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PREFACE

In the summer of 2004, the Scientific Committee of the European Academy of Occupational Health Psychology reviewed in excess of one hundred and fifty papers that had been submitted for presentation to the Academy’s sixth full conference. This number represented a record for an Academy conference and may be taken as evidence of the Academy going from strength to strength and succeeding in attracting high quality submissions from a growing international constituency. Authors whose papers were accepted were subsequently invited to produce a short paper pertaining to their presentation. Many authors took up the opportunity to do so and this Book of Conference Proceedings contains the results of those endeavours.

The conference took place over three days at the end of November 2004 in the beautiful Portuguese city of Oporto. The conference broke new ground by introducing a student conference, prior to the formal conference, intended to bring occupational health psychology to the consciousness of local students who may otherwise fail to be aware of the discipline and the post-graduate educational and career opportunities available. Both the student and formal conference were, by all accounts, a tremendous success and served to spark a renewed enthusiasm for taking Academy activities forward.

One initiative to arise from the wave of renewed zeal expressed in the last few months by Academy members has been the creation of a new Academy publication, the European Review of Occupational Health Psychology. The 'Review' is an annual publication that seeks to provide an overview of cutting edge research in occupational health psychology in Europe and beyond, comprising of extended versions of high quality papers drawn from the Book of Conference Proceedings, invited and free-standing papers. The goal of the new journal is to establish a quality international publication which would summarize the developments in the area of Occupational Health Psychology. A pan-European editorial board made up of active and internationally recognised individuals in the field will be installed early in 2005. The Review is an important initiative and central to the European Academy’s agenda for growth.
We hope you enjoy this publication and find it useful. Feedback is always welcome, so if you have any comments please don't hesitate to get in touch. The Academy's next full conference takes place in 2006 and throughout 2005 there will be a number of locally organized regional events. Please be sure to visit www.ea-ohp.org regularly for information on such events or even consider collaborating with colleagues and organizing one yourself!

Best wishes,

Jonathan Houdmont
jonathan.houdmont@nottingham.ac.uk

Scott McIntyre
PSYCHOMETRICAL EVALUATION AND WORKING QUALIFICATION IN HIGH VOLTAGE ELECTRIC WIRES SERVICE ENGINEERS

C. ABBATE, C. BAGNATO, S. ABBATE, G. SOLE & E. MICALI

1 University of Messina, Italy
2 Manufactory ISAB-ERG Siracusa, Italy

Introduction and objective

Technology innovations in telecommunication and electric energy’s conduction plants sectors led to the development of electric and magnetic fields. This condition produced an increase in studies directed at investigating the effects of exposure to electro magnetic fields on human health. Scientific results are contradictory and determined many doubts for exposure evaluation and for disease assessment. Some epidemiological studies suggest a correlation between electro magnetic fields exposure and the onset of neoplastic diseases, as well as immune systems and central nervous system changes (1, 2). In a review about the effects of electro magnetic fields in electric utility workers, Szadkowska-Stanczyk asserts that exposure increases the risk of neurology and circulatory system diseases (3). Other studies do not support these conclusions (4, 5, 6).

The aim of the study is to check the efficiency and performance levels, cognitive abilities and mental state alterations, associated with psycho emotional changes, as an index to value professional performance modifications related to the biological age and to the subjective perception of occupational risk in a party of workers employed for the maintenance of high voltage electric wires.

Materials and methods

Our study was carried out on workers employed for the maintenance of high voltage electric wires, located in Sicily, who were monitored in a course of yearly working ability follow-ups over the last four years. The sample consisted of 12 male subjects with an average registry age of 41 years, average working seniority of 15 years in this specific occupation and an average school attendance of 10 years. They were non-smokers, non-alcohol dependents, without pathologies in act, none in pharmacological treatment, with a negative medical history for neuropsychiatric pathologies, and with a body mass index (BMI) lower than 25 at the moment of employment.

During the yearly qualifications follow-up to their specific occupation, the workers were subjected to a general medical examination, laboratory and
instrumental investigations (audiometry, vestibular exam, haematological routine, uranalysis) related to the risk, and a neuropsychological and neurobehavioral evaluation in a quiet soundproof place, with no interferences or interruptions, with microclimate control, by means of a psycho diagnostic protocol that included:

- The Mini Mental State (7) to value a possible cognitive impairment. A total score between 24 and 30 indicates a mental state as a rule, a score equal to or lower than 15 is symptomatic of dementia.
- Wechsler Adult Intelligence Scale (WAIS-R) (8), consisting of 11 subtests divided into verbal and manual tests, to deduce intellective efficiency index and more or less significant differences between verbal and manual performances.
- The Branches Alternate Movement Task (BAMT) (9), for motor coordination, consisting of sequences of movements, repeated as fast as possible for a period of 30 seconds, checked by an alarm timer.
- Gottschaldt's series to evaluate attention and concentration, by means of identification and cancellation of exactly alike graphic symbols.
- Answer velocity record to a simple visual stimulus.

During the development of the study, the psycho-diagnostic protocol was modified to contain the bias in mental tests concerning the psycho-emotional sphere, with the subsequent use of:

- The Beck Depression Inventory (BDI) (10), whose items highlight depressive symptoms. It is comprised of 21 items; a score superior to 18 highlights clinical depression.
- The Anxiety Scale (ASQ-IPAT) (11), consisting of 40 items, which shows latent and evident anxiety levels.
- The Symptoms' Questionnaire (SQ) (12), comprised of 92 items, to investigate pathological conditions and well-being. It is useful for clinical routine and psychosomatic research that requests an evaluation of changes in psychological conditions.
- The Emotional Fragility Questionnaire (EFQ) (13), comprised of 30 items, is a useful prevention and control instrument to analyse affective and cognitive processes controlling behaviour.

Individual mental reactives administration time, for every yearly psychometric control, is not more than 50 minutes.

Exposure assessment

Electric energy's distribution net of the territory in which our sample works includes, as highest tension (380-220 kV), and, as high tension (150-132 kV) parts. On average, electromagnetic field values of the electric distribution wires are superior to 25-18 and 14 μT, for highest tension and high tension respectively.
Wires’ maintenance is made by interventions on the different constituting portions, such as insulator, equipment and terminals, conductive and cables, wires support, foundations and observation belts of the plan. Interventions are made under tension as out of tension wires and imply all the above electromechanical operations through small tools. Working activity involves actions executed in unstable positions, on trellises at changeable altitude, about 50 m in height, which are reached through slings. Sometimes maintenance interventions imply permanency in the electric substation; here it is possible to find electric fields up to 16 kV/m and magnetic fields up to 270 μT. The subjects employed for maintenance, organized in teams, reach the repairing structures by car.

Results

General medical evaluation did not highlight, during the whole four years of the study, any organic disease in any subject of our sample. Instrumental and laboratory research always resulted at the norm.

All of the subjects were always considered suitable for this specific occupation during psychometrical evaluation, over the whole four years, with efficiency-performance levels and cognitive parameters at the norm.

The following table, n. 1, reports total scores obtained by our subjects in the single Mental Reactives, during the four years in the subsequent controls.

<table>
<thead>
<tr>
<th>TEST</th>
<th>Subjects</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mini Mental State (MMS)</td>
<td>n 7/12</td>
<td>TS = 28</td>
<td>TS = 28</td>
<td>TS = 25</td>
<td>TS = 25</td>
</tr>
<tr>
<td></td>
<td>n. 5/12</td>
<td>TS = 26</td>
<td>TS = 26</td>
<td>TS = 26</td>
<td>TS = 26</td>
</tr>
<tr>
<td>Wechsler Adult Intelligence Scale (WAIS)</td>
<td>n. 12/12</td>
<td>RS = 60</td>
<td>RS = 60</td>
<td>RS = 60</td>
<td>RS = 60</td>
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<td></td>
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<td></td>
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<td></td>
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<tr>
<td></td>
<td>Manual</td>
<td>RS = 70</td>
<td>RS = 70</td>
<td>RS = 70</td>
<td>RS = 60</td>
</tr>
<tr>
<td></td>
<td>Scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beck Depression Inventory (BDI)</td>
<td>n. 6/12</td>
<td>TS = 10</td>
<td>TS = 10</td>
<td>TS = 13</td>
<td>TS = 15</td>
</tr>
<tr>
<td></td>
<td>n. 2/12</td>
<td>TS = 12</td>
<td>TS = 12</td>
<td>TS = 15</td>
<td>TS = 18</td>
</tr>
<tr>
<td></td>
<td>n. 4/12</td>
<td>TS = 8</td>
<td>TS = 8</td>
<td>TS = 9</td>
<td>TS = 10</td>
</tr>
<tr>
<td>Anxiety Scale (ASQ-IPAT)</td>
<td>n 12/12</td>
<td>TS = 27</td>
<td>TS = 29</td>
<td>TS = 29</td>
<td>TS = 31</td>
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</table>

Legend  TS = Total Score  RS = Raw Score

The table highlights that, at Mini Mental State, all of the subjects reported total scores between 24 and 30. No one had a score lower than or equal to 15, revealing dementia. Seven subjects reported a score equal to 28 in the first and the second
yearly control, and subsequently, in the other two controls, they recorded a decrease, with a total final score equal to 25. Five subjects reported the same score for the whole four years, equal to 26.

WAIS did not show intellective decline nor pathological differences between the Verbal Scale and the Manual Scale, but manual performances in the last control, for all of the subjects, did show a speed execution decrease.

With BDI six subjects recorded a total score of 15 in the last control, which highlights a middle level depression; two subjects reported a score of 18, which can be considered the limit for clinical depression.

Anxiety levels, measured by ASQ-IPAT, were located for all of the 12 subjects in sten 6, which is indicative of middle anxiety level. In the study sample, we noticed, in the course of the four years, a low decrease in cognitive performance associated with an increase in anxiety and depression levels. (Graphic n. 1).

Graphic n. 1. Answer trends at the single mental reactives during the four years observation

Psychometrical evaluation, making use of BAMT’s motor sequences, were always executed correctly throughout the four years, but the speed of execution came down during that time. Gottschaldt’s series, after controlling for attention, concentration and deletion of the same graphical signs, revealed a low deficit of concentration over the course of the four years. There was an increase in simple visual reaction times too during the four years. SQ for the whole 12 subjects showed somatic symptoms such as cephalea, perspiration, tachycardia, muscular tension. EFQ did not reveal experienced sentiments of persecution or emotional susceptibility. By means of psycho-diagnostic instruments (BDI, ASQ-IPAT, SQ), which were separately administered throughout the four years, we highlighted significant changes inherent in affectivity, thought, ideation, excitability and mood state, with evident anxious-depressing symptomatology, asthenia related, sleep troubles and weight increase.
Discussion and conclusion

Our results highlight that an experimental sample, even though preserving cognitive parameters at the norm, an essential condition to be considered suitable for this specific occupation, shows a low deficit in effective memory and short term memory, without any alteration related to long term memory. Our findings show a decrease in concentration and attention levels associated with an addition in simple reaction time and with a decrement to manual praxies and oculomotory coordination. These decrements are progressive during the course of the years and concern all of the subjects individually. Chung-Yi Li performed a case control study to assess the relationship between exposure to electromagnetic fields and the risk of cognitive impairment. The results of this study show that a relationship exists between electromagnetic field exposure and the onset of cognitive impairment and support the possible association with neurodegenerative diseases (14, 15). Our results, even though we did not prove the existence of organic neurological pathologies, cannot exclude that. Significant changes have been found regarding the psycho-emotional and affective sphere, with an increase in depression and anxiety levels and an accentuation of psychosomatic symptoms (16, 17).

The relationship between cognitive performance decrease and anxious depressive psychosomatic symptomatology, showed by our study’s sample, is, in our advice, referable to the effects of biological age and to work related electro magnetic fields exposure. Neuropsychological alterations, highlighted by studies concerning work related electromagnetic field exposure, show neurological deteriorations and neurodegenerative diseases (18). Concerning the effects on the psyche, they have postulated a link between exposure to EMFs and depression, based on the observation that such exposures alter the daily rhythm of pineal melatonin production and excretion in rats. Our findings show, by means of the BDI, the presence of middle level depression. We suppose it could be explained through the changes of daily rhythm melatonin production, as demonstrated by clinical trials, highlighting that temporally stable magnetic fields exposure are associated with reduced nocturnal 6-hydroxymelatonin sulphate excretion (19, 20).

So, we thought subjective neuropsychological troubles throughout control examinations need to be valued, to qualify someone as a high voltage electric wires service engineer working in unstable positions. Our study highlights that the parameters which underwent significance, but not pathological decreases were: short term memory, slight attention and concentration deficits. It also shows an increase in simple reaction times. More significant changes concern psycho-emotional and affective spheres, with troubles related to registry age and working exposure. Psychiatric evaluation scales and neuro-cognitive tests, so clearly important and reliable, are useful both for the clinician and for the researcher as valid instruments to support clinical investigations. Finally, we
think that psychometric tests are useful for periodic follow-ups, to integrate working qualifications for subjects intending to join prominent psychophysical works and to enable them to face up to the peculiar mental and emotional working burdens.

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**Keywords:** High-voltage electric, mental reactive, neuropsychological battery, working qualification

Address for correspondence: abbatec@unime.it
THE RELATIONSHIP BETWEEN MOBBING AND BURNOUT AND PSYCHOLOGICAL WELL-BEING: THE ROLE OF SELF-EFFICACY

S. AGUT, M. GARCÍA-IZQUIERDO, M. C. SÁEZ & B. LLOR
University of Murcia Spain

Theoretical background

Mobbing at work refers to a situation where a person, persistently over a period of time, perceives himself or herself to be on the receiving end of negative actions from one or several others. In this situation the victim has difficulties defending him or herself against these actions (Leymann, 1990; Einarsen & Raknes, 1997). Despite research about the individual health consequences of harassment in the workplace still being limited, we could expect negative effects as a result of these hostile behaviours at work.

Specifically, mobbing could favour the presence, and/or the development of burnout. This is a syndrome, related to work, composed of three dimensions: exhaustion (i.e., the draining of energy due to excessive efforts spent at work), cynicism (i.e., an indifferent, detached and distant attitude towards one’s work) and professional efficacy (i.e., a sense of accomplishment and job competence). High levels of exhaustion, cynicism, and a low level of professional efficacy are indicative of burnout (Schaufeli & Enzmann, 1998). Moreover, mobbing could also produce individual psychological distress. The General Health Questionnaire constitutes one of the most reliable indicators of psychological distress, which encompasses four dimensions: somatic symptoms, anxiety, social dysfunction, and depression (Goldberg & Hillier, 1979). On the contrary, we could also expect that mobbing reduces individual beliefs about his or her competence and success in the work domain. Bandura (1986, 1997, 2001) called this self-efficacy, and defined it as “the beliefs in one’s capabilities to organise and execute the courses of action required to produce given attainments” (Bandura, 1997, p. 3). Even though the paper on self-efficacy in the mobbing process is not well known, we could anticipate a positive relationship with psychological well-being and negative with burnout. Furthermore, self-efficacy could play a moderating role in the link between mobbing and burnout, and psychological well-being, protecting the individual from the negative impact of harassment at work on his or her health. From this point of view, self-efficacy would constitute a resource for individual to cope with hostile behaviours at work.

This study has a twofold aim: 1) to analyse the relationship between mobbing at work (i.e. hostile behaviours that affect employee social setting, hostile behaviours related to his or her job performance, discriminatory actions associated
with employee gender and age, and threats or physical abuse, insults, and insinuations to give up the job) and burnout (i.e. exhaustion, cynicism, and low professional efficacy), and psychological well-being (i.e. somatic symptoms, anxiety, social malfunction, and depression); 2) to examine the paper of self-efficacy (direct and moderator) in the linkage between mobbing and burnout, and psychological well-being.

Method

Participants and procedure

The sample consists of 570 Spanish employees (196 males and 372 females – 2 missing values) from health and education settings (68.8% – 31.2%, respectively). The average age was 40.1 years (S.D = 8.8).

Employees were asked to complete self-report questionnaires. Supervisors or managers from education and health organizations were responsible for the distribution of the questionnaires, which were voluntary and confidential.

Measures

Mobbing was operationalized by 24-items, the NAQ-RE scale (adapted by García-Izquierdo et al., 2004), that consists of four subscales: (1) Hostile behaviours that affect employee social setting (HB-SO-9 items), (e.g., "Perceive gossips or murmurs about you "); (2) Hostile behaviours related to performance (HB-PER-6 items) (e.g., "Your effort at work is undervalued"), (3) Discriminatory actions associated with employee gender and age (DIS-6 items) (e.g., “Receive attentions at work according to your gender that you do not desire”), and (4) Threats or physical abuse, insults, and insinuations to give up the job (ABU-3 items), (e.g., “Receive threats or physical abuses”). All items were scored on a five-point rating scale, ranging from (1) "Never" to (5) "Daily". High levels in the four subscales are indicative of mobbing at work.

Burnout was measured by 16-items, MBI-GS (Schaufeli, Leiter, Maslach, & Jackson, 1996), that consists of three subscales: (1) Exhaustion (EXH-5 items), (e.g., "I feel used up at the end of the workday"), (2) Cynicism (CY-5 items), ("I have become more cynical about whether my work contributes anything"), and (3) Professional Efficacy (PEF-6 items), (e.g., "I have accomplished many worthwhile things in this job"). All items were scored on a seven-point rating scale, ranging from (0) "never" to (6) "every day". High levels of exhaustion and cynicism, and a low level of professional efficacy indicate Burnout.

Psychological well-being was measured by 28-items (7 positive and 21 negative), the General Health Questionnaire (GHQ-28), (Goldberg & Hillier, 1979, adapted by Lobo et al., 1981), that consists of four subscales: (1) Somatic symptoms (SOM-7 items), (e.g., “Do you feel perfectly well and in good health?”),
(2) Anxiety (ANX-7 items), (e.g., “Do you lose sleep over worry?”), (3) Social dysfunction (SO-DYSF-7 items), (e.g., “Do you take more time doing the things?”), and (4) Depression (DEP-7 items), (e.g., “Do you think that you are no good?”). The positive items are scored on a four-point rating scale, ranging from (1) "More than usual" to (4) "Much less than usual". 18 of the negative items are scored on a four-point rating scale, ranging from (1) "Not at all" to (4) "Much more than usual". The remaining negative items use other types of response scales. Higher scores indicate greater level of psychological distress.

Self-efficacy was assessed by 10-items, the Generalized Perceived Self-efficacy Scale (Baessler & Schwarzer, 1996; adapted to work). A sample item is: “I can solve most problems at work if I make the necessary effort”. All items were scored on a four-point rating scale, ranging from (1) "does not describe me" to (4) "describes me totally". High scores in all items are indicative of high self-efficacy.

Data analysis

Data analysis was done using SPSS statistics computer program. Firstly, MANOVA was done to detect differences in the variables according to gender and work setting (health-education). Descriptive analysis, correlations (Pearson r), internal consistencies (Cronbach's α), and hierarchical multiple regression analyses (main effects of the dimensions of mobbing and self-efficacy and modulator effect of self-efficacy) were performed to fulfil objective 1 and 2.

Results

Preliminary analysis

In order to test whether or not the sample differed on the study variables, according to gender (men=196 - women=372) and work setting (health workers=392 – education workers=178), two MANOVAs were carried out. All of the twelve study variables were included: dimensions of mobbing, burnout, and psychological well-being, and also self-efficacy. In relation to gender, multivariate results indicated that men and women differed on the variables in a significant way (F(12, 555)=5.575; p=.001). Also with regard to work setting, results show that both groups differed significantly on these variables (F(12, 557)=3.21; p=.001). Therefore, it was decided to control the possible effect of gender and work setting in the first step of the hierarchical multiple regression analyses.

Descriptive analysis

Table 1 shows the means, standard deviations, internal consistencies (Cronbach's α), and the correlations of the study variables. The scale of self-efficacy and the subscales of mobbing, and psychological well-being were
sufficiently internally consistent, since Cronbach’s α meets the criterion of 0.70 (Nunnaly, 1978). In the case of burnout, after removing one item from CY (‘When I’m working I don’t want to be bothered’) and another from PEF (“To achieve aims at my job encourage me”) the initial CY a coefficient (=.80) was increased to .87, and the initial PEF a coefficient (=.61) was increased to .68.

The dimensions of mobbing, burnout, psychological well-being, and self-efficacy correlated among them in the expected direction. Also mobbing and self-efficacy correlated with burnout and psychological well-being, as we expected.

### Table 1: Means, standard deviations, internal consistencies (Cronbach’s α)

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<tr>
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<th>4</th>
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<td>.50</td>
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</tr>
<tr>
<td>2. HB-PER</td>
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<td>.66**</td>
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<td>3. DIS</td>
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<td>.70</td>
<td>.47**</td>
<td>.41**</td>
<td>-</td>
<td>-</td>
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<td>-</td>
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<td>4. ABU</td>
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<td>.78</td>
<td>.56**</td>
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<td>.34**</td>
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<td>-</td>
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<td>6. CY</td>
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<td>.23**</td>
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<td>7. PEF</td>
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<td>.15**</td>
<td>.17**</td>
<td>.13**</td>
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<td>-.15**</td>
<td>-.17**</td>
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**p ≤ .001; * p ≤ .025, # = p no significant

HB-SO = Hostile behaviours that affect employee' social setting, HB-PER = Hostile behaviours related to performance, DIS = Discriminatory actions associated to gender and age, ABU = Threats or physical abuses, insults, and insinuations to give up the job, EXH = Exhaustion, CYN = Cynicism, PEF = Professional efficacy, SOM = Somatic symptoms, ANX = Anxiety, SO-DYS = Social dysfunction, DEP = Depression, SELF = Self-efficacy.

and correlation (Pearson r)

**Relationship between mobbing and burnout, and psychological well-being**

Table 2 displays a summary (last stage) of the fitting of the data to a lineal model for exhaustion, cynicism, and professional efficacy, as dependent variables. When gender, work setting, and also age were controlled in the first stage of the regression analyses, the independent variables accounted for 30% of the variance in exhaustion, 29% in the case of cynicism, and 22% in the case of professional efficacy. Mobbing was significantly associated with burnout in the expected direction and self-efficacy had a main and interaction effect, as we expected.
Table 2: Multiple regression analyses of mobbing on dimensions of burnout: interaction effect of self-efficacy

<table>
<thead>
<tr>
<th>Model</th>
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<th>Model</th>
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<td>PROF. EFFICACY</td>
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<td>44***</td>
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<tr>
<td>HB-SO x SELF</td>
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<td></td>
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</tbody>
</table>

Multiple R: .55, R²: .30, F: 39.23***

Table 3. Multiple regression analyses of mobbing on dimensions psychological well-being: interaction effect of self-efficacy

<table>
<thead>
<tr>
<th>Model</th>
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<th>Model</th>
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<td>HB-PER x SELF</td>
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<td>HB-SO x SELF</td>
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<td>47</td>
<td>HB-SO x SELF</td>
<td>21***</td>
<td>SELF</td>
</tr>
<tr>
<td>ABU x SELF</td>
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<td>ABU x SELF</td>
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<td>Multiple R</td>
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<tr>
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<td>.20</td>
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<td>.16</td>
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<tr>
<td>F</td>
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<td>F</td>
<td>19.80***</td>
<td>F</td>
<td>26.26***</td>
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</tbody>
</table>

***p < .001, **p < .025, *p < .050

HB-SO = Hostile behaviours that affect employee' social setting, HB-PER = Hostile behaviours related to performance, DIS = Discriminatory actions associated to gender and age, ABU = Threats or physical abuses, insults, and insinuations to give up the job, SELF = Self-efficacy.
Table 3 shows a summary (last stage) of the fitting of the data to a lineal model for the dimensions of psychological well-being, as dependent variables. When gender, work setting, and also age were controlled in the first stage of the regression analyses, the independent variables accounted for 22% of the variance in somatic symptoms, 22% in the case of anxiety, and 20% in the case of social dysfunction, and 16% for depression. Mobbing was significantly associated with psychological well-being in the expected direction and also self-efficacy had a main and interaction effect, according to expectations.

**Interaction effects**

The significant interaction effect of dimensions of mobbing and self-efficacy on exhaustion and the dimensions of psychological well-being were explored. One sample interaction is graphically represented here, the rest does not appear for extension reasons. According to expectations, Figure 1 shows that subjects with low self-efficacy, when hostile behaviours that affect their social setting were high, level of exhaustion increased. On the contrary, employees with high self-efficacy who do not suffer this kind of hostile behaviour presented the lowest level of exhaustion. Similar patterns appeared for the following interactions: HB-SO x SELF on somatic symptoms, HB-PER x SELF on social dysfunction, ABU x SELF on social dysfunction and HB-PER x SELF on depression. For the other three interactions, different patterns emerged. Specifically, for the interaction between ABU x SELF on somatic symptoms, it also appears that subjects with low self-efficacy, when there were threats or physical abuse, insults and insinuations to give up the job, level of somatic symptoms was the highest. However, against expectations, subjects with high self-efficacy but that suffered these abuses obtained the lowest level of somatic symptoms. For the interaction of HB-SO x SELF, we obtained that workers with low self-efficacy, when they did not suffer these hostile behaviours, suffered the highest level of social dysfunction, but as we expected, the lowest level of social dysfunction emerged in individuals with high self-efficacy and that did not suffer hostile behaviours. Finally, for the interaction DIS x SELF on social dysfunction, again we obtained, as we expected, that social dysfunction was higher in workers with low self-efficacy than in those ones with high self-efficacy, but almost there are differences between individuals that suffer and not discrimination actions.

**Conclusion and discussion**

This study had two objectives: 1) to analyse the relationship between mobbing at work (i.e. hostile behaviours that affect employee social setting, hostile behaviours related to his or her job performance, discriminatory actions associated with employee gender and age, and threats or physical abuse, insults and insinuations to give up the job) and burnout (i.e. exhaustion, cynicism and low professional efficacy) and psychological well-being (i.e. somatic symptoms, anxiety, social
dysfunction, and depression); 2) to examine the paper of self-efficacy (direct and moderator) in the linkage between mobbing and burnout, and psychological well-being. Firstly, the results show that when the effects of gender, age and work setting were controlled, according to expectations, hostile behaviours referring to employee job performance were positively related to exhaustion and cynicism. Hostile behaviours that affect employee social setting were related to professional efficacy and exhaustion, negative and positive, respectively. Also hostile behaviours referring to employee social setting and his or her job performance were linked to psychological distress (somatic symptoms, anxiety, social dysfunction and depression) in a positive way, as we expected. Threats or physical abuse, insults and insinuations to give up the job were only related to social dysfunction.

Secondly, as we expected, self-efficacy had both a direct and modulator effect on burnout and well-being. Specifically, self-efficacy held a negative relationship with exhaustion, cynicism, somatic symptoms, anxiety, social dysfunction and depression. On the contrary, its linkage with professional efficacy was positive. Moreover, self-efficacy constituted a modulator variable in the relationship between mobbing, on the one hand, and burnout and psychological well-being, on the other one. In all cases of interaction, workers with low self-efficacy presented higher levels of exhaustion and psychological distress (somatic symptoms, social dysfunction and depression) than those individuals with high self-efficacy. In general terms, when the subject felt self-efficacious at work, the impact of mobbing on his or her health decreased (i.e., lower exhaustion, somatic symptoms, social dysfunction and depression). The findings regarding the moderator paper of self-efficacy are similar to those obtained in a previous study (Salanova, Peiró, & Schaufeli, 2002) that explored the relationship between job demands and burnout.

Harassment in the workplace deteriorates employee health. Nevertheless, the worker could benefit from self-efficacy, as it protects the subject from the effects of mobbing ("buffer" variable). Thus, the belief that one's actions are responsible for successful outcomes constitutes a key individual resource that could significantly reduce the negative effect of hostile behaviours at work on health. However, further longitudinal research is required to make causal inferences, and also explore the moderator role of other factors that could act as resources, such as training, social support or personality variables.

References


WOMEN IN THE WORKPLACE: DESIGN AND RESULTS FROM THE FIRST STAGE OF AN INTERVENTION PROJECT TO IMPROVE WOMEN’S WORKING CONDITIONS

K. ALBERTSEN, K. NIELSEN, S. O. BRENNER, L. SMITH-HANSEN & C. ROEPSDORFF

Danish National Institute of Occupational Health, Copenhagen, Denmark

Introduction

Denmark has one of the highest proportions in the world of women in the workforce. In 2001, 46.9% of the workforce was female (Statistic Denmark, www.dst.dk). However, the labour market is strongly segregated: women dominate some professions as men dominate others. There is growing evidence that work characteristics are more important when considering women’s well-being than just employment per se. The current paper presents the baseline results from a large study investigating working conditions in female-dominated occupations.

For use in this study, four psychosocial factors were identified and hypothesized to be important for women in female-dominated workplaces: 1) Emotional demands. As women dominate the healthcare setting, emotional demands stemming from working with clients, children and patients have been reported (Kristensen, Borg and Hannerz, 2002). 2) Quantitative demands. At the same time women have been found to be experience high quantitative demands. Recent research has indicated that two kinds of quantitative demands are relevant; demands relating to having a lot to do whilst at work (time pressure) and quantitative demands requiring you to work overtime (length of working time). For women in blue collar positions, it will typically be the case that the demands women meet are those of high time pressure; having to do lots whilst at work. 3) Influence. It has been reported in a number of studies that women typically experience less influence than men. For example, Fagan and Burchell (2002) found that women had significantly less influence at work than their male counterparts and, as influence has been found to be related to health and well-being, it is important to consider this in a model of women’s working conditions and health. 4) Social support. First, it has been found that women are more likely to seek and provide social support (Jex, Adams and Ehler, 2002). Further, it has been found that women benefit more from social support at work than men. (Vermeulen and Mustard, 2000) concluded that social support at work may be more important for women in minimising the negative impact of poor working conditions on health and well-being than it is for men.
It has also been found that work influences the health and well-being of men and women in different ways. In a study focusing on gender differences in job strain, social support and psychological distress in a representative sample of the Canadian workforce, Wade and Cairney (1997) found that women experience a higher degree of psychological distress than men. A literature review on musculoskeletal problems concluded that women report more musculoskeletal symptoms than men (Punnett and Bergqvist, 1997). This is interesting as men typically carry a heavier physical workload than women, even in cases where men and women have the same job title.

In a review of 19 studies (Jick and Mitz, 1985) concluded that women more frequently experience psychological distress, whereas men experience more physical distress. Therefore this study focused on work factors and health outcomes believed to be of particular importance to women.

However, it is not sufficient to investigate female-dominated workplaces as a whole. Nelson, Burke and Michie (2002) call for research identifying group differences in gender research rather than focusing on men or women per se. Pousette and Hanse (2002) conducted a study where they compared four different occupational groups against an overall model of work characteristics, appraisals of the psychosocial work situation and ill-health, using multi-group structural equation modelling and found that groups differed in how the factors were related to each other – both in strength and direction. This paper aims to examine the impact of work stressors prevalent in female-dominated areas whilst at the same time taking account of the group differences between occupational groups. To this end four groups were included: nurses, healthcare assistants, cleaning and industry workers. Although these groups share at least one or more characteristics it is likely that these differ in a variety of ways. This paper focuses on presenting a model of the interactions between working conditions and employee well-being in female-dominated occupations.

The main objective is to build a model of the working conditions and their interaction, both amongst themselves but also within employee health and well-being measures in female-dominated workplaces, using multi-group structural equation modelling.

Figure 1: Hypothesized model
It was hypothesized that:

1) There will be positive associations between quantitative demands and back pain and behavioural stress reactions.
2) Quantitative demands will be associated with low social support at work, as having high work pressure will leave employees less time to establish close bonds with colleagues.
3) Quantitative demands will be positively related to emotional demands. It is plausible that those with high time pressures will also have more emotional demands as they do not have the time to engage in building up good relationships and cope with demanding emotional situations with colleagues and clients.
4) There will be a positive association between emotional demands and behavioral stress symptoms.
5) There will be a negative relationship between influence and emotional demands.
6) There will be a negative association between influence and behavioural stress symptoms.
7) There will be a positive association between influence and social support.
8) Influence will be negatively associated with back pain.
9) Social support will be negatively related to behavioral stress reactions and back pain.

Methods

Background

This study is conducted using data from the baseline survey in the project Women in the Workplace, a study on women’s working conditions and employee well-being in a number of female-dominated occupations in Denmark. The project started in 2001. The main objective of the project was two-fold: a) to illuminate ways in which the working environment in female-dominated professions influences employee health and well-being, absenteeism and exclusion from the labour market; b) to increase knowledge about the opportunities of reducing such problems through work-related interventions. The project was a multiple case study. Seventeen intervention projects were selected by the Inspectorate and the NIOH research team to participate. Thirteen of these projects were implemented. The majority of participating groups worked within the industry, the service and cleaning sector, healthcare and education. The majority of participants were blue-collar workers with little or no education. In this paper only the four largest groups: industry, cleaning, nursing and healthcare assistants are included. Questionnaires were distributed to all employees within the participating organizations or departments.
Participants

For the purpose of this paper, only organisations employing at least one of the above mentioned occupational groups were included. This means a total of 1737 respondents. Thus the final sample consisted of the following four subgroups:

1. Industry (n = 281), of whom 78 % were female and the average age was 41 years.
2. Cleaning (n = 255), of whom 92 % were female and the average age was 44 years.
3. Nursing (n = 791), of whom 96 % were female and the average age was 41 years.
4. Healthcare assistants (n = 410), of whom 96 % were female and the average age was 41 years.

Measures

All participants responded to a questionnaire containing questions on demographic variables, job characteristics, psychosocial factors, health and well-being. The measures used in this study can be grouped as independent and dependent variables. The main instrument used was the COPSOQ (Copenhagen Psychosocial Questionnaire) that measures aspects of the working environment and health and well-being outcomes. The measures included in the analyses presented in this paper were:

Quantitative demands were measured by a three-item scale (Cronbach’s α = .71 for the overall group). A five-point Likert scale was adapted with responses from Always, Often, Sometimes, Seldom, Never/hardly ever.

Influence was measured by a four-item scale (Cronbach’s α for the overall group = .73) with the same response categories as above.

Emotional demands were measured by a three-item scale (Cronbach’s α = .90 for the overall group). A five-point Likert scale was employed with response categories from ‘To a large extent’ to ‘A very little extent’.

Social support was investigated by means of a four-item scale (Cronbach’s α = .74 for the overall group) with response categories as emotional demands.

The dependent variables were examined using the four-item version of the Setterlind Behavioural stress reaction scale, which taps into behavioural symptoms of stress such as irritability, lack of initiative and energy to socialise (Cronbach’s α for the whole group was .84) and a three-item scale investigating low back pain developed at AMI (Cronbach’s α = .74).

All scales were transformed to range between 0 and 100.
Statistical analysis

In order to assess the fit of the proposed model to the observed data, a structural equation model (SEM) was employed. The structural equation model described in this study was estimated, employing the maximum likelihood techniques with the covariance matrix, as the input using LISREL 8.5.

The goodness of fit between the model and the observed data was tested using a number of goodness-of-fit indices. In this study, the chi square, RMSEA, CFI and GFI are reported. It is generally agreed that RMSEA values of less than .08 indicate an acceptable fit, and values less than .05 represent a close fit. The GFI indexes the relative amount of observed variances and covariances accounted for by the model and is analogous to R2.

Results

Preliminary analysis

Prior to MGSEM, some preliminary analyses were conducted in order to gain insight into the data. Means, standard deviations, Cronbach’s alphas and Pearson’s correlations of the variables were calculated for all four samples. The four groups showed varying mean differences on endogenous and exogenous variables (data not shown). As one would expect, the human service groups, health care assistants and nurses, experienced higher emotional demands than their colleagues in industry and cleaning (60.16 and 65.97 compared to 30.84 and 32.98). Healthcare assistants experienced slightly higher influence over their work than their colleagues. Further differences were also found with regards to correlations. Whilst influence was significantly negatively related to emotional demands for nurses ($r = -0.10$, $p < .01$) and healthcare assistants ($r = -0.16$, $p < .01$), a positive relationship was found for industry ($r = 0.28$, $p < .01$) and cleaning ($r = 0.17$, $p < .01$).

MGSEM results

A structure for relationships between the latent variables was specified based on the hypothesized model. The denoted hypothesized processes involving the entire system of variables can be seen in figure 1. The model was fitted to the observed covariance matrices over a series of runs. The universal model ($\chi^2 = 316.04$, $p < .001$, RMSEA = .10, CFI = .71, GFI = .92). First, the parameters in the structural part of the model were constrained to equity over the groups. Second, the model was adjusted according to the modification indices: a relationship was added between behavioural stress reactions and back pain for industrial workers and cleaners as indicated by the modifications indices. Third, parameters for the relationships between influence and emotional demands,
Table 1: Structural model. Standardized coefficients for two models (universal model and group-sensitive model) of relations between work characteristics and low back pain and behavioural stress reactions.

<table>
<thead>
<tr>
<th>Path</th>
<th>Group-specific</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Industry</td>
</tr>
<tr>
<td>Quantdem-Back</td>
<td>.23</td>
</tr>
<tr>
<td>Quantdem-Emodem</td>
<td>.24</td>
</tr>
<tr>
<td>Quantdem-Support</td>
<td>-.16</td>
</tr>
<tr>
<td>Emodem-Behstress</td>
<td>.24</td>
</tr>
<tr>
<td>Influence-Emodem</td>
<td>.23</td>
</tr>
<tr>
<td>Influence-Behstress</td>
<td>-.10</td>
</tr>
<tr>
<td>Influence-Support</td>
<td>.18</td>
</tr>
<tr>
<td>Support-Behstress</td>
<td>-.18</td>
</tr>
<tr>
<td>Influence-Back</td>
<td>-.15</td>
</tr>
<tr>
<td>Behstress-Back</td>
<td>.16</td>
</tr>
</tbody>
</table>

Note: only significant relationships are reported in this table, *p < .05, †p < .01. Labels of paths: Quantdem = Quantitative demands, Emodem = Emotional demands, Support = Social support, Back = Back pain, Behstress = Behavioural stress reactions.

Figure 2: Group-specific model

emotional demands and behavioural stress reactions, influence and social support were estimated freely where appropriately indicated by the modification indices. This method tests for variances across the four
occupational groups. Finally, the t-value indicated that the direct relationship between quantitative demands and behavioural stress reactions was non-significant and was therefore deleted. These changes were made in a series of runs adding one change at a time to remain in control of the process. As one change is made these may influence other relationships (Cheng, 2001). Model comparisons were made between the hypothesized model and the adjusted model. The adjusted model had a better model fit ($c^2 = 75.91$, $p > .05$, RMSEA = .03, CFI = .97, GFI = .96) than the universal model. The standardized path coefficients for the group specific model are reported in table 1. Figure 2 gives an overview of significant paths for the modified model in the four samples.

**Discussion**

This study represents a first descriptive exploration of the baseline data from a large intervention study. Follow-up studies are planned to explore the combined effects and processes connected with specific interventions, e.g., effects and processes related to a combined health promotion and well-being project among canteen employees (Nielsen & Fredslund, 2004) and the effects of an intervention with increased influence on scheduling among health care workers on work-family conflicts (Pryce, Nielsen, Albertsen, 2004). Furthermore, a study is planned to explore the association between the dissemination of interventions and effects.

The hypothesized main association between quantitative demands and back pain was supported. The direct association between quantitative demands and behavioural stress was, however, not supported in this study. Only an effect mediated by social support was found. Thus the effect of quantitative demands on behavioural stress seems to be highly dependent of the degree of social support.

The hypothesized main associations between influence and back pain and influence and behavioural stress were both supported, and furthermore an effect mediated by social support was found. This is in accordance with the study of Tummers et al. (2002), who found in a study of nurses that, even after controlling for possible mediators, decision authority still had a direct effect on job satisfaction and intrinsic job motivation.

Besides these main effects an association between quantitative demands and emotional demands was supported. To our knowledge there has been no previous research investigating the relationship between quantitative and qualitative demands, however (Zapf, 2002), hypothesized a conflict between quantitative and qualitative demands: a health care assistant may feel an inner conflict if other clients are waiting and therefore feel there is not sufficient time to engage emotionally in the work with the present client. Being too busy may impede on the secondary task.
One important result of this study was that the hypothesized group-sensitive model was confirmed. Thus the results of Pousette and Hanse (2002) were confirmed in this study of female-dominated occupations. Some paths differed significantly between the groups, thereby indicating that the process from job characteristics to the outcome variables may be different depending on occupational type. Some of the group specific paths deserve comments. First, the path between influence and social support is much stronger for health care assistants than for the other groups. This might be due to the specific organisation of this work. Teamwork has been implemented in a lot of health care settings, and this has simultaneously fostered higher influence and closer collaboration with colleagues, thus enabling more social support among the health care workers. Where it has not been implemented, influence and social support are missing. Second, the path between influence and emotional demands is positive among industrial workers and cleaners, where it is negative among health care assistants and non-significant among nurses. Higher influence among industrial workers and cleaners will often be associated with more superior positions implying increased contact and communication with colleagues, and accordingly more emotionally demanding situations. Among health care assistants on the other hand, the contact with clients is in itself highly emotionally demanding, and a superior position will often imply less contact with clients and thus a decline in emotional demands. Teamwork organisation may simultaneously help coping with the emotional demands in the job. Among nurses the effect of a superior position might be anticipated to decrease emotional demands associated with clients, but increase emotional demands associated with colleagues, and thus make the association less pronounced.

A third path that differed between the occupational groups was that of behavioural stress and back pain, which is only present among industrial workers and cleaners. Cleaners are furthermore characterised with a much higher score on behavioural stress than any other group. But there is no other obvious explanation why this association between psychological and physiological measures of unpleasantness should be much stronger in this group than in any other group. A more thorough study of this phenomenon might clarify this finding.

In summary, results indicate that it is important to examine and try to elucidate the different underlying dynamics in different occupational contexts. It would appear that generic models should be avoided and that focus should be on occupational-specific models. Certain psychosocial job factors may have different impacts of employee health and well-being in different occupations. Since job characteristics can be potentially amended, these findings have important implications for the differentiation of prevention and intervention in different occupations.
References


MENTAL HEALTH IN THE WORKPLACE: WHAT DOES IT HAVE TO DO WITH OCCUPATIONAL HEALTH PSYCHOLOGISTS?

A. R. ARTHUR
West Kent NHS & Social Care Trust, United Kingdom

Introduction

"Occupational mental health is a ‘Cinderella’ subject" (Tom Cox, 2004).

Occupational Health Psychologists (OHPs) should be more involved in the treatment of workplace mental health problems. The role of OHPs has traditionally been prevention of work-related stress through research into better job design and the development of stress reducing workplace initiatives; but work-related stress is often a mental health problem that could benefit from greater involvement by OHPs.

Background

OHPs have been indirectly involved in workplace mental health at the primary level through stress prevention and research for some time. For example, research has supported the identification of six main occupational stressors that have formed the basis of the United Kingdom’s ‘Management Standards’ approach to reduce work-related stress: demands, control, managerial support, work colleague support, role, relationships and change (Cousins et al., 2004). But OHPs have been less directly involved in the identification, management and treatment of mental health problems in the workplace. Tom Cox refers to this omission as ‘something of a Cinderella area’ (2004, p. 184) that requires a “magic slipper” of increased interest, research and improved practice… to transform this particular Cinderella into a princess capable of contributing to good mental health in, at least, an important and substantial part of the European population’ (Ibid).

Stress and mental health

OHPs could contribute to the development of mental health services within occupational health services and the workplace, but first they may have to reconsider that what they have traditionally understood as workplace stress may really be mental health problems in disguise. For example, three recent surveys of employees attending their organisation’s Employee Assistance Programme for
stress have found up to 86% show evidence of mental health problems, particularly anxiety and depression (Arthur, 2002b, 2004b; Kay, 2004).

What is the difference between stress and mental health? This can be difficult to determine. Of course, in cases of evident severe and enduring mental illness like psychosis, schizophrenia, psychotic depression, manic-depression, etc., the issue becomes clearer; the patient may require hospitalisation, certainly medication and intense treatment by mental health professionals. However, the majority of mental illness does not present in this way, require hospitalisation, or the use of major antipsychotic medication. Indeed in the UK one in four general medical consultations are for mental health problems and managed by primary care medical services in the community; it is the first point of contact for over 90% of patients experiencing mental health problems without ever involving mainstream psychiatric services (DOH, 2000). For these patients the main treatment is counselling provided by counsellors, psychotherapists and psychologists (Sharman & Seber, 2004). Many of these patients continue to work; and 'the issues of concern in terms of their mental health are likely to be of a sub-clinical nature' (Cox et al., 2004, p. 182). It is to this group that occupational mental health services should be directed; although the very much smaller group who develop severe mental illness would also require help.

Should occupational health psychologists provide psychological therapies like their clinical counterparts in mental health services? This may be a solution, but then why not employ clinical psychologists, psychotherapists or counsellors to work directly in occupational health settings as sometimes happen? Because they do not have an occupational health psychology background, do not understand the ways work environments or practices cause distress and, most importantly, may not understand the organisational context that is impacting on the individual and how to feedback to managers and the organisation.

It is important to get the balance right between organisational and individual approaches to mental health in the workplace. As Frank Bond (2004) points out, it is no wonder occupational health psychologists advocate organisational-directed interventions to prevent stress, but ‘it is also crucial not to lose sight of the importance, and need, for individual-directed interventions’ (Ibid, p.147). This is because: (1) employees may not be able to avoid the stressors, (2) poor individual mental health may undermine coping, and (3) crucially, work related stress does not occur in a vacuum, it is an interaction between the individual and their environment (Lazarus, 1995). The wrong balance leads to compartmentalisation where OHPs perceive stress as a problem of improving work design, detection and organisational intervention and clinicians try to relieve it through individually focussed treatment (Arthur, 2004c). For example, the ‘Management Standards’ approach (Cousins et al., 2004) is expected to prevent stress in the United Kingdom but as Bond (2004) notes, it should not be at the expense of providing help for those who require individual-focused interventions. A study of the relationships between work characteristics and mental health suggests there is evidence for a reciprocal
relationship between the two, and that the one-directional view of the original Demand-Control-Support, and similar models, may be too narrow (De Lange, Taris, Kompier, Houtman & Bongiers, 2004). Their study of 668 Dutch employees provides evidence for a reciprocal causal relationship between work characteristics and mental health with up to a one-year time lag between mental health symptoms and its effect at work. The findings suggest professionals in occupational health psychology should be aware that work characteristics and mental health mutually influence each other.

Tom Cox et al. define occupational mental health as a new sub-discipline for occupational health psychology (2004). Should it be provided within the existing professional role of OHPs, or by a new type of psychologist: the clinical occupational health psychologist (COHP) (Arthur, 2004a)? Baldursson identified the title COHP at the 3rd Annual EA-OHP Conference (Baldursson, 2001) and describes the role as drawn from clinical psychology, treating distressed individuals in the workplace and developing diagnostic systems. It is likely most OHPs could perform these tasks with further training and experience in adult mental health; either as part of their training in occupational health psychology or as an additional speciality postgraduate course. Some OHPs may already have sufficient knowledge and experience to feel confident in this area, but it is likely most would require supplementary training. Training should include assessment, diagnosis, prevention and treatment by psychological therapy of common mental health problems. Additional knowledge about local care pathways for mental health problems would assist in making and advising others about referral.

Mental health and OHPs

The COHP or OHP specialising in occupational mental health would be a source of specialist knowledge and expertise available to employees, employers, organisations, occupational health services, human resources and managers. Their role would include mental health promotion in the workplace, research, mediation, mentoring and the provision of psychological therapies (counselling, cognitive behaviour therapies, brief psychotherapy, etc.). Particularly they could provide employees with mental health advice, support and information and construct organisational initiatives to tackle and reduce mental health problems. It is likely they would be cost-effective in preventing employees from needing time off work to seek specialist help, becoming more seriously mentally ill, having performance problems, developing poor morale or leaving their job through mental ill health. There is evidence that employers who provide mental health services for their employees have a ‘competitive edge’ in the marketplace (Goetzel, Ozminkowski, Sederer & Mark, 2002). Before this can happen OHPs need to agree that occupational mental health is their concern, clarify whether they need to obtain further expertise in it, and educate employers, organisations,
and human resource professionals that stress is a mental health issue that requires a combined organisational and individual treatment approach response.

It is important to examine how OHPs view the causes and treatment of mental health problems. How prevalent is the view that there is a need for a more clinical dimension to OHP? During the Vienna EA-OHP Conference 2002 a symposium was held on mental health problems in the workplace (Arthur, 2002a), and its participants invited to take a questionnaire survey on its causes and treatments. Results from 58% (n = 26) of those returning questionnaires showed that OHPs believe organisations, economies and work groups primarily cause work-related mental health problems; and that the role of individual responsibility is less important. This appears to reflect the high importance OHPs attribute to the context within which individuals work and probably differs from the more individualist view of clinicians (e.g. clinical psychologists, counsellors, psychiatrists). Indeed when asked to rank the causes of mental health problems in the workplace, the items ranked highest were work and organisational difficulties; significantly individual physical, mental illness and addiction were considered low causes. When asked to rank who is responsible for tackling work-related mental health problems OHPs ranked their profession, organisational/occupational psychologists, and human resources the most important. The clinical professionals (clinical psychology, medicine, psychiatry) were less important, which might reflect the preventative versus treatment emphasis in occupational health psychology.

When asked, what should be done? Greater awareness by employers, improved job design, the education of society and training managers were highly ranked, but providing more counsellors for individual treatment was less important.

Overall, the results of the survey suggest OHPs rate more highly organisational preventative measures over individual clinical solutions and see themselves as key players in these initiatives. Less relevant are individual clinical services and their providers. The questionnaire results suggest that OHPs prefer involvement in preventative measures compared to individual clinical interventions and therefore support for individually based clinical occupational health psychological interventions may be limited at present. Nevertheless, responses to mental health issues in the workplace need not be restricted to individual treatment, but can be employed to develop a greater understanding of how maladaptive managers, poor group dynamics, and ‘sick’ organisations can ultimately impact on individuals’ mental health (Obholzer & Roberts, 1999). Clinical treatment is therefore not just for individuals but also for working groups, management or organisations.

It appears from this survey that OHP colleagues must be convinced about the idea of developing a clinical aspect to their work, and convinced this would not mean compromising their beliefs in preventative action through traditional methods. However, developing a clinical dimension to their work would likely
enhance, inform and lend weight to concerns many OHPs have about the real human mental-health effects of disturbed working environments.

If occupational health psychologists want to develop a clinical dimension to their work it is not clear whether this is best performed by specialist practitioners within OHP (like the clinical occupational health psychologists) or, as Cox (2004) suggests, by establishing a sub-discipline of occupational mental health. Certainly, creating a clinical occupational health psychologist role (COHP) is likely to trigger professional rivalries from related professionals (e.g. clinical psychologists, counsellors, psychotherapists, etc.) and create concerns about monitoring and regulation of the clinical services they would provide. Perhaps for now it is sufficient for OHPs to begin to recognise there is a mental health component to their work that crosses over from workplace stress, and that by developing an awareness and interest they could begin to establish a framework that may translate knowledge into effective practice (Cox et al., 2004). Establishing a separate COHP speciality may actually serve to reduce the effective contribution and involvement of OHPs in this area. There is one thing that can be done now however, and that is to consider mental health as part of the training or postgraduate development of OHPs.

Mental health training

What might mental health training for OHPs consist of? The most closely allied models of mental health to OHP are within clinical psychology; particularly the psycho-social model which emphasises the interaction between an individual’s psychology and their living or working environment. Additionally, there would need to be an understanding of the medical models to understand the major mental illnesses their causes and treatment. Training and supervised experience in psychological therapies would also be important for those wishing to take on a treatment role; for example, cognitive behaviour therapy, counselling, brief psychotherapy and treatments for Post Traumatic Stress Disorder. There is an additional role in rehabilitation where employees who either have or develop severer forms of mental illness require support to maintain their working lives; this is particularly important because of the positive therapeutic affect work can have on recovery and self-esteem. Finally, placements in adult mental health clinics and services would facilitate the OHPs ability to discern the differences between stress and mental health problems and enable them to provide the correct support, advice and information.

Providing mental health services would enhance the OHPs role; after all the title occupational health encompasses mental as well as physical health. By focussing only on work-related stress and ignoring mental health, OHPs are in danger of misunderstanding the nature of psychological problems. OHPs with this knowledge would be able to provide a more holistic and comprehensive
responsive to issues in the workplace; probably more than any other profession, and certainly more than those with just individual clinical perspectives. Because of this involvement, there could be further work in research, organisational dynamics (Obholzer & Roberts, 1999) and consultation. For example, Edgar Schein's (1987) model of consulting to organisations process consultation has similar assumptions to forms of clinical and psychiatric counselling that emphasise the client’s self-discovery. Therefore, he believes the consultant must be an expert on human relations; be experienced and able to establish, use and employ a helping relationship. The central premises of process consultation are that the client (the work group or organisation) owns the problem and continues to own it, but shares in the diagnostic process and is actively involved in the process of generating a remedy; very much like psychotherapy.

Conclusion

Occupational health psychologists have much to contribute to mental health issues in the workplace and it would be a pity if they did not become more involved. Employees experience significant mental health problems and these are not just work-related stress difficulties that can prevented through traditional occupational health psychological interventions. They require specialist advice, information, support and treatment. The prince is offering OHPs a chance to try on Cinderella’s magic slipper; it is important for them to see if it might fit and turn them into princesses!

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Address for correspondence: andrew@aarthurfsnet.co.uk
ORGANIZATIONAL CLIMATE AND PSYCHOSOCIAL WORK ENVIRONMENT IN AIR TRAFFIC CONTROL

M. ARVIDSSON1,2,3, C. R. JOHANSSON1,2,3, Å. EK3,4 & R. AKSELSSON3,4
1 Division of Work & Organisational Psychology, Lund University, Sweden
2 Univa AB, Sweden
3 Change @ Work, Lund University, Sweden
4 Lund Institute of Technology, Lund University, Sweden

Introduction

Air traffic control (ATC) in Sweden is being studied in a joint long-term project between Lund University and the Swedish Air Navigation Services (ANS). The project aims to investigate how different organisational aspects such as organisational climate, team climate, leadership, psychosocial work environment and safety culture will be affected by ongoing organisational and technical changes. The basic research design comprises three studies, two prior to the introduction of a new air traffic control system and one after. This design has provided opportunities to compare the situation before and after the system introduction.

The first and the second studies have been completed and the results concerning organisational climate and psychosocial work environment are the focus of this paper.

Organisational climate is defined by Ekvall (1990) as a conglomerate of attitudes, feelings and behaviours that characterise life in an organisation. This definition of organisational climate is just one of many in the literature. Even if there is some disagreement as to the exact meaning of the term, most authors seem to assume that the organisational climate is rather stable over time with respect to attitudes and that it affects people's behaviour. The organisational climate is important due to its potential to influence different organisational and psychological processes. Communication, problem solving, decision-making, learning and motivation can all be affected by the organisational climate. This in turn might have an impact on the effectiveness and productivity of the organisation as well as the work environment and employee well-being in the workplace (Ekvall, 1990). In a high-risk environment such as the ATC industry, it might also have an effect on safety standards.

No simple and uniform definition of the term psychosocial work environment seems to exist. According to Westlander (1980) three concepts can be crystallised: one dealing with psychosocial factors as causal conditions in the
work environment, one concerning the effects on experiences and behaviours, and one that treats psychosocial factors as the effects of the interaction between the individual and the environment. Despite the differences between them, these concepts still indicate a close relationship between the individual and the environment. Westlander (1980) also suggested a distinction between psychosocial factors and psychosocial consequences. The first refers to environmental conditions that have a significant psychosocial meaning for the individual. Psychosocial consequences, however, refer to experiences and behaviours that are reactions to environmental conditions in the workplace.

Past research (European Agency for Safety and Health at Work, 2002) shows that the risk for stress and health problems increases when the psychosocial work environment is characterised by:

- **few resources**: low control over work, low skill discretion, low decision authority
- **unsuitable demands**: too high or too low demands, monotonous work
- **few social resources**: limited social support from colleagues and management, role conflicts, limited social community
- **low predictability**: job insecurity, little feedback from supervisors, lack of information.

Past research also indicates that air traffic control is stressful, taking into account high demands, low control and shift work. This is troublesome since stress not only can cause emotional and physiological reactions, it can also influence people's behaviours. Research has repeatedly demonstrated that people underperform, make mistakes and are careless in their routine work behaviour when they experience stress (Cartwright, Cooper & Barron, 1993). An air traffic controller under stress could thus be more inclined to take unnecessary risks at work. Hence, good mental and physical health among air traffic controllers is supposed to have a direct connection to good performance. This will, in turn, most certainly have an impact on safety standards.

In this paper, different groups of respondents were compared concerning their assessment of the organisational climate and the psychosocial work environment with respect to their participation in the two studies. Three different groups were involved: one group participating in the first and the second study, one group participating in the first study only, and one group participating in the second study only. From the first to the second study there was a noticeable dropout of participants, which could be interpreted as a general dissatisfaction with the work situation. Such dissatisfaction could have an impact on the employees' assessment of the organisational climate and the psychosocial work environment. If this was the case, it could be assumed that the group participating only in the first study should score lower than the group participating in both the first and second studies.
Since the group participating only in the second study mainly consisted of recently employed subjects or people returning after sick leave or leave of absence, a second assumption would be that in general this group should assess the organisational climate and the psychosocial work environment in a more positive way. These subjects are assumed to have a more expectant and enthusiastic view of the work and the organisation and have not yet experienced the downside of the profession.

Method

Participants

The studies were conducted at two air traffic control centres, one en route centre and one arrival and departure centre. The superior unit, the ANS division at Luftfartsverket, the Swedish Board of Civil Aviation was also included in the studies. Questionnaires were distributed to all 642 employees in the first measurement and to all 635 in the second measurement at the three units. 390 subjects returned completed questionnaires in the first study and 304 in the second. Of these, 141 of the employees at the en route centre filled out questionnaires in the first study and 121 in the second. For employees at the arrival and departure centre, it was 130 and 119 respectively, and for the ANS division employees, 119 and 64 respectively.

Instruments

The GEFA questionnaire (Ekvall, 1990) was used to study the organisational climate. It consists of 50 statements formulated in the following manner: “People usually feel welcome when presenting new ideas here.” The statements are answered on a four-point scale: do not agree at all (0), agree to some extent (1) agree to a great extent (2), fully agree (3). The 50 statements are grouped in ten different organisational climate dimensions with five statements in each dimension (Ekvall, 1990). The dimensions mainly focus on innovation and change within an organisation, but other aspects are covered as well. The 10 dimensions, extracted by factor analysis and presented in the manual, are as follows (Ekvall, 1990): Challenge, Freedom, Support for ideas, Trust, Liveliness, Playfulness/Humour, Debate, Conflicts, Risk taking and Idea time.

The psychosocial work environment was measured by the COPSOQ questionnaire (Kristensen & Borg). This instrument consists of 141 questions. With a few exceptions, each question is answered on a five-point scale. Based on factor analysis, the 141 questions are grouped in 30 different dimensions. In the current study, 22 of these dimensions were included for the comparisons. They cover a wide range of aspects concerning the psychosocial work environment. The dimensions included were: Quantitative demands, Emotional demands,
Demands for hiding emotions, Sensorial demands, Influence at work, Possibilities for development, Degree of freedom at work, Meaning of work, Commitment to the workplace, Predictability, Quality of leadership, Social support, Feedback at work, Sense of community, Insecurity at work, Job satisfaction, General health, Mental health, Vitality, Behavioural stress, Somatic stress and Cognitive stress.

**Procedure**

The questionnaires were delivered to the en route centre in person and to the arrival and departure centre and the ANS division by mail. Each questionnaire was then distributed to the staff through the internal post system. Before the questionnaires were distributed, several information meetings were conducted, mainly with managers and team leaders but also with union representatives. The employees were informed about the studies by their supervisors and by posters and circulars at the three units. The questionnaires were answered anonymously and the subjects were asked to return the questionnaires within three weeks. After that, three reminders were sent by e-mail to the employees to increase response rate.

Three groups of respondents were compared concerning their assessment of the organisational climate and the psychosocial work environment with respect to their participation in the two completed. The first group consisted of 185 subjects participating only in the first study (group 1, "dropouts"). The second group consisted of 99 subjects participating only in the second study (group 2, "recently engaged"). Finally, the third group consisted of 205 subjects participating in both the first and the second study (group 3, "consistent respondents"). When group 3 was compared with group 1 the comparisons related to the first measurement. When compared with group 2, the comparisons related to the second measurement.

The mean score for each dimension was calculated and the groups were compared using Students t-test, alpha < .05.

**Results**

**Organisational climate**

No comparisons concerning the organisational climate resulted in statistically significant differences.

**Psychosocial work environment**

**Group 1, "dropouts", versus group 2, "recently engaged"**

As Figure 1 shows, eight statistically significant differences appeared between group 1, "dropouts", and group 2, "recently engaged". Seven of these were in favour of group 1, "dropouts".
Figure 1: Comparison between group 1, "dropouts", and group 2, "recently engaged", with respect to appraisals of the psychosocial work environment. Note: High values are positive; dimensions in boxes indicate statistically significant differences between the groups.

Figure 2: Comparisons between group 2, "recently engaged", and group 3, "consistent respondents", with respect to appraisals of the psychosocial work environment. Note: High values are positive; dimensions in boxes indicate statistically significant differences between the groups.
Group 1, "dropouts", versus group 3, "consistent respondents"
No comparisons between group 1, "dropouts", and group 3, "consistent respondents", resulted in statistically significant differences.

Group 2, "recently engaged", versus group 3, "consistent respondents"
Figure 2 illustrates that ten statistically significant differences appeared between group 2, "recently engaged", and group 3, "consistent respondents". Six of these were in favour of group 2, "recently engaged", and four in favour of group 3, "consistent respondents".

Discussion
This paper aimed to investigate differences in organisational climate and psychosocial work environment between different groups of employees with respect to their participation in two studies. The first assumption was that group 1, "dropouts", reflected a general dissatisfaction with the work situation and that this group, participating only in the first study would score lower than group 2, "recently engaged", and group 3, "consistent respondents". The results do not support for this assumption, however. Concerning the organisational climate, no differences could be found between any of the groups. Neither could the assumption be supported concerning the psychosocial work environment since no statistically significant differences appeared between group 1, "dropouts", participating only in the first study compared with group 3, "consistent respondents", participating in both the first and the second studies. This means that group 1, "dropouts", did not assess the organisational climate or the psychosocial work environment as less positive compared with group 3, "consistent respondents", who did not drop out. Dissatisfaction with the work situation can still be a reason for the dropout of subjects in group 1 since the instruments used in these studies do not cover all aspects of the work situation. According to the results, it seems more likely that the dropout occurred for other reasons.

The second assumption was that group 2, "recently engaged", participating only in the second study would score higher since this group mainly consisted of people new in the organisation. When this group was compared with group 1, "dropouts", the results contradicted the assumption since seven dimensions showed statistically significant differences in a positive direction for the latter group. It is hard to find a reasonable explanation for this result. It might be related to a general decline in the aviation industry with decreasing number of passengers and increasing costs affecting the psychosocial work environment between the first and the second study. Since air traffic control is dependent on the general aviation industry, pressure from the changing environment is present in every day work. Scores on some of the dimensions that show a statistically
significant difference between the groups such as "Insecurity", "Behavioural stress" and "General health", indicate that this could be the case. However, this has to be more closely investigated.

Differences also appeared in comparison between group 2, "recently engaged", who participated only in the second study, and group 3, "consistent respondents", who participated both in the first and the second study. The pattern that emerges indicates that group 2, "recently engaged", experienced fewer stress reactions and demands since the dimensions "Quantitative demands", "Emotional demands", "General health", "Behavioural stress", "Somatic stress" and "Cognitive stress" were more positively assessed by this group. This result supports the second assumption. However, the dimensions "Sensorial demands", "Freedom at work", "Commitment", and "Feedback" were assessed more positively by group 3, "consistent respondents", than by group 2, "recently engaged", a result that contradicts the assumption.

Concerning the organisational climate, no statistically significant differences could be found between any of the groups. As stated in the introduction, the climate is considered to be rather stable concerning attitudes and feelings that characterise the life of an organisation. In this sense the climate could be considered as rather homogenous. On the other hand, the psychosocial work environment is more an expression of people's direct experience of their work situation making it more sensitive to differences in the kind of comparisons made here.

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A STUDY USING EXISTING LOCAL KNOWLEDGE TO DEVELOP PRACTICAL, CONTEXT SPECIFIC, INTERVENTIONS TO REDUCE WORKPLACE STRESS IN SOCIAL SERVICES: USING A FOCUS GROUP APPROACH

M. COFFEY, L. DUGDILL & A. TATTERSALL
Liverpool Hope University, United Kingdom

Stress has become a major concern for employers and employees, not only because of the health effects on individual workers, but also because of the economic impact and the social costs to European business (European Agency for Safety & Health at Work (EASHW), 2003). Whilst some academics have argued that stress is almost a meaningless term, there is a convincing body of research which shows that there is a clear link between poor work organisation and subsequent ill-health (Health and Safety Executive (HSE), 2004). In this respect, the HSE (2004) have decided to continue to use the word ‘stress’ as the most commonly used term to describe this experience, which they define as “the adverse reaction people have to excessive pressure or other types of demands places on them”.

The Confederation of British Industry (CBI) has recently reported that the total number of working days lost to absence has increased for the first time since 1998. Total days lost rose from 166 million in 2002 to 176 million in 2003, whilst the cost of overall workplace absence was estimated at £11.6bn in 2003 (CBI 2004). Within those global data there are variations in levels of absence across different occupational groups. The Employers’ Organisation (2000) annual workforce survey shows, for example, that staff in social services suffer higher levels of sickness than staff in the private sector and other branches of local government. By region, Northern UK Authorities tend to have the highest absence rates.

Looking at recruitment and retention, findings from the Audit Commission (2002) indicated that the public sector is facing an “imminent staffing crisis” (p. 2), because young people no longer want to work in it and nearly a third of its’ workforce are over 50 years of age. The Audit Commission described this as a potential “demographic time bomb” (p. 2), stating that there are also concerns about “skill shortages, both in terms of basic skill levels in the workforce, and in the key leadership, management and technical skills that are needed to deliver public service improvements” (p. 2). The latest Department of Health figures show that in September 2001, 9.4% of posts within Social Service Departments (SSDs) covered by the survey were vacant (Employers Organisation, 2002). The report indicated that “the worst affected group was the recruitment of field social workers to work with children and families, for whom half the authorities (48%)
reported that they were experiencing difficulties in recruiting” (Employers Organisation, 2002, p. 8). In this respect, stress is reported to be the biggest single factor in people’s decision to leave (Audit Commission, 2002).

The philosophy for stress prevention is for employers to try to eliminate the stressors, i.e. primary prevention (EASHW, 2002). Organisational change plus stress management is recommended as a comprehensive approach to a healthy workplace (Cox et al., 2000). However, preventative activities are still comparatively rare, and “a review of the stress management literature reveals that most interventions are weak, targeting only the individual, and that very few are adequately designed or evaluated in scientific terms” (Cox et al., 2000, p. 120). At the same time there are few studies to date that have reported positive results, with frequent methodological limitations in the research that has previously been published (Nytro et al., 2000). This is leading to a growing feeling of discontent with the stress management industry which, sceptics claim, can offer solutions that can do more harm than good, e.g. relaxation therapies, when the problem is that they have been forced to take on too much work (Briner & Reynolds, 1999). This is due to the tendency to apply stress management strategies without an initial ‘problem diagnosis’ stage (Cox et al., 2000), described as a method of damage limitation, in that it generally addresses the consequences of stress rather than its sources.

The overall aim of this research was to develop an understanding of what stressors impact on social service staff, in order to develop an effective range of interventions from a grounded research baseline, which could then be followed up with an evaluation study to assess the effectiveness of the interventions applied. This ‘systematic approach’ advocates active involvement of higher management; employee participation; personnel management; occupational health service; external guidance; works councils; health and safety committees and unions (European Foundation, 1997).

The research was conducted in two SSDS in the North West of England (n=3,771), in three phases. Firstly, a baseline survey (informed by discussions with key stakeholders and in-depth interviews with staff (n=8)) was used to identify what stressors were impacting on social service staff and the potential impacts these were having in terms of mental well-being, organisational constraints and job satisfaction. The second phase used focus groups in the most severely affected work area in order to develop effective interventions in a participatory way from the research baseline already established. The third phase comprised an evaluation of the process, which was used to identify: what worked well, what did not and in what context; to inform the literature on change management (which tends to give the impression that change is relatively simple, as long as an organisation sticks to recommended recipes); to identify any successes that were not anticipated; and finally, to build evidence concerning the conditions which need to be created in order to achieve successful outcomes and improve intervention effectiveness.
This paper will briefly outline the key findings of the first phase of the research however the main focus will be on the second phase of the research, which used focus groups to develop interventions.

**Results**

**Phase 1**

The first phase consisted of a large-scale survey using the ‘Healthy Work Questionnaire’ (HWQ), which comprised a unique range of scales, enabling correlations to be carried out between the main outcome variables, which highlighted a number of stressors that appeared to be negatively impacting on the mental health of the workforce. There was a response rate of 33% (n=1,234). Salaried staff in particular reported high levels of organisational constraints, high levels of psychosocial job demands and high levels of mental distress. Overall, those working in Children & Families Division reported the highest levels of organisational constraints, poorest levels of well-being, highest levels of reported absence through illness, with weekly paid staff from this division reporting higher levels of psychological job demands and decision latitude (control) than their weekly paid counterparts across the department. Low levels of job satisfaction were reported throughout, with staff stating that they had too little time to do their jobs properly, difficulties with service users and insufficient staff to cover the workload.

This ‘problem diagnosis’ phase was a crucial step in identifying where particular problems existed, how and to what degree staff were being affected, and who was being affected. As a result Children & Families Division was chosen for pilot interventions, because of the number of difficulties highlighted by the survey and the recruitment and retention difficulties that are most pronounced in this area.

**Phase 2 – ‘The Intervention Phase’**

Focus groups have become an increasing popular way of gaining insight into employees’ experiences and can be used as a vital resource in identifying both problems and solutions (EASHW, 2002). In this way focus groups are a particularly useful way of involving staff in a participatory way in organisational change (Donaldson, 2002).

Four focus groups took part in this study and ranged in size from three to six participants. The focus groups comprised: social workers; administration staff; family centre workers; and staff from a residential children home. The groups were homogeneous, as pre-existing groups were considered the best way to answer the research objectives. The HWQ had provided a pre-understanding of the stressors therefore the purpose of the focus groups was to get a more in-depth
emic’ understanding of these issues. In this respect, focus group methods are useful when combined with quantitative methods, such as questionnaires, to help tease out the findings (Barbour & Kitzinger, 1999). The aims of the focus groups were to: consider the findings of the HWQ; identify the main sources of stress and any gaps in the findings; consider what actions could be taken in order to reduce or eliminate the stressors; and to develop ‘points for action’ for implementation.

Using focus groups to collect data is dependent upon the facilitator establishing rapport and trust within the group, through identifying the commonality of experience (Kidd & Parshall, 2000). Because this level of prior knowledge of the particular groups with whom one is working is crucial for both group facilitation and subsequent data interpretation (Barbour & Kitzinger, 1999) participants were given a copy of the main findings of the HWQ in respect of their division at the outset. The researcher considers that because of this pre-understanding of the issues, and the fact that the findings from the HWQ highlighted problems within Children & Families Division, which verified the researcher’s awareness of the issues, this helped the group to see the researcher as someone who was on their side, and impartial, and consequently helped to build up a rapport. As a result, interaction with the researcher and between the groups was relaxed and insightful.

Generally, the focus group participants were in agreement with the HWQ findings, except where there were issues that were chiefly pertinent to the individual groups, for example, staff sickness cover was reported as being never or rarely provided across Children & Families Division, however this was not the case in children’s residential, as it is mandatory for certain levels of cover to be in place at all times.

There were a large number of diverse issues that came to light during the focus group meetings, which were split into ‘local’ issues and ‘general issues’, lending themselves to either ‘practical context specific solutions’ or more general recommendations. Themes were developed inductively (Frankland & Bloor, 1999) using thematic content analysis. This method of analysis was adopted because the aims of the groups were to gain illuminative, descriptive data about largely predetermined areas, rather than generating theories.

For the sake of brevity, examples of issues will be given, along with examples of the context specific solutions that were proposed. Examples of local issues that arose were: budgets that had been set inappropriately, e.g. a stationery budget of £50 (when a photocopier cartridges costs £80), necessitating ‘shuffling’ money from one account to another, which was very stressful; ‘social work’ speak/abbreviations used in communications; insufficient computer training was available; large amounts of paperwork to be written up; and lack of internet access on computers. Examples of solutions that were put forward included: individual managers to be consulted when budgets are being set; ‘social work speak’ to either be removed, or a glossary or terms provided with future
communications; training courses to be matched to training needs; dictaphones or lap-top’s provided to reduce ‘writing up’ time; and the availability of computers with internet access.

**General findings and discussion of findings**

Social Workers and Administration staff reported that their workload was unmanageably high and were concerned about the amount of pressure this put them under, which is one of the six main factors identified by the Audit Commission (2002) underpinning people’s decision to leave the public sector. In addition they reported that they pushed themselves constantly because of their commitment to their job and the nature of the work, which the Audit Commission (2002) identified as one of the main reasons that people report joining the public sector.

The main difficulties reported by Social Workers were: lack of time, necessitating working late, or taking work home; excessive paperwork (Pay and Workforce Research, 2003); fear of missing something or getting it wrong, especially with regard to child protection cases (Cresswell & Firth-Cozens, 1999); being unable to properly address service users’ needs (Taylor, 2000); and the tight timescales dictated by the national performance assessment framework. The degree of responsibility one has for others, especially in public sector is one of the critical factors identified as being major sources of potential stress (Cooper et al., 1996). Administration workers similarly reported tight timescales causing them to work extra hours, which seem to be a reflection of those difficulties put forward by the Social Workers, as administration work is generated by Social Workers and therefore subject to similar time pressures. Although both Administration staff and Social Workers reported that they were under pressure, the most difficult aspect appeared to be the chronic, unrelenting nature of this pressure, which they felt unsustainable in the long-term. Additionally, fear of getting it wrong in child protection cases, has been found to place considerable emotional demands on health care professionals (Cresswell & Firth-Cozens, 1999). This issue seems to be exacerbated because whilst head-teachers or health visitors also have child protection responsabilities, the ‘buck’ stops with the social worker. Cresswell and Firth-Cozens (1999) found significant correlations between depression levels and levels of stress associated with working with children. However, this degree of pressure did not appear to be felt in either the Family Centre, or the Children’s Residential Home, although they reported being busy and in the Family Centre there was concern about the potential impact of the adoption of shift work patterns.

Administration staff and Social Workers reported that the pressure of work was exacerbated, if not caused, by a shortage of staff, especially when staff were off sick, or training. Both groups felt that lack of resources were the main reason for staff shortages, which Postle (2002) found to be one of the most frequently
cited stressors amongst social workers. Within the social work team, the lack of staff appeared to be impacting on safety, with Social Workers reporting that instead of going to a residence in pairs, they were going in ‘cold’ by themselves. This is extremely worrying, given the risk of violence associated with social work and in light of Government strategies (launched in 1999) aiming to reduce figures on violent incidents by 25% (Community Care, 2003).

Overall staff perceived that there was little or no recognition from senior management, either for doing their jobs well, or for the pressure they were working under. Staff considered that this lack of recognition manifested itself in: poor wages; criticism; not listening or acting on what staff said; and poor office equipment. Considering these in turn, there is evidence that the more a profession is dominated by women (80% of staff in the public sector), the lower the worker’s average salary, which Gibelman (2003) argues is due to continued patterns of discrimination. This inequity between wages received and efforts put in has been found to be associated with absenteeism (De Boer et al., 2002), turnover intention (Geurts et al., 1999), unpleasant emotional states (Adams, 1965), psychosomatic health complaints, job dissatisfaction and physical health symptoms (Van Veghel et al., 2001). Not listening to or not acting on what staff say, together with criticism for failing, equates to factors such as lack of participation and effective consultation or poor communication, which are management styles frequently associated with causing stress (Smith, 2000). However, communication within teams, rather than between teams and senior management was considered good.

Focus group participants reported that there was a lack of training and equipment, which Fay & Sonnentag (2002) have identified as stressors leading to direct impairment of job performance and execution.

Changes were reported to be affecting the Family Centre more than the other groups, as their roles were changing and their team was being amalgamated with other newly created family support worker teams. Staff reported being very concerned with the way that the changes were being managed, which Donaldson (2002) asserts can cause irreparable damage to employee well-being and organisational culture.

Looking at sickness levels, Children’s Residential reported that there were some members of staff who abused the system, whilst both Administration and Social Workers considered that sickness absence was low. Workers who abuse this system could possibly indicate that sickness absence may be a social phenomenon, with absences taken in accordance with what is allowed by culture or norms (Xie & Johns, 2000). Low sickness absence amongst the other groups, would appear to be evidence of their commitment to their jobs and their willingness to ‘make a difference’ (Audit Commission, 2002).

The nature of the service users was also found to be causing difficulties. This aspect of working for social services seems unlikely to improve, and may worsen, given the ever stricter eligibility criteria that is resulting in service users presenting with more difficult and complex problems than was previously the
case (Postle, 2002). Shift changes were also reported to be problematic in the Children's Residential home. This could potentially negatively impact on family care, which appears to magnify the impact of stress on women (International Labour Organisation, 2001). Additionally Children's Residential staff reported problems because they lacked budgetary control. Control is considered to be an important factor (Karasek et al., 1998) because it enables staff to deal with demands by taking personal action, and is considered to be important for well-being (Warr, 1987).

The main 'general' points for action drawn up by the focus group members were: workloads to be reviewed; staffing levels to be addressed by: reviewing current staffing levels, reviewing the use of temporary/agency staff; and improved recruitment and retention measures; tangible benefits to show recognition and appreciation of the effort put in by staff; improved communication, regular meetings and the development of a monthly newsletter; more support at times of change, with improved consultation and the use of support groups; and the development of policies to deal with persistent, long-term sickness absence.

**Conclusion**

The main focus group themes were: a heavy workload; lack of staff; insufficient recognition/loyalty; poor communication; lots of change; and sickness levels. The issues causing most distress to staff were therefore due to organisational factors, rather than the intrinsically stressful nature of the job. In seemingly stressful jobs, research indicates that organisational factors e.g. communication, rather than factors intrinsic to the job, are the main predictors of psychological distress (Clarke & Cooper, 2000).

The focus group findings and points for action arising, highlight how even in a complex bureaucratic organisation, pre-existing groups can come together to: provide a more in-depth understanding of survey results; verify the results of the survey; pinpoint any gaps in the findings; identify more 'local' issues that may not have been exposed by the survey; and develop context specific practical solutions to these problems. Prior knowledge of the issues was considered a crucial aspect in the development of trust between the researcher and the participants. By using this approach, the literature strongly suggests that interventions designed with the involvement of staff, i.e. participatory action research (PAR), are the most likely to be effective in the long term (Cox, 2002). Additionally, PAR has been found to increase people's job control (Bond & Bunce, 2001) and to empower those involved (Beresford & Evans, 1999). This process meant that in this study those affected by stress were able to work towards a solution, highlighting how PAR recognises the value of ordinary people's perspectives and challenges 'expert knowledge' (Loewenson et al., 1999).
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**Keywords:** Focus Groups. Participatory Action Research, Social Services

Address for correspondence: coffeym@hope.ac.uk
DOES THE RELATION BETWEEN WORK CHARACTERISTICS AND ACTIVATION-RELATED HEALTH OUTCOMES DIFFER AS A FUNCTION OF AGE?

A. DE LANGE¹, T. TARIS², P. JANSEN¹, M. KOMPIER², I. HOUTMAN³ & P. BONGERS¹,4

¹ Vrije Universiteit Amsterdam, Amsterdam, The Netherlands
² Radboud University Nijmegen, Nijmegen, The Netherlands
³ TNO Work & Employment, Hoofddorp, The Netherlands
4 Body@work research center on physical activity, work and health TNO-VU, Amsterdam, The Netherlands

Introduction

The so-called baby boom generation (the cohort born in 1946-1964) constitutes a large and increasing percentage of the working population in many Western countries (Collins, 2003). Although this group of workers has attracted more research interest during the past decade, as yet their career development has not been studied extensively (Stroh & Greller, 1995). At the same time, the traditional safety net of funded (early) retirement is being withdrawn worldwide, and it currently appears that many, if not most, workers will not retire before the age of 65. It has therefore become even more important to understand the motivation and learning behaviour of these workers. Earlier research has shown that older workers are relatively inactive learners and generally less motivated to take part in training (Warr, 2000). This is a problem as the aging worker will need to learn new behaviour to remain competent in their dynamic work environment. Fortunately, other research has shown that older workers can be just as flexible, trainable and cost-effective as their younger colleagues (Sterns & Mikos, 1995). Nevertheless, even these studies do not provide information on possible predictors of activation-related behaviour and whether the lagged effects of these predictors differ as a function of age. This study therefore examines the question how we can explain the development of activation-related behaviour and whether this development differs for older (≥ 45 years) versus young workers (< 45 years).

Earlier theorising (Karasek & Theorell, 1990) has suggested that particular combinations of psychosocial work characteristics (i.e., high demands combined with high control, social support) may elicit activation-related behaviour. Few studies have examined this activation-hypothesis (De Lange
et al., 2003; Taris et al., 2003). The present study presents one of the first longitudinal tests of Karasek and Theorell's (1990) predictions as regards the effects of job demands, control and social support on worker learning, and further examines whether the relations between these work characteristics on the one hand and active learning on the other differ for younger and older workers. We expect to find different reciprocal cross-lagged effects for old versus young workers (cf. De Lange et al., 2004; Warr, 2000), but formulated no specific hypotheses as research on this particular topic (as far as we know of) is still lacking. Figure 1 presents our tentative causal model, to be tested in a multi-group analysis.

Design

To test our model, we used data from a longitudinal panel Study on Musculoskeletal disorders, Absenteeism, Stress and Health (SMASH). We selected 1159 employees working in 34 different companies throughout the Netherlands. We compared senior workers (> 45; N = 216) to young workers (< 45; N = 943). Table 1 presents descriptive statistics for both groups.

Measures used

Job demands were measured using a five-item Dutch version of Karasek's (1985) Job Content Questionnaire (e.g. “My job requires working very fast”, “1 = strongly disagree”, 4 = "strongly agree"). Job control and social support was also measured with Karasek's (1985) JCQ. Job control was measured as the mean of two scales. Skill discretion was measured using a five-item scale (e.g. "My job requires that I learn new things"), and Decision authority was measured using a three-item scale (e.g. “My job allows me to take many decisions on my own”, 1 = "strongly disagree", 4 = "strongly agree"). Social support of supervisors was measured using a four-item scale (e.g. “My supervisor pays attention to what I say”, 1 = "strongly disagree", 4 = "strongly agree").

Following Warr (1994) and Ryff and Keyes (1998), in the present study worker health is conceptualised broadly, including health complaints as well as positive, motivation-related outcomes such as the motivation for learning new behaviours and active coping behaviour. Motivation for learning new behaviours was measured by a nine-item Dutch scale developed by the department of Work and Organizational Psychology of the University of Nijmegen (e.g., “In my work I feel challenged by new problems”, 1 = "never", 4 = "often"). Active coping behaviour was measured by a seven-item Dutch scale (Schreurs, Van der Willige, Tellegen & Brosschot, 1988), including items such as "I remain calm when facing a difficult problem ", 1 = "never", 4 = "always").
In order to test the reciprocal causal model across the different subgroups (see Figure 1), we applied multiple-group analysis using Structural Equation Modeling (Jöreskog & Sörbom, 1993; Byrne, 1998). The advantage of this method is that all reciprocal cross-lagged effects of Figure 1 can be tested simultaneously for old and young workers. In line with Byrne's (1998) suggestions, we first tested the proposed cross-lagged effects for each subgroup separately (forming a baseline model). Then we tested for invariance across groups.

All model tests were based on the covariance matrix and maximum likelihood estimation. A non-significant or low chi-square value indicates that the model fits the data well. However, in large samples (such as ours) even
small and substantively unimportant differences between the estimated model and the "true" underlying model will result in model rejection (Bentler & Chou, 1987). Therefore, we also considered other indices in judging the fit of our models. In this paper we used the goodness-of-fit index (GFI), the non-normed fit index (NNFI) and the root-mean square error of approximation (RMSEA) as additional fit indices. Levels of .90 or better for GFI and NNFI and levels of .05 or lower for RMSEA indicate that the models fit the data reasonably well (Byrne, 1998). Considering the problems caused by estimating all observed items and latent variables (insufficient power and under-identification, Bentler & Chou, 1987; Schumacker & Lomax, 1996), we assumed the scale and latent variables to be identical.

**Results**

Prior to the multi-group analyses, several preliminary analyses were carried out to gain insight into the data. For example, MANOVAs were conducted to examine the differences in mean scores on the activation-related variables. Although the (mean) differences were relatively small, the young workers reported significantly more activation-related behaviour on Time 3 compared to their older colleagues. Moreover, the Time x Group effect for active coping behaviour was significant ($F(1, 1269) = 4.91^\ast$). Both groups reported a significant decrease in active coping behaviour across time, but the older workers reported a greater decrease. Hence, enough evidence to further examine the differences in activation-related behaviour between old and young workers.

In the first step of the multi-group analyses the reciprocal causal model (Figure 1) was fitted for both groups separately. Tables 2 and 3 present the fit indices of these tests. Table 2 shows that the chi-square value of the baseline (reciprocal causal) model is significant and the other fit indices are not acceptable (except for Goodness-of-fit index). The modification indices revealed that the model fit could significantly be improved by including the path of Time 1 active coping behaviour to Time 3 motivation to learn. We therefore decided to modify the model accordingly (modified model 1). After including this relationship in the baseline model, the model fit improved significantly and was now acceptable.

<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2$</th>
<th>$df$</th>
<th>NNFI</th>
<th>GFI</th>
<th>RMSEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>$M_0$ Baseline reciprocal model (Figure 1)</td>
<td>105.90*</td>
<td>19</td>
<td>.89</td>
<td>.99</td>
<td>.09</td>
</tr>
<tr>
<td>$M_1$ Modified baseline model</td>
<td>49.35*</td>
<td>18</td>
<td>96</td>
<td>.99</td>
<td>.04</td>
</tr>
</tbody>
</table>

$^\ast = p < .001$. 

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Table 3: Fit indices of the baseline reciprocal causal model for old workers

<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2$</th>
<th>$df$</th>
<th>NNFI</th>
<th>GFI</th>
<th>RMSEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>$M_0$ Baseline reciprocal model (Figure 1)</td>
<td>53.35*</td>
<td>19</td>
<td>.83</td>
<td>.97</td>
<td>.09</td>
</tr>
<tr>
<td>$M_1$ Modified baseline model</td>
<td>19.80</td>
<td>18</td>
<td>.99</td>
<td>.99</td>
<td>.02</td>
</tr>
</tbody>
</table>

* $p < .001$.

Table 3 shows that the chi-square value of the baseline model for the old workers is significant, whereas the other fit indices were not acceptable. Again, the modification indices revealed that the model fit could be improved by including the path of Time 1 active coping behaviour to Time 3 motivation to learn. After adding this relationship to the model, the model fit revealed a non-significant chi-square value, revealing good model fit.

These results indicate that the hypothesized cross-lagged effects between the psychosocial work characteristics and activation-related variables in Figure 1 are valid. However, not all hypothesized cross-lagged effects were significant and there were also significant differences across the groups. For example, only significant reversed effects of Time 1 active coping behaviour to Time 3 demands were reported by the old workers, whereas the young workers reported significant reversed effects of Time 1 active coping behaviour to Time 2, 3 job control. Furthermore, only significant cross-lagged effects of Time 1 job demands to Time 3 motivation to learn were found for the old workers.

In step 2 of our analyses we performed multiple-group analysis and compared three nested models by means of the chi-square difference test (Bentler & Bonett, 1980; Jöreskog & Sorbom, 1993). These nested models are the following: $M_2$ (invariant baseline model): the hypothesized cross-lagged relations of Figure 1 are specified as invariant (meaning that the relations have the same strength and direction) for old and young workers. $M_3$ (invariant, modified model): again the hypothesized relations of Figure 1 are specified as invariant. Furthermore, the cross-lagged relation of Time 1 active coping behaviour to Time 3 motivation to learn is specified as invariant across the subgroups. $M_4$ (non-invariant, modified model): the aforementioned cross-lagged effects are specified as non-invariant across the two subgroups. This model is therefore the least restrictive model. Table 4 presents the fit indices and chi-square difference tests of these models.

Table 4 shows that the non-invariant modified model accounted the data better compared to the invariant models. This result indicates that our hypothesized reciprocal cross-lagged relations are not invariant across the subgroups. After examining the standardised solution of the modified models presented in Tables 2 and 3, we may conclude that the motivation for learning new behaviour can be predicted by active coping behaviour, job control and job...
demands for old as well as young workers. However, old and young workers may benefit differently from learning or applying active coping behaviour, as only the young workers report a significant reversed effect of active coping behaviour on job control across time. More specifically, Table 5 presents the significant normal and reversed cross-lagged effects for the old versus young workers.

Table 4: Fit indices and chi-square difference test of three nested models in a multi-group analysis

<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2$</th>
<th>df</th>
<th>NNFI</th>
<th>GFI</th>
<th>RMSEA</th>
<th>Comparison</th>
<th>$\Delta\chi^2$</th>
<th>$\Delta$df</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2 Invariant baseline model</td>
<td>250.56*</td>
<td>102</td>
<td>.94</td>
<td>.98</td>
<td>.049</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M3 Invariant, modified model</td>
<td>168.74*</td>
<td>101</td>
<td>.97</td>
<td>.99</td>
<td>.03</td>
<td>M1 vs. M2</td>
<td>81.82*</td>
<td>1</td>
</tr>
<tr>
<td>M4 Non-invariant, modified model</td>
<td>69.2*</td>
<td>36</td>
<td>.96</td>
<td>.99</td>
<td>.039</td>
<td>M2 vs. M3</td>
<td>99.54*</td>
<td>65</td>
</tr>
</tbody>
</table>

* = $p < 0.001$

Table 5: Significant standardised cross-lagged effects found for old versus young workers

<table>
<thead>
<tr>
<th>Groups</th>
<th>Significant normal cross-lagged effects ($p &lt; .01$)</th>
<th>Significant reversed cross-lagged effects ($p &lt; .01$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Young workers</td>
<td>T1 Control $\rightarrow$ T3 Mol ($\beta = .19$)</td>
<td>T1 ACB $\rightarrow$ T2 Control ($\beta = .16$)</td>
</tr>
<tr>
<td></td>
<td>T2 Demands $\rightarrow$ T3 Mol ($\beta = .08$)</td>
<td>T1 ACB $\rightarrow$ T3 Control ($\beta = .05$)</td>
</tr>
<tr>
<td></td>
<td>T2 Control $\rightarrow$ T3 Mol ($\beta = .19$)</td>
<td>T2 Control ($\beta = .11$)</td>
</tr>
<tr>
<td></td>
<td>T2 Control $\rightarrow$ T3 ACB ($\beta = .10$)</td>
<td>T3 Demands ($\beta = .11$)</td>
</tr>
<tr>
<td>2 Old workers</td>
<td>T1 Demands $\rightarrow$ T3 Mol ($\beta = -.15$)</td>
<td>T1 ACB $\rightarrow$ T3 Demands ($\beta = .11$)</td>
</tr>
<tr>
<td></td>
<td>T1 Control $\rightarrow$ T3 Mol ($\beta = .26$)</td>
<td>T1 ACB $\rightarrow$ T3 Demands ($\beta = .11$)</td>
</tr>
<tr>
<td></td>
<td>T2 Demands $\rightarrow$ T3 Mol ($\beta = .11$)</td>
<td>T1 ACB $\rightarrow$ T3 Demands ($\beta = .11$)</td>
</tr>
<tr>
<td></td>
<td>T2 Control $\rightarrow$ T3 Mol ($\beta = .20$)</td>
<td>T1 ACB $\rightarrow$ T3 Demands ($\beta = .11$)</td>
</tr>
<tr>
<td></td>
<td>T2 Control $\rightarrow$ T3 ACB ($\beta = .31$)</td>
<td>T1 ACB $\rightarrow$ T3 Demands ($\beta = .11$)</td>
</tr>
</tbody>
</table>

Note. T3 Mol = Time 3 motivation for learning new behaviours; T3 ACB = Time 3 active coping behaviour; T1 ACB $\rightarrow$ T3 Mol was also significant for the old ($\beta = .31$) and young workers ($\beta = .21$).

Discussion

The results are discussed with respect to their impact for practical interventions that are targeted towards increasing worker active learning behaviour and active coping behaviour (as being a major dimension of worker health). Methodologically, our findings underline the importance of subgroup analyses in occupational health psychology; relationships may be moderated by third variables, and it is therefore important to consider such variables when analysing the data. Finally, we address the (dis)advantages of using multiple-group Lisrel analysis as a method of testing differences between subgroups.
References


Address for Correspondence: Annet de Lange, Vrije Universiteit Amsterdam, Department of Management and Organisation, Faculty of Economics and Business Administration, room 3A-34, 1081 HV Amsterdam, The Netherlands E-mail: alange@feweb.vu.nl, Tel. +31-20 4446123
Introduction

In response to the escalating problem presented by work-related stress, research within the field of stress management has been both rich and diverse. However, the overwhelming majority of research in this area focuses either on organisational-level causes and interventions or on individual-level causes and interventions. In contrast, very little is known about the pivotal role that leaders and managers play in the prevention, causation, identification and alleviation of stress in the workplace.

In the UK, National Management Standards are being developed (HSE, 2004) to provide guidance for organisations in meeting their duties to monitor and address work-related stress. Whilst this government-led initiative will be driven from Health & Safety, much of the responsibility for implementation will fall on line managers: it is anticipated that managers will be responsible for assessing and managing stress at a local level. Providing managers with ownership of this process is both economical and best practice, however it necessitates not only that managers have an informed understanding of what stress is, but also that they have the relevant skills and abilities to identify and manage stress experienced by their subordinates. There is some evidence that managers’ behaviour has an impact on the stress levels of their direct reports (e.g. Alimo-Metcalfe & Alban-Metcalfe, 2001). Despite this, we currently lack a framework that identifies the management skills, abilities and behaviours that underpin the effective management of stress at work.

As the need to help managers manage workplace stress becomes ever clearer, it is essential to develop a clear understanding of the competencies that relate to the prevention, identification and alleviation of stress in the workplace. This study aims to advance our understanding of the management behaviours specific to effective stress management at work.

Management behaviours that cause, prevent, identify and alleviate stress in the workplace

There is some evidence that management behaviours may have a causal link to stress-related outcomes in subordinates. For example, Tepper (2000) suggests that the manager-subordinate relationship is one of the most commonly reported causes of stress in the workplace; and Hogan, Curphy and Hogan (1994), reviewing the
anonymous output from employee climate surveys, reported that for 60% to 75% of
the employees “the worst or most stressful aspect of their job is their immediate
supervisor” (p. 494). However, there is still only limited understanding of exactly
what behaviours are significant in this context.

Much of the research in this area has focussed on the level of support provided
by managers. A number of studies have shown that higher levels of perceived social
support from a manager are associated with lower levels of stress and burnout (e.g.
Lee & Ashforth, 1996; Schaufeli & Enzmann, 1998) and that low levels of manager
support are a significant predictor of stress-related outcomes (e.g. Borrill et al.,
1998). Given these findings, further examination of which individual behaviours
shown by managers lead to perceived support could prove illuminating.

While management behaviours that impact upon perceived support, are almost
certainly important, it seems unlikely that the degree of support that managers
provide is the only element of their behaviour that impacts upon their subordinates’
well-being. As Donaldson-Feilder (2004) points out, managers’ behaviours probably
have an impact upon all six categories of psychosocial hazard covered by the UK
Health and Safety Executive (HSE) stress Management Standards: demands,
control, support, relationships, role and change. There is some research evidence for
the importance of manager behaviours other than support. For example, Selzer and
Numerof (1998) considered not only manager consideration, which has similarities
to support, but also the degree to which managers initiate structure in their study of
the association between manager behaviour and subordinate burnout. They found
that there was an interaction between the two manager variables: although low
initiating structure and high consideration were individually associated with low
burnout, the subordinates with the lowest levels of burnout were those who
perceived their manager to be high in both consideration and initiating structure.
This may be partly because the construct of initiating structure may be non-linear:
high initiating structure behaviours may lead to low perceived control and
autonomy; but low initiating structure may lead to uncertainty and ambiguity.

Alimo-Metcalfe and Alban-Metcalfe (e.g. 2000, 2001, 2004) have also looked
at a range of leadership behaviours and their association with subordinate stress.
Their research focuses on behaviours defined as constituting transformational
leadership, reflecting the ‘new paradigm’ of leadership in which a key function of
leaders is to deal with change rather than “merely creating order in organisations,
as was the case in the ‘old paradigm’ models of the 1970s” (Alimo-Metcalfe &
Alban-Metcalfe, 2004). The elements of transformational leadership that appear,
from this research, to be associated with subordinate perceptions that their
manager reduced their job-related stress are: showing genuine concern, being
accessible, encouraging change, being honest and consistent, acting with integrity,
ispiring others and supporting a developmental culture (some of these were only
associated with the stress outcome measure for a subsection of the subordinate
population). There is a need to see whether these research findings are replicated
using other measures of subordinate well-being.
Managers' role in causing or (preferably) preventing stress is not the only area that is significant in the context of ensuring that stress is effectively managed in the workplace. Managers also have a key role to play in identifying and alleviating stress when it does occur (whether or not their behaviour is a causative factor).

**Aims of the study**

Teaching is a sector within which the effective management of work-related stress is particularly key. Recent reports identify work-related stress as one of the primary threats to effective and sustainable education in the UK, whilst recent figures suggest that one in four head teachers have visited their doctor with stress-related complaints (Jarvis, 2002). This paper aims to identify the behaviours required by those who manage teachers to prevent, identify and alleviate work-related stress. It looks particularly at how the behaviours associated with effective stress management are related to the core areas of psychosocial hazards identified by the HSE (demands, control, support, relationships, role and change). In doing so it aims to provide a preliminary stress management competency framework to guide future management development.

**Method**

A sample of 24 teachers comprised of 14 women and 10 men was recruited from schools in London using a snowballing sample. As the study aimed to identify specific managerial behaviours, this sampling strategy was chosen as the most appropriate to widen the number of managers discussed in the study.

Participants were invited to engage in a structured interview, focusing upon their experiences of effective and ineffective management of stress at work. The interview incorporated critical incident techniques to capture data concerning managers’ behaviours that impact on the well-being of their direct reports. Prior to discussing the critical incidents, participants were first asked how they defined work-related stress and this was discussed with the researcher in the context of an established HSE definition. This ensured that all participants used the same reference (Chell, 1998). Participants were then asked to describe a time when they had been managed well and a time when they had been managed poorly under periods of stress. Each interview therefore gathered data on two critical incidents. To aid the identification of behaviours associated with the prevention, identification and alleviation of work stress, the participants were encouraged to discuss this in detail with reference to a timeline (of their specification). Throughout this discussion, participants were asked to identify what they did and what their managers did. The interviews were conducted on the telephone and recorded and transcribed.
The interview data was analysed using thematic analysis (Strauss, 1987). Behaviours were extracted on the basis of the definition ‘all managerial behaviours associated with the stressful incident’. Behaviours were written on cards and grouped into behavioural themes by six impartial observers (Miles & Huberman, 1984) using a card sort technique. The emergent framework was then compared to psychosocial hazard frameworks to identify commonalities and discrete components related to the effective management of stress at work.

Results

404 behavioural indicators were extracted in total, 192 positive indicators and 212 negative indicators. 16 clusters, or competencies, of stress management behaviours were identified in the data. These are represented in table 1 below. 236 of the indicators were elicited by female participants, 168 by male participants. Two separate card sort exercises, with four and two independent and impartial observers, elicited good interrater reliability. The frameworks were integrated by the researchers and an independent expert was asked to sort 46 randomly selected indicators into the identified themes. The indicators were selected using the random number generator in Excel. The results of the thematic analysis was compared and a 70% agreement was found. After controlling for chance, Cohen’s Kappa revealed a 66% agreement, representing a good level of interrater reliability (Altman, 1991; Cohen, 1960).

Table 1: Stress Management Competencies: Positive and Negative Behaviours

<table>
<thead>
<tr>
<th>Competency</th>
<th>Positive behaviours</th>
<th>Negative behaviours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acting with integrity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Awareness of stress in others</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effective communication</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Empowering</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Managing own emotions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive approach</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Providing support</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taking responsibility/ accountability</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The competencies were grouped into super-ordinate themes drawing from the HSE Management Standards. Super-ordinate themes are shown in table 2. Here, the behaviours could be categorised under each of the six management standards and offer an additional competency referring to individual management style. The identification of behaviours associated with each of the management standards provides managers with clear behavioural examples of good and poor management practices. Furthermore, the additional competency (which includes behaviours associated with: awareness of stress in others; managing own emotions; empathy, openness and approachability; and a positive approach) provides a distinct set of behaviours relating to the management style of those who are effective at managing others under pressure.

Table 2: Stress Management Competencies & the HSE Management Standards

<table>
<thead>
<tr>
<th>MANAGEMENT STANDARD</th>
<th>COMPETENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relationships</td>
<td>Acting with integrity</td>
</tr>
<tr>
<td></td>
<td>Taking responsibility/ accountability</td>
</tr>
<tr>
<td>Control</td>
<td>Consultative approach</td>
</tr>
<tr>
<td></td>
<td>Empowering</td>
</tr>
<tr>
<td>Change</td>
<td>Effective communication</td>
</tr>
<tr>
<td>Role</td>
<td>Setting goals, roles and expectations</td>
</tr>
<tr>
<td></td>
<td>Awareness and understanding of wider job context</td>
</tr>
<tr>
<td>Demands</td>
<td>Thinking ahead</td>
</tr>
<tr>
<td></td>
<td>Planning</td>
</tr>
<tr>
<td>Support</td>
<td>Feedback, advice and coaching</td>
</tr>
<tr>
<td></td>
<td>Problem solving</td>
</tr>
<tr>
<td></td>
<td>Providing support</td>
</tr>
<tr>
<td>Individual management style</td>
<td>Awareness of stress in others</td>
</tr>
<tr>
<td></td>
<td>Managing own emotions</td>
</tr>
<tr>
<td></td>
<td>Empathy, openness and approachability</td>
</tr>
<tr>
<td></td>
<td>Positive approach</td>
</tr>
</tbody>
</table>

**Conclusion**

The competency framework for the management of stress at work provides a review of the competencies for managing well-being uncontaminated by perceptions of performance and other organisational drivers. Interestingly, in addition to allowing managers to understand how to implement national frameworks for stress management, such as the UK Management Standards (HSE, 2004), this study has also identified an unique cluster of behaviours associated with individual management style. These additional characteristics
were identified as key to managing the stress of others at work. As such, it is proposed that if managers are to manage the stress of others effectively, it is not only important that they work towards providing a work environment meeting the six standards of support, role, change, relationships, demand and control, but also that they demonstrate the interpersonal behaviours to identify and then manage stress. The authors propose that further research is urgently needed to explore the added value of these characteristics.

References


TEMPORARY JOBS AS A RISK FACTOR FOR OCCUPATIONAL STRESS AND HEALTH

T. E. EIKEN¹, P. Ø. SAKSVIK¹, K. NYTRØ¹ & H. TORVATN²
¹ Norwegian University of Science and Technology, Norway
² SINTEF, Technology and Society, Norway

Introduction

Recent studies show that temporary workers regard themselves as lacking involvement, knowledge of and interest in the company they are working for. The studies show that temporary work can lead to a reduced level of control over the work tasks the individual worker is performing as well as control over their accumulated exposure and stress from the different positions they hold temporarily. In a review it was found that 14 out of 24 studies of temporary workers exhibited a negative association with occupational health and safety (OHS) outcomes, two found no association and eight were inconclusive (Quinlan, Mayhew & Bohle, 2001). In these reviewed studies the negative associations concerned injury rate, disease risk, hazard exposures or worker (and manager) knowledge of OHS and regulatory responsibilities. At the company level the reduced involvement, interest and knowledge from temporary employees may lead to reduced collective control over working conditions (less interest for and involvement in collective bargaining) or a lack of participation in preventive work (systematic OHS-work) (Saksvik & Quinlan, 2003).

It has also been shown that temporary employees, along with perceiving low levels of control, actually perceive less stress, have lower absenteeism, and report lower job satisfaction than permanent employees. Based on previous research on control, these results seem surprising, but we argue for the need of including theoretical models to see this association in a broader scope. In the present paper we use data from two studies in an attempt to obtain a wider understanding of temporary employees and their work situation.

• If they lack control, why are they less stressed than permanent employees?
• Are higher scores on subjective health one of the reasons they became temporary employed in the first place or do they develop subjective health problems as a consequence of their contract?
• Is the growth of temporary work more of a threat to industrial relations (collective bargaining) and systematic preventive occupational health and safety work than to the individual worker?

Our theoretical framework consists of two well-known models of the psychosocial work environment – the demand-control-support model (Karasek & Theorell, 1990) and the effort-reward imbalance model (Siegrist, 1996).
According to the demand-control-support model, occupational stress and health is mainly dependent on workers' levels of demands (e.g. workload, work pace) and degree of control (decision authority and skill discretion). While control is assumed to be the primary risk factor for job-related stress, the model implies an interaction effect between demands and control. Low control is supposedly only a risk factor when the job demands are high. Various combinations of high or low demands and high or low control give rise to four possible work situations, where the active job type (high demands and high control) is considered to be most beneficial for both the company and the individual employee, and the high strain job type (high demands and low control) is considered to be the type most strongly related to occupational stress and health problems. The demand-control model was later expanded by Karasek and Theorell (1990) to include supervisor and co-worker support – labeled social support. Studies on cardiovascular disease and absenteeism have shown that social support is one of the most important factors in reducing stress and strain, either directly or indirectly, in the workplace (Karasek & Theorell, 1990).

An implication of this is that we have to analyze not only differences in control between temporary and permanent employees, but also differences in demands and social support. We expect that temporary employees perceive lower demands than permanent employees because the former group is less involved in their present workplace (as documented by Aronson et al., 2002), and because they experience lower commitment towards the company. These demands can be related to responsibility for work tasks, involvement in clients, and so on. When it comes to social support, e.g., assistance and help from colleagues or manager, there is no reason to assume that social support acts as a buffer for stress among temporary employees at the same magnitude as it does for permanent employees. Temporary employees may feel less involved in the work group, and studies have shown that they receive less training and are less exposed to other kinds of follow-up from management and more experienced employees (e.g. Virtanen, Kivimäki, Virtanen, Elovainio & Vahtera, 2003). This may be expressed as a lack of social support from managers and colleagues.

Siegrist and colleagues have developed the “effort-reward imbalance” (ERI) model that defines psychosocial risk conditions as an imbalance between effort and reward at work (Siegrist, 1996). For the individual, threats against continuous learning, promotion, and job security are distressing (Siegrist, 1996). Siegrist and Peter (1996) have argued that a major threat to health and well being at work is “low status control,” as seen, for example, in forced job changes. This means that it is important to identify high effort-low reward situations that involve high job insecurity and forced occupational mobility (Siegrist, 1996). Low levels of status control may influence the situation for many employees in the present working life. Ongoing organizational change causes job insecurity. The employees have to invest more without gaining any future job security (Saksvik, 1996). Temporary employees on the other hand, may perceive a greater effort-reward balance. Their expectations
of job security are limited and they are not as involved in (or interested in) reorganizing projects at the plant floor. Their status control may be directed towards own career or profession, not their present employer and the future situation for the company (Hecksher, 1995).

When we talk about control as a concept it is also important to differentiate between different levels of control. ‘Higher level control’ (Landsbergis et al., 2000) may be understood as the kind of control we find in a workers collective (member of a union) or to be involved in systematic preventive OHS work. The growth of temporary employment poses a number of threats to both systematic OHS management and worker unionization (see Quinlan & Mayhew, 2000, and Saksvik & Quinlan, 2003). A lack of participation and involvement in such organizational level activities is considered a possible threat to the workplace. If the level of temporary employees is increasing, and few of them are members of a union and a minority is involved in the systematic preventive work at the plant floor, this may affect the health of the organization over time. This means that involvement is a critical indicator when we study the consequences of temporary employment.

The reasons for why people take temporary jobs vary extensively. Aronson et al. (2002) have shown how various categories of temporary employees differ in subjective health problems like fatigue and discomfort. Substitutes and on call employees are the categories with most such health problems. However, unless we know more about the reasons why they have become temporary employees, we cannot claim that temporary work causes health problems. It is for example probable that some of the most vulnerable employees choose temporary jobs voluntarily. Some will also use temporary jobs to add to their disability pension or social assistance. But also students are often found in the substitute and on-call categories and they are probably among the healthiest. By following temporary employees longitudinally we can compare their development with permanent employees.

**Hypotheses**

1. Temporary employees have lower levels of control than permanent employees, but also lower levels of demands. They will therefore experience less stress than permanent employees.
2. Temporary employees will receive less social support than permanent employees and this will affect stress in a negative direction.
3. Temporary employees are less affected by organizational change in the workplace compared to permanent employees due to their career/professional commitment. Therefore temporary employees perceive lower levels of work stress.
4. The health problems of temporary employees will not deteriorate longitudinally compared to permanent employees.
5. Temporary employees are less involved in systematic occupational health and safety work and exhibit lower union membership compared to permanent employees.

Method

We used data from two studies:

1. A longitudinal survey study in the service sector – 463 employees taking part in both waves, 35 of them were temporary employees. Response rate for initial survey: 70% and follow-up: 84%.
2. A cross-sectional survey study with a representative sample of the Norwegian working population – 2421 employees, of whom 350 had classified themselves as temporary employees. Response rate 61%.

The demands-control-support dimensions were measured by, or based on, items from the Job Content Questionnaire (JCQ) (Karasek, 1985).

- **Job demands** were measured with four items from the JCQ (α = .77).
- **Job control** was measured using nine items (both skill discretion and decision authority) from the JCQ (α = .78).
- **Social support** was measured by two items from the JCQ and three items collected from the Team Work Profile (Lindström & Kiviranta, 1995) (α = .75).
- **Job stress** was measured with Cooper’s Job Stress Scale (Cooper, 1981). The instrument consists of four sub-scales: work, communication, leadership, and relocation and the total scale consists of 22 items (α = .92). High scores on this variable indicate increasing levels of stress.

**Subjective health symptoms** were measured with a scale used in The Second European Survey on Working Conditions (European Foundation, 1997). This index consists of 20 questions regarding frequent somatic and psychological complaints experienced during the last 30 days (α = .87). Response alternatives ranged from “Not troubled” (4) to “Seriously troubled” (1). So, high scores on this variable indicate better health.

**Unionization** was measured with simply stating “Are you a member of a union”.

**Systematic OHS-work** was measured with one question about the status for implementing systematic OHS-work according to the regulation of 1992 (Saksvik, Torvatn & Nytrø, 2003). The variable used in this study was a subjective measure of the opinion of the employee regarding the progression of OHS implementation. The four answer options were “Do not know”, “Not started”, “Implementing now,” and “Implemented and in use”.

The analyses were conducted using SPSS (version 12.0). A variance analysis (Univariate ANOVA) and logistic regression analysis were conducted to analyze the cross-sectional data and repeated measures ANOVA was used to analyze the longitudinal data to study the change in subjective health over time.
Results

Table 1: Odds Ratios for the Logistic Regression of form of Employment
(Permanent versus Temporary)

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>OR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demands</td>
<td>.80*</td>
<td>.667-.951</td>
</tr>
<tr>
<td>Control</td>
<td>.68***</td>
<td>.569-.816</td>
</tr>
<tr>
<td>Support</td>
<td>1.11</td>
<td>.918-1.335</td>
</tr>
<tr>
<td>Subjective health</td>
<td>1.01</td>
<td>.984-1.033</td>
</tr>
<tr>
<td>Stress</td>
<td>.98*</td>
<td>.976-.999</td>
</tr>
<tr>
<td>Gender</td>
<td>.65***</td>
<td>.495-.845</td>
</tr>
<tr>
<td>Age</td>
<td>1.11***</td>
<td>1.098-1.131</td>
</tr>
<tr>
<td>Years of education</td>
<td>1.31**</td>
<td>1.090-1.570</td>
</tr>
<tr>
<td>X², df</td>
<td>375.06***, 8</td>
<td></td>
</tr>
<tr>
<td>-2 log likelihood</td>
<td>1450.873</td>
<td></td>
</tr>
<tr>
<td>Number of cases</td>
<td>2300</td>
<td></td>
</tr>
</tbody>
</table>

* p < .05.  ** p < .01  *** p <.001

Hypothesis 1

In the analysis, permanent employees have been given the value 1. Scores lower than 1 in Table 1, therefore imply that the temporary employees have lower scores on the respective variables. In line with the findings of Aronson et al. (2002), Table 1 shows that the temporary employees experienced lower control than permanent employees, but we found, as hypothesized, that they also perceived lower demands. According to the demand-control-support model, the lower level of control should not cause increased strain or health problems when combined with lower level of demands. The results in Table 1 confirm this, showing no significant difference in health problems (measured by the overall subjective health score) between the two groups of employees and a slightly lower amount of stress among the temporary employees. Hypothesis 1 was confirmed.

Hypothesis 2

Table 1 shows that temporary employees receive support from their new colleagues and managers on the same level as permanent employees, and Hypothesis 2 was, thus, not confirmed. One reason for this may be that the number of temporary employees in Norway is still relatively low (approximately 8%) (but Norway is also facing the new situation with work migration as an EEC-member of EU).
Hypothesis 3

We found that the permanent employees perceived that they were more involved in reorganization (46%) than the temporary employees (27%). A univariate analysis of variance with gender and age as covariates showed a significant mean difference between the two groups “temporary” and “permanent” employees for the perception of reorganization (F (1) = 35.60, \( p < .001 \)). We also found a difference for work stress, (F (1) = 14.80, \( p < .001 \)) with the permanent employees perceiving more work stress (mean = 9.12/SD = 3.71) than the temporary employees (mean 7.91/SD = 3.75). Hypothesis 3 was confirmed.

Hypothesis 4

In our cross-sectional study two symptoms, fatigue and irritability, were found more frequently among the temporary employees, but most of the symptoms (14 out of 19) were slightly more frequent among the permanent employees. One of these differences was statistically significant (sleep disturbances), i.e., more frequent among the permanent employees. There was no difference between the two groups in the overall subjective health score.

In our longitudinal study we found no significant change in subjective health symptoms over time for either of the groups. No difference between the permanent and temporary employees was observed in this sample. No systematic pattern regarding differences between the two groups and change over time was detectable for any symptom. Hypothesis 4 was confirmed.

Hypothesis 5

Among the permanently employed 65% were unionized compared to 37% among the temporary employees. A chi-square test confirmed that the degree of unionization was dissimilar between permanent and temporary employees (F = 95.14 (1), \( p < .001 \)). The most remarkable difference between the two groups regarding systematic OHS-work, was that 68% of the temporary employees had no knowledge of whether an OHS-system was established or not, while only 30% of the permanent employees were in the same category. A univariate analysis of variance controlling for gender and age showed a significant difference between permanent and temporary employees' reports of the status of implementation of systematic OHS-work (F (1) = 101.33, \( p < .001 \)). This means that the permanent employees both had a better knowledge of and interest in the status of the preventive OHS-work at the plant floor, and that they work in enterprises that have taken this kind of work seriously. Hypothesis 5 was confirmed.
Conclusion

Our analyses support former studies concerning the impact of temporary work on the perception of stress and subjective health problems, but they also nuance and expand these findings. While our findings show that temporary employees in fact do have lower levels of control than permanent employees, these employees also have lower levels of demands and feel less involved in reorganization processes at work. These findings can explain why temporary employees generally report lower levels of stress than permanent employees. Further, as noted earlier, the effort-reward balance might be better for temporary employees than permanent. The job of today can offer rewards for tomorrow’s career. Thus, even when the current work situation is harsh, a temporary employee may be less likely to be stressed considering he or she expects to move on in some months or years. We found no clear indication of more subjective health problems among temporary employees, and we found a slightly higher level of perceived stress among the permanent employees.

At the collective level, our findings support what has been considered the main threat from an increase in temporary work: a lower level of unionization and less knowledge about and interest in OHS-work among the temporary employees. This underscores the importance of being aware of what is happening on the level over the individual. Even though temporary employees generally don’t experience more health problems than permanent employees, a high percentage of temporary employees might weaken the systematic OHS work and collective bargaining power for all employees. As the number of temporary employees rises, this will most certainly have adverse effects on the competence and motivation of the companies to take preventive actions towards health threatening work situations.

References


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INTRODUCTION OF TELEWORKING IN A PENSION INSURANCE FUND: A QUALITATIVE STUDY ON SUCCESS FACTORS OF ALTERNATIVE WORK ARRANGEMENTS

M. ERTEL, E PECH, & P. ULLSPERGER

Federal Institute for Occupational Safety and Health, Berlin, Germany

Introduction

The diffusion of new technologies, such as the Internet, gives rise to a variety of flexible work arrangements of which telework can be regarded as a typical example. However, the spread of telework is not only influenced by technical and economic factors, and so recent telework discussions have also raised organisational, social and cultural issues (e.g. Jackson & v. d. Wielen, 1998).

According to recent studies on the diffusion of telework in 15 European countries, the number of teleworkers amounted to 6% of the working population in 1999 and more than doubled by 2002 (13%). This survey also shows that the extent of telework practice varies considerably between member states, with the highest proportion of teleworkers in the Netherlands (26.4%) and Finland (21.8%), 16.6% in Germany, and the lowest proportion in Southern Europe (4.9% in Spain and 3.4% in Portugal) (Kordey, 2002). Even though these figures may provide only a rough estimate, given that surveys on telework are undertaken with different objectives and are based on different concepts and variables, it can be said that there is a growing interest in teleworking arrangements.

In Germany, an increasing number of companies integrate teleworking into their business strategy and human resources management as an important "family-friendly policy" tool. Teleworking arrangements allow companies to use the skill of qualified employees at times when they would normally not be available to the company (e.g. during childcare leave). However, there is little previous research that evaluated the overall effects of telework on health, productivity and work-life balance. The present study conducted by the Federal Institute for Occupational Safety and Health is an attempt to fill this gap. As an example of applied research, it focuses on the question of whether home-based telework in a pension insurance fund is an appropriate arrangement for female

1 Teleworking is a flexible way of working which covers a wide range of work activities, all of which entail working remotely from an employer, or from a traditional place of work, for a significant proportion of working time (...) The work often involves electronic processing of information, and always involves using telecommunications to keep the remote employer and employee in contact with each other (Gray et al. 1995, p. 2)
employees with young children to accommodate work with their family responsibilities. In this company, home-based telework was introduced as a pilot project for 120 employees on a one-year basis. Conditions for successful (healthy and productive) teleworking were explored by qualitative interviews.

Study design/methods

Qualitative, semi-structured, face-to-face interviews based on the grounded theory approach\(^2\) were conducted in autumn and winter 2003/2004 with 25 teleworkers (among them 23 women) and with 21 partners. Of the total group of 120 teleworkers, 25 teleworkers were randomly selected to be interviewed. They were informed of the objective of the study in advance, and participation in the interviews was voluntary. The average duration of the interviews with the teleworkers was 1 hour and 45 minutes; the interviews with their partners were shorter (45 minutes on average). The interview questions were formulated on the basis of an interview manual that centred on the following dimensions: objective conditions (working conditions including psychosocial factors, workload and resources, family situation and the work-home interface) and subjective conditions (self-rated health status, effect of telework on individual health and family, satisfaction with work and family life). The interviews were recorded, transcribed and coded. The coded transcripts underwent typological analysis in order to generate homogenous case groups including cluster analysis.

Table 1: Descriptive characteristics of the study sample

<table>
<thead>
<tr>
<th>Gender</th>
<th>23 women</th>
<th>2 men</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean age</td>
<td>33 years</td>
<td></td>
</tr>
<tr>
<td>Occupational category</td>
<td>Professional 3</td>
<td>Skilled 16</td>
</tr>
<tr>
<td>Children per family</td>
<td>1.4 (mean)</td>
<td></td>
</tr>
<tr>
<td>Mean age of children</td>
<td>2 years</td>
<td></td>
</tr>
<tr>
<td>Mean working hours per week</td>
<td>25 0</td>
<td></td>
</tr>
</tbody>
</table>

\(^2\) The choice of grounded theory as a research method for the collection and analysis of data in this study was guided by the following considerations: a) Explorative study with little previous research on the topic; b) Focus on human experience and interaction; c) Applicability to practice; d) The use of contextual interpretation (e.g. Pauleen & Yoong, 2004). "The general goal of grounded theory research is to construct theories in order to understand phenomena. A good grounded theory is one that is: (1) inductively derived from data, (2) subjected to theoretical elaboration, and (3) judged adequate to its domain with respect to a number of evaluative criteria (Haig, 1995)."
Results

To answer our research question of whether job and family demands could be balanced by telework in the insurance company under study, the teleworkers’ experiences were analysed along the dimensions (conceptual categories) working conditions, family situation, and subjective parameters. In the following step of the analysis, the resulting answers of the teleworkers on these dimensions were summed up to factors that:

a) are in favour of telework ("success factors")

b) hamper the success of telework.

These factors that account for the success or the failure of teleworking arrangements refer to the company on the one hand and to the teleworkers on the other hand.

In the last step of the analysis, the 25 teleworkers were clustered into distinct groups (clusters) according to their respective scores on the three dimensions (working conditions, family situation, subjective parameters). We assigned labels to the resulting cluster groups in order to empirically determine to what extent our sample meets the conditions for successful (i.e. healthy and productive) teleworking.

Cluster 1 with 7 of the teleworkers represents the win-win-situation. Among these teleworkers, resources outweigh stressful working conditions and the employees and their company as well benefit from the teleworking arrangement. Cluster 2 represents 11 (i.e. 44%) of the teleworkers in an ambivalent situation. They experience problems in particular with regard to their work-life balance. Cluster 3 represents the remaining 7 (i.e. 28%) teleworkers who were lacking the requirements for healthy and productive teleworking at the time our study was conducted (Table 2). For the latter group, the conditions under which they perform telework represented a situation of disprofit. This is mainly due to the fact that they are not able to make use of the benefits of teleworking (in particular flexibility with regard to time of work); moreover, they experience a high level of "double workload" (by work and family demands). Not surprisingly, neither of them continued to take part in the second part of the teleworking pilot project in the insurance company under study.

All in all, the most important success factors for telework in our study can be summarized as follows:

a) On the part of the teleworkers themselves:
   - adequate skills to perform the work demands
   - support by a male partner at home and/or external childcare arrangement
   - high intrinsic motivation, good self-management capabilities
   - good relationship with management
b) On the part of the company:
- appropriate management style based on trust, fairness, motivation and results orientation
- social support by management at the lower and the middle level
- social climate in the work team supportive of teleworking
- possibilities for alternating teleworking arrangements

As a result of our analysis, we delivered recommendations to the company management on how they could improve teleworking arrangements. These recommendations include criteria for the choice of employees (suitability for telework), who also need guidance and support in the process of teleworking. At the same time, managers of teleworkers (or teleworking teams) must be well prepared for the challenge of flexible work styles.

Table 2: Characteristics of cluster groups

<table>
<thead>
<tr>
<th></th>
<th>Two Step Cluster-Groups</th>
<th>Moderate/ Imbalance</th>
<th>Imbalance</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Win-Win</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of teleworkers under study</td>
<td>7</td>
<td>11</td>
<td>7</td>
<td>25</td>
</tr>
<tr>
<td>Mean age of teleworkers</td>
<td>31.0</td>
<td>33.5</td>
<td>35.4</td>
<td>33.4</td>
</tr>
</tbody>
</table>

a) Working conditions:
- Higher skill requirements at work*: 6 (86%) 6 (54%) 2 (29%) 14 (56%)
- Working hours per week#: 30.4 23.7 21.6 25.0
- Alternating telework(1) +: 5 (71%) 2 (18%) 0 (0%) 7 (28%)
- Assessment of managers by teleworkers (2) #: 1.4 2.3 2.9 2.2

b) Family situation:
- Children (ns): 1.3 1.5 1.4 1.4
- Age of youngest child (ns): 2.2 1.9 2.0 2.0
- External child care arrangements (3) +: 88% 48% 58% 62%

c) Subjective parameters:
- Self-rated health status (4): 1.3 2.2 3.3 2.2
- Change in health status (5): 1.6 2.7 3.7 2.7
- Work satisfaction (6): 1.0 1.8 3.1 2.0
- Satisfaction with family life (ns) (7): 1.6 1.7 2.1 1.8

<table>
<thead>
<tr>
<th>Teleworkers who will continue telework in the company</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 (100%)</td>
<td>16 (64%)</td>
</tr>
</tbody>
</table>

+: significant between group 1, 2 and 3
#: significant between group 1 and 3
ns: not significant

Legend:
1. Proportion of teleworkers who actively contact their colleagues and managers and work longer at the central office than officially required

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2. Rating scale 1-5 (1: excellent – 5 poor)
3. Proportion (%) of time for external child care arrangement in relation to job-related working hours
5. Change in general health status from the time when starting telework: Rating scale 1 – 5 (1: much more better -5: much worse)
7. Satisfaction with family life: Rating scale 1-5 (1: very satisfied ...5: rather dissatisfied)

Conclusion

The results of this qualitative study illustrate that individual, social and company-related factors account for the success of teleworking arrangements. Employees, their partners and the employer must be well prepared for the new situation of remote working. There may be a mismatch between the reasons teleworkers cite for wanting to work at home (e.g. save commute time) and their capabilities to do so effectively. As a rule, teleworkers need guidance in order not to underestimate the challenges when the workplace is shifted to their home. In many cases, the introduction of teleworking arrangements may promote organisational development towards less bureaucratic and less hierarchical forms of organisations and more employee participation. However, this is not always easily achieved. Commitment by the top management is necessary if teleworking is to succeed. In particular, organisational constraints and traditional forms of management and corresponding attitudes have to be overcome.

At the societal level, an overall strategy is needed so that family-friendly policies designed to favour women are not counteracted by traditional gender roles at home.

References


Author for correspondence: Ertel.Michael@baua.bund.de
COGNITIVE-BEHAVIOURAL THERAPY (CBT) 
BASED STRESS MANAGEMENT 
INTERVENTIONS (SMIS): INVESTIGATING THE 
MECHANISMS OF CHANGE 

P. E. FLAXMAN & F. W. BOND 
Goldsmiths College, University of London, United Kingdom 

Introduction 

Individual-focused worksite stress management interventions (SMIs) are 
designed to help employees cope with work-related strain, and usually take the 
form of psychoeducational training programmes. The most common SMIs are 
comprised of a combination of cognitive-behavioural therapy (CBT) 
techniques, such as cognitive restructuring, relaxation training, and problem 
solving. Based on the traditional CBT models (e.g., Beck, 1976; Ellis, 1962; 
Meichenbaum, 1977), these interventions typically provide instruction on how 
to change the content of “dysfunctional” (or stress-related) cognitions, and 
how to reduce unpleasant emotional arousal. Major reviews of SMI outcome 
research have concluded that such interventions are generally effective for 
reducing mental ill-health in the workplace (e.g., Murphy, 1984; 1996; 
Saunders et al., 1996; Van der Klink et al., 2001). 

In contrast to the traditional change-oriented cognitive-behavioural models, 
recent developments in CBT have placed greater emphasis on “acceptance” and 
“mindfulness” approaches. One approach that is at the forefront of this new wave 
of CBTs is Acceptance and Commitment Therapy (ACT; Hayes et al., 1999), an 
intervention protocol that promotes acceptance, rather than change, of difficult 
psychological content. The general aim of ACT is to enhance psychological 
acceptance, an individual characteristic that has two related components: (1) a 
willingness to experience all internal events (thoughts and feelings, etc.), 
including those that are undesirable, without trying to control, change or remove 
them; and (2) a commitment to engage in valued (goal-directed) action, even in 
the face of difficult psychological content (Bond & Bunce, 2003). There is now a 
growing body of clinical research that has shown ACT to be an effective 
treatment package for a range of psychological problems, including anxiety, 
eating disorders and depression (see Hayes et al., 1999, for a review). 

In view of the historic relationship between CBTs and SMIs, these 
developments in CBT would seem to have important implications for the design 
of worksite interventions. Our recent research findings support this proposition. 
For example, in research conducted at call centres in the U.K., we found that 
psychological acceptance was a powerful longitudinal predictor of mental health,
work performance and absenteeism (Bond & Bunce, 2003; Bond, Flaxman & Bunce, 2004). Moreover, our intervention research has shown that acceptance-based SMIs are as effective as traditional CBT interventions for improving employees’ mental health. Our analyses also revealed that psychological acceptance was a principle mechanism (or mediator) of change in both traditional and ACT interventions (Bond & Bunce, 2000; Flaxman & Bond, 2003).

The study reported below extends this line of research in two ways: (1) we assess the extent to which an ACT SMI (and increases in psychological acceptance) would impact upon stress-related (or “dysfunctional”) cognitions; and (2) we test the impact of ACT on a learning at work variable. Our hypotheses stem from the theory of acceptance (Hayes et al., 1999) and from the related clinical and occupational research. First, following on from our previous research (Bond & Bunce, 2000; Flaxman & Bond, 2003), we hypothesized that an ACT worksite intervention would improve employees’ mental health by increasing psychological acceptance. Our second hypothesis predicted that an ACT SMI would reduce employees’ ratings of the believability of dysfunctional cognitions, but would not necessarily reduce the frequency of these cognitions. This prediction was informed by clinical research that has found that ACT reduces the believability of negative thoughts associated with depression (e.g., Zettle & Hayes, 1986). Our final hypothesis was that an ACT intervention would result in improvements in work-related learning. This prediction is consistent with a key ACT theoretical proposition: that a person with higher levels of acceptance, who is less likely to be concerned with controlling his/her internal states, will have greater cognitive resources to examine, and learn from, his or her (working) environment (e.g., Bond et al., 2004).

Method

Design and Participants

This randomized controlled group study compared two conditions: (1) an Acceptance and Commitment Therapy (ACT)-based stress management training programme [ACT] and (2) a wait-list control group [control]. Various outcome and mediator measures were administered at baseline (Time 1), three months after an initial training phase (Time 2), and again three months after a final session of training (Time 3). Time 3 occurred six months after Time 1.

Participants were employees from a public sector organisation in London who volunteered for “Work & Life Effectiveness Training”. These volunteers were drawn mainly from the housing and social services divisions within the organisation, and were responsible for the administration of housing and welfare benefits, and the provision of leisure services (e.g., libraries) for the local community.
The analyses reported below are based on eighty seven participants (77% female) who completed measures at pre- (Time 1) and post-test (Time 2 or Time 3)\(^1\), and who scored > 9 on the GHQ-12 at Time 1 (Likert scoring method). Of these 87 participants, 52 were randomly assigned to the ACT group and 35 to the control group. The mean age of these participants was 43 (range = 25-63). The majority (76%) worked between 35 and 40 hours per week, with 14% working in excess of 40 hours per week. Forty six percent classified their job role as clerical or administration, 21% as middle management/technical and 33% as senior management/professional.

**Measures**

**Mental health** – *General Health Questionnaire (GHQ-12; Goldberg, 1978).* Typical item: “Have you recently……lost much sleep over worry”. The Likert method of scoring was used (see Banks et al., 1980), whereby each item was scored on a 4-point scale ranging from 0 (*not at all*) to 3 (*much more than usual*).

**Psychological acceptance** – *Acceptance and Action Questionnaire (AAQ; Hayes et al., 2002).* Respondents were asked to rate 48 statements on a scale ranging from *never true* (1) to *always true* (7) (e.g., “I can move towards important goals even if I don’t feel good about myself”).

**Dysfunctional cognitions** – *The Dysfunctional Attitude Scale (DAS; Weissman, 1979).* For the present study the scale was reduced to 12 items (e.g., “If I do not do well all the time, people will not respect me”), which were rated on a 5-point scale for frequency (*not at all* (1) to *all the time* (5)), and believability (*not at all* (1) to *totally* (5)).

**Learning at work** – this 9-item scale was developed by the second author (FB). Each item was rated on a six point scale (*strongly disagree* (1) to *strongly agree* (6)) (e.g., “In doing my job, I have learnt better ways to handle difficult problems”).

**Intervention**

The ACT SMI was delivered during working hours to small groups of employees at the organisation. The “2 + 1” method of delivery was used (see Barkham, 1989; Bond & Bunce, 2000), whereby participants received three sessions of training – two on consecutive weeks and a third three months later. Each training session lasted for approximately three hours. The training involved a mixture of group discussion, didactic teaching and practice of ACT techniques. Participants were also encouraged to complete homework assignments between sessions.

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\(^1\) Attrition: 19 participants in the ACT group and 13 controls only completed measures at two time points. However, there were no significant differences on any of the study variables between these participants and those who completed measures at all three time points.
The content of the intervention closely followed a comprehensive Acceptance and Commitment Therapy (ACT) protocol (Hayes et al., 1999), and two subsequent ACT manuals that were specifically developed for group worksite interventions (Bond & Hayes, 2002; in prep.). Over the three sessions, participants were introduced to various ACT metaphors, experiential (mindfulness) techniques, and a values (and goals) assessment exercise. These techniques were designed to: (1) undermine experiential avoidance strategies; (2) increase participants’ willingness to experience difficult psychological content; and (3) strengthen commitment to valued action (see Hayes et al., 1999, for a detailed discussion of ACT interventions).

Results

Mental health

Figure 1 shows the impact of the ACT SMI on GHQ scores across the three time points, relative to the control group. The intervention group reported significant, large effect reductions in mental ill-health between Time 1 and Time 2 ($F(1, 48) = 17.09$, $p < .001$, $\eta^2 = .26$), and between Time 1 and Time 3 ($F(1, 32) = 24.33$, $p < .001$, $\eta^2 = .43$). GHQ scores also reduced in the control group, but these changes were less pronounced (Time 1 to Time 3: $\eta^2 = .15$). At Time 2 and Time 3, the ACT group reported significantly lower GHQ scores (i.e., better mental health) than the control group ($\eta^2 = .07$ at both time points).

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*Eta-squared ($\eta^2$) effect sizes are small at .01, medium at .09 and large at .25 (Cohen, 1977).*
Psychological acceptance

The ACT group reported significant increases in acceptance across all three time points (see Fig. 2) (Time 1 to Time 2: F(1,41) = 11.58, p < .001, $\eta^2 = .22$; Time 1 to Time 3: F(1,27) = 10.26, p < .01, $\eta^2 = .28$). No significant changes were reported by the control group. At Times 2 and 3, the intervention group reported significantly higher levels of acceptance than the controls ($\eta^2 = .13 \& .17$ respectively).

Dysfunctional cognitions

As can be seen in Fig. 3, the ACT intervention resulted in significant reductions in the frequency of dysfunctional thinking (T1 to T2: F(1, 49) = 5.49, p < .05, $\eta^2 = .10$; T1 to T3: F(1, 32) = 11.98, p < .01, $\eta^2 = .27$). There was also a marginally significant reduction in dysfunctional cognitions in the control group between Time 1 and Time 3 ($\eta^2 = .14$). At time 3, the ACT group had lower DAS frequency scores than the controls, but this effect was not statistically significant. Contrary to hypothesis 2, no significant effects were found for the DAS believability scale.
Learning at work

Both groups reported increases in learning at work across the six month assessment period (see Fig. 4). These within group changes were statistically significant in the ACT group (Time 1 to Time T2: \( \eta^2 = 21 \); Time 1 to Time 3: \( \eta^2 = 32 \)), but not in the control group. The difference between the two groups was marginally significant at Time 2 (\( \eta^2 = .04 \)), but not at Time 3.

![Fig. 4: Learning at Work](image)

Mediation Analyses

To test the mediation hypotheses, we conducted multiple regression analyses to reflect the “four tests for mediation” outlined by Baron and Kenny (1986). We found support for our first hypothesis, in that increases in psychological acceptance fully mediated the improvements in mental health that resulted from the ACT SMI. This mediation effect was evident across all three time points. Interestingly, the mental health improvements observed in the ACT group were not mediated by changes in the frequency of dysfunctional cognitions. We also found some support for hypothesis 3 – the impact of the SMI on learning was partially mediated by increases in acceptance, but this mediation effect was only evident at the first two time points.

Discussion

The results of this study, along with our previous research in this area (e.g., Bond & Bunce, 2000; Flaxman & Bond, 2003), demonstrate that ACT-based worksite SMIs can lead to significant improvements in both mental health and work-related outcomes. These findings suggest that ACT represents a viable alternative to the more traditional CBT programmes. Indeed, as we have previously noted, ACT may be particularly suitable for worksite interventions
because of its emphasis on goals and action, and because it promotes healthy acceptance of internal states that may arise from unavoidable work demands (e.g., time pressure, customer contact, etc.) (Bond & Bunce, 2000).

In the present study, the impact of the ACT intervention on dysfunctional cognitions was particularly noteworthy. Contrary to our hypothesis, ACT resulted in significant decreases in the frequency of stress-related thinking, but did not impact on believability ratings. The changes observed in the ACT group suggest that the frequency of dysfunctional cognitions continued to decrease over time, as psychological acceptance increased. This dual pattern of change is consistent with thought suppression research, which shows that suppression attempts (i.e., low psychological acceptance) are often counterproductive, and can lead to increases in the frequency of the suppressed content (e.g., Wegner, 1994; Zettle, 2003).

However, it should be noted that although the ACT intervention resulted in reductions in stress-related thinking, these reductions were not the mechanism by which the intervention improved participants’ mental health. Rather, the reductions in GHQ scores observed in the ACT group were fully mediated by increases in psychological acceptance. This pattern of mediation provides support for the ACT theory of psychopathology, which suggests that “2nd order” change (e.g., changing the context within which negative cognitions function) has greater therapeutic utility than “1st order” change (e.g., changing the content of negative cognitions) (e.g., Hayes et al., 1999; Zettle, 2003).

This study also found evidence that ACT interventions have the potential to enhance work-related learning. Of particular interest was the finding that acceptance was a partial mediator of these learning effects. This result adds to previous research that has found an association between acceptance and performance-related variables (e.g., Bond & Bunce, 2000; 2003). Although further research is needed in this area, these findings are consistent with the idea that psychological acceptance provides a person with greater attentional resources that can be focused on the immediate working environment (e.g., the task at hand) (e.g., Bond & Bunce, 2003; Hayes et al., 1999).

Although there is now substantial evidence that demonstrates the effectiveness of ACT and other CBT-based SMIs, we do not recommend that that these individual-focused interventions are used in isolation. There is a danger that these “coping skills” interventions are perceived as an attempt to “fix” employees, in the absence of any attempt to reduce workplace stressors at their source. We therefore encourage occupational health psychologists to consider implementing ACT-based programmes alongside organisation-focused initiatives (e.g., work redesign). Indeed, in our recent research, acceptance was found to moderate the relationship between job control and stress-related outcomes, such that the benefits of increased job control were enhanced in those employees who had higher levels of acceptance (e.g., Bond & Bunce, 2003; Bond et al., 2004). Also, we have found that employees who participate in our ACT workshops often provide useful, and specific,
information on the work-related risk factors (e.g., low control, lack of support, etc.) in their organisation; this information can be used to inform the design of subsequent work reorganisation interventions, thus providing a valuable link between individual- and organisation-focused programmes.

In conclusion, the present study provides further support for the incorporation of ACT into individual-focused worksite SMIs. Moreover, we have obtained strong evidence that the benefits reported by employees who participate in ACT SMIs are mediated by increases in psychological acceptance. Future research may wish to examine other process variables, such as moderators of change, to identify the circumstances in which, and for whom, SMIs are effective (see Bunce, 1997). This focus on the mediators and moderators of change should enhance our scientific understanding of the efficacy of SMIs, and, ultimately, lead to more effective interventions.

References


TIME ALLOCATION, TIME PRESSURE AND STRESS – FAMILY COMPOSITION MATTERS

E. FONTAINHA
ISEG, Technical University of Lisbon, Portugal

Introduction

The aim of this research is to study the effects of family environment on individual stress. Special attention is given to two-parent families with at least one child aged under 15, divided into two age groups – aged under 6 and 6-14 years old. The parent-child relationship is subject to the constraint of time, which has an effect on the stress felt in relation to professional and personal life. This constraint will affect certain family types more than others, depending of time allocation of each member. Time-use data are used to understand the interface of work and family. Some time-use surveys take additional information to understand people’s subjective feelings about some, or all, of their pattern of time-use. Time-Use Surveys do not just document how people allocate their time but also assess how they regard this allocation and as a consequence measures of time-pressure are at present a common component of time-use studies (Michelson and Crouse, 2002). Other components for example are household production, labour market participation and well-being (Fisher et al., 2000). Different economic theoretical approaches of time use were surveyed by Hamermesh and Lee (2003), using time-use data, who developed what they called an Economic Theory of Time Stress, following the seminar work about time allocation of Becker (1965), and based on the assumption that “stress” is “physical, mental or emotional strain or tension”. Time stress should thus be interpreted as strain or tension that is generated by feelings that the available time is insufficient to accomplish desired activities. Time, like goods, is always insufficient – because time is limited, everyone is to some extent stressed” (Hamermesh and Lee, 2003, p. 6). There are many other studies associating work performance and stress in an economic approach, such as Leontaridi and Ward (2004) who use data from International Social Surveys Program (ISSP) for 15 OECD countries, but family characteristics are not included. There is a growing literature which relates work-life balance and stress in economics such as Ruhm (2004), or sociological perspectives such as Folbre and Bittman (2004) or Zuzanek (2001). The present paper proposes a contribution to a better understanding of the Portuguese labour market, family dynamics and characteristics, analysing stress variables.
Data and methodology

The research is based on data from the first national Time Use Survey conducted in Portugal in 1999, by the Office of National Statistics, which adopted the guidelines of the harmonised European Time Use Survey – Eurostat. The information was collected on the basis of household questionnaires, individual questionnaires and diaries (sample size: 5,500 household units and 10,000 individuals). The weighted data are considered to be representative of the nation as a whole. Analysis uses information from three databases (diaries, individual questionnaires and household questionnaires) and other socio-economic data (INE, 1999; Eurostat, 1999). The subjective sense of being pressed for time or psychologically stressed is evaluated by survey results regarding perception of stress (now and over the last three and five years), stress felt in relation to professional life, stress felt in personal life and individual options about time management. Respondents were also asked about time allocation and socioeconomic characteristics that are usually correlated with the stress explanation. Time use information covers diverse activities: work time, household time, sleep time, traffic time, leisure time, socialising time, and child care time. Analysis brings together individual and household information like employment status, occupation, income and educational level, sex, age, marital status and family characteristics.

The analysis discriminates the population according to employment status and family composition and tests for a number of explanatory factors. The aspects analysed in relation to families are composition, size, income level and sources.

Empirical results

Time management and perception of stress – Families in a rush: The global results from Portuguese Time – Use Survey reveal that there are great differences between employment status categories (employed, unemployed, household worker, student, retired worker) relating to the ways people allocate their use of time (i.e. their “free” time) and to their perception of time. In terms of feeling rushed, the highest values are from employed women (77% feel rushed and 48% of these women feel rushed everyday). In the opposite situation are retired men, only 16% feel rushed. In general, it is employed people that feel most rushed and 50% of household workers claim to feel under stress. This is the situation referred to in 1999, but more than half of the respondents said that they believed life would be less peaceful in the future.

The present paper will study the perception of stress in more detail, looking into the family/household data. On the issue of the lack of time and the sense of perpetually being in a hurry, how is this perceived by family-members? With regard to mothers, the situation varies depending on the age of the children. In
families where the children are older (6-14), the employed mothers feel that they are "in a rush" more frequently (92% against 73% in the other families with younger children) but with a lower increase compared with the previous years (in 1994, 1996 and 1998) (Table 1). The responses revealing a perpetual lack of time to carry out all the tasks of private life and working life are markedly higher in this type of family. The family-members also lack the time to carry out everything they intend to do during the weekend.

Thus, the lack of free time is not surprising: 91% of employed mothers with children between 6 and 14 never have “free time without knowing what to do with it”. If they had some spare time, they would use it either to do “nothing at all other than rest” (21%), more than to socialise with the family (16%). The choice of spending spare time “doing nothing other than resting”, is correlated with more working hours (paid or unpaid). A frequent trade off exists between this passive option of leisure and the desire for conviviality with the family. A greater need to attend to the younger children seems to be reflected in the preferences expressed regarding the allocation of free time by mothers of younger children.

The large majority of parents in these kind of families are always or often in a hurry. Many of them feel more rushed now than in the last year and 3 and 5 years ago. Therefore, more than a half of those parents have no intentions of slowing down in the future. The lack of time is felt in the different spheres of life and invades what is assumed to be leisure days for the generality of people, the weekend. About 50% of mothers and fathers are not always or frequently able to finish all the tasks they have, either in professional life or private life. The time pressure in professional life must be analysed knowing that the working week in general has more than 35 hours.

Free time is very scarce, more than 70% of parents asked answered that they never or rarely had time to do whatever they want to do. Time constraints are also present as a result of administrative services timetables and kindergarten and child school timetables. In general, phenomena associated with stress affects the mothers more than the fathers and affects more the employed mothers than the non-employed mothers. There is a very large difference between fathers and mothers regarding stress perception during the weekend. The mothers’ feeling of lack of time usually in non-working days (weekend) is double that felt by fathers. The weekend data from TUS-diary reveals that the weekend is also a period of hard work at home.

The time pressure in professional life is higher for fathers than mothers, perhaps because they set higher careers goals than mothers. Children’s age seems not to have a large effect on fathers’ stress. Only the attitude regarding the future

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1 On Grebner (2004) a detailed analysis of the relation between stress and both life and work aspects.
2 The non-employed mother’s information is sometimes insufficient to conclude with an acceptable variation coefficient.
slowing down is different and there also exists a slight difference concerning
time pressure in private life. The time pressure and the feeling of rushing,
however, is stronger among the mothers of older children (6-14 years). Factors
such as mothers’ age and fathers having less participation in the activities of
this child group (less time and less frequency of fathers’ presence) could be a
reason explaining this result. Socialising with the family is one of the
activities that these parents would do if they had more time, especially in the
case of families with one child under 6 years old (38% and 32% respectively
for fathers and mothers). In second place comes “doing nothing, only resting”;
household and family care come next. Socializing with friends, entertainment,
travel and sports are other alternatives for free time allocation. The age of
children seems to influence the preference for allocating more time to
socialising with friends. Parents of children (aged 6-14) and especially
mothers present a large preference for “doing nothing/only resting” perhaps as
a result of the high stress level referred to previously.

Families with one child aged 15 years or older – is stress a heritage?

This analysis of the perception of stress is approached from two perspectives:
that of the parents and that of the children. Only, in this case, we can analyse
together the perception of stress for parents and children because the complete
TUS individual survey is only addressed to individuals 15 years of age or above.

Children’s feelings of being in a hurry are less frequent than those felt by
parents, but the gender difference is present in both groups. Attitudes concerning
slowing down in the future are similar for parents and children (Table 2).
Concerning free time, children in general answer that they know what to do when
they have free time, in a very different way to parents in these kinds of families.
This could be interpreted in two ways: either children have more fertile
imaginations than their parents or they even have less leisure time than parents.
In these families, parents have less time constraints imposed by several services
timetables. Some of these results could mirror different generational attitudes and
conflict behaviour. If the parents had more time, the preferred allocation of it is
socialising with family (20%). But if the children had more time, the preferred
allocation of it is socialising with friends (20%), reflecting the peer group
phenomenon. Entertainment, touristy travel and sports are activities equally
preferred by both parents and children. Household and family care are less
relevant in these families than in the other two categories previously considered,
perhaps because there is less housework to do and more ways of sharing it.

3 Notice that respondents can only choose an alternative.
4 There is a special TUS questionnaire to children 6-14 but data and results are unpublished
Conclusion

Using the Portuguese Time-Use Survey data base, combining household and individual questionnaires, we concluded that the perception of stress differs according to gender, employment status, family characteristics and children's age. There are signs that stress is installed, is growing, and is gaining in the new generations, from parents to children, as a heritage.

Acknowledgements

I thank helpful suggestions received to my paper "Parental Time, Family Composition and Labour Market Participation" from the attendees at the conference on "Time Pressure, Work-Family Interface, and Parent-Child Relationships: Social and Health Implications of Time-Use", University of Waterloo, March 2002, organised by the Research Group for the Study of Time-Use, Life Stress and Work-Family Interface (University of Waterloo) in cooperation with the International Association for Time Use Research (IATUR), Policy Research Initiative (Ottawa), Health Canada (Ottawa), and Statistics Canada (Ottawa). Commission for Equality in Work and Employment (CITE) – Portugal (Research Project: Gender and Time-Use – the value of unpaid work – CESIS) made possible the availability of unpublished data of Portuguese Time Use Survey – INE.

References


INE – Instituto Nacional de Estatística (1999), Inquérito à Ocupação do Tempo


Table 1: Feelings of Time Crunch by Employment Status and Family

Family size and composition: Couple with one child less 6 years old (3 members); Couple with one child 6-14 (3 members); Couple with one or more children, at least one of whom is under 15 years (3 or more members)

<table>
<thead>
<tr>
<th></th>
<th>Couple + 1 child (&lt; 6 years old)</th>
<th>Couple + 1 child (6-14 years old)</th>
<th>Couple with one or more children, at least one of whom is under 15 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parental Employment Status</td>
<td>Employed Father</td>
<td>Employed Father</td>
<td>Employed Father</td>
</tr>
<tr>
<td></td>
<td>Employed Mother</td>
<td>Employed Mother</td>
<td>Mother out of Labour Market (*)</td>
</tr>
<tr>
<td>Feel rush</td>
<td>68#</td>
<td>73#</td>
<td>66#</td>
</tr>
<tr>
<td>Feel of &quot;being in a hurry&quot; always or often (%)</td>
<td>76#</td>
<td>82#</td>
<td>82</td>
</tr>
<tr>
<td>Feel more rushed than:</td>
<td>47#</td>
<td>52</td>
<td>43#</td>
</tr>
<tr>
<td>- last year</td>
<td>52#</td>
<td>67</td>
<td>55#</td>
</tr>
<tr>
<td>- 3 years ago</td>
<td>73#</td>
<td>76</td>
<td>56#</td>
</tr>
<tr>
<td>- 5 years ago</td>
<td></td>
<td></td>
<td>60#</td>
</tr>
<tr>
<td>No mention of slowing down in the future</td>
<td>73#</td>
<td>75</td>
<td>68#</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>69#</td>
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100
<table>
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<tr>
<th>Time Pressure</th>
<th>50#</th>
<th>38</th>
<th>53#</th>
<th>41#</th>
<th>-</th>
<th>48</th>
<th>39</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional Life (always +often)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private Life (always +often)</td>
<td>54#</td>
<td>53#</td>
<td>48#</td>
<td>58#</td>
<td>..</td>
<td>51</td>
<td>59</td>
</tr>
<tr>
<td>Week-end (frequently +sometimes)</td>
<td>29#</td>
<td>68</td>
<td>29#</td>
<td>72#</td>
<td>..</td>
<td>67</td>
<td>74</td>
</tr>
<tr>
<td>FREE time (never and rarely)</td>
<td>84#</td>
<td>90#</td>
<td>83#</td>
<td>91</td>
<td>72</td>
<td>52</td>
<td>61</td>
</tr>
</tbody>
</table>

.. Variation coefficient equal or upper 25%
# Variation coefficient between 15% and 25%
- Not applicable
(*) To the youngest group of children, mothers out of the labour market (housework's + unemployed + student + retired + other non-active) are not represented because the variation coefficient is equal or upper 25%.

Table 2: Feelings of Time Crunch Parents and Children
Family: Couple with one child upper 15 years (3 members) (*)
Unit: valid%

<table>
<thead>
<tr>
<th>Parents (F+M)</th>
<th>Employed Father</th>
<th>Employed Mother</th>
<th>Out of L. Market Father</th>
<th>Out of L. Market Mother</th>
<th>Children (S+D)</th>
<th>Son</th>
<th>Daughter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feel rush</td>
<td>56</td>
<td>61</td>
<td>82</td>
<td>21#</td>
<td>44#</td>
<td>59</td>
<td>54</td>
</tr>
<tr>
<td>Feel of &quot;being in a hurry&quot; always or often (%)</td>
<td>76</td>
<td>74</td>
<td>80</td>
<td>71</td>
<td>73#</td>
<td>65</td>
<td>63#</td>
</tr>
<tr>
<td>Feel more rushed than: - last year - 3 years ago - 5 years ago</td>
<td>32</td>
<td>36#</td>
<td>29#</td>
<td>.</td>
<td>33#</td>
<td>46</td>
<td>47#</td>
</tr>
<tr>
<td></td>
<td>42</td>
<td>41#</td>
<td>45#</td>
<td>.</td>
<td>41#</td>
<td>70</td>
<td>64#</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>51#</td>
<td>54#</td>
<td>.</td>
<td>46#</td>
<td>82</td>
<td>76#</td>
</tr>
<tr>
<td>Parents (F+M)</td>
<td>Employed Father</td>
<td>Employed Mother</td>
<td>Out of L.Market Father</td>
<td>Out of L.Market Mother</td>
<td>Children (S+D)</td>
<td>Son</td>
<td>Daughter</td>
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<td>----------</td>
</tr>
<tr>
<td>No intention of slowing down in the future</td>
<td>65</td>
<td>63</td>
<td>62#</td>
<td>.</td>
<td>69#</td>
<td>67</td>
<td>58#</td>
</tr>
<tr>
<td><strong>Time Pressure</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professional life (always + often)</td>
<td>37</td>
<td>35#</td>
<td>43#</td>
<td>.</td>
<td>.</td>
<td>39</td>
<td>41#</td>
</tr>
<tr>
<td>Private life (always + often)</td>
<td>48</td>
<td>47#</td>
<td>58#</td>
<td>45#</td>
<td>40#</td>
<td>41</td>
<td>41#</td>
</tr>
<tr>
<td>Weekend (frequently + sometimes)</td>
<td>62</td>
<td>68</td>
<td>75</td>
<td>.</td>
<td>40#</td>
<td>71</td>
<td>68#</td>
</tr>
<tr>
<td>FREE time (never and rarely)</td>
<td>49</td>
<td>42#</td>
<td>56#</td>
<td>.</td>
<td>57#</td>
<td>74</td>
<td>72#</td>
</tr>
</tbody>
</table>

. variation coefficient equal or upper 25%
# variation coefficient between 15% and 25%
- Not applicable

(*) The marital status was adopted to proxy the parents’ or children status (the married members of the families are assumed to be the parents and the single to be the children; the error introduced with this methodology was analysed and is not very representative). In this category of families, the children (+ 15) could participate in the labour market, and employment status is not useful to identify parents/children case as had been done in the previous tables concerning families with one child < 15. Childcare arrangements and time related with childcare activities is not available in relation to this children category, that covers a large (and very heterogeneous) scope of ages.
NURSING STAFFING SHORTAGE IN THE UNITED KINGDOM: EXTENT OF THE SHORTAGE, ORGANISATIONAL ATTITUDES RELATED TO INTENTION TO LEAVE AND ATTEMPTED SOLUTIONS

M. FONTENLA 1 & H. SWANN 2

1 City University, London, United Kingdom
2 London Metropolitan University, United Kingdom

Background

This paper reports on an adjunct study to the NEXT study 1 (Nurses' Early Exit Study, a longitudinal European study) exploring qualitatively reasons underlying nurses' intention to leave their profession and institution in England. The present study aimed to identify patterns in the nursing labour market through the consultation of secondary sources.

Introduction

This is a time of rapid change in the health care environment. Dramatic medical technological developments have resulted in improved life expectancy and increased patient's expectations. Health care providers are faced with the challenge of delivering consistently high quality care. Nurses are the natural and most capable allied to face the challenge of delivering quality care because they are ubiquitous and they are the largest group of health care professionals in the National Health Service (NHS) in the United Kingdom (UK).

Not only are nurses numerous but also their roles are diversifying. The introduction of the European Working Time Directive, which establishes a maximum of 48 hours working week for junior doctors, has transformed the way nurses work. Nurse practitioners and nurse prescribers have emerged blurring professional boundaries. These changes have been welcomed as exciting career opportunity for nurses, however more nurses will be needed to take on these extended role. This demand for nursing staff comes at a time of acute global nursing shortages.

The shortage of nursing staff is a complex phenomenon but there is evidence of the shortfall in nursing numbers in the UK. Vacancy and turnover rates indicate

1 The NEXT study can be consulted on http://www.next uni-wuppertal de
the negative balance between demand and supply of nursing staff. The NHS reported 14.3% turnover rates in 2002 (Buchan, Finlayson and Gough, 2003) and 2.9% vacancy rates in 2003 (Department of Health 2003). However, these figures mask regional and specialty differences. For example, London vacancy rates for qualified nurses in the NHS was 6.1% in 2003 and its turnover rates were over 20% (Buchan, Finlayson and Gough, 2003). High levels of staff turnover and persistent vacancies impact negatively on the quality of care because they are disruptive to staff and patients.

In addition, evidence from the Nursing and Midwifery Council2 (NMC) Live Register shows that the nursing workforce in the UK is ageing and that retirement is an increasingly common reason for departure from the register (Meadows, 2002; Watson, Manthorpe and Andrews 2003). The proportion of older practitioners has grown from 10% to 15% in a ten years interval (Nursing and Midwifery Council, 2004). Data based on the 1991 census corroborated information from the NMC, highlighting a declining participation rate in nursing employment associated with age (Lader, 1995). In the mid 1990s only 59% of those nurses aged 50-54 were employed compared to 88% in younger age groups. The continued ageing of the workforce has important implications for employers. Patient care delivery will need to be restructured to be more ergonomically sensitive to older nurses, who are more susceptible to neck and back injuries (Buerhaus, Staiger and Auerbach, 2002).

High vacancy rates, high turnover, considerable numbers of practitioners leaving the NMC register, and older practitioners due to retire soon stress the fragile situation of the UK Nursing Labour Market. The impact of staff shortages on the active nursing staff left behind is manifest in their increased workload and low morale.

The UK government has attempted to solve the recruitment and retention difficulties in nursing by injecting considerable sums of money into nursing education, improving retention of staff, and recruiting from abroad. However, difficulties in retention and recruitment of nurses in England still persist.

### Methods

In this climate of acute global shortages, the NEXT study (Hasselhorn, Tackenberg and Muller, 2003) is exploring the early exit from the nursing profession and is being currently undertaken in Belgium, Finland, France, Italy, Netherlands, Norway, Poland, Slovakia, Germany and England. The NEXT study is an ongoing longitudinal study. The results of the survey data collected on the pilot stage for the NEXT study are reported in this paper, complemented by

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2 In the UK the Nursing and Midwifery Council is responsible for the regulation of qualified nurses and midwives. All nurses need to be registered to be able to practice.
semi-structured interviews of nursing staff in London. The main difference in the NEXT study and the pilot study was the purpose and methodology. The former is a rigorous longitudinal and quantitative study, while the latter is an exploratory snapshot that used mixed methods.

The aim of the pilot study was to explore intention to leave the profession (ITLP) and the organisation (ITLO) and their relationship to job satisfaction and commitment to the organisation and the profession. The study fieldwork comprised a two-part investigation combining quantitative with qualitative methods: a postal survey in four health care institutions across England and semi-structured interviews in two London hospitals.

The postal survey collected information on ITLP and ITLO. Intention to leave is the most reliable predictor of actual behaviour (Wai Chi Tai, Bame and Robinson, 1998). This factor was operationalised as How often in the past year have you thought about leaving the profession/organisation? Information on other important factors was also collected using the Copenhagen Psychosocial Questionnaire (Kristensen, 2000), Allen & Meyer, commitment scale (Allen & Meyer, 1990), Nursing Stress scale (Gray-Toft & Anderson, 1981), and Copenhagen burnout inventory (Kristensen and Borritz, 2001). All these scales have been found to be reliable through use and reuse over many years presenting Alpha Chronbach ranging from 0.65 to 0.90.

Semi-structured interviews were carried out to further explore intention to leave. The interview protocol was based on relevant concepts identified through literature review and survey results. The interviews collated information on ITLP/ITLO, commitment, satisfaction, career history, family responsibilities and reasons to stay in post/profession.

Results

Response rate & representativeness of sample

The postal survey obtained a 28% response; 75 questionnaires were returned to researchers. Therefore, the data obtained needs to be taken with caution. However, the nature of the study was exploratory; thus the results are not generalisable but illustrative instead. The low response rate is likely to reflect a number of factors, including staff workloads, length of the questionnaire, and the fact that the first author was unable to distribute the questionnaires directly to the sample. The participating institutions were randomly selected and all staff in each institution was eligible to participate in the study.

Interviews obtained a more successful response rate, 27 out of 30 nurses invited to take part agreed to do so. The findings resulting from the interviews are not nationally representative in a statistical sense, but they are expected to illustrate the picture of nurses' commitment and intention to leave in London.
Intention to leave the institution

The postal survey found that ITLO was significantly related to ITLP (r Pearson = 0.35); these two concepts although related were distinct. Regression analysis revealed linear relationships between ITLO, job satisfaction and burnout. Fifty-nine percent of variance in ITLO was explained by those two factors alone. Thus, those nurses who were less satisfied and were reporting higher levels of burnout were more likely to intend to leave the institution.

In turn, 53% of job satisfaction variance was explained by social support, autonomy and quantitative demands of the job. Nurses who reported to be satisfied with their job were those who were working amongst supportive colleagues and superiors, had autonomy within their role and were not being overloaded with work.

The interviews also found that many nurses reported thinking about leaving the institution, giving reasons such as career advancement or job characteristics.

Intention to leave the profession

The postal survey revealed that a quarter of nursing staff (24%) thought about leaving the profession at least once a month. And a third (32%) were thinking about leaving once a year. It could be argued that this finding was a bias born from the low response rate. However, this finding has been confirmed by preliminary results of the NEXT study were a third of 2,700 nursing staff surveyed thought about leaving the profession at least once a month. In fact comparisons across Europe reveal that nurses in England report intention to leave the profession more often than any other European country (Hasselhorn, Tackenberg and Muller, 2003).

Intention to leave the profession appeared to be a very complex construct with no linear relationships but significantly related to other factors. ITLP seems to be related to the nursing experience in its entirety. Job satisfaction and burnout were highly related to ITLP (Pearson correlation of −0.38 and 0.25 respectively). Discrimination and harassment at work were also underpinning the intention to abandon nursing. Lack of flexibility in working patterns and lack of social and practical support from peers and superiors also were significantly related with ITLP.

The interviews confirmed that ITLP and ITLO were related but separate concepts. Many nurses had thought about leaving the profession seriously, some even had alternative career changes outlined. The reasons for leaving were related to the working hours, the lack of resources and staff, the relationship between the stressful nature of nursing and the perceived low pay and the perceived low status of the profession.

Other findings

Overall, the interviews confirmed the findings of the postal survey. However, they also revealed new factors. Work family balance and the importance of family
friendly policies transpired as an important factor which would retain nurses in an organisation and in the profession. As obvious as this may seem it is important to recognise that not all organisations provide family friendly policies and this finding could strengthen the case for them.

Also discrimination, harassment and the low status of the nursing profession emerged as factors which were related to intention to leave the profession.

Discussion

ITLP and ITLO were found to be complex phenomena explained by a set of intertwined individual, organisational and environmental factors. Acute nursing shortages seem to have led to deterioration of working conditions which result on work overload. The postal survey showed nurses are suffering role overload and burnout. However, job satisfaction was the pivotal predictor of ITLP, which was positively related to social support and negatively to role overload. Additional variables emerged as important: flexible working patterns, harassment experiences, and discrimination. The findings of the interviews suggested that nurses leaving the organisation would do so due to lack of career opportunities. Issues such lack of resources and staff, antisocial working hours, work-family balance, and the low status of the profession were reasons for leaving the profession.

The study suggested potentially helpful interventions to tackle intention to leave, such as: increasing job satisfaction through attending to structural and organisational factors (colleagues’ support, autonomy, advancement opportunities, and role overload); intention to leave the profession can also be modified through specific interventions in the workplace (flexible working schedules, control over rota planning and improving the quality of leadership).

However, long-term initiatives directed to improve nurses’ professional status need to be implemented. This is essential for nurses to feel valued and recognised for the work they do. This would not only attract school leavers to the profession but also will retain nurses. Promoting nursing as a worthwhile career, providing opportunities for flexible working without disadvantages in terms of training or promotion, and making sure nurses’ pay reflects their work are all strategies which will help improve society’s view of the nursing profession.

In conclusion, the present and projected nursing shortage mandates administrators, Human Resources professionals and Government implement incentives to recruit and retain staff. However, the solution to the shortage is not just about enlisting and maintaining the right number of nursing staff. It is about supporting them to make the best use of their skills in delivering care and providing a safe and healthy working environment.
References


Addresses for correspondence: Marina Fontenla, Researcher, City University, St Bartholomew School of Nursing & Midwifery, 20 Bartholomew Close, London, EC1A 7QN. Tel: 020 7040 5708. Fax 020 7040 5717. Email: marinafontenla75@hotmail.com. Humphrey Swann, Senior Lecturer in Occupational Psychology, London Metropolitan University, Calcutta House, Old Castle Street, London, El 7NT. Tel: 020 7320 1077. Email: h_swann@londonmet.ac.uk

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METHODS FOR PROCESS EVALUATION OF WORK ENVIRONMENT INTERVENTIONS

H. FREDSLUND 1 & J. STRANDGAARD 2

1 National Institute of Occupational Health, Denmark,
2 Copenhagen Business School, Denmark

Introduction

In recent years, intervention studies have become increasingly popular within occupational health psychology. The vast majority of such studies have focused on interventions themselves and their effects on the working environment and employee health and well-being. Few studies have focused on how the context and processes surrounding the intervention may have influenced the outcomes (Hurrell and Murphy, 1996). Thus, there is still relatively little published research that provides us with information on how to evaluate such strategies and processes (Saksvik, Nytrø, Dahl-Jørgensen and Mikkelsen, 2002).

This paper describes how organisation theory can be used to develop a method for identifying and analysing processes in relation to the implementation of work environment interventions. The reason for using organisation theory is two-fold: 1) interventions are never implemented in a vacuum but in a specific organisational context (workplace) with certain characteristics that the organisation theory can capture, 2) within the organisational sociological field there is a long tradition for studying organisational changes such as workplace interventions.

In this paper, process is defined as “individual, collective or management perceptions and actions in implementing any intervention and their influence on the overall result of the intervention” (Nytrø, Saksvik, Mikkelsen, Bohle and Quinlan, 2000). Process evaluation can be used to: a) provide feedback for improving interventions; b) interpret the outcomes of effect evaluation; c) replicate interventions in other settings minimising the number of pitfalls associated with a given intervention (Goldenhar et al., 2001).

Theoretical positions

The method builds upon four different organisational perspectives: a rational, a natural, a political and an institutional. A perspective is a way to categorise and analyse different ways of understanding organisations, interventions and implementation strategies.
**The rational perspective**

From a rational perspective, organisations are collectives oriented to the pursuit of relatively specific goals and exhibiting relatively highly formalized social structures (Scott 1992). Within the rational perspective a work environment intervention is based on the following assumptions:

- Interventions are designed and implemented in well-defined phases
- Interventions often aim at increasing the effectiveness of the organisation whilst at the same time solving the identified work environment problem
- The content of the intervention is selected from an analysis of the effectiveness of the different solutions
- Preferably evidence-based interventions are selected
- The component parts of the organisation are oriented to pursue the goals of an intervention
- The highly formalized social structures ensure that roles and responsibilities in the intervention are given – or at least easy to identify
- Interventions can be designed and managed by the top management (top-down strategy)
- If an intervention is not implemented as expected, there is something wrong with either the theory behind the intervention (theory failure), with the design of the intervention (programme failure), or with the part of the system the intervention is implemented in.

The rational approach to organisational studies has been criticised for only dealing with the tip of the organisational iceberg. Underneath the visible formalised social structures there are aspects, which are just as (or even more) determining for the implementation processes.

**The natural perspective**

According to the natural perspective organisations are collectives whose participants share a common interest in the survival of the system and who engage in collective activities, informally structured, to secure this end (Scott 1992). Interventions that are based on a natural perspective will focus on the values of the different players and on human development. An evaluation of interventions within the natural perspective builds on assumptions such as:

- Interventions are based on the values of the organisation, the project managers, or the employees
- Different players may have different understandings of an intervention
- The aim of the intervention is to develop the employees
- Interventions are better implemented by involving the employees (bottom-up strategy)
• If the official aim of an intervention is not fulfilled this does not necessarily imply failure. The implementation process may have created important organisational learning on the way that can be useful in later interventions or in the daily work.

Thus the natural perspective represents an alternative to the rational approach. Underneath the tip of the iceberg we find different values that affect the implementation of an intervention.

*The political perspective*

From a political perspective organisations are open, social systems with potential conflicts and with players in different positions (Borum, 1995). In a political perspective, interventions are seen as determined by different conflicting interests inside as well as outside the organisation. Thus organisations are considered to be open systems (Scott, 1992). If we evaluate interventions from a political point of view our assumptions about interventions are as follows:

• Interventions are planned, adopted and implemented because someone has an interest in it
• An intervention can be designed to stabilise or displace existing power relations
• The change agents will typically be powerful individuals or groups. If they don’t have the power to get through with the intervention they will make coalitions with other powerful groups
• If the implementation does not succeed it will often be due to a collision of conflicting interest or due to the lack of support from powerful groups.

Also the political perspective offers an alternative to the rational approach where we underneath the tip of the iceberg find different interests and power structures that influence the interventions and implementation processes.

*The institutional perspective*

The fourth perspective on organisations is the institutional perspective. Here organisations are understood as open and loosely coupled systems, which manifest themselves through organisation processes (Borum 1995). Interventions in such a system are very difficult to evaluate because it is assumed that:

• Both the intervention and the strategy for implementation take continuous shape and will be adapted in order to address the problems that may come into existence during the processes. This means that we can not design a successful intervention in well-defined phases beforehand.
• One can not distinguish between which processes (and effects) that relates to the planned intervention and which relates to other parallel (planned as well as not planned) changes in the organisation.

• Planned interventions often bring about unexpected events.

• Interventions cannot be isolated to internal affairs because organisations are seen as open systems.

• Interventions are implemented in a loosely coupled system where part of the interventions tends to be decoupled.

Under the tip of the organisational iceberg we find loose couplings and organising processes and not an organisation that works like an organisation chart.

It must be emphasised that organisations, interventions and change strategies always represent mixed forms of the perspectives. However, the four perspectives enable us to construct some analytical categories that can structure both the collection and the interpretation of our empirical material.

Methodological implications

The rational perspective

If we take the rational perspective for granted a process evaluation of an intervention must focus on the formal structures and processes, e.g., a) the way the intervention was planned, b) the way the intervention was organised, c) the implementation strategy, and d) the degree of fulfilment of the planned purposes.

The methods we suggest to collect empirical material about the above subjects are written documents about the intervention, questionnaires and structured interviews with key persons. Since an intervention within a rational system is relatively transparent it is not necessary to use methods that go further below the surface. To analyse the empirical material theories from the rational perspective can be used, such as Mintzberg (1993) or Galbraith (1973).

The natural perspective

Within a natural perspective, process evaluation focuses on informal structures and processes such as adaptation processes, communication and participation processes, and learning processes. Overall subjects for such a process evaluation could be: a) the agreement between the intervention and the values within the organisation; b) the agreement between the implementation strategy and the values within the organisation; c) the involvement of the different players in planning and implementing the intervention; d) the planned and the unintended learning (organisational as well as individual) in relation to the intervention and the implementation.
To gain knowledge about these issues it is necessary to employ in-depth qualitative methods such as semi-structured interviews, focus groups, and/or observations. To interpret the empirical, material theories such as Schein (1985) or Argyris & Schón (1996) are suggested, since they are in line with the natural perspective by focusing on respectively values and learning processes.

The political perspective

From a political perspective a process evaluation must focus on power processes of an intervention such as negotiation and decision processes, influence and authority processes, and institutional framework for behaviour. Overall themes for a process evaluation could be: a) who decided the content of the intervention and the implementation strategy; b) who were the interested parties in the intervention and what were their interests; c) are there any discourses in play that set limits for the content of the intervention or the implementation strategy?

It is often difficult to get information on power issues. First, because power is often invisible, tacit and almost impossible to document. Second, because power usually is a sensitive issue in organisations. Therefore it is a useful method to find indirect ways of asking about power in qualitative interviews. Furthermore it can be a good idea to create some more informal situations to talk with the different players about power aspects. Finally observations and written sources can be used to analyse power relations. To interpret the empirical material different theories about power can be used, such as Robert A. Dahl (1961) (direct power), Peter Bachrach & Morton Baratz (1970) (indirect power), Steven Lukes (1974) (power to control consciousness) and Max Weber (1971), Geert Hofstede (1980) or Michel Foucault (1993) (institutional power).

The institutional perspective

If we accept the chaotic circumstances the institutional perspective builds upon, the purpose of a process evaluation is to identify processes of organising, processes of decoupling and processes of legitimising. Some of the evaluation subjects could be: a) how was the intervention organised and implemented in practice; b) what other kind of change processes took place before and during the implementation of the intervention; c) have any parts of the intervention been decoupled; d) is the intervention used to supply the organisation with legitimacy?

As methods to collect empirical material on such subjects we suggest a combination of written sources, interviews and observations. In the written sources we get information about the formal aim of the intervention. Through interviews and observations we get to know more about the informal processes and changes of practice in the organisation. In the interviews it is recommended to ask questions starting with “what” and “how” instead of “why”, because we want information on practice and not on normative reflections. By combining
these two methodological approaches, that covers respectively formal and informal aspects of the intervention, it becomes possible to uncover decoupled elements. To analyse the empirical material we suggest theory from the institutional school such as Powell & DiMaggio (1991) or Weick (1979).

An empirical example

The methods for process evaluation presented in this paper have been used in a large research project investigating the effects of workplace interventions in a number of female-dominated workplaces in Denmark. Whenever a process evaluation is carried out it is necessary to decide what perspective to apply to the evaluation, which subjects to include, which methods to use for collecting empirical material, and which theories to choose for interpreting the material. All these choices are determined by the purpose of the process evaluation and by the knowledge we have of the specific intervention and the context it is implemented in. This means, that we did not use the same methods for evaluating the different interventions. In interventions where the project managers seemed to have a natural approach it was obvious to include subjects from the natural perspective as suggested in this paper. In interventions where conflicting interest seemed to block the way for the implementation of an intervention the political perspective was used. And in interventions where other organisational changes seemed to overshadow the intervention the institutional perspective was brought into play. But in none of the many process evaluations did we use only one single perspective. We always used a mix of the four perspectives adjusted to the specific intervention and the specific context.

An example:

In the process evaluation described in Nielsen & Fredslund (2004) we used subjects from all four perspectives. Since the purpose of the process evaluation was to get as far below the tip of the organisational iceberg as possible we used observations, individual interviews, focus groups and written documents to study the processes. In the interview guides we included the subjects from the four perspectives that could deepen the knowledge we got from participating in the processes and that could give us knowledge about the topics we wanted to include in the reports for the two work places. The subjects were: 1) evaluation of the activities in the intervention (rational perspective); 2) evaluation of the project organisation and the involvement of the employees (natural perspective); 3) identification of the 'ownership' of the intervention (political perspective); 4) the influence other organisational changes and processes had on the interventions (institutional perspective).

We did not do theoretical interpretations of each of the many process evaluations we did in the research project. Instead we have done an overall interpretation of all
the process evaluations. The interpretation is structured by the four perspectives in order to find some general tendencies in the processes in relation to the implementations at the different workplaces. In some cases it seems that the project managers applied a perspective that to some extent did not match the type of organisation or group of employees the intervention was directed to.

Conclusion

In this paper we have described how organisation theory was used to develop a method for process evaluation. It has been the ambition to draw a line between the organisational perspective, assumptions about interventions, subjects for process evaluation, methods to collect empirical material, and finally theory to interpret the collected material.

By using organisation theory we ensure that the themes for a process evaluation are not chosen at random but consider the characteristics of: a) the intervention; b) the context in which the intervention is implemented. Furthermore, the four perspectives make it obvious, that the outcome of a process evaluation is very much dependent on the perspective we choose. Thus, we will claim that the development of a simple standard method for process evaluation will result in evaluations that do not reflect the complexity and the differences in the contexts that are so crucial for interpreting the processes in relation to the implementation of interventions. By operating with several perspectives it becomes possible to adjust the evaluation subjects, the methods and the theories to the specific intervention and context. And that is the reason for suggesting a flexible method for process evaluation.

References


GALBRAITH, J. K. (1973) Designing Complex Organizations. Reading, Mass.: Addison-Wesley


A claim was made that the prevalence of coronary heart disease (CHD) is related to estimated degrees of stress within the professions of medicine, dentistry and law. To test this hypothesis, detailed questionnaires were mailed to 3954 attorneys in Cleveland and Detroit. Prevalence of CHD in the 2342 responders was compared with stress ranks of legal specialties and with the quality of the law school attended, as rated independently by a law school professor. In the age group 40-69 years, stress-ranked specialties demonstrated slight differences which were not significant.

A hierarchy of 4 school groups was established with Group I (Harvard, Yale, Columbia, Chicago, Michigan) the highest. CHD prevalence rates in ages 24-59 were compared: School Group I (0.86%) was significantly lower than School Group III (2.88%) (p < 0.05), but not significantly lower than School Group IV (2.21%) (p > 0.10). There were not enough attorneys in School Group II to provide a meaningful sample. Coronary prevalence rates were related to law school quality, but not to stress-ranks of legal specialties, tending to support the social class hypothesis (Friedman & Hellerstein, 1968).

The Meyer Friedman-Ray Rosenman structured interview, designed to elicit Type A behaviour, was administered to 107 patent attorneys and 170 businessmen in 1965. Rosenman's ratings revealed fewer speech hesitation pauses one second or more (SHPs) in the Type A subsample of patent attorneys. The rate of their SHPs at >2 SHPS per minute, correlated with the state of the circulation (angina/hypertension) in the patent attorneys; and with the incidence of clinical CHD in both population samples, observed prospectively for 10 years, p < 0.05. In the businessmen sample, 1965 SHPs ratings demonstrated that the top income group exhibited significantly fewer SHPs than the middle income group but not significantly fewer SHPs than the bottom income group, hence replicating the CHD prevalence pattern observed in the questionnaire study of attorneys.

Among the patent attorneys, systolic and diastolic blood pressures indicating physiologic arousal were significant discriminators among those who reported new coronary events compared with noncoronary attorneys, p < 0.01. In contrast, systolic and diastolic blood pressure among the businessmen exhibited only a trend toward statistical significance, 0.05 < p < 0.10 in discriminating between 22 coronary and 148 noncoronary businessmen. In both population samples; the average magnitude of coronary-risk over 10 years comparing high hesitators, >2 per minute, with low hesitators, on the order of 1 per minute, was on the order of 6:1. These findings demonstrate that a high pause rate identified high coronary risk men well in advance of clinical manifestations of circulatory systems. The
validity of this method is demonstrated by reproducibility across time: 89 businessmen re-interviewed in 1975 demonstrated a significant correlation of their rate of SHPs with their rate in 1965, r = 0.60, p < .01 (Friedman & Sanders, 1988). Therefore, a microprocessor-based monitor was constructed to sort SHPs at 1, 2 and > 2 per minute.

The role of this method in stress management is demonstrated by the association of the reduction of blood pressure with longer, less recurrent SHPs of approximately 2 seconds. These responses are linked to secure attachment in 17-month-old infants and the feeling of rhythmical and prefrontal cortical modulation of dopamine lateralized to the right hemisphere during the delayed alternation task (Friedman, 1997; Friedman, 2004a). Therefore, the positive correlation between insecure attachment styles (avoidant or anxious/ambivalent) and burnout suggests that strategies for coping with burnout-causing situations, have a theoretical and a practical implication: burnout research and intervention should include greater emphasis on personal factors in addition to contextual factors (Pines, 2004).

The fact that rate and variability in duration of SHPs correlate with the left and right hemisphere, respectively, prompts stress management by the analysis of SHPs on a time-base in auditory training of asymmetrical brain functions (Friedman, 2004a) (see table). This strategy includes 2.5- to 3-second delay periods for inhibition shaping the temporal flow of information in the prefrontal cortex (Friedman, 2004b). This hypothesis is supported by a report that the microvascular response to the onset of neural activity is consistently delayed on the order of 3 seconds and is linked with increased coherence of gamma-band electroencephalogram activity (30-50 Hz or broader, centered on 40 Hz) associated with the execution of more complex tasks (Friedman & Coats, 2000).

This methodology is supported by the role of silence in expressing the inexpressible (Aldous Huxley); a report that pauses convey meaning beyond words; and the much-quoted: “Heard melodies are sweet, but those unheard are sweeter” [John Keats].

(Friedman, 2004a; Shriberg et al., 1998)

References


Table: Auditory Training of asymmetrical brain functions

R K., a 73-year-old white housewife with anxiety, depression and hypertension, was treated with Vasotec 10 mg qd, Remeron 30 mg hs, Tranxene 3.75 mg td and Zyprexa 1 25 mg hs. The addition of audiotape feedback of nature sounds yielded further benefit monitored by speech hesitation pauses in spontaneous telephone dialogues, 1.50+/-.33 seconds, 4.79+/2.48 per minute (mean+/SD) through right/left ear. RE/LE.

<table>
<thead>
<tr>
<th>Date</th>
<th>Right ear</th>
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<tbody>
<tr>
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<td>1.90/5</td>
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<td>13 Nov 01</td>
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<td>20 Dec 01</td>
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<td>27 Dec 01</td>
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<td>31 Jan 02</td>
<td>2.20/13</td>
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<td>21 Feb 02</td>
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<td>25 Feb 02</td>
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<td>16 May 02</td>
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<tr>
<td>1 Aug 02</td>
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<td>1 10/3</td>
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<tr>
<td>8 Aug 02</td>
<td>2.20/13</td>
<td>2.60/5 # “better” tape stopped on her own.</td>
</tr>
<tr>
<td>15 Aug 02</td>
<td>2.20/3</td>
<td>1.30/4</td>
</tr>
<tr>
<td>5 Sep 02</td>
<td>1.30/1</td>
<td>1.50/2 resume tape</td>
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<td>1.30/2</td>
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<tr>
<td>26 Sep 02</td>
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<td>10 Oct 02</td>
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<tr>
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<td>1.80/1</td>
</tr>
<tr>
<td>31 Jan 03</td>
<td>2.20/13</td>
<td>2.20/1 “dream of inability to get out of a maze”</td>
</tr>
</tbody>
</table>

Pause rate < 7 per minute (< 1 SD): RE 20 of 37 vs LE 33 of 37, P < .001. # Prefrontal time.

Address for correspondence. Ernest H Friedman, MD, Department of Medicine and Psychiatry. Case School of Medicine, 1831 Forest Hills Boulevard, Cleveland, OH 44112. p) 216/681-5200 e) friedman@en.com
THE IMPACT OF BURNOUT ON ORGANIZATIONAL COMMITMENT IN THE POLICE CONTEXT: THE MODERATING EFFECTS OF COLLEAGUES SUPPORT

S. GONÇALVES & J. NEVES
Instituto Superior de Ciências do Trabalho e da Empresa (ISCTE), Portugal

Introduction

The world is becoming increasingly competitive and characterised by the existence of pressure that is frequently much greater than what is desired. For this reason it becomes difficult to respond actively and on time to such pressure and maintain the emotional and psychological balance needed to face daily pressures. In this context, stress associated with work is one of the worst problems to have originated from industrialisation and modern technology, and when stress is very strong and permanent, it results in burnout.

Growing concerns about the impact of burnout on both employee and organizational well-being have stimulated efforts to understand its determinants and consequences in the workplace. A review of the literature suggests that burnout has individual (e.g. depression, cardiac illness) as well as organizational consequences (e.g. low job satisfaction, low levels of organizational commitment) and a wide range of determinant factors (e.g. interpersonal relationship in the workplace, role ambiguity). Studies on burnout outcomes have been conducted in various occupational environments (e.g. schools, hospitals and industries). However, studies that explore these relationships in the police context are rare (Dobreva-Martinova, Villeneuve, Strickland & Matheson, 2002). Although, we think that in the present context of our societies, policemen are under higher levels of stress compared to other workers (e.g. Selye, 1978).

The present study aims to analyse the relationship between burnout and organizational commitment in the police context, and to examine the existence of colleague’s social support as a moderating variable of this relationship. It is important to mention that this concern with the relationship between burnout and commitment is a relatively recent empirical topic, and thus highlight the theoretical and empirical relevance of the present study.

Organizational commitment

Researchers have revealed an increasing concern with the concept of organizational commitment because of its positive effects in organizations (e.g.
Monday, Steers and Porter (1979) have classified the commitment approaches in terms of two broad perspectives: behavioural and attitudinal. In the behavioural approach, commitment is defined as “a state of being in which an individual becomes bound by his actions and through these actions to beliefs that sustain the activities and his own involvement in organization” (Salancik, 1977, cited by DeCottis & Summers, 1987, p. 446). According to the attitudinal approach, organizational commitment is a psychological state that: (a) characterizes the employees’ relationship with the organization; (b) has implications for the decision to continue membership in the organization (Allen & Meyer, 1990). Based on this definition, Allen and Meyer (1997) identified three components of organizational commitment: a) affective commitment – affective or emotional attachment of the individual to the organisation, that is, workers remain in the organisation because they want to; b) continuance commitment – tendency for the individual to get involved in consistent courses of action, based on the recognition of costs (or loss in benefits) associated with leaving the organisation, in this way workers remain in the organisation because they need to; c) normative commitment – belief in responsibility and loyalty that the individual has for the organisation so workers stay in the organisation because they should. In this study, commitment is viewed as an attitude.

Professional stress and burnout

Exposure to stress in the work environment for a long-time promotes a set of negative psychological experiences, which Maslach and Schaufeli (1993) defined as burnout. According to Maslach Burnout Model, “burnout is viewed as a syndrome that consists of three dimensions: emotional exhaustion, depersonalization and reduced personal accomplishment” (Shirom, 2003, p. 246). Emotional exhaustion refers to feelings of being depleted of one’s emotional resources; Depersonalization referring to negative or cynical attitude to other people at work; and reduced personal accomplishment referring to feelings of decline in one’s competence and productivity and to one’s lowered sense of self-efficacy.

Social support

According to Sarason, Sarason and Pierce (1990), the concept of social support can have several definitions, depending on the context. Taking into consideration the definition given, for example, by Etzion (1984), social support is the individual’s perceptions of being supported by others.
According to Goldberger and Brezutz (1993), social support can come from different sources, namely, family members, friends, work colleagues, religion congregations, sport clubs, etc.

During these last two decades, a great research effort has been made regarding the study of the beneficial effects of social support in people's health and well-being. According to Henderson (1984, quoted by Daniels & Guppy, 1994), research about the effects of social support has been focusing on two hypotheses. The first one suggests that social support has a direct effect in people's well-being (e.g. Cohen & Wills, 1985), and the second one is known as the “buffering” hypothesis, that is, social support has a weakening effect on the impact of stressors to people's well-being (e.g. Kirmeyer & Dougherty, 1988). These two research approaches have been confirmed in several contexts, including in the police context (Kirmeyer & Dougherty, 1988; Kirkcaldy & Furnham, 1995).

**Organizational commitment, burnout and social support**

There is relatively little literature that talks about the relationship between burnout and organizational commitment, but on the other hand there are several studies that relate stress and organizational commitment. These studies point out the fact that there is a positive association between stress and continuance commitment, and a negative association between stress and affective and normative commitment (e.g. Dobreva-Martinova et al., 2002; Gonçalves, 2004). As stress and burnout seem to be closely linked (Maslach & Schaufeli, 1993), it is possible to justify the analysis of the relationship between burnout and organizational commitment, like studies have been doing regarding the concept of stress.

Several studies show that the negative relationship between burnout and its consequences can be moderated by the “buffering” effect that social support can cause (e.g. Pretorius, 1993). That is, the social support of family, friends and work colleagues weakens the negative consequences of inductive circumstances of burnout, namely low organizational commitment (e.g. Rodriguez and Cohen, 1998, quoted by Serra, 2000).

**Hypothesis of the present study**

Following the principles of the theoretical approaches above mentioned, we propose the following hypotheses: H1 – a negative association between burnout and affective commitment is expected; H2 – a negative association between burnout and normative commitment is expected; H3 – a positive association between burnout and continuance commitment is expected; H4 – it is expected that colleague’s social support will moderate the relationship between burnout and the three components of organizational commitment.
Method

Sample

The sample (convenience sample) is composed of 324 members of one Portuguese Police Force (all men), with ages between 20 and 52. The average age of respondents was about 34 years. Respondents reported an average of 11 years of tenure. Overall, 66.6% were married and 54% had children.

Instruments and Measures

A questionnaire was constructed with the following scales: the Maslach Burnout Inventory – General Survey (adapted from Maslach et al., 1996), the Social Support Scale (adapted from Greller, Parsons & Mitchell, 1992) and the Affective, Normative and Continuance Commitment Scales’ (adapted from Allen & Meyer, 1997).

Burnout ($\alpha = 0.85$) was measured with the Maslach Burnout Inventory (MBI) by Maslach et al. (1996), using a total of 18 items, for example, “I feel emotionally drained by my work”. The items were scored on a 5-point rating scale, ranging from “Never” (1) to “Very frequent” (5). We created a total burnout score based in the three areas that typify burnout: emotional exhaustion, depersonalization and personal accomplishment.

Colleague’s social support ($\alpha = 0.81$) was assessed with 4 items by Greller, Parsons and Mitchell (1992), for example, “My work colleagues give attention to my feelings and problems”. The items were scored on a 5-point rating scale, ranging from “Never” (1) to “Very frequent” (5).

Organizational commitment was measured with the scales of affective ($\alpha = 0.77$), normative ($\alpha = 0.60$) and of continuance commitment ($\alpha = 0.64$) by Allen and Meyer (1997), using a total of 18 items (e.g. “I would be very happy to spend the rest of my career in this organization”). The answer scales are a five point Likert scale, in which 1 means “I totally disagree” and 5 corresponds to “I totally agree”.

Results

The results of this study will be presented as follows: (1) determination of the association of burnout with organizational commitment; (2) determination of the moderator role of social support in this relationship.

Table 1 presents the descriptive statistics, reliabilities and the correlations between the different variables of this study. The results show that burnout has a negative correlation with affective ($R = -0.50$) and normative commitment ($R = -0.25$), and these associations are statistically significant. However, the correlation between burnout and continuance commitment ($R = 0.10$) is not statistically significant.
Table 1: Descriptive statistics, reliabilities and correlations between the different components of organizational commitment, age, burnout and colleagues' social support

<table>
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<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
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<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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<tr>
<td>1. Affective commitment</td>
<td>3.77</td>
<td>0.74</td>
<td>0.77</td>
<td></td>
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<tr>
<td>2. Continuance commitment</td>
<td>3.07</td>
<td>0.67</td>
<td>0.04</td>
<td>0.64</td>
<td></td>
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<tr>
<td>3. Normative commitment</td>
<td>3.37</td>
<td>0.66</td>
<td>0.42**</td>
<td>0.28**</td>
<td>0.60</td>
<td></td>
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</tr>
<tr>
<td>4. Age</td>
<td>34.20</td>
<td>8.85</td>
<td>-0.13*</td>
<td>-0.05</td>
<td>-0.10</td>
<td></td>
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<tr>
<td>5. Burnout</td>
<td>2.38</td>
<td>0.62</td>
<td>-0.50**</td>
<td>0.10</td>
<td>-0.25**</td>
<td>0.07</td>
<td>0.85</td>
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</tr>
<tr>
<td>6. Colleagues' Social Support</td>
<td>3.34</td>
<td>0.78</td>
<td>0.36**</td>
<td>0.16**</td>
<td>0.21**</td>
<td>-0.12*</td>
<td>-0.29**</td>
<td>0.81</td>
</tr>
</tbody>
</table>

*P < 0.05; **P < 0.01; Reliabilities (Cronbach’s a) given on the diagonal of the correlation matrix

As the relationship between burnout and continuance commitment does not exist, the relationship between these two variables was excluded from the moderating analysis.

As Table 2 presents, a moderating effect of colleagues’ social support in the relationship between burnout and affective commitment is not statistically significant. So, there are not moderating effects.

Table 2: Hierarchical regression analysis predicting affective commitment

<table>
<thead>
<tr>
<th>Predictor variables</th>
<th>R² Adjusted</th>
<th>R² Change</th>
<th>b</th>
<th>S.E.</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>0.01</td>
<td>0.02</td>
<td>-0.01</td>
<td>0.01</td>
<td>0.02</td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td>-0.01</td>
<td>0.00</td>
<td>0.06</td>
</tr>
<tr>
<td>Burnout</td>
<td>0.25</td>
<td>0.24</td>
<td>-0.59</td>
<td>0.06</td>
<td>0.00</td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td>-0.01</td>
<td>0.00</td>
<td>0.15</td>
</tr>
<tr>
<td>Burnout</td>
<td>-0.51</td>
<td>0.06</td>
<td>0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Colleagues, social support</td>
<td>0.30</td>
<td>0.05</td>
<td>0.22</td>
<td>0.05</td>
<td>0.00</td>
</tr>
<tr>
<td><strong>Step 4</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-0.01</td>
<td>0.00</td>
<td>0.16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Burnout</td>
<td>-0.51</td>
<td>0.06</td>
<td>0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Colleagues, social support</td>
<td>0.22</td>
<td>0.05</td>
<td>0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Burnout X Colleagues, social support</td>
<td>0.299</td>
<td>0.00</td>
<td>-0.04</td>
<td>0.06</td>
<td>0.49</td>
</tr>
</tbody>
</table>
The results obtained in Table 3 show that colleagues’ social support has a moderating effect in the relationship between burnout and normative commitment, when colleague’s social support is high (Table 4).

**Table 3: Hierarchical regression analysis predicting normative commitment**

<table>
<thead>
<tr>
<th>Predictor variables</th>
<th>$R^2$ Adjusted</th>
<th>$R^2$ Change</th>
<th>$b$</th>
<th>S.E.</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-0.00</td>
<td>0.00</td>
<td>-0.00</td>
<td>0.00</td>
<td>0.88</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td>0.00</td>
<td>0.00</td>
<td>0.86</td>
<td></td>
</tr>
<tr>
<td>Burnout</td>
<td>0.05</td>
<td>0.06</td>
<td>-0.26</td>
<td>0.06</td>
<td>0.00</td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Burnout</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Colleagues, social support</td>
<td>0.07</td>
<td>0.02</td>
<td>0.13</td>
<td>0.05</td>
<td>0.01</td>
</tr>
<tr>
<td><strong>Step 4</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Burnout</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Colleagues social support</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Burnout X Colleagues, social support</td>
<td>0.08</td>
<td>0.01</td>
<td>-0.12</td>
<td>0.06</td>
<td>0.05</td>
</tr>
</tbody>
</table>

**Table 4: Analysis of the simples’ slopes**

<table>
<thead>
<tr>
<th>Predictor variables</th>
<th>$b$</th>
<th>S.E.</th>
<th>$P$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burnout</td>
<td>-0.12</td>
<td>0.08</td>
<td>0.10</td>
</tr>
<tr>
<td>Low Colleagues, social support</td>
<td>0.13</td>
<td>0.05</td>
<td>0.01</td>
</tr>
<tr>
<td>Burnout X Low Colleagues, social support</td>
<td>-0.12</td>
<td>0.06</td>
<td>0.05</td>
</tr>
<tr>
<td>Burnout</td>
<td>-0.31</td>
<td>0.08</td>
<td>0.00</td>
</tr>
<tr>
<td>Higher Colleagues, social support</td>
<td>0.13</td>
<td>0.05</td>
<td>0.01</td>
</tr>
<tr>
<td>Burnout X Higher Colleagues, social support</td>
<td>-0.12</td>
<td>0.06</td>
<td>0.05</td>
</tr>
</tbody>
</table>

**Discussion of the results and conclusion**

The aims of the present study were to analyse the relationship between burnout and the organizational commitment and to examine colleague’s social support as resources that could moderate this relationship in the police context. The results supported the hypothesis that burnout is negatively correlated both with affective commitment and with normative commitment. The positive correlation between burnout and the continuance commitment was not supported.
Contrary to what was hypothesized, no moderating effects were found for colleague’s social support between burnout and affective commitment. Moderating effects of colleague’s social support were found in the relationship between burnout and normative commitment, but in the inverse direction of what was expected, so the hypothesis of “buffering” effects of colleagues’ social support was not supported. This result may be related with the intrinsic nature of the police context and colleagues’ social support appears to be a way to legitimate the less positive relationship with the organization.

To explore these results in the future, it would be interesting to do a comparative study between the police context and other organizational contexts.

References


Addresses for correspondence: S. Gonçalves (sonia_goncalves@iol.pt), J. Neves (jose.neves@iscte.pt)
Background and research questions

The oil and gas industry has a long history of outsourcing activities. There have been suggestions that there will be more outsourcing in the industry because of higher technological sophistication. It has also been pointed out that oil and gas companies will focus more on being an investment bank operating with financial expertise and geological competence and resources. This latter development is a subject for heavy debate. However, regardless of strategies to be chosen, there will be further changes in the value chains of the oil and gas industry. On the Norwegian continental shelf today, 70% of the population of employees and managers are working for a contract company (Petroleum Safety Authority Norway, 2004), meaning that being employed by a traditional oil and gas company is the exception, not the rule. The drilling operations have a long history of outsourcing. This has also been a traditional high-risk activity historically, but also compared with other activities offshore even today.

Based on the recent year’s development and concern for health and safety in the oil and gas industry in Norway, several initiatives have been established in order to assess the conditions and improve them. This has led to the following up of the risk level on the Norwegian continental shelf using both quantitative and qualitative data (PSAN, 2004). The oil and gas industry has established different task groups working with different improvements under the umbrella of Samarbeid for Sikkerhet ("Working together for Safety"). A working group has been established to deal with contracts and health and safety.

The length of contracts are said to be important (Lamvik & Ravn, 2004). In their study of drilling operations they focus on the importance of stability and continuity to explain good health and safety performances in South East Asia. The drilling contracts are longer in South East Asia, but at the same time there are other structural conditions to consider as well, including offshore personnel staying longer in the same position. They also have longer working periods, and management is more directly involved in the day-to-day activity compared with the Norwegian sector. Typically the contract length for a rig in South East Asia is 5-8 years (Lamvik & Ravn, 2004). In Europe the contracts are seldom up to 5 years, they are usually 3 years with 2 X 3 options.

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CONTRACTS VERSUS CONTACTS AND CO-OPERATION?

G. GUTTORNSEN¹, L. BJØRNSEN² & T. STEIRO¹

¹ SINTEF Industrial Management, Norway
² Norwegian University of Science and Technology, Norway
The role contracts play with respect to health and safety are important issues to examine. This has led us to focus on the contractual issues and formulate the following research questions:

- What are the main perceived challenges with regards to health and safety issues associated with the contracts?
- What improvements can be made?

Knowledge and experience with contracts on an operational level is needed. In this study we do not look at the juridical aspects of contracts as such, but more focusing on the framework they create and how the different parties perceive them.

**Empirical approach**

We have conducted secondary analysis of interviews with senior stakeholders in the Norwegian oil and Gas industry on the topic of contracts. As part of the project Risk Level on the Norwegian Continental Shelf-Phase 4, 12 interviews were conducted with representatives for the industry, industry organization, and trade unions with senior personnel to discuss and get their opinions regarding the risk level. Dr. Knut Haukelid from the University of Oslo performed the interviews and résumés from the interviews are made public in the report Risk Level on the Norwegian Continental Shelf-Phase 4 (PSAN, 2004). It is always a challenge using others interviews since very little is known about the context of the interviews. At the same time we had limited opportunity to make our own interpretations, meaning that we have focused on the topic 'contracts' in the interview.

Another approach has been to conduct interviews with operational people, people responsible for the contracts, and health and safety people both from Oil and Gas companies and the drilling contractor on one installation that is simply termed as the “Guttorm” platform in this paper. The “Guttorm” platform is operated by one of the largest Oil and Gas companies in Norway. In addition, interviews with one representative from “Working together for Safety” and one representative from the Petroleum Safety Authority of Norway were conducted. The last two interviews were more on a validation level, since the two informants did not have detailed knowledge of the “Guttorm” platform. The total number of informants was 16. Dr. Knut Haukelid also interviewed one of the informants in the study from the “Guttorm” platform. We therefore had to merge the results from this informant to avoid double reporting or circle argumentation.

**Results from the study**

Our empirical findings show that several important factors related to contracts can be a threat to health and safety:
Short-time contracts seem to be one challenge regarding health and safety issues. Length of the contract plays an important role for investment in health and safety and also for communication and co-operation. In bids for short time contracts the main focus for the operator companies is said to be economy. In some cases health and safety is not mentioned at all in contracts. The cost for this is reduced quality and higher risk, both related to poor work planning and lack of good safety analyses prior to job execution.

Offshore workers claim that good health and safety is derived from good communication between coworkers and co-operation between companies involved in operations. According to the workers, short-term contracts affect the amount of time provided for important work meetings and job preparations between companies involved. Short time contracts can also affect organizational redundancy as a means to achieve reliable operations. Organizational redundancy is created when individuals ask each other for advice, ask critical questions, spot each other's erroneous actions or intervene to correct an erroneous action before it leads to an accident. Rosness et al. (2000) argued that organizational redundancy depends on both instrumental and cultural preconditions. The instrumental preconditions concern the personnel's possibility of direct observation of each other's work, overlapping competence, and overlapping tasks and responsibilities. The cultural preconditions concern the skill and willingness to exchange information, provide feedback, reconsider decisions made by one and others, and to intervene to recover erroneous actions. All these important factors seem to be affected when contracts are short and the amount of resources provided for co-operation is reduced.

"E-bidding" can affect health and safety. It is argued that this kind of bidding-method can cause the contractor companies to make too rapid decisions about economical issues and because of this, they can get the contract, but they are selling their services too cheap. The consequence of this is said to be less resources for e.g. competence and knowledge development programs for employees. Trade unions argue especially that these kinds of programs are important for improving health and safety on installations. The “Guttorm” platform had no experience so far with E-bidding.

Financial incentives are “built into” the contracts and in the evaluation of bids. Even though the operator is concerned with a number of different qualities associated with a product or service (cost, quality, delivery time, use of new technology, health and safety, etc.), the framing of the financial incentives can mean that focus on one or more of these qualities may come at the expense of health and safety. Because it is difficult in practice to formulate accurate incentives to promote health and safety, the use of incentive schemes to promote e.g. delivery time and cost reduction can contribute to turning the contractor's focus away from health and safety.

1 "E-bidding" is online auctioning on the Internet in real time.
Financial incentives can also lead to underreporting of accidents/near accidents. Offshore workers must face the dilemma of either reporting accidents/near accidents or to risk that their company loses their bonus. In many cases these bonuses are designed to also benefit the offshore workers in the form of higher salary and/or other goods. It is clear that these do not promote openness about health and safety issues between operators and contractors.

Results from the “Guttorm” platform show that concerns regarding contracts are not so evident compared with what was highlighted in the Risk Level on the Norwegian Continental Shelf-Phase 4. There might be several explanations for this. In those interviews they are asked of the perceived risks and what they see as challenges on a more general level.

Results show that the employees from the contracting company do not know the contracts in detail. One could argue that this is not so important, because contracts become more evident when re-negotiating contracts or if there are deviations from the contract. Very often the contracts are not discussed in detail after the closing of the deal, but the contract documents can be used when the cooperation is not functioning (Rognes, 2001). The companies operating the “Guttorm” platform have a long history of good cooperation. However, following a serious incident after the start of the contract, the contractor felt they were overruled by the operator company. The interviews from the platform revealed the following challenges regarding cooperation:

- Health and safety culture
- Experience transfer
- External conditions

It can be argued that even though there are not many problems with the contract, they still function as a framework condition. This means that some of the frustrations they might perceive are not attributed to the contracts directly. Another challenge regarding the contracts is linked to the lack of knowledge of the contract and organizational learning. Experience shows that managers see the contract departments getting more involved in the contract work. This can lead to a shift in power, but also lead to lack of organizational learning between different departments. The reason for the latter is that the contract departments will often be distant to the offshore workers because there are few if any arenas to meet and exchange ideas. If so, the employees as well as some of the middle managers will have reduced influence on the contract formulation. They might see the contract as something that is forced upon them or something they feel distant to.

Should health and safety be a subject of competition between different contractors? The contract department will perhaps have limited knowledge of experience and points of view regarding using health and safety as a competitive factor. The informants from the oil and gas company at “Guttorm” do not view using health and safety as a key performance indicator in tenders to be
problematic. They argue that even if health and safety is a subject for competition, the different drilling contractors will still use experience transfer as a means to improve health and safety standards. Some of the informants see the use of incentives as something positive that will reinforce health and safety. The argument is that health and safety efforts will pay off.

The informants from PSAN and “Working together for Safety” are more skeptical using incentives linked to health and safety performance. The first informant has seen too many negative effects. The other informant from “Working together for Safety” report that this might have a negative impact. However, it might depend on what is measured. Incentives linked to a proactive health and safety-work can be a positive tool. Incentives linked to performance are only positive if the health and safety demands are taken care of.

What improvements can be made?

There are different opinions regarding financial incitement in contracts and especially with regards to health and safety performance. There is a need to include more of the operational experience and plough them back to the tendering process and the negotiations. In the interviews with the trade unions, they were critical of the lack of employee involvement in the contract processes. The trade unions want to influence the contract processes. There also seems to be a lack of operational experience that is taken into the contract as organizational learning. Longer contracts seem to benefit health and safety, but more knowledge and verification is needed regarding this topic.

Overall discussion and conclusion

In our study we see that the contracts do play a role indirectly in the day-to-day operation. When the interviews on the “Guttorm” platform were conducted, there was a contractual relationship between the operator and the contractor. The results from the interviews might have been different if the contract was about to be re-negotiated.

We conclude from this study that contracts and their effects are hard to study without looking at the context they are developed in and the use of them. Health and safety culture, experience transfer, external conditions play a role in the study from the “Guttorm” platform, but other structural conditions could also play an important role at other installations. From the secondary analysis of the interviews from the Risk level project, all parties seemed to agree that health and safety in contracts should be protected. Lower health and safety efforts in order to win the bid should not be encouraged. Protection of health and safety in contracts is seen as necessary, but it is feared by the trade unions that this is a
necessary but not sufficient condition. On the other hand there are differences when it comes to using health and safety more actively, giving the contract to one contractor company that has demonstrated proactive efforts when other Key Performance Indicators are equal.

It is hard to compare two installations and even harder to compare installations in different provinces. There was another drilling contractor and operator company in a study from South East Asia (Lamvik and Ravn, 2004). Their study questions whether longer drilling contracts, more hands-on management, and more stable employees can explain seemingly higher health and safety records in South East Asia compared with the Norwegian Continental shelf. This is despite the fact that the drilling operations in South East Asia involve more personnel and are more manual. The differences are complex, but their research could raise questions as to whether the industry could benefit from having longer contracts. Shorter contracts will open up for more competition, leading the contractors to put their shoulder to the wheel. Longer contracts might limit the power of the operator company, but in return they could benefit from more investment in competence and health and safety efforts. The contractor could see this as beneficial in the long run. These issues should be looked into in more detail. If it is true that the contracting departments are getting more powerful, the focus on economical and juridical aspects could be stronger on behalf of competence and health and safety matters.

Profit as we see it has two sides. The informants focus a lot on the incitements in the contracts and the effects on the contractor company. But there is also another side to this. There must be focus on doing a good and safe job from both parties. The operator company must use the contract as a basis for co-operation. On the other side, the contractor company must demonstrate trust the other way, meaning that they need to show willingness to invest in competence and health and safety efforts. They need to prove that they are not only trying to gain the highest possible profit. The “Guttorm” platform shows that the impact of contracts is individual and the two companies have benefited from focusing on co-operation. To build a constructive and informal learning climate is a significant management task that is not straight-forward to achieve. The reason for this is paradoxical: co-operation functions best through informal organizing. Responsibility, on the other hand, is best served through clear lines of accountability (Gjelsvik, 1999). As shown in this paper, studying the effects of contracts is difficult. In our approach we had to focus on the framework and the context they operate in. Further studies should be aware of some of these methodological challenges. E-bidding was identified as a challenge, however, no experience of this issue was reported so far on the “Guttorm” platform. E-bidding will be used to cut costs to an increasing degree, and it will be interesting to study the effects and experiences from an operational level.
Acknowledgements

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References


Address for correspondence: Geir Guttormsen@sintef.no
EMPLOYMENT ASPIRATION AND JOB SEARCH BEHAVIOUR OF NON-WORKING PEOPLE IN THE NETHERLANDS

D. J. K. HESSELINK & P. G. W. SMULDERS
TNO Work and Employment, The Netherlands

In the last decade of the 20th century, economy in The Netherlands was booming and there was a strong need for employment. Appointments at the level of the European Union, such as the Amsterdam treaty, and national initiatives helped many people to get a job. Yet about 29% of people between 15 and 65 years of age did not have a paid job. The question was raised how to stimulate this reservoir of inactive people to enter the labour market.

Who are not employed and why?

In this study we only looked at the population between 15 and 65 years of age. In The Netherlands the years before 15 are restricted to compulsory education and 65 is the official retirement age (although many people retire before 65 by means of social regulations and/or money of their own). Because we looked explicitly at the situation in the Netherlands, we mostly cite results of Dutch studies in answering the above mentioned question.

Many studies indicate that the chance of being non-employed is higher for women, the elderly, the low educated and immigrants (Koning, Nes & Veen, 1998). Non-employment is also found to be related to medical and social problems, financial debts and care obligations (Mallee & Putman, 2000). The chance of being or staying non-employed may also be due to factors in the working situation. Employers often look for people that are educated and healthy and the minimum net income is often lower then the unemployment benefit (Haan, Smit & Gent, 2001). Personal problems also play a role in not getting a job. Among the many psychological problems, we only mention learned helplessness specifically (Rodriguez, 1997). In this respect it was found that, for the disabled, a history of disappointments related to the disability status has a stronger effect on reintegration efforts, when compared to the effects of gender, age and education (Zwinkels & Besseling, 1997). The effect was particularly strong for people with an immigrant background. In the same study it was found that factors such as social contacts, employment aspiration and the relative absence of psychosocial complaints was related to finding a job again.
Objectives of the study

From this overview we conclude that, next to the well known demographic variables, there are many personal and social factors related to the fact that people are not employed. Understanding the nature of these factors can give us more insight into the mechanisms of people entering the labour market or not.

A study was designed to make a pair-wise comparison between unemployed people with high employment aspiration and active job search behaviour on the one hand, and their counterparts not wanting and not searching for work on the other hand. This comparison was made for three non-working groups: registered unemployed, non-employed (mostly people being involved in household tasks or study) and people receiving disability benefits.

Design

Data originated from the 1997, 1998 and 1999 waves of the Dutch life situation survey (Permanent Onderzoek Leef Situatie) of the Dutch Central Bureau of Statistics. Every year about 10,000 people in the population are investigated by means of face-to-face interviews. Questions include demography, leisure activities (church membership, physical exercise, walking and biking, pub visits, family life, internet surfing, music and painting), job search behaviour, health and social isolation.

Methods

Three groups were selected: non-employed (n = 3,614), registered unemployed (n = 1,184) and people receiving disability benefits (n = 912). The samples are representative of the population groups, which consist respectively of about 18%, 6% and 5% of the total population in the 15 to 65 age categories. Variables are analysed by means of logistic regression.

Results

Table 1 gives an overview of the numbers and the percentages of people not having a paid job in The Netherlands and who wish to have paid work and who actively search for it.
Table 1: Numbers and percentages of three groups of unemployed people in The Netherlands who wish to have paid work (employment aspiration) and who actively searched for paid work (job search behaviour) in the last six months.

<table>
<thead>
<tr>
<th>Employment aspiration (wish for paid work)</th>
<th>Sample</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Non-employed</td>
<td>3,614</td>
<td>811</td>
<td>22%</td>
</tr>
<tr>
<td>- Registered unemployed</td>
<td>1,184</td>
<td>453</td>
<td>38%</td>
</tr>
<tr>
<td>- Disabled</td>
<td>912</td>
<td>122</td>
<td>13%</td>
</tr>
<tr>
<td>- All three groups together</td>
<td>5,710</td>
<td>1,386</td>
<td>24%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Job search behaviour (in the last 6 months)</th>
<th>Sample</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Non-employed</td>
<td>3,614</td>
<td>355</td>
<td>10%</td>
</tr>
<tr>
<td>- Registered unemployed</td>
<td>1,184</td>
<td>275</td>
<td>23%</td>
</tr>
<tr>
<td>- Disabled</td>
<td>912</td>
<td>43</td>
<td>5%</td>
</tr>
<tr>
<td>- All three groups together</td>
<td>5,710</td>
<td>673</td>
<td>12%</td>
</tr>
</tbody>
</table>

Of all inactive people in the Netherlands, 24% have a positive employment aspiration and 12% actively search for a job. Registered unemployed most often wish for having paid work and are most active in job searching. The disabled group (having a disability benefit) rank lowest on both variables, the non-employed rank in between.

Next, in table 2, an overview of the predictors of employment aspiration (the wish to work) is given in terms of odds ratios for three unemployed groups separately and together.

Most relationships with demographic variables, known from the literature, are confirmed by the analyses in this table. In almost all groups, being male, young and highly educated is a significant predictor of employment aspiration. More immigrants, however, want to have a paid job. For the non-employed, the middle aged group ranks highest in employment aspiration, indicating a large group of women with declining care tasks re-entering the labour market.

Next, couples with or without children do not often have employment ambitions, but this relationship is only significant for the disabled. For the non-employed, hours involved in housekeeping is related to employment aspiration. For the registered unemployed, the presence of two or more household incomes has the same effect. Social isolation however is often not related to employment aspiration in this group. Being involved in part-time education is related to more employment aspiration for the non-employed and the disabled.

Leisure activities predict employment aspiration (pub visits, internet surfing, walking and biking) or not (church visits). The relationships mostly point in the same direction, but are often not significant. Being disabled and involved in playing music or painting is related to less employment aspiration.
Table 2: Predictors of employment aspiration (the wish to work): results of logistic regression analyses (odds ratios) for three groups separately and together.

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Non-employed</th>
<th>Registered unemployed</th>
<th>Disabled</th>
<th>All three groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex (women)</td>
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<td>0.44 ***</td>
<td>0.74</td>
<td>0.53 ***</td>
</tr>
<tr>
<td>Age (15-24 years)</td>
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<td>-</td>
</tr>
<tr>
<td>Age (25-34 years)</td>
<td>1.25</td>
<td>0.97</td>
<td>0.66</td>
<td>1.78 **</td>
</tr>
<tr>
<td>Age (35-44 years)</td>
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<td>0.92</td>
<td>0.38</td>
<td>1.67 ***</td>
</tr>
<tr>
<td>Age (45-54 years)</td>
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<td>0.42 ***</td>
<td>0.20</td>
<td>0.84 ***</td>
</tr>
<tr>
<td>Age (55-64 years)</td>
<td>0.16 ***</td>
<td>0.04 ***</td>
<td>0.09</td>
<td>0.19 ***</td>
</tr>
<tr>
<td>Single without children</td>
<td>-</td>
<td>-</td>
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<td>-</td>
</tr>
<tr>
<td>Single with children</td>
<td>1.37</td>
<td>0.83</td>
<td>0.70</td>
<td>1.20 **</td>
</tr>
<tr>
<td>Couple without children</td>
<td>0.73</td>
<td>0.68</td>
<td>0.58</td>
<td>0.62 **</td>
</tr>
<tr>
<td>Couple with children</td>
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<td>0.51</td>
<td>0.65 ***</td>
</tr>
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<td>0.85</td>
<td>1.63</td>
<td>1.32 **</td>
</tr>
<tr>
<td>Current part-time education</td>
<td>2.25 ***</td>
<td>1.01</td>
<td>2.44</td>
<td>2.04 ***</td>
</tr>
<tr>
<td>Education (Primary school)</td>
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<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Education (Low professional)</td>
<td>1.14</td>
<td>1.05</td>
<td>0.94</td>
<td>1.11 **</td>
</tr>
<tr>
<td>Education (Low secondary school)</td>
<td>1.22</td>
<td>1.55</td>
<td>1.26</td>
<td>1.17 **</td>
</tr>
<tr>
<td>Education (Secondary school)</td>
<td>1.45 ***</td>
<td>1.79 ***</td>
<td>1.11</td>
<td>1.33 ***</td>
</tr>
<tr>
<td>Education (University, professional)</td>
<td>1.45 ***</td>
<td>2.27 ***</td>
<td>1.18</td>
<td>1.51 ***</td>
</tr>
<tr>
<td>Housekeeping (0-12 hours/week)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
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<td>Housekeeping (13-27 hours/week)</td>
<td>1.69 ***</td>
<td>1.01</td>
<td>1.10</td>
<td>1.41 ***</td>
</tr>
<tr>
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<td>1.49 ***</td>
<td>1.01</td>
<td>1.19</td>
<td>1.36 ***</td>
</tr>
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<td>Household incomes (one)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Household incomes (two or more)</td>
<td>1.03</td>
<td>1.60 **</td>
<td>1.68</td>
<td>1.17 **</td>
</tr>
<tr>
<td>Household incomes (do not know)</td>
<td>0.93</td>
<td>0.70</td>
<td>1.90</td>
<td>0.87 **</td>
</tr>
<tr>
<td>Household income (decile 1 t/m 3)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Household income (decile 4 t/m 7)</td>
<td>1.31</td>
<td>0.80</td>
<td>1.79</td>
<td>1.20 **</td>
</tr>
<tr>
<td>Household income (decile 8 t/m 10)</td>
<td>0.93</td>
<td>1.00</td>
<td>1.78</td>
<td>0.98 **</td>
</tr>
<tr>
<td>Household income (missing value)</td>
<td>0.98</td>
<td>1.14</td>
<td>0.96</td>
<td>1.04 **</td>
</tr>
<tr>
<td>Zero to three health complaints</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Four or more health complaints</td>
<td>1.08</td>
<td>1.07</td>
<td>0.92</td>
<td>1.04</td>
</tr>
<tr>
<td>Health complaints (missing value)</td>
<td>1.15</td>
<td>0.71</td>
<td>0.56 *</td>
<td>0.95 **</td>
</tr>
<tr>
<td>Social isolation (0 complaints)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Social isolation (1. more complaints)</td>
<td>1.11</td>
<td>0.72 **</td>
<td>0.96</td>
<td>0.99 **</td>
</tr>
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<td>Social isolation (missing value)</td>
<td>0.91</td>
<td>1.21</td>
<td>1.15</td>
<td>1.04</td>
</tr>
<tr>
<td>Contacts with family, neighbours</td>
<td>1.04</td>
<td>0.98</td>
<td>1.08</td>
<td>0.91 **</td>
</tr>
<tr>
<td>Frequently visiting pubs</td>
<td>1.16</td>
<td>1.25</td>
<td>1.31</td>
<td>1.27 ***</td>
</tr>
<tr>
<td>Frequent church attendance</td>
<td>0.71 ***</td>
<td>0.78</td>
<td>0.78</td>
<td>0.75 ***</td>
</tr>
<tr>
<td>Frequent internet surfing</td>
<td>1.52 ***</td>
<td>1.15</td>
<td>1.32</td>
<td>1.26 **</td>
</tr>
<tr>
<td>Painting, music as a hobby</td>
<td>1.00</td>
<td>1.55</td>
<td>0.33 **</td>
<td>0.90 **</td>
</tr>
<tr>
<td>Frequently walking, biking</td>
<td>1.13</td>
<td>1.32</td>
<td>1.06</td>
<td>1.23 ***</td>
</tr>
<tr>
<td>Frequently conducting sports</td>
<td>1.05</td>
<td>1.10</td>
<td>1.15</td>
<td>1.10</td>
</tr>
<tr>
<td>Number of persons</td>
<td>3.614</td>
<td>1.184</td>
<td>912</td>
<td>5,710</td>
</tr>
</tbody>
</table>

Levels of significance. * p ≤ 0.10; ** p ≤ 0.05; *** p ≤ 0.01

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Table 3: Predictors of job search behaviour (in the last 6 months): results of logistic regression analyses (odds ratios) for three groups separately and together.

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Non-employed</th>
<th>Registered unemployed</th>
<th>Disabled</th>
<th>All three groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex (women)</td>
<td>0.57</td>
<td>0.61</td>
<td>0.61</td>
<td>0.54</td>
</tr>
<tr>
<td>Age (15-24 years)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Age (25-34 years)</td>
<td>0.76</td>
<td>0.87</td>
<td>1.21</td>
<td>1.25</td>
</tr>
<tr>
<td>Age (35-44 years)</td>
<td>1.28</td>
<td>1.26</td>
<td>1.04</td>
<td>1.49</td>
</tr>
<tr>
<td>Age (45-54 years)</td>
<td>0.61</td>
<td>0.81</td>
<td>0.31</td>
<td>0.75</td>
</tr>
<tr>
<td>Age (55-64 years)</td>
<td>0.08</td>
<td>0.09</td>
<td>0.12</td>
<td>0.16</td>
</tr>
<tr>
<td>Single without children</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Single with children</td>
<td>1.07</td>
<td>0.45</td>
<td>0.27</td>
<td>0.87</td>
</tr>
<tr>
<td>Couple without children</td>
<td>0.55</td>
<td>0.66</td>
<td>0.30</td>
<td>0.51</td>
</tr>
<tr>
<td>Couple with children</td>
<td>0.53</td>
<td>0.92</td>
<td>0.42</td>
<td>0.55</td>
</tr>
<tr>
<td>Family situation unknown</td>
<td>0.37</td>
<td>1.28</td>
<td>0.46</td>
<td>0.67</td>
</tr>
<tr>
<td>Immigrant by birth</td>
<td>0.91</td>
<td>0.90</td>
<td>3.57</td>
<td>1.19</td>
</tr>
<tr>
<td>Current part-time education</td>
<td>2.17</td>
<td>0.98</td>
<td>1.73</td>
<td>1.82</td>
</tr>
<tr>
<td>Education (Primary school)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Education (Low professional)</td>
<td>1.10</td>
<td>1.38</td>
<td>1.75</td>
<td>1.21</td>
</tr>
<tr>
<td>Education (Low secondary school)</td>
<td>1.20</td>
<td>1.48</td>
<td>1.31</td>
<td>1.16</td>
</tr>
<tr>
<td>Education (Secondary school)</td>
<td>1.48</td>
<td>1.46</td>
<td>1.85</td>
<td>1.33</td>
</tr>
<tr>
<td>Education (University, professional)</td>
<td>1.44</td>
<td>2.03</td>
<td>2.27</td>
<td>1.60</td>
</tr>
<tr>
<td>Housekeeping (0-12 hours/week)</td>
<td>-</td>
<td>-</td>
<td>-</td>
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</tr>
<tr>
<td>Housekeeping (13-27 hours/week)</td>
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<td>1.02</td>
<td>1.15</td>
<td>1.39</td>
</tr>
<tr>
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<td>1.24</td>
<td>0.84</td>
<td>1.12</td>
</tr>
<tr>
<td>Household incomes (one)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Household incomes (two or more)</td>
<td>0.82</td>
<td>1.54</td>
<td>2.23</td>
<td>1.22</td>
</tr>
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<td>Household incomes (do not know)</td>
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<td>0.85</td>
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<td>Household income (decile 1 t/m 3)</td>
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<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Household income (decile 4 t/m 7)</td>
<td>1.32</td>
<td>1.11</td>
<td>3.56</td>
<td>1.25</td>
</tr>
<tr>
<td>Household income (decile 8 t/m 10)</td>
<td>0.86</td>
<td>1.23</td>
<td>1.45</td>
<td>0.92</td>
</tr>
<tr>
<td>Household income (missing value)</td>
<td>0.78</td>
<td>1.13</td>
<td>1.71</td>
<td>0.95</td>
</tr>
<tr>
<td>Zero to three health complaints</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Four or more health complaints</td>
<td>1.08</td>
<td>1.12</td>
<td>1.06</td>
<td>1.07</td>
</tr>
<tr>
<td>Health complaints (missing value)</td>
<td>1.16</td>
<td>0.80</td>
<td>0.28</td>
<td>0.92</td>
</tr>
<tr>
<td>Social isolation (0 complaints)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Social isolation (1, more complaints)</td>
<td>1.09</td>
<td>0.82</td>
<td>1.49</td>
<td>0.99</td>
</tr>
<tr>
<td>Social isolation (missing value)</td>
<td>0.96</td>
<td>0.87</td>
<td>0.55</td>
<td>0.99</td>
</tr>
<tr>
<td>Contacts with family, neighbours</td>
<td>1.00</td>
<td>1.07</td>
<td>1.13</td>
<td>0.91</td>
</tr>
<tr>
<td>Frequently visiting pubs</td>
<td>1.13</td>
<td>1.48</td>
<td>1.16</td>
<td>1.39</td>
</tr>
<tr>
<td>Frequent church attendance</td>
<td>0.80</td>
<td>0.53</td>
<td>0.64</td>
<td>0.68</td>
</tr>
<tr>
<td>Frequent internet surfing</td>
<td>1.20</td>
<td>1.62</td>
<td>0.29</td>
<td>1.01</td>
</tr>
<tr>
<td>Painting, music as a hobby</td>
<td>0.61</td>
<td>1.54</td>
<td>0.14</td>
<td>0.71</td>
</tr>
<tr>
<td>Frequently walking, biking</td>
<td>1.37</td>
<td>0.99</td>
<td>0.81</td>
<td>1.26</td>
</tr>
<tr>
<td>Frequently conducting sports</td>
<td>1.19</td>
<td>1.01</td>
<td>1.38</td>
<td>1.00</td>
</tr>
<tr>
<td>Number of persons</td>
<td>3.614</td>
<td>1.184</td>
<td>912</td>
<td>5.710</td>
</tr>
</tbody>
</table>

Levels of significance: * p ≤ .10, ** p ≤ .05, *** p ≤ .01
In table 3 we look at the same set of predictors, but now with job search behaviour as the dependent variable. Again most relationships with the demographic variables are confirmed. In almost all groups, being male, young and highly educated is found to be a significant predictor. The same relationship is found for being involved in part-time education (not for the registered unemployed) and for being a disabled immigrant. Couples with and without children do not seek often, but this relationship now is significant not only for the disabled but also for the non-employed. Being single and having children at home is related to less frequent job search behaviour in the registered employment group.

For the non-employed, housekeeping is related to job seeking, but too many housekeeping hours per week (+ 28 hours) seems to inhibit this. For the registered unemployed, the presence of two or more household incomes again is related to job search behaviour.

Leisure activities predict job search behaviour less strongly, compared with employment aspiration. Pub visits are related to more and church visits related to less job seeking. The relationships again mostly point in the same direction, but are often not significant. The non-employed and disabled, involved in music and painting activities, often do not search for jobs, but frequent walking and biking is related to more job search behaviour for the non-employed. For the disabled, social isolation is a factor related to more job seeking. Some relationships are hard to explain, as is, for instance, the case in the groups with missing values on household incomes and health complaints.

Conclusion

Our first conclusion is that this study confirms that demographic variables, so well-known from the literature, are strongly related to employment aspiration and job search behaviour. This relationship is not found however for being an immigrant with a disability benefit. They often want and search for work. We do not know why. Perhaps immigrants feel that they are wanted by organisations in economically prosperous times and discover their chances. We conclude that policy efforts should concentrate on getting more organisations motivated to search among neglected groups and to attract more women, elderly, low educated and immigrants. Many of them are eager to get a job, but lose their enthusiasm in the long run when they do not find one. We mentioned already the learned helplessness factor as a mechanism. Perhaps this factor explains why more people long for work, compared to actually searching for it. Together these groups form a large reservoir of people ready for the labour market. Many problems of this market could be solved when the 24% of these people wanting a new job are facilitated to have one.
The second conclusion is related to the question: 'What other mechanisms make people eager to want or search for a new job?' For the non-employed, housekeeping is related to the wish for a job, but spending many hours in the household certainly is an inhibiting factor to job search behaviour. Also, people with children at home often do not want or search for a job. Getting these people in the labour market needs the development of, for instance, more care facilities. For the registered unemployed, two or more incomes in the household seem to be a stimulator to want and search for a job. The reason for this is not clear, but may be related to the fact that these people rely on a high income level. This may be a powerful self stimulating mechanism however, which we cannot influence by means of employment policy. Part-time education during the non-employment period seems to be a strong motivator for the non-employed and the disabled, but not for the registered unemployed. Stimulating the development of part-time professional training facilities may therefore be a motivating policy for people long term unemployed, reducing learned helplessness and facilitating the step of entering the labour market.

What can we learn from the leisure activities? We are not able to interpret the different relationships in a consistent way. Pub visits, internet surfing, walking and biking are mostly related to more employment aspiration and job search behaviour and church visits to less. We do not know why and cannot explain this. Perhaps other mechanisms, not studied, contribute to the different relationships. The same may be true for social isolation, which acts as a stimulator but also as an inhibitor. For the disabled, social isolation and not being involved in hobby's (painting, music) is related to searching for a job. This is not the case for the registered unemployed however. It is also unknown whether the registered unemployed lose their jobs because of their poor social behaviour or become isolated once being unemployed.

Secondary analysis of an existing dataset has limitations. A drawback of this study for instance is its restricted scope. Many alternative explanations are not studied. A factor not included for instance, but certainly having an important contribution, is the extent of the period being unemployed. This may be the reason that we cannot find interpretable relationships relating to the leisure activities. More studies directly exploring these relationships are necessary to uncover the social mechanisms and the stimulating and inhibiting factors of people wanting to enter the labour market. Also, in economically less prosperous times this may be a contributing factor to the intentions of The Netherlands and other member states of the European Union to get more people at work in the forthcoming years.

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Address for correspondence Dr. D.J. Klein Hesselink & Dr. P.G. W. Smulders, TNO Work and Employment, P.O. Box 718, 2130 AS Hoofddorp, The Netherlands Tel. +31 23 554 94 59 J.KleinHesselink@arbeid.tno.nl
IMPROVING EMPLOYEE WELL-BEING IN CRITICAL CARE: A UK NHS CASE STUDY

J. HILL-TOUT & N. FRUDE
Cardiff and Vale NHS Trust, Wales, United Kingdom

Introduction

The National Health Service (NHS) delivers comprehensive health care to the UK population and is one of the largest employers in the world. Within the UK the performance of the NHS can have significant impact on perceptions of Government success, depending on whether policies work in terms of providing quality services equitably across the country within reasonable budgets. Striving for quality services has led to an emphasis on evidence based practice and national standards for a range of services and treatments, as well as setting professional training standards and frameworks for continuing professional development. Giving value for money means that services are encouraged to work smarter and make good use of resources in ways that do not undermine quality. This requires service systems to adapt and change all the time to ensure that these standards are achieved.

Whilst the overall focus is centrally driven there is also an understanding that top down approaches and hierarchies are not the answer for a successful health service. It is increasingly recognised that different aspects of health and social services are interdependent and that improvements in one area cannot be achieved without the cooperation and action of others. Staff are encouraged to work as multidisciplinary and multi-agency teams and to develop systemic approaches to complex health issues. This can seem like a daunting if not impossible task where the need for flexibility and change comes up against the wider hierarchical organisation and all its vested interests. In addition the skills of negotiating, team working and networking have not necessarily been included in the training and development of clinical staff.

The stress levels of staff working in the NHS are reported to be higher than any other similar employer (Borrill et al., 1998) and sickness absence costs the service millions of pounds every year. Whilst the service is poor at keeping statistics on sickness it is reasonable to assume that stress will be an important factor in these sickness figures and in Wales sickness absence is at higher levels than England. This is bad news for health services on a variety of fronts. Paying staff who are off work is a significant expense but service delivery has to continue and so there is the additional expense of agency or locum workers. Add to this the cost of replacing and training new staff where the service pressures cause staff to leave and the overall strategy to achieve quality with economy is seriously undermined. Research also suggests that stressed staff
are more likely to make mistakes and to have complaints made against them (Firth-Cozens, 2001) which is bad for service users and for the way in which the NHS is perceived by the general public.

Key features of the NHS are associated with poor outcomes for the well-being of staff. The workload is huge and is increasing alongside demands for improved quality. The expectation and reality of change is a constant in clinical and managerial service provision but also hard to achieve in a large hierarchical organisation where communication and joint working are a constant challenge. In the process of change the roles of individual staff can become unclear, overloaded and conflicting causing problems for some. However these inherently challenging aspects of NHS working are often mitigated by protectors which are also commonly found in the service. Team working is known to be good for staff well-being (Borrill et al., 2000) and team working is often cited by NHS staff as something that helps them to cope with the demands of the job. Supportive interpersonal relationships, a good developmental environment and flexible working arrangements including part time working are also cited as reasons to stay in the NHS and which staff value. If the NHS is to achieve a good value, quality service across the UK therefore, attention will not only need to be paid to moderating the inherent stressors of the work but also enhancing the inherent protectors that make the NHS such an exciting and fulfilling place to work for some staff. The high costs of sickness absence, recruitment and retention, and the high risk of error, complaints and litigation make the well-being of NHS staff an important national concern.

Case study

In 1998 the Critical Care Service at the University Hospital of Wales, Cardiff, the third largest Critical Care Service in the UK, recognised that it had a problem with employee well-being. Sickness rates were above average for the Trust, and recruiting and retaining staff was problematic causing significant problems for senior staff delivering a complex and demanding clinical service. The Critical Care Directorate commissioned a review of staff well-being and in particular the reasons for it. As a result of this it was decided to establish an Organisational Health Service within the Directorate to deliver a range of interventions that it was hoped would improve the situation. Clinical Psychologists were employed to set up a service in line with evidence-based practice which incorporated staff counselling, educational initiatives and interventions to improve communication and decision making across the Directorate. The service was well received and popular with staff but a subsequent period of significant organisational change caused disruption for staff and morale once again seemed to be low. It was decided that in order
to use the Clinical Psychology resource in the most appropriate way then it would be necessary to measure how the organisation was doing on a regular basis and to design interventions that met the changing needs of the staff rather than making a best guess at what might be needed.

Assessment

It was decided that a measure was needed that would give a profile of how individuals were perceiving their work environment and why, that is a quantitative and qualitative sample of staff perceptions of their work environment. It was also decided to measure dimensions that were seen as important by the staff themselves rather than assume that the senior team or the clinical psychologists would know what to look for. A cross section of nursing, medical and administrative staff was therefore brought together on two separate occasions and their views sought on what should be measured. Staff advised that the measure would need to look not only at how they were feeling but also how they thought their team was feeling. Following discussions it was also agreed that a range of dimensions should be assessed from an individual and team perspective, namely perceptions of stress, morale, effectiveness, support and atmosphere. A 48 item questionnaire was devised, the Organisational Health Indicator (OHI) (Frude and Hill-Tout, in preparation) that would enable staff to rate on these dimensions and also describe in their own words why they saw the work environment this way. The questionnaire was anonymous but staff agreed that it would be important to note staff role and staff location and so this was also incorporated.

With the agreement of staff they were asked to complete the OHI on one day a month for a period of 6 months. Anybody on duty that day would be required to fill in a questionnaire and return it to the clinical psychology department. A total of 260 staff work for the Directorate and between 70 and 80 forms were returned each month. These data were analysed on a monthly basis and the results fed back to staff in the form of graphs and a summary of written comments. At the end of the 6 month period a final report was produced which was made available to all staff and the Directorate-Management Team were committed to producing an action plan.

Results

A consistent picture emerged over the six month trial suggesting that something stable was being measured. Some of the recurring themes were as follows:
- Stress levels were high for individuals and increased somewhat over the six months
- Individuals consistently rated their team as a whole as more stressed than they were as individuals
- The Directorate Management Team consistently reported lower stress levels than the rest of the staff
- The most frequently cited stressors were workload, change and communication
- Despite high stress, levels of personal and team morale and effectiveness were rated as high
- Poor interpersonal relationships caused special difficulties for some staff
- One group of senior nurses consistently reported higher stress than any other group
- Staff valued training opportunities and the overall developmental environment
- Flexible working practices available were valued by staff

This information was fed back to the senior team and all the staff, and an action plan developed. There was concern and interest regarding the poor results for the senior nurses. For some time this group had been seen by senior staff as experiencing difficulties and it proved useful to hear about this from their point of view. As senior staff they are pivotal to the success of the Directorate, and have a very important role to play in the quality and effectiveness of the clinical service. As a result the Directorate Team decided to focus their energies on improving their situation.

**Intervention**

The Organisational Health Monitoring exercise had demonstrated to the senior team that they could not necessarily assume that they understood the detail of the problems being experienced by their staff and so the first step of the intervention was to ask the senior nurses in more detail why they felt as they did. This was undertaken by randomly allocating them to four facilitated discussion groups and asking them to think systemically about the problems in the service. In other words, they were asked to describe the dynamic that resulted in problems for them. The group was then brought together and the different perspectives discussed. There was considerable overall agreement that the group of 17 nurses did not function as a team and that subgroups or cliques approached work in different ways. They acknowledged that there was mistrust within the group and that as a result they were not able to consistently withstand outside pressures. As a consequence they felt their role was being eroded and they were being left out of the decision making loop. They agreed
that change was managed badly in the Directorate but because of their poor team functioning their voice was not strong enough to be heard, indeed they were not able to reach agreement on important issues. They also reiterated the view that the workload was huge, increasing and becoming unsustainable, and that they did not have a way of saying no to it.

The senior nurses reached an agreement on these issues, presented them to the Senior Management Team and it proved possible to have a dialogue about solutions that were jointly owned. Various interventions were put in place as follows:

- Resources were allocated to allow the senior nurses to meet bi-monthly to discuss key issues and continue their team development process
- An escalation policy was introduced so that once a certain number of beds were filled then referrers would be informed, tertiary referrals refused and in the final analysis operations cancelled
- Doctors were briefed on the limits of their role in relation to the nursing team
- New systems were put in place for clinical information sharing
- Doctor/nurse business meetings were allocated an impartial chair and terms of reference agreed.

Underpinning these actions was the process of relationship building, not only between members of the nursing team but also between the nurses and senior managers. This enabled each group to understand the pressures and demands being made on the other, and also to appreciate that in a complex health system groups are interdependent and cannot necessarily resolve things on their own.

**Follow up**

The Directorate has now agreed that the OHI should be repeated on a yearly basis in order to update the picture of employee well-being and take appropriate actions. The results show once again that there are recurring themes. The senior team consistently see things differently from other staff and this finding also holds true in Accident and Emergency and Medical Genetics Services where the OHI has been used. Once again staff see their team as being more stressed and having lower morale than they do as individuals, but that in spite of huge workload pressures morale and effectiveness are still seen as good overall. However there are also differences this time. The group of 17 senior nurses no longer stand out as being different and are reporting higher morale, effectiveness and support. Written comments suggest that they feel more supported and that whilst workload is still high the introduction of the escalation policy has meant that they have some control.
over it and that it feels better. Anecdotally it is noticeable that the group is not any longer seen as problematic and is able to take part in and influence decision making within the Directorate. The group themselves report that the development of the team has been an important underpinning for change. Across the Directorate there seem to be positive consequences for the improved functioning of this group of nurses. Junior staff are reporting feeling more supported by their colleagues and managers, and appreciate that their concerns have been listened to and acted upon which is hugely important for collaborative working.

Learning points

When the Critical Care Directorate Management Team recognised that they had a problem with employee well-being they were motivated to do something about it. The nature of the work is demanding and exacting and clinical outcomes will be affected if staff are underperforming. It is an expensive service to deliver at the best of times and anything that increases those costs, for example the use of agency staff, will be unwelcome. However, the Directorate also has within it some key attributes that enabled action to happen. The size of the service means that it has some budget flexibility and was able to identify the resources to investigate the problem and subsequently employ additional staff to support the process of change. At a senior level there is strong and confident leadership and a strategically focused senior team that is prepared to engage with the wider system to achieve change in the Directorate. This attribute was especially important when it was decided to implement the escalation policy as this impacted negatively on clinical colleagues in other specialities. The senior team is also in touch with Trust wide agendas and mindful that the issues being identified in Critical Care are proving problematic across the Trust with consequent cost implications.

When Clinical Psychologists were first invited to work with the Critical Care Service to identify the causes for their poor employee well-being, the Directorate was already in the ‘Preparation’ stage of change (Prochaska et al., 1992) and ready to try out new ways of tackling their problems. However, there were also aspects of the way in which the work was undertaken that contributed to action being taken. Critical Care work is typically very task focused and staff working in the area are inclined to be action orientated. Clinical Psychologists on the other hand are skilled in process and are inclined to be reflectors. An important attribute of the intervention work therefore has been appreciating the need for a common language to describe the systemic problems. The OHI has been especially important in this regard. It has matched the Critical Care ‘discourse’ (Campbell, 2000) by using numbers, graphs and objective means to describe perceptions and subjective
judgements. This has made it easier to talk about the issues within the Directorate and also to convey important messages at a Trust wide level.

It has been and continues to be very important that quality research is being undertaken in practice settings by academic institutions. Research published in peer reviewed journals is important to inform good practice and enables employee well-being services to deliver in line with the evidence base. It has also been crucial for the Clinical Psychologists to retain a position that is metaphorically outside the service so that a meta view is maintained. Without this it is very difficult to support staff with process issues (Schein, 1998). However, there is also a constant balancing act between being an outsider and maintaining good working relationships with colleagues in the service. It helps that Psychology staff are based in the Critical Care area but are employed by the Clinical Psychology and Counselling Directorate and also receive regular external supervision. Finally a good grasp on the clinical realities of the service is also an important attribute of the Clinical Psychology intervention. This has helped us to reach a shared understanding of where interventions to lessen stressors are feasible and where it will be better to focus on improving aspects of the workplace that will serve as protectors.

**Future developments**

Continued commitment to maintaining these changes is the current challenge. There is agreement that the OHI will be repeated yearly and the results disseminated, an important maintenance intervention as it encourages a re-examination of the issues and measures changes in staff well-being in a way that is easy to understand. It is also important for maintenance that the work is acknowledged outside the Directorate and for senior staff to incorporate it into their performance measures. This is already happening informally in discussions with the General Manager and Trust Chief Executive, and it is helpful that the national policies are now expecting services to focus on well-being and demonstrate changes.

The work on employee well-being that is being undertaken in the Critical Care Directorate is beginning to be seen as useful in other areas of the Trust. Approaches have been made to the Clinical Psychology Service for reviews of employee well-being in Accident and Emergency and Genito Urinary Medicine, and these are currently underway. At a Trust wide level funding has been identified for a staff counselling service and it is planned to use some of this resource to establish limited educational and organisational initiatives. Experience locally suggests that when posts are advertised there is no shortage of good quality applicants. These developments, and the continued underpinning of high quality research in the area suggest some cause for optimism in relation to employee well-being in the NHS.
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SOCIAL SUPPORT AMONG MANAGERS: WHY DON’T THEY HELP EACH OTHER?

C. HOEDEMAKERS¹, R. PEPERMANS¹ & G. NOTELAERS²

¹ Vrije Universiteit Brussel (VUB), Brussels, Belgium
² Catholic University of Leuven (KUL), Leuven, Belgium

Introduction

In this paper we will explore the quality of work of managers in general and focus on the coping strategies they use to deal with their work related problems. The theoretical background used in this paper follows the Michigan stress model (Christis, 1998; Van Veldhoven, 1996) stating that there has to be a fit in the perception of the demands and supplies of the environment on the one hand, and the abilities and values of the individual on the other hand. The way in which managers make the trade-off between the supplies provided and their abilities, seems to influence the way in which they experience strains such as tension or well-being. When coping is involved we follow the theory of Lazarus and Folkman (Christis, 1998; Mertens, 2000; Tellegen, 1986) who consider coping as a transactional process and distinguish problem-solving strategies from emotion-regulation strategies. Hence, coping is not considered from a psycho-analytical point of view, nor treated as a personality trait. According to this theoretical background, managers’ quality of working life focuses on using their perceptions of various stressors, strains and coping strategies.

Method

This article explores the stressors and the strains managers encounter and looks at managers’ coping strategies. But, since the interactional theory is followed, more attention will be given to the managerial perception of these stressors, strains and coping strategies. These perceptions are derived on the one hand from a literature study and on the other hand from a content analysis of 17 group interviews with managers¹.

The group interviews were conducted along the structure of a self-administrated questionnaire used to measure the experience and evaluation of work in the organisation (VBBA; Van Veldhoven, 1996). This questionnaire, in line with the interactional theory, not only questions the work-related factors (stressors), but also the person-related factors in terms of well-being

¹ More information on these group interviews is found in Hoedemakers, C. (2003).
and tensions (strains). The questionnaire consists of 148 items, measuring 27 scales, of which 19 are work-related and 8 person-related. A minutes secretary was present during the group interviews which made it possible to make an inventory of the given comments on each scale of the VBBA. Using this overview it is possible to see how often a scale was discussed during the group interviews, which comments were given on the respective scales and how often comments were given. Table 1 shows some background characteristics of the qualitative data collected for this research.

Table 1: Personal features of the managers

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Number of managers</td>
<td>221</td>
</tr>
<tr>
<td>Average age</td>
<td>39 82 yrs</td>
</tr>
<tr>
<td>Average function seniority</td>
<td>8 62 yrs</td>
</tr>
<tr>
<td>Proportion of men</td>
<td>78 7%</td>
</tr>
<tr>
<td>Modal educational level</td>
<td>Higher education (non university)</td>
</tr>
<tr>
<td>Average number of employees/group</td>
<td>24 69</td>
</tr>
</tbody>
</table>

Before discussing the results of the content analysis, a short overview is given on managerial stressors, strains and coping strategies derived from the literature study.

Managerial quality of working life

Theoretical background

Managers indicate that they learn ‘on the job’, rather than from theoretical books (Manfred, 1997; Koot, 2000). Although managers are sceptical towards this so called theoretical debate, it urges them to fulfill some roles if only to show that they master the debate (Koot, 2000). What managers ought to do and how they should do it is grounded in sociological changes, such as the need for employer flexibility in order to stay competitive in relation to competitors, the quality of working life, work/life balance, the presumption that ‘each customer is a king’, the continuously changing environment, etc. (Hell, 1999; Doppler, 1996; Stoker, 2000). These changes alter the demands put on managers. They have to manage self guiding teams, they have to leave behind the hierarchical way of thinking, they have to manage organisational changes; but they also have to coach employees (Hell, 1999; Doppler, 1996; Stoker, 2000). This means that managers should respond – at the same time – to different expectations and demands, which are sometimes difficult to
combine. In a way this lines up with the debate on managerial role-problems, i.e. role ambiguity and role conflicts.

Task-related problems, among which are the well-known role problems, urge managers to find a balance between the expectations of the organisation, their employees and their own expectations. This balancing – we presume – must give them headaches, literally. Literature on the managers' quality of work, however, gives little information on these strains. Although managers encounter high psychological demands such as the amount of work, they get many regulating possibilities (independence and participation) in return. This makes the managerial job a challenging job (Bernin, 2001). That managers worry, that they have high recuperation needs, that they feel insecure and uncertain is still "not spoken of" (Koot, 2000).

Research that focuses more on the perceptions of managers gives us an insight into the uncertainties managers encounter. Research by Hesse (1996) indicates feelings of depression among managers. Instead of optimism, they feel disappointment, they doubt and are thinking of being sacked. This is especially the case in larger organisations: in middle management, pressure gets higher. Other research indicates that managers, and especially younger managers, have a high risk of recuperation needs: 14% of the <25 year old managers find themselves in the high risk category of recuperation needs, compared to the 3% of <25 year old managers in the average (Notelaers & Hoedemakers, 2002). Lindorf (2001) found that 75% of Australian managers believe that colleagues, superiors or employees do not care about them as a person. This is perhaps already an indication on how social relationships at work are perceived by managers.

Results from the content analysis

In this part of the article we focus on the task-related problems, since these problems seem to play an important role in the managerial quality of working life. Analysing the group interviews with managers, it became clear that managers are confronted with role problems, such as problems with the task (role conflict) and unclear functions (role ambiguity). They want to meet the expectations of their employees and, at the same time, they need to meet the demands of the organisation. Other factors seem to play an important role as well i.e. problems with changes at work, the absence of information about their personal functional level and the communication of organisational matters. All these factors together may be conceived as task-related problems, rather than role problems.

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1 The way in which high risk groups are defined is treated in Notelaers, G., Hoedemakers (2002).
As far as the strains are concerned, worrying, need of recuperation and emotional reactions at work are discussed more profoundly. The latter (emotional reactions at work) can also be seen as an emotion-regulating coping strategy.

Table 2 shows the questionnaire items that correspond to task related problems from the literature and the considered strains; the scales by which these items were represented in the VBBA, the number of times these scales were discussed and the frequency of no comments on the related scale.

<table>
<thead>
<tr>
<th>Literature</th>
<th>VBBA: factors and scales</th>
<th>Discussed</th>
<th>No Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Task related problems</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clarity in function requirements</td>
<td>Inclarity of the function</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>Handle changes</td>
<td>Changes at work</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>Role conflicts</td>
<td>Problems with the task</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>Internal cooperation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feedback</td>
<td>Information</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>Communication</td>
<td>Communication</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td><strong>Tension</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Need of recuperation</td>
<td>Need of recuperation</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>Being in doubt</td>
<td>Worrying</td>
<td>13</td>
<td>4</td>
</tr>
<tr>
<td>Emotional reactions at work</td>
<td></td>
<td>7</td>
<td>10</td>
</tr>
</tbody>
</table>

The scale problems with the task mentioned during the group interviews can be captured as 'doing things a manager should not have to do'. This includes administrative tasks, technical support, etc. But managers also speak of an overload of meetings. Consequently managers do not find the time to coach their employees and lose track in overviewing their department at the same time. Both tasks – meeting the coaching expectations of employees, and meeting the organisational demands – are considered as the main tasks of a manager. Although these findings give the idea that managers have a lot of task-problems, some perspective is required.

According to the group interviews, the unclear function is related to the lack of (clearly) defined priorities or continuously changing priorities, unclear mapping of responsibilities, non-existing vision and mission and a lack of strategies to realise the vision (if there is a vision). Because of the continuously changing priorities, with an unclear communication of the purpose of these changes, managers experience problems with the changes at work. Another problem managers encounter with the changes at work are the deadlines, which are perceived as non-realistic. Managers ask themselves how long they will be able to positively manage these changes: they speak of continuous changes, the unclear consequences of the changes, the perception
that they are no longer able to anticipate these changes (which make changes less digestable). The – unintended – consequences of these rapid organisational changes are a reduction of competences in the team, less motivated employees, and a loss of overview. A consequence for the manager is that he or she feels less capable of meeting the demands and expectations put upon them from the organisation, the employees and from themselves.

Managers feel that they do not get enough feedback on how they function in the organisation, or as was formulated during one group interview: “We fulfill our job at OUR own insight. When we don’t do it the right way, we expect to hear it from the higher management”. Communication on organisational matters is an important source of information for managers in doing their job. During group interviews little was said on this theme, although the overall feeling on the organisational communication was positive. Additional information is wanted on strategic issues, i.e. the vision and mission of the organisation.

We can presume that these task-related problems give managers ‘a headache’. Although managers seem to find it difficult to speak of their personal well-being – few comments were given on these VBBA-scales – we gathered some information on this matter. The managers confirmed, during the group interviews, their recuperation needs. They speak of: not being able to unload mentally, not being able to leave work behind. This means that managers not only recognise their recuperation needs, but that they encounter tension in general. Besides the need of recuperation, managers worry a lot. They worry about the shortage of means, they worry about the future, about their employees and they worry about the job that does not finish and never gets finished. Although few managers see this worrying as a token of their job involvement, their organisational commitment and their sense of responsibility; not all managers agree with this point of view.

In almost half of the group interviews, the scale ‘emotional reactions’ at work was a point of discussion. The main reaction was that they feel frustrated because they cannot finish their work (in a way they feel satisfied). These frustrations will sooner or later come to the surface, either at work or at home. In both cases managers feel guilty. These findings on task-related problems and the strains bring us to our second question: how do they cope?

How managers cope

Theoretical background

According to Lazarus & Folkman (1984), coping can be defined as: “constantly changing cognitive and behavioural efforts to manage specific external or internal demands that are appraised as taxing or exceeding the
resources of the person” (Koot, 2000, p. 172). They distinguish problem solving strategies versus emotion regulation strategies. Koot suggested the following problem-solving strategies used by managers: hiring organisational advisors, expressing one’s own power in a verbal way, making alternative analyses of the situation. On the other hand, managers also use emotion-regulation strategies, such as cynicism and looking for emotional support from the secretary. Although looking for social support is often mentioned as a helpful coping strategy (Karasek, 1979; Mertens, 2000; Weusten, 2000), managers are not often using this strategy, but female managers seem to rely more often on social support than male managers.

Results from the content analysis

Lazarus and Folkman distinguish problem solving and emotion regulating strategies. In terms of our VBBA-scales, ‘emotional reactions at work’ are considered to represent the emotion-regulating strategy. Since this scale is already discussed in the first part, we now will focus on the problem-solving strategies.

As a first observation, it seems that managers develop problem-solving strategies rather to deal with their stressors than with their strains. Work is more important than personal well-being, so to say: managers try to meet the demands of the organisation, they work more hours than they should, they take their work home, they keep on working even during sickleave periods. The work that is taken home is the more technical, administrative work. However, earlier we saw that managers see a second demand they have to meet, i.e. the expectations of the employees. And although managers find these expectations very important, they do not seem to find the time to deal with them. This brings us to the second conclusion: within the problem-solving strategies, managers develop strategies to meet the organisational demands, rather than to meet the expectations of the employees.

Our analyses show that problem-solving strategies (taking work home, etc.) are limited to the individual level, although almost all managers use these strategies very much, with little impact of the peer group. Still, we noticed an increasing need for social support from employees and higher management as well as from the peer group. The problems managers encounter can be seen as collective problems: not only do all managers encounter the same (task-related) problems, they also affect (almost immediately) the demands put on his/her colleagues. This means that managers, rather than dealing with the task-related problems at an individual level, could seek support from their colleagues, their superiors or their employees. During the group interviews it was stated that if managers would act as a team, some of these problems may end up in a solution more easily. The group interviews themselves gave them a remarkable insight: as managers they are not only competitors, but also a
group of collaborators with common demands and needs. This resulted in their formulating a need to seek more social support.

However, in order to make use of the aforementioned support as a coping strategy, it must be available. Therefore, the question arises: what are the (work-related) social resources managers can use in order to develop specific coping strategies as a group?

Relating to the relationships with colleagues, few remarks were made during the group interviews. Perhaps evaluating the relationship with colleagues is not that easy in front of these colleagues. The overall opinion is that the relationships are positive, but ‘only’ in terms of: no conflicts, no annoying circumstances, etc. Talking of social relationships in terms of social support is less acknowledged. Because of the amount of work and the competitive pressure among managers, and despite the overload of meetings, managers do not seem to find the time for mutual adjustment and collective work on vision and mission. This kind of support and cooperation is nevertheless heavily emphasized as needed and wanted by these managers.

Moreover, although the relationship with the superior(s) is generally evaluated in a positive way, some concerns were noted during the group interviews. We already mentioned them when discussing the task-related problems: managers expect clear priorities, more participation in important decisions, but they also feel a lack of respect and support in difficult situations.

Although the relationship with the employees is not considered in the VBBA-questionnaire, this item was discussed in almost all group interviews (16/17). The main issue was already spoken of in the theme: problems with the task. Managers feel that they do not meet the expectations of their employees: they do not have (and take!) the time to coach their employees, to be close to their employees. Intranet has taken over the oral and direct communication and all of this makes managers feel incapable of motivating their employees in doing what they have to do. Additionally it was mentioned that managers not only try to motivate their employees, they themselves receive a lot of motivation from their employees.

As a final conclusion it can be said that although managers are somewhat in search of social support, and although social relationships seem to be acceptable, managers are not intending to ask for social support. Perhaps managers feel lonely at the top.

Conclusion and suggestions for further research

When managers’ quality of work is discussed in the literature (Hesse, 1996; Manfred, 1997; Koot, 2000; Stoker, 2000), emphasis is mostly put on the high regulating possibilities as a compensation for the high amount of work
managers' encounter. Still, a managerial job is considered as a challenge. In this paper, our attention goes to a less known stressor in managerial jobs, i.e. the task-related problems such as role problems, but also the problems with work changes, the lack of (functional) information/feedback and the need for organisational communication. These task-related problems are presented as collective problems. It does not only refer to all managers encountering them, but they also have a collective effect on the managers: they make it more difficult for them to do the job they are expected to do. Although these task-related problems (among other stressors) do raise the need for recuperation among managers and make them worry even when they are at home, managers tend to apply coping strategies which only partially solve the problem and which certainly do not take their personal well-being into account since they take work home. Managers realise however that other solutions are available or at least are worth exploring: the (work-related) social resources to develop specific coping strategies. Although the relationships with colleagues, superiors and even employees are evaluated as positive, managers fail to ask for their help.

Therefore, stress-coping interventions could attempt to enforce teamwork within the group of managers and help them to develop collective coping strategies, focusing on their common actions as a team towards higher management, in search of clarity in vision, mission and strategies (and not only on extracting social support from the peer group). These suggestions are in line with suggestions from others (Stoker, 2000; Broadbridge, 2002; Lindorff, 2001). However, more research is needed on the impact of task-related problems and on managerial work quality. More research is also needed on the impact of these task-related problems and on the strains managers encounter, as well as on the coping strategies managers develop and the way in which (work-related) social resources can be helpful.

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Address for correspondence. caroline.hoedemakers@vub.ac.be
EMOTIONS AND OTHER PREDICTORS OF ORGANISATIONAL COMMITMENT; A MULTI-METHOD STUDY ON HOME CARE WORKERS

J. J. HOLDEN-PETERS, S. O. BRENNER & A. GRIFFITHS
Institute of Work, Health & Organisations, University of Nottingham, United Kingdom

Introduction

Organisational Commitment (OC) has been defined by Mowday, Steers, and Porter (1979) as the relative strength of an individual’s identification with, and involvement in, a particular organisation. It has been found to predict voluntary turnover (e.g., Dunham et al., 1994, Mathieu & Zajac, 1990) and is recognised to be one of the most important workplace attitudes. It is conceptually distinct from, but correlated with, job satisfaction (Brooke et al., 1988, Mathieu & Farr 1991). Many researchers have tried to identify the predictors of OC, so that these might be harnessed in occupational settings. The current literature on the antecedents of organisational commitment seems to point towards the existence of two distinct categories of predictors: organisational level factors (i.e., the characteristics of the workplace) and individual level factors (i.e., the personality and values of the worker).

Organisational level antecedents

Early research on the causes of OC concentrated on organisational level factors, demonstrating convincing evidence for the association of a number of work characteristics with OC (Mathieu & Zajac, 1990). The causal direction of this relationship (from work characteristics to OC) is supported by a small number of more recent longitudinal studies (e.g., Arnold & Davey, 1999).

However, what is known about the exact mechanisms behind this effect? How exactly do work characteristics impact on an attitude such as organisational commitment? A number of cognitive mediators have been proposed: for example, perceived fairness/justice, perceived support and trust (Moideenkutty et al., 2001; Pillai et al., 1999; Spiser & Valerie, 2001; Robbins et al., 2001). But are there other, more affective, pathways at work? Traditionally, social psychologists have argued that attitudes are composed of affective and belief components. Indeed organisational commitment has often been divided into affective and non-affective commitment components (e.g., Allen & Meyer, 1990). More recently, attitude researchers have argued that it
useful to conceptualise the affective and non-affective components of attitudes as separate constructs, defining attitudes as evaluative judgments (Weiss, 2002). According to this approach, the affective component would be ‘pushed back along the chain’ and treated as a cause rather than a component of the evaluation (Olson & Zanna, 1993).

**Emotions as mediators**

Weiss and Cropanzano’s (1996) Affective Events Theory (AET) posits that affective episodes at work can shape work attitudes such as OC. The theory suggests that stable work environment features act by predisposing the more or less frequent occurrence of particular types of real-time events in the workplace, and that these discrete events are the proximal causes of momentary positive or negative moods and emotions. In turn, the cumulative experience of momentary positive and negative feelings while working influences job attitudes such as OC. Thus, work environment features may impact upon work attitudes directly through cognitive judgement processes (as has traditionally been assumed) but also indirectly, through their impact on events and momentary affect.

To date, relatively few studies have explicitly examined the role of affect as a mediator in the relationship between work features and work attitudes (see George & Jones 1996 for a notable exception), and where they have, they have tended to rely on retrospective measures of typical affect, such as mood at work over the past month. Although such straightforwardly obtained measures are convenient and appealing to researchers, moods and emotions are variable and transient, and can be hard to recall. Kahneman (1999) argues that because of the inaccuracy of retrospective measures, it is best to assess current affect repeatedly in real time (i.e., as it happens) and then aggregate the reports into a measure of actual affect experienced. Correlations in studies where retrospective reports have been compared with aggregated multiple real-time reports during the same period suggest that the two measures typically share less than 50% of their variance (e.g., Barrett, 1997; Cutler et al., 1996; Diener et al., 1995). Retrospective reports of affect are thought to be prone to a number of sources of bias (see e.g., Brief et al., 1995; Mitchell et al., 1997, Barrett, 1997; Fredrickson, 2000). The AET has so far only been tested empirically with real-time measures of affect by a few researchers (see, for example, the March 2002 edition of the journal *Motivation and Emotion*).

**Individual level antecedents**

Individual level factors as predictors of OC have received much less attention than organisational level factors. Only recently have researchers begun to pay more attention to the possibility that some people might be, through their
disposition, more prone to feel committed than others. Those researchers who have examined this link have found positive affectivity (PA) (the disposition to experience positive affect) to be related to increased OC, but no effect of its counterpart negative affectivity (NA) (Cropanzano et al., 1993).

Among other possible individual differences, values have been singled out as particularly important (Meyer & Allen, 1997). Values are defined as “principles or standards of what is valuable or important in life” (Oxford English Dictionary, 1996). Values are held across a number of life domains, including work. In a rare study, Putti et al. (1989) found that work-related values were associated with OC, and that this connection was stronger for intrinsic rather than extrinsic values. But this avenue of research is still relatively unexplored (Arnold et al., 1998). One intrinsic value, of particular interest in the present study due to the nature of our sample, is a construct which measures the extent to which people see their job as a 'calling' (Wrzesniewski et al., 1997). People who see their work as a ‘calling’ tend to focus on the enjoyment of fulfilling, socially useful work, rather than on career advancement or financial rewards.

The present study

The purpose of the present study was to attempt to integrate the abovementioned theoretical and methodological issues by proposing and testing a model of the process by which OC is brought about in home care workers. In particular, the possible mediating effect of positive and negative emotional experiences was investigated. Emotions were measured in real time over a two-week period, at the end of which participants provided measures of both organisational-level (work characteristics) and individual-level factors (personality and values) and measures of Organisational Commitment and Intention to Quit, an associated outcome.

Model

The model tested in this study is shown in Figure 1. It is based on the AET in that it suggests that organisational level factors predispose the occurrence of emotional events (with either a positive or negative valence), and that these in turn will predict OC, after controlling for individual differences in positive affectivity, that is, the dispositional tendency to experience positive emotions in general. One work-related value, as an individual-level antecedent of OC, and Intention to Quit as a possible outcome of OC, as predicted by the literature, were also measured. The following section reviews previous studies and proposes hypotheses for relations between the variables included in the model below.
Hypotheses

It is widely acknowledged that perceived work characteristics can impact directly on organisational commitment, and a number of cognitive processes have been proposed to explain this pathway (see above). The present study does not explicitly measure these processes but it does assume their existence, and predicts that positive work characteristics will be positively associated with organisational commitment (hypothesis 1). Based on Weiss & Cropanzano' (1996) AET, which states that work environments predispose the more or less likely occurrence of positive or negative emotional events, it is predicted that positive work characteristics will be positively associated with positive emotions (hypothesis 2) and negatively associated with negative emotions (hypothesis 3). This theory also states that the cumulative experience of these emotions impacts on work attitudes, such as OC. It is predicted that positive emotions will be positive associated with OC (hypothesis 4) and negative emotions will be negatively associated with OC (hypothesis 5).

Since the workers in our sample were all home care social workers, a job traditionally considered to be more rewarding intrinsically than extrinsically, we tentatively predicted that ‘seeing one’s job as a calling’ would be positively associated with OC (hypothesis 6). Previous studies have found positive affectivity (PA) but not negative affectivity (NA) to be associated with OC (Cropanzano et al., 1993), and therefore we predict that PA will be positively associated with OC (hypothesis 7). NA was not measured in the present study. Based on the AET (Weiss & Cropanzano, 1996), which states that affective dispositions predict affective reactions at work, we predict that PA will be positively associated with positive affective reactions (hypothesis 8).

Lastly, several researchers have constructed causal models that posit OC as a cause of intention to quit (see Mathieu & Zajac, 1990). Therefore, we predict that OC will be negatively associated with intention to quit (hypothesis 9).
Method

Sample

This study was carried out among public sector home care workers for the elderly in one English county. This population represents an occupation of increasing importance in our ageing population, and one which in England is facing growing problems of recruitment and retention. A total of 218 workers were invited to take part in the study, of which 83 completed both phases of the study (diary and questionnaire). Of these 83 cases, six were eliminated from the sample because they failed to complete the diary within the required parameters. Thus, the final sample size was 77. The mean age of the sample was 45 (SD = 9.37) and mean tenure seven years (SD = 7.22). An overwhelming majority of the sample was female (93%). The clear majority of the sample were ‘shop-floor’ level Care Assistants (77%) and the remainder were Senior Care Assistants (20%) and Managers (3%).

Procedure

The diaries and questionnaires were distributed from within the organisation by senior members of staff. Participants were given packs containing (i) a diary (consisting of sheets to be filled in each time they experienced an emotion at work over a two-week period), (ii) a questionnaire (to be completed at the end of the 2-week period), (iii) full instructions, (iv) example diary sheets, and (v) a postage pre-paid envelope to return the completed diaries and questionnaires to the research team, as well as a promise of a small cash reward for completing the study.

Measures

Diary

Positive and Negative Emotions: The positive emotion items from Fisher’s (2002) Job Emotions Scale (JES) – liking for someone/something, happy, enthusiastic, pleased, proud, optimistic, enjoying something and content – were combined with a number of items which were elicited in pilot work – rewarded, engaged, appreciated, satisfied, interested, grateful and amused – to form an aggregated measure of positive emotions, with a reliability of .93. The negative emotion measure was also Fisher’s (2002) JES aggregated measure, with the items depressed, frustrated, angry, disgusted, unhappy, disappointed, embarrassed and worried, and a reliability of .80. In response to a positive event, participants were asked to rate on a sheet in their diaries the extent to which they had experienced each positive emotion on a scale of 1 (not at all) to 5 (a great deal), and likewise for the negative emotions in response to a negative event. The completing of
a diary sheet was therefore intended to be contingent on the experience of an emotional event at work, for an accurate test of the AET (see Grandey et al., 2002). Measures of both the frequency (number of emotional events over the two-week period) and intensity (ratings averaged over the two-week period) of emotional reactions for each participant were collected. However, despite instructions, a number of participants completed one diary sheet per day rather than solely in response to an emotional event, and so the validity of the frequency data is somewhat questionable. Therefore, the model was tested with intensity data only. Since there was such a range of items within each scale, it was decided that a more meaningful measure of emotion intensity would be the average of the three highest emotion items for each entry. This average score was in turn itself averaged across the number of diary entries, to provide each participant with an aggregated global score of positive emotion intensity and an aggregated global score of negative emotion intensity for the period under study.

Questionnaire

Organisational factors: A bespoke measure of work characteristics was used, based on a selection of items from a number of established measures and previous pilot work. Respondents were asked to rate 33 statements about their workplace on a scale of 1 (strongly disagree) to 5 (strongly agree). Factor analysis revealed a range of factors which were labelled ‘challenging and interesting work’, ‘quality of supervision’, ‘quality of relationships with colleagues’, ‘quality of relationships with clients’, ‘adequacy of training’ and ‘pay and progression opportunities’. In all cases, a high score on a variable or scale signified ‘positive’ or ‘desirable’ features. Although these subscales had acceptable reliability coefficients, for the purpose of this paper and to avoid overcomplicating the model, an overall global measure of work characteristics was used, encompassing all 33 items. The reliability of this scale was .92.

Individual factors: Positive Affectivity (PA) was measured using the positive items of Watson et al. (1988) PANAS scale. Respondents were asked to report how they generally felt, on average, in their life as a whole. The reliability of this scale was .93. A two-item measure of the extent to which participants saw their job as a calling was designed by asking them to rate two statements on a scale of 1 (strongly disagree) to 7 (strongly disagree): I see my work as a calling and My work is one of the most important things in my life (the item in Wrzesniewski et al. (1997) ‘calling’ scale with the highest factor loading). This two-item scale had a reliability of .60.

Outcome variables: Organisational Commitment was measured using Cook & Wall’s (1980) British Organisational Commitment Scale (BOCS), minus one particular item which was deemed irrelevant for workers in a public sector
organisation. Cook & Wall's BOCS is the most commonly used measure of OC in the UK (Peccei & Guest, 1993). The reliability of this measure was .72. Intention to Quit was measured using a 2-item measure, based on items from Seashore et al. (1982) scale. This measure had a reliability of .75.

Results and discussion

Path Analysis was implemented using LISREL 8.3 (Joreskog & Sorbom, 2000) to test the model shown in Figure 1. Based on the recommendations of others (Joreskog, 1993) we present several different indices of the adequacy of model fit: (i) the chi-square statistic (widely used), (ii) the Adjusted Goodness of Fit Index (AGFI) (for which values vary between 0 and 1 and, by convention, values of .90 and above are considered to indicate good model fit (Hoyle, 1995)), and (iii) and the root mean square of approximation (RMSEA) (which is a measure of discrepancy between the predicted and observed covariance matrices per degree of freedom where values of .05 or below indicate a close fit, and values of up to .08 are considered reasonable errors of approximation).

Figure 2 presents the results obtained from the test of the model. Looking at the fit indices, it can be concluded that the model fits the data reasonably well ($\chi^2 = 10.98$ (9), AGFI = 0.89, RMSEA = 0.043), although the AGFI is fractionally below the recommended value for good fit. However, it is worth noting that when the measure for Negative Emotions, for which all predicted associations were non-significant, was removed from the analysis, the model fit was much better ($\chi^2 = 3.9$ (5), AGFI = 0.93, RMSEA = 0.0).
Examination of Figure 2 shows that the pathway between Work Characteristics and OC was positive and significant (R = .33, p < 0.01), as predicted by hypothesis 1. Care Assistants who perceived their work environment to be positive (in terms of having challenging/interesting work, good relationships with their supervisor, colleagues and clients, and adequate training, pay and progression opportunities) reported higher OC, as might be expected. As described above, there a number of cognitive pathways that would explain this relationship.

Although perceived work characteristics were positively associated with the intensity of positive emotional experiences before controlling for positive affectivity (with a zero-order correlation of R = .30, p < 0.01), the relationship was not quite significant in the model (R = .19, ns), contrary to our prediction (hypothesis 2). It is difficult to conclude anything about this failure to find a significant relationship. A (rare) previous test of the AET, with a larger, heterogeneous sample, did find this relationship to be significant (Fisher, 2002). Nonetheless, it seems that a home care worker's predisposition to be cheerful is a more important predictor (than the environment they work in) of the intensity with which they experience, or at least with which they report, positive emotions at work.

Work characteristics were negatively associated with Negative Emotions, but only very weakly (R = -.06, ns). This does not support hypothesis 3, but this lack of a relationship is in fact consistent with a point made by Herzberg et al. (1959), later ratified by Weiss & Cropanzano (1996) and Pekrun & Frese (1992), that the absence of events that tend to produce good feelings does not itself cause bad feelings while the absence of events that cause bad feelings does not produce good feelings, adhering to the argument that they are not simply opposite extremes on one continuum (see e.g., Watson & Tellegen, 1985). This is further supported by zero-order correlations that show that the positive and negative emotion measures in this study were positively and not negatively correlated, albeit not significantly (R = .20, ns). It seems that the particular work characteristics measured in this study were those related to positive but not negative affect, although the results are still somewhat puzzling since a wide range of work environment features were measured.

Hypotheses 4 and 5 stated that positive and negative emotions would have respectively positive and negative associations with OC. Positive emotions were indeed positively and significantly associated with OC (R = .21, p < 0.05), but negative emotions only showed a weak non-significant effect (R = -.04, ns). This is in fact consistent with the findings of Fisher (2002), and it once again suggests the existence of a two-factor model of affect, with positive and negative affect having both different predictors and outcomes. With regards to practice, it suggests that organisations that want to engender OC should prioritise promoting positive emotion inducing events rather than solely reducing the types of events which lead to unpleasant feelings. This is not to claim that negative aspects of work environments do not predict OC at all; perhaps they do so via more direct
cognitive rather than affective pathways. In addition, it could be that the most common causes of negative emotions experienced at work by home care workers have little to do with their organisation, but rather with the nature of the work itself, and as such, since the organisation is not perceived to be at the root of their experience, the attitudes toward that organisation are not affected.

Can conclusions about causality be made from the relationship between positive emotion intensity and OC? Does the experience of positive emotions at work shape work attitudes, as hypothesized, or is it simply that those workers who are more committed to their organisation report more positive emotions? It is hard to make steadfast assertions about the direction of causality in our data, but we have a number of reasons to suggest that the experience of positive emotions influence OC, rather than vice versa. An alternative model was also tested, in which the arrows from positive emotions, negative emotions and 'calling' (i.e., the only other variable that, without previous empirical support to back the supposition, was tentatively suggested to causally influence OC) to OC were inverted. All indices of fit for this alternative model showed a poorer fit than our main model ($\chi^2 = 16.04$ (11), AGFI = 0.87, RMSEA = 0.067). The difference in the $\chi^2$ values is not quite statistically significant, but the RMSEA index of fit reveals that our main model shows a close fit to the data (since it is < 0.05) whereas the alternative model shows only a reasonable fit. There are also a couple of other reasons to favour our interpretation of causality. Firstly, the temporal order of measurement supports our view (emotions were measured first in time), although admittedly the time differences are relatively small (i.e., over a 2-week period). Secondly, if it were the case that those workers with higher OC would have been more predisposed to report positive emotions we might have expected them to report a greater number of positive emotions. However, this was not the case; rather it was the intensity of the experience of these positive emotions that was associated with OC. Lastly, we believe that the individual level factors measured here (PA and 'calling') at least partly control for individual predispositions to complete the diary entries a particular way, which is what is implied by a hypothesis that states that those with higher OC would routinely report more positive emotions. Whilst none of these points taken alone provide conclusive proof of our inferred direction of causality, taken together they do seem to support the hypothesised direction, and merit further investigation.

Figure 2 shows that 'calling' was positively and significantly associated with OC, as predicted in hypothesis 6. The interpretation of this finding is somewhat hampered by the low reliability of the 2-item scale that was used to measure it, but it does suggest that it is an important individual factor to consider as an antecedent of OC, particularly in the context of the type of occupation that was sampled. It might be interesting in future research to look at this relationship again using Wrzesniewski et al. (1997) full scale of the construct, and to measure the other 'work-related values' constructs they put forward.
Hypotheses 7 and 8 predicted that PA would be positively associated with OC and with positive emotions. Whilst the second of these predictions, based on the AET, was supported by the data ($R = .29$, $p < 0.05$), the first was not ($R = .02$, ns). In fact, the zero-order correlation between PA and OC was highly significant ($R = .31$, $p < 0.01$), and the association only became non-significant after controlling for the effect of positive emotions, so that the experience of these emotions seems to mediate the relationship between how dispositionally cheerful a person is and how committed they are.

Lastly, hypothesis 9 predicted that OC would be positively and significantly associated with intention to quit, and this prediction was supported by the data ($R = -.54$, $p < 0.01$), consistent with the considerable literature documenting this link.

**Conclusion and limitations**

The model developed suggests that both organisational and individual level factors need to be considered when considering the antecedents of OC. Perhaps more interestingly, it shows that the experience of positive emotions (but not negative emotions) at work influences work attitudes such as OC, even after controlling for dispositional PA. What is not yet clear is whether the experience of these emotions is really mainly determined by the work environment, as posited in the AET, or whether they are better explained by individual differences in PA. Whilst it is true that the associations among questionnaire measures were stronger than those between diary and questionnaire measures, the possibility of inflated correlations as a result of common method variance should not be underestimated, and this gives extra credence to the relationships observed between diary data and questionnaire data. Perhaps a larger sample size would have helped interpret these findings more clearly. However, there is no escaping the fact that, for all their methodological advantages, diaries have one considerable practical flaw, namely the low rate of compliance, particularly in samples of full-time workers with physically demanding jobs. The AET has never before been tested on such a large homogenous sample, so this study represents an important step forward, with suggestive findings that indicate that similar work should be done in other occupational groups.

**References**


DEFINING A CASE OF WORK-RELATED STRESS
VIA STAKEHOLDER ANALYSIS: DATA HARVESTING TECHNIQUES

J. HOUDMONT, T. COX & A. GRIFFITHS
Institute of Work, Health & Organisations, University of Nottingham, United Kingdom

Introduction

This paper describes research that formed part of a project that sought to explore the notion of 'case definition' as it relates to work-related stress. In epidemiological terms, a 'case' is defined as 'a person in the population identified as having the condition under investigation' (Last, 2000). The focus of interest is thus on the circumstances and individual characteristics that, in sum, constitute a 'case' of work-related stress.

Throughout Western Europe, there is evidence that work-related stress is one of the major challenges to the health of working people. Against this backdrop there is a need to monitor the incidence and prevalence of work-related stress in the general population. The British Government has set targets for the reduction of work-related illness to be achieved by 2010 (Department of the Environment, Transport and the Regions, 2000; Health & Safety Commission, 2000); these commit all stakeholder parties to working together to improve occupational health in a number of key areas. Among these, tackling work-related stress is identified as a priority programme with two allied objectives. First, to reduce the incidence of work-related stress by 20%, and second, to reduce the number of working days lost from work-related stress by 30%.

Challenges and benefits in delineating a case definition

At present it is difficult to assess whether Britain is on course to achieve its 2010 targets for work-related stress (Health & Safety Executive, 2002; Health & Safety Commission, 2002). Methodological inconsistencies in case definitions variously applied hinder the comparison of data from different sources and make it difficult to draw secure conclusions to the 'true' extent of the problem. The lack of consensus in regard to case definition stems in large part from the intangible and 'subjective' nature of the phenomenon; work-related stress is not made manifest in terms of a consistent set of observable signs and symptoms (Cox, 1978, 1993; Cox et al., 2000). Furthermore, existing approaches to case definition, in terms of the sum of circumstances and individual characteristics that constitute a case, vary in terms of theoretical underpinnings and methodological rigour as each stakeholder group has developed a set of criteria deemed suitable for purpose in a particular domain.
The British Government's Health & Safety Executive (HSE) decided that progress towards achieving the 2010 targets would be facilitated by the development of a consensus case definition in relation to work-related stress. Given this, an associated assessment schedule or measurement procedure for use in future epidemiological studies might be developed. The authors were commissioned by the HSE to investigate the feasibility of this plan. If achievable, together they would afford two related benefits of specific interest to Healthy & Safety Executive:

(i) Improved interpretation of work-related stress statistics: In light of methodological shortcomings within nationally representative surveys of work-related stress, accurate assessments of the 'true' level of the phenomenon are currently not possible.

(ii) Facilitation of the development of subsequent targets: Equipped with accurate assessments of the true level of work-related stress at a national level, governmental decision-makers will be better informed to set targets.

As detailed above, the British Government's objectives for the reduction of work-related stress are based on the premise that all stakeholders will work collaboratively towards meeting the targets set for 2010. The HSE is therefore keen to explore the feasibility of developing a model of a case of work-related stress and assessment schedule that are acceptable to all stakeholder groups. The value placed on consensus is reflected in the research strategy outlined below. As far as the authors are aware there have been few, if any, attempts to reconcile the various perspectives. The research described in this paper comprised one part of an attempt at such reconciliation.

Stakeholders

Each perspective on case definition for work-related stress is sustained within the particular stakeholder domain by the custom and practice. Differences in definitions are determined, in part, by the use to which case assessments are put. The development of a case definition for work-related stress that is capable of translation into a measurement procedure is likely to have implications beyond epidemiology. It could, for example, affect practice in relation to organisational risk management, employee liability insurance and the application of both common and statutory law.

Research methodology

An initial objective of the research was to identify representatives from the various stakeholder groups and to explore the case definitions applied by each in
relation to work-related stress. Secondly, the work involved an assessment of the feasibility of reconciling those various perspectives in a constructive manner towards the development of a ‘consensus’ case definition. This paper describes the first of these activities.

The research strategy applied to identify the various stakeholders and case definitions involved four stages.

**Stage 1: Harvesting and overview of available evidence**

The first stage of the research focused on collecting and providing an initial overview of the available literature on caseness and work-related stress to provide the framework and key questions for the first exploratory round of interviews with experts from the various stakeholder groups. The overview covered:

(i) National surveys of work-related stress with attention paid to the methods and measures used, the definitions (and theories) of stress that were implicit in the research, and the prevalence and incidence estimates for work-related stress.

(ii) Models and approaches to caseness in relation to work-related stress considering the purpose and use of the associated assessment schedules and measurement procedures, the different methodologies employed together with the advantages and disadvantages of each.

**Stage 2: Exploratory interviews**

Following an initial overview of the available literature, and prior to its more detailed and critical review, a series of semi-structured interviews was conducted with experts from the stakeholder groups. The use of semi-structured interviews in epidemiological and occupational health research has been advocated by Ballard et al. (2004).

The first round of interviews was conducted, face to face where possible, with experts drawn from the stakeholder groups. Interviews were essentially exploratory and served five specific purposes:

- to establish likely publications and information sources on the issue of case definition as related to work-related stress
- to establish markers of status and value to be used in the literature review
- to establish the key issues that would drive the interrogation of the literature
- to guide construction of a semi-structured interview schedule for application in the second interview round
- to identify new or confirm existing stakeholders

Among other things, interviewees were asked to identify sources of information relevant to the research. Where experts identified peer-reviewed publications, they were included in the review. Other contributions were assessed for quality and relevance by the research team prior to inclusion (see below).
The identification of possible groups of stakeholders was one of the subjects discussed with the HSE in the initial set-up meetings. Possible ‘experts’ in relation to the question of caseness and work-related stress were identified for each group. These experts were approached and invited to participate in the exploratory interviews. Where this was not possible, alternatives expected were approached. Once a particular group was identified as a potential stakeholder, a web-based search was conducted to provide information on that group and on its ‘experts’ and to establish the presence or otherwise of a relevant literature.

During the exploratory interviews, the question of stakeholders was discussed with the interviewees and they were asked to confirm (or otherwise) the existing list of stakeholders and given the opportunity to add any other groups or suggest any other experts for interview. By the completion of the exploratory interviews, the research team was confident that, it had identified and included all key players.

The stakeholder groups included occupational health psychologists, occupational physicians, clinical psychologists and psychiatrists, epidemiologists, personal injury lawyers, insurers, trade unions, employer representative groups and occupational health and safety policy makers.

**Stage 3: Critical review of the available evidence**

The literature search was restricted to English language publications. This was justified on the basis that the majority of the relevant world-class journals are published in English. This justification is in line with that applied in earlier reviews of work-related stress research commissioned by the HSE (e.g., Daniels et al., 2004).

All papers and other publications for review were selected independently by two researchers on the basis of their methodological adequacy (see below) and their relevance. There was a high degree of agreement on the selection of papers and other publications. Where there was disagreement on the value added by a specific publication, a third researcher adjudicated. Papers relating to specific and unusual work groups, settings, patterns or events were excluded.

The literature review focused on three different types of publication:

- **Area 1:** Peer-reviewed articles in international journals
- **Area 2:** Organisational reports and contract research reports
- **Area 3:** ‘Grey’ materials

**Area 1: Peer-reviewed articles in international journals**

The first phase of the review focused on peer-reviewed articles in international journals. Peer-review assures quality control in the publication process. The emphasis in the selection of material here was largely on relevance. Potential papers for review were identified using a number of search engines and electronic databases. Searches included databases relevant to psychology, management, business and insurance, epidemiology, public health, occupational health, medicine and law.
Area 2: Organisational reports and contract research reports

The second phase of the literature review focused on reports produced by commercial and research organisations often commissioned by agencies such as the Health & Safety Executive or by professional bodies. Much of this literature is not peer-reviewed and quality control is not as well established. To provide some extra quality assurance, the review was restricted to publications produced by organisations with a reputation for quality output. This judgement was arrived at by consensus among the research team on a publication by publication basis.

Area 3: ‘Grey’ material

The third phase focused on other material, the quality of which could not be easily established. Such ‘grey’ material included that which was not produced by reputable academic, professional or industry sources and/or was not necessarily specific in its focus on work-related stress or caseness. Material in this category was largely derived from web searches undertaken using general engines including Google and Yahoo. A judgement on the value of each was arrived at by consensus among the research team on a publication by publication basis.

Commentary

Several reviews of the literature on work-related stress have focused exclusively on studies (papers) that were judged methodologically sound and to be without obvious flaws. Given the complexities of the world of work and the difficulties of conducting research in such an environment, the imposition of methodological perfection as a selection criterion results in a small and possibly unrepresentative population of studies (papers) to review. Furthermore, the logic sustaining such an exclusive strategy is itself flawed.

The review of evidence drawn from empirical studies that individually are not methodologically perfect can have value if there is no common failing and when taken together there are strong common findings. This principle is well established in other areas of science and was accepted here.

Stage 4: Follow-up interviews

A second round of interviews was conducted with two specific objectives:

• to undertake expert validation of the data derived from initial interviews and interrogation of the literature;

• to explore in detail particular issues arising from initial interviews and the literature.

Interviews were again conducted, face to face, where possible, with a wide range of stakeholders, many of whom were recommended as suitable for
interview during the first wave of interviews. A semi-structured interview schedule was again applied, the design of which was informed by the outcomes of first exploratory interviews.

In addition to individual interviews with stakeholder experts, seminars were convened to explore in the issues from the perspective of particular stakeholder groups. Stakeholder experts were invited to these seminars as representatives of their particular groups. The seminars served to provide a cross-section of opinion for each stakeholder perspective.

**Discussion and conclusion**

The research methodology described above was applied in order to draw conclusions on four inter-related questions:

- Which stakeholder groups possess a vested interest in the modelling and measurement of a case of work-related stress?

- What theoretical modes of work-related stress are applied by each stakeholder group?

- Within the various perspectives on the modelling of work-related stress, what form do existing case measurement and assessment measures take?

- What form of outcomes do existing conceptualisations make reference to?

To the extent that the research methodology was satisfactory for elucidating answers to the aforementioned questions, the data harvesting techniques proved effective.

The focus of this paper is on data harvesting methodology. However, it would be remiss not to make brief reference to outcomes in terms of the stakeholder perspectives on case definition identified in the research. While knowledge is not, and cannot be complete, sufficient is known about the relationship between the work environment and psychological health to support action to protect psychological health through consideration of the design and management of work (Cox, 1993; Cox et al., 2000). This being so, it might be expected that research to establish, apply and evaluate case definitions among stakeholder groups would be well developed. The research showed this not to be the case, except in the insurance and legal professions where an increase in personal injury litigation for work-related psychiatric injury has focused minds. The case definition question has also been posed, and various levels of consensus achieved, within industrial injury compensation schemes (EUROGIP, 2004).

The research described formed part of a larger project that, in addition to what is described here, sought to assess the feasibility of integrating the various perspectives on case definition into a consensus model and the translation of that
consensus model into an assessment schedule suitable for the identification and enumeration of cases in a manner consistent with existing epidemiological approaches. The research methodology described provided a satisfactory foundation for investigation of the subsequent questions and is therefore recommended as an approach in stakeholder analysis research exercises.

References


Address for correspondence: jonathan.houdmont@nottingham.ac.uk
INTERVENING AT DIFFERENT LEVELS IN THE ORGANISATION: ROLES FOR THE OCCUPATIONAL HEALTH PSYCHOLOGIST

T. JENNINGS
Northumbria Healthcare NHS Trust, United Kingdom

Introduction and background

Healthcare is a stressful business and it is well documented that NHS workers experience comparatively high levels of stress compared to other organisations (e.g., Payne and Firth-Cozens, 1987, Borrill et al., 1998, Williams et al., 1998). In UK legislation on health and safety, the emphasis is on primary risk reduction targeted at the organisation. However, a combination of organisational and individually focused interventions is likely to be the most effective way of preventing stress and providing support to those who are already experiencing stress.

Northumbria Health Care NHS Trust is one of the largest trusts geographically in the UK. It is a relatively new trust having been formed in 1998 from the merger of several acute and community trusts. The trust employs over 6,000 staff and provides healthcare to over 1/2 million people in the North East of England. There has been much change resulting from the merger including the closure of old and development of new hospitals. Nearly five years ago, a clinical psychology post was established in occupational health, the first of its kind for the trust and unique to the region.

The remit of the Occupational Health Psychologist was to provide support to staff as well as devising preventative approaches to reducing stress within the organisation. This paper outlines a range of activities provided by the psychologist at different levels of the organisation. The importance of developing a comprehensive strategy for stress prevention and management within the organisation is discussed. Methods involved in developing preventative approaches to stress and the challenges involved in implementing these strategically are highlighted.

A model of stress intervention

Public health notions of prevention have been applied to stress management interventions (Cox, 1993, Quick, 1999). Thus, primary interventions are targeted at sources of stress in the organisation with the aim of removing or reducing the risk of stress at work. Secondary interventions are aimed at modifying ways in which the individual responds to stress. Tertiary interventions aim to treat and
support employees with stress related problems. A model of stress intervention based on primary, secondary and tertiary interventions is the main framework for different levels of service provision by the Occupational Health Psychologist for Northumbria Healthcare Trust (NHCT). The nature of healthcare work is stressful; employees have to deal with illness and death on a regular basis and there is a culture of continuing change and increasing patient expectations operating within a target driven world. Staff shortages lead to high demands and workload. It is important to equip staff with coping strategies for dealing with these job stressors and to achieve a balance between primary, secondary and tertiary interventions. From the outset, it was intended that the Occupational Health Psychologist should provide a range of interventions targeting both the individual and the organisation. Some examples of service provision at all three levels within NHCT are outlined in table 1.

**Development of a psychological wellbeing policy: A primary stress intervention**

When the occupational health psychology post was first established, it was seen as an important step to for the post-holder to lead on the development of a policy dedicated to stress prevention in the trust. The policy title used the term *psychological wellbeing* rather than *stress* as this was thought to be a more positive way of capturing the aim of improving mental health generally. A risk management framework was used in keeping with Health and Safety guidelines for maintaining health at work. The policy stated the trusts commitment to developing preventative approaches to reducing stress as well as to provide support to those experiencing stress problems at work. However, it was also emphasised that staff had personal responsibility for maintaining their own health at an individual level. Initially, a steering group was set up consisting of the Occupational Health Psychologist, Occupational Health Manager, Director of Human Resources, Medical Director, Training Manager and Staff Side Representative. The policy was drawn up and sent out to senior trust managers for comment. Following ratification by the trust board, some policy awareness events were organised to promote the new policy across the trust. The policy advocated the need to raise awareness in managers about stress and how to assess risk in their own working environments. Training events were subsequently organised for a group of managers across the trust to meet these objectives.

Recently the policy has been reviewed and updated in the light of the new Health and Safety Executive (HSE) standards for managers on sources of stress at work. These standards equate to good management practice and provide a yardstick against which employers can assess their performance in tackling a range of key stressors. The standards include the following:
- **Demands** – ability to cope with demands of the job
- **Control** – a say in how the job is done
- **Support** – adequate information and support from colleagues and superiors
- **Relationships** – not subject to unacceptable behaviour such as bullying
- **Role** – understanding role and responsibility
- **Change** – consultation, communication and support about organisational change.

**Table 1: Examples of activities of the occupational health psychologist at primary, secondary and tertiary levels**

<table>
<thead>
<tr>
<th>Primary Stress Interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development of stress prevention and management strategy</td>
</tr>
<tr>
<td>Development of a psychological wellbeing policy</td>
</tr>
<tr>
<td>Training for managers in psychosocial risk assessment</td>
</tr>
<tr>
<td>Contribution to organisational groups such as.</td>
</tr>
<tr>
<td>Improving Working Lives (IWL)</td>
</tr>
<tr>
<td>Health and Safety Steering Group</td>
</tr>
<tr>
<td>Clinical Governance</td>
</tr>
<tr>
<td>Continuing Professional Development Board</td>
</tr>
<tr>
<td>Staffing and Staff Management Group (Human Resources)</td>
</tr>
<tr>
<td>Contribution to trust policies and strategies such as.</td>
</tr>
<tr>
<td>Occupational Health</td>
</tr>
<tr>
<td>Bullying and Harassment</td>
</tr>
<tr>
<td>Bereavement</td>
</tr>
<tr>
<td>Breaking Bad News</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Secondary Stress Interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development of a ‘hotspots’ strategy; a mechanism for dealing with areas of high organisational stress.</td>
</tr>
<tr>
<td>Conducting stress audits – assessing sources of stress and developing action plans</td>
</tr>
<tr>
<td>Provision of mediation services to resolve conflict between team members.</td>
</tr>
<tr>
<td>Consultation and coaching for managers on problems relating to their teams.</td>
</tr>
<tr>
<td>Training for staff on coping strategies for managing stress, dealing with trauma, bereavement, etc.</td>
</tr>
<tr>
<td>Life-skills training such as assertiveness skills, conflict resolution, communication skills, etc.</td>
</tr>
<tr>
<td>Individual and group support following trauma</td>
</tr>
<tr>
<td>Development of a “listener” service to support those being bullied or harassed.</td>
</tr>
<tr>
<td>Development of informational support; self-help literature, leaflets, tapes, etc.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tertiary Stress Interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provision of a psychological assessment and therapy service for staff</td>
</tr>
</tbody>
</table>
Challenges involved in putting policy into practice

In the authors' experience, there are two differing views from managers on stress risk assessment. One view is that they do not have the necessary expertise in this area and therefore there is a sense of helplessness about incorporating this into everyday practice. Secondly, that the standards themselves amount to good management practice and there is no need to conduct risk assessment in any formal sense. It is of course crucial to incorporate risk assessment into everyday management practice. For this to happen, it needs to be pragmatic and user-friendly, not perceived as something only to be conducted by an expert. Cox (1993) has stated that a risk management approach to work stress need not be "rocket science" and that the goal is to achieve a "good enough" system for compliance with health and safety legislation.

Another challenge is to get the whole concept of stress prevention embedded into the culture of an organisation. It is easy to produce a policy but something quite different to put ideas and promises into action. Within NHCT, there are training events and courses directed at certain groups of managers, and the Occupational Health Psychologist delivers training regarding the prevention and management of stress at work to some of these. However, training still needs to be directed at all levels of managers, including senior members of the organisation, in order to get a top-down as well as bottom-up commitment to the process. This raises the issue of mandatory training to ensure compliance by all levels of management.

It is vital to introduce a strategic approach to stress prevention within an organisation. Within NHCT there are a number of policies, strategies and initiatives which impact on wellbeing of staff, many of which are associated with national targets and standards such as Improving Working Lives. Proposals for primary, secondary, and tertiary stress interventions need to be clearly linked with other organisational strategies and activities directed at staff wellbeing. It is important to convince the organisation of the benefits to be gained by adopting a strategy with clear plans for action and implementation.

Development of a hotspots strategy: A primary and secondary stress intervention

Inevitably within large organisations such as NHS trusts, there will be some wards, teams, or departments where stress is particularly high. In providing a support service to individuals, a picture may form of pockets of stress within certain areas of the organisation (hotspots).

Hotspots need to be identified and addressed in a timely way in order to reduce further risk of stress in team members and possible increases in sickness absence. Once members of a team start to go on sick leave, it creates further problems in terms of reduced resources and increased demands. A vicious circle
ensues whereby the remaining team members become fatigued and more susceptible to stress and sickness absence. There are other effects to be considered such as increased risk to patients due to errors as well as recruitment problems because the ward or department starts to get a “bad reputation”. It is important to have a mechanism within organisations for identification and feedback of hotspots, however, this needs to be balanced against the need to maintain confidentiality of individuals presenting for help. Evidence of hotspots may arise from different sources within the organisation. Indicators include:

- High levels of referrals to occupational health
- High sickness absence figures
- Increase in incidence of complaint/errors/critical incidents/accident
- High rates of grievances and disciplinaries
- Recruitment and retention difficulties
- Increased incidence of bullying and harassment claims
- Information from staff exit interviews
- Annual staff survey information

The challenge is to co-ordinate information from different sources within the organisation in order to form an accurate picture of hotspots. Within NHCT, the Occupational Health Psychologist tends to rely on information from contacts to the occupational health department, however not all staff utilise occupational health or may simply choose to leave the organisation. The trust is currently working towards establishing a more accurate picture regarding sickness absence figures.

Organisations may be reluctant to adopt a strategy for dealing with hotspots because of a variety of reasons including:

- No clear strategic approach to organisational stress management
- Managers are overburdened with other priorities such as targets relating to patients
- Concerns about what might be seen as interfering with another managers patch
- Making the situation worse
- Cost implications
- Concerns about lack of resources to deal effectively with the problems
- Problems in teams are chronic and entrenched making resolution difficult

Primary, secondary and tertiary feedback loop

Information from occupational health referral patterns (tertiary prevention) helps to construct a picture of a hotspot. The formation of a hotspot feedback mechanism is an example of both a primary and secondary stress intervention. The timely reaction to developing stress problems as evidenced by organisational
indicators means that the potential for further stress within the team or department is prevented or reduced (primary prevention). Feedback can also enable organisational learning to take place to prevent future problems (primary prevention). For those already experiencing stress related problems in the team, a planned intervention may help to prevent further stress occurring (secondary prevention).

The Occupational Health Psychologist met with the chief executive of NHCT to discuss a mechanism for feeding back hotspots. It is important that senior members of the organisation take ownership of problems and that the resolution of hotspots does not simply lie with the Occupational Health Psychologist. A problem in one particular area may be a symptom of a problem elsewhere in the system that needs addressing. Figure 1 illustrates the feedback loop between different levels of stress intervention.

**Discussion**

The Occupational Health Psychologist can work at different levels of an organisation helping to shape the development of a variety of approaches to stress prevention and management. It is crucial that a strategic approach is embedded into the organisations business plan and becomes part of the culture of everyday management practice. However, it can seem easier to tackle behavioural change...
at an individual level because organisations can be more reluctant to take ownership of problems that may involve systems level changes. Developing a stress prevention policy or strategy raises awareness and highlights the organisations intention or commitment to take action. Any action plan should advocate mandatory training for managers in risk assessment according to HSE management standards. However, the organisation needs to understand how a comprehensive stress prevention strategy links to all other standards, targets and policies linked to wellbeing of staff. It is important to make explicit the benefits of adopting such a strategy in order to convince the organisation of the need to take action. In describing the adoption of innovation in healthcare, Plsek (2003) refers to the challenge associated with putting a concept into action and embedding it into the day-to-day routine of the organisation. He refers to the state of readiness that an organisation is in to take on new ideas and that the decision to make changes hinges on individuals within the system making an assessment of the risks and benefits associated with change.

National targets against which NHS trusts are now assessed include staff wellbeing issues such as positive staff survey results and achievement of Improving Working Lives targets which include the causes of stress. Trusts have to demonstrate that they are improving the working lives of staff and that they have in place systems to reduce stress. The drive towards attainment of government targets on staff wellbeing alongside stress risk management obligations will hopefully lead to the development of stress prevention strategies as one of the core competencies of healthcare organisations. The Occupational Health Psychologist is in a unique position to enable the organisation to achieve these goals.

References


ZEST FOR WORK? ASSESSMENT OF ENThusiasm AND SATISFACTION WITH THE PRESENT WORK SITUATION

M. JOSEPHSON1, L. ALFREDSSON2 & E. VINGÅRD1
1 Section for Personal Injury Prevention, Karolinska Institutet, Stockholm, Sweden
2 Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden

Introduction

The overall intention of the project from which this study emanates was sustainable health for the employees in the public sector. An intermediate aim was to start a learning process in the workgroups on how to identify and solve work problems, and how to implement this in their ordinary work. The process involved measurements, feedback to the workgroup and at some workplaces regular meetings in the workgroup, a learning process, and development of action plans for solving problems. The initial position was that the employees must be involved in the development of an appropriate improvement and that improvements should be context specific (Mikkelsen, Øystein Saksvik et al., 2000).

A recurrent challenge is how to use results from questionnaire studies, describing work conditions, for improvement of the psychosocial work factors (Dallner, Elo et al., 2000; Landsbergis and Theorell 2000; Mikkelsen, Øystein Saksvik et al., 2000). In the workplace it is difficult to transform general factors into concrete issues. Psychosocial constructs can mean different things, and are more or less important, in different work settings and for different individuals (Fairbrother and Warn, 2003). The content validity of the concepts is often unclear (Bartunek and Seo, 2002).

The measurement of zest for work is closely related to participatory interventions involving actions to improve the work situation. The term “zest for work” comes from the expression “zest for life” and can roughly be interpreted as the degree of enthusiasm and satisfaction with the present work situation. The measurement assessing zest for work consisted of three components: the employees made their own list of factors that were important for their feeling of zest for work; they rated if the factors were positive or negative in the current work situation; if it was possible to have any influence over the listed factors.

This paper describes the association between zest for work, job strain and self-reported health for working. The aim was to investigate whether assessing zest for work can be a valuable approach in occupational health work.
**Method**

Our study was conducted within the framework of the prospective Swedish cohort study of sustainable working health in the public sector (The HAKuL-study). The main occupational groups were registered nurses, assistant nurses, home-based personnel care workers, employees at daycare centers and teachers at the compulsory school.

8022 employees were asked to take part in the measurement of zest for work and to answer a self-administered questionnaire, including questions concerning psychosocial job factors and health. The questionnaire was answered by 6722 employees (84%), and 5994 (75%) participated in the measurement of zest for work. Included in this study were those who responded both to the questionnaire and to the measurement of zest for work, 5539 subjects in all, constituting a response rate of 69%.

**Zest for work**

The measurement of zest for work was made during work hours. A researcher gathered a maximum of 30 employees on each occasion and put to them the question: “What influences your zest for work?” The participants made an individual list of not more than seven factors they thought about. Furthermore, the participants rated on an attitude scale whether these factors in their current job situation were positive or negative, and on another scale if they had any influence over them. The two scales could assume values between 0-100; the higher the value, the more positive. The subjects kept the lists of factors that were important for their zest for work, but they were asked to use them in further discussions concerning their work conditions. The ratings on the scales were individually marked and collected in by the researcher. A mean score of less than 50 on the attitude scale was interpreted as a negative attitude; a score of 50 or more was interpreted as a positive attitude. The same limits were used for the influence scale: a score of less than 50 was interpreted as low influence; 50 or more was regarded as high influence. The limits were based on previous practice. Negative attitude and low influence were defined as “low zest for work” and positive attitude and high influence as “high zest for work”.

**Job strain**

A job situation that is reported as psychologically demanding, and where at the same time there is low influence over decisions, has been described as a job strain situation. A job strain situation has been pointed out as an important factor for stress and negative health outcomes (Karasek and Theorell, 1990).

Job demands and influence over work were measured using an eleven-item Swedish version of Karasek & Theorell’s job content questionnaire (Theorell,
Tsutsumi et al., 1998). The index of psychological demands consisted of five items: excessive work; conflicting demands; not enough time to do work; fast work and hard work. The score variation was 5-20; the higher the score, the higher the demands. The index of decision latitude consisted of six items. There were four items about intellectual discretion: learning new things; high levels of skills; high levels of creativity; repetitive work, and two items concerning authority over decisions: influence over what to do at work and how to perform the work. The possible score variation was 6-24; the lower the score, the less the decision latitude. The indices were divided, based on the distribution among the respondents. The score was divided into tertiles; a score of 15 for high psychological demands and 16 for low decision latitude were the cut-off points. Reporting high demands and low decision latitude was categorized as job strain.

Self-reported health

In the estimation of sustainable health for working, both items from the ‘short form 36’ (SF-36) health survey and items from the Work Ability Index (WAI) were used (Ilmarinen and Tuomi, 1992; Sullivan, Karlsson et al., 1995). From SF-36 the general health scale (5 items) was used. The scores for the scale were calculated according to the proposed scoring system and ranged from 0 (lowest wellbeing) to 100 (highest wellbeing). From the WAI index one single question was used: “From the standpoint of your health, do you believe that you will be able to do your current job two years from now?”. The response alternatives were “Unlikely”, “Not certain” and “Relatively certain”. Based on the baseline measurement, poor health for working was classified as belonging to the quartile with the lowest score at the SF-36 general health scale (score ≤ 64), and reporting “unlikely” or “not certain” on the WAI question.

Results

Low zest for work was reported by 17%, while 40% reported high zest for work. No significant differences were observed between women and men, or between different age groups.

A job strain situation was reported by 10% of the participants. Among those with job strain, 29% perceived low zest for work, compared with 15% of those not reporting a job strain situation, a significant difference of 14% (95% CI 10-18%).

The prevalence of poor health for working was 11%. There was a clear association between zest for work and health for working. Table 1 shows the prevalence rate ratio for a poor health working for those with low zest for work and for those with either low or high zest for work, compared to those
with a high zest for work. It was 2.7 times more common with a poor health for working when having a low zest for work compared with having a high zest for work. The prevalence of poor health for working was 20% among those who reported low zest for work and 7% among those with a high zest for work.

Table 1: The association between zest for work and self-reported poor health for working.

<table>
<thead>
<tr>
<th>Investigated factor (exposure)</th>
<th>Reference group</th>
<th>Outcome</th>
<th>Number of exposed outcomes</th>
<th>Prevalence rate ratio (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low zest for work</td>
<td>High zest for work</td>
<td>Poor health for working</td>
<td>186</td>
<td>2.7 (2.3-3.3)</td>
</tr>
<tr>
<td>Either low or high zest for work</td>
<td>High zest for work</td>
<td>Poor health for working</td>
<td>273</td>
<td>1.7 (1.3-2.0)</td>
</tr>
</tbody>
</table>

Discussion

Low zest for work was associated with job strain and self-reported poor health for working. The results supported the notion that employee involvement in identifying areas for improvements in work conditions is relevant in occupational health work.

The specific part measuring zest for work, the list made by the participants to bring up factors that are important for zest for work, has a qualitative approach. Qualitative research is likely to deal with each work setting as unique, assuming that each organization is unique, with its own meanings regarding the factors that have value for the work conditions (Bartunek and Seo, 2002). The participants were asked to sort the dimensions they listed under different headings. The proposed headings were: work content, knowledge, equipment, social climate, work organization, the management, physical work environment, feedback, workload or other factors. The heading most frequently used was "other factors". This underlines the fact that it is a challenge to transform more general models and concepts to fit a specific workplace.

Rating attitudes to the current work situation is an approach closely related to the global concept of job satisfaction. Job satisfaction is defined as the extent to which the employees like or dislike their jobs, and can be seen as a global feeling and attitude about the job (Spector, 1997). In studies, general job satisfaction is often related to different health outcomes. Factors that explain job satisfaction are concerned both with work conditions but also with individual factors such as experience and capacity. In general, having a feeling of influence over job features or over the choice of work increases the chance of job satisfaction. When using the concept in intervention work, a key factor
is to identify the factors in the job that give satisfaction (Spector, 1997). The concept “zest for work” can be interpreted as broader than job satisfaction, involving satisfaction but also enthusiasm and stronger feelings regarding the work situation.

Several scales and instruments have been developed as research instruments but also as instruments used in feedback to the employees and in organizational development (Dallner, Elo et al., 2000; Landsbergis and Theorell, 2000). Even if other instruments cover the central factors at the workplace, the issues can be distant for the specific workplace. A qualitative process instrument will not replace scales that cover important dimensions of the psychosocial work conditions and identify health hazards. However, for intervention efforts specific questions designed for the workplace, and qualitative measurements, such as a free list of factors that are important with regard to the zest for work, can be useful (Landsbergis and Theorell, 2000; Bartunek and Seo 2002).

Combining different types of measurements increases the possibility of identifying factors for improvement. The free listing makes it possible for the workgroups to find out if there is an agreement concerning factors that are of greater or lesser importance for the zest for work. Zest for work is a general feeling, but is related to different factors for different individuals and workplaces.

**Conclusion**

Zest for work was related to psychological job strain and self reported health for working. The results support the notion that measurements of zest for work can be used in occupational health work.

**References**


Address for correspondence: Malin Josephson, Karolinska Institutet, Section for Personal Injury Prevention, Box12718, SE-112 94 Stockholm, Sweden. E-mail Malin.Josephson@cns.ki.se
OCCUPATION-SPECIFIC STRESSORS AND COPING AMONG GREEK POLICE OFFICERS

M. KARANIKA 1 & S. A. ANTONIOU 2

1 Institute of Work, Health & Organisations, University of Nottingham, UK
2 University of Athens, Greece

Background

Police officers’ work is among the top five most hazardous and stressful occupations (Dantzer, 1987; Evans et al., 1993; Alkus and Padesky, 1983). Many of their duties feature on top of the list of stressor severity, and include responsibilities for citizens as well as colleagues. Work stressors can have a significant effect on police officers’ job satisfaction, performance outcomes, physical health and mental wellbeing (Evans and Coman, 1988). An especially high potential for causing stress is inherent in police officers’ repeated experiences with violence and aggression, which have been shown to have adverse effects on police officers’ physical and mental health, and work performance (Anshel, Robertson and Caputi, 1997). The nature and impact of acute stressors in police officers have been studied extensively (e.g., Anshel, Robertson and Caputi, 1997). However, the nature of everyday stressors for this occupational group has not been examined in as much detail as application of knowledge and stress management may require. A number of stress taxonomies have been developed over the last decade, aiming to classify potential occupational stressors that workers deal with in their every day work. But is such a generalisation of stress measures useful for understanding the variety of occupations, and is it appropriate for translating knowledge for the purposes of stress management and stress intervention? The importance and experience of stressors in different occupations depends on the roles, demands and opportunities that exist in each context. Office work is diametrically different to manual work, and common sense says that the nature and intensity of stressors in each will differ by job context. Assumptions of the nature of stress that are erroneous may produce or lead to inappropriate efforts and interventions to address work stress in the police. Therefore, it is important to look at the detailed picture of occupation-specific stressors in the police if we are to adequately understand their nature and effects.

Coping plays an important role in the relationships between stressors and health (Zeidner and Endler, 1996) has been conceptualised in a number of different ways. The most common definition describes the behaviours, emotions and cognitions that individuals use in order to deal with a taxing situation. There are many conceptual problems in coping research, related to coping resources, coping strategies and coping style, which is more prominent across different
situations, and how coping should be measured (e.g., Edwards, 1988; Dewe, Cox and Ferguson, 1993). The behaviours and resources that people use to cope with taxing situations act as mediators of the effects of stress on health. Specifically, coping behaviour is a meaningful explanatory variable in the relationship between stress and health. It has been shown that the effects of coping in this relationship are over and above the direct effects of stress on health or of coping on health. Effectiveness of coping behaviours can be measured in a number of ways. One is to look at the frequency with which a specific behaviour is being used. This is what the chosen measure of coping does. Another is to examine whether it actually reduces the deleterious effects of stress on health. This is the mediation approach used at the present study. Since the stressors assessed in the present study are of a frequent, daily nature, it was deemed appropriate for coping responses to be measured by a scale that asks respondents to indicate how often they use a specific coping behaviour.

The present study takes a bottom-up approach in examining sources of daily stressors in police officers. It does is not presume the existence of specific stressors, but rather seeks to derive stress categories from police officers' descriptions of their tasks, experiences and expressed concerns. Research reviews and concerns expressed by the Hellenic Police Head Office, revealed that there is a lack of research on stress among the police force in Greece that is comparable to European research, and also that there is a high level of complaints by police officers concerning feelings of stress and increased numbers in sickness absence. The study emerged from both a research front (literature reviews) and practical concerns and occupational health issues as expressed by the Hellenic Police Head Offices. The study endeavoured to (a) perform a bottom-up assessment of the stressors (daily stressors) experienced by Greek police officers, (b) to identify the coping strategies that are more effective for dealing with each of the stressors in this specific occupational group and (c) to map their mediating effects in the stress-health relationship.

Method

The analyses reported in this paper are based on a sub-sample of 394 male police officers in the four lower ranks of the Hellenic Police Office. A measure of occupational stressors at the police was developed. A large pool of items was chosen on the basis of the stress literature, researchers' consultation and familiarisation with police officers' work and environment, and interviews conducted with police officers from all police ranks. The items were piloted on a small sample representative of the jobs in the police force through semi-structured interviews. The final questionnaire consisted of a list of 62 items for reduction down to meaningful categories. Respondents are asked to assess their stressfulness on a 6-point Likert scale (from 1 = 'does not cause stress at all', to 6 = 'causes extreme stress'). The final measure
has a compacted 10-subscale structure with good internal reliability (see next section). The Revised Ways of Coping Checklist (WCCL-R; Vitaliano, Russo, Carr, Maiuro & Becker, 1985) was used to assess the coping strategies that police officers use as a response to their occupational stressors. The 42-items are grouped into five categories: ‘problem-focused coping’, ‘seeking social support’, ‘blaming one’s self’, ‘wishful thinking’ and ‘avoidance’. The Job Satisfaction scale (Warr, Cook and Wall, 1979) was used to assess respondents’ job satisfaction. The measure has two subscales that cover Extrinsic Job Satisfaction and Intrinsic Job Satisfaction. Physical ill-health symptoms were assessed by the relevant subscale from the Occupational Stress Indicator (Cooper, Sloan, and Williams, 1988). Perceived health was assessed by a single item asking respondents to indicate whether they felt healthy at present. The literature suggests a number of demographic variables that may affect the measured outcomes. Control variables used in this study were: age, rank and tenure.

Results

The majority (73.7%) of the respondents were in the 36-45 age group, 17% were 46-55, and 9% were 30-35 years of age. Eighty-nine per cent (89%) were married. Respondents were employed as police officers for an average of 22 years (SD = 10.46).

Stressor categories

Principal components analysis with orthogonal rotation was performed on the 62-item stressor scale in order to derive broader categories of stressors specific to police officers’ experiences. The analyses revealed a 10-factor solution incorporating 55 items and explaining 65.12% variance. Correlations between stress factors ranged between 0.07 and 0.63, indicating that some scales were independent of other constructs whereas others belonged to opposite ends of a single dimension. The ten categories of context-specific stressors in the police were: Career opportunities; Relationships with the public; Relationships with the management; Lack of support (organisational); Responsibility for the public; Roles; Work-home balance; Work load; Case workload balance; Equipment/IT.

Correlations between variables

Pearson’s correlations were performed on the predictor and outcome variables. Problem-focused coping was not related to the health outcomes, but was positively correlated with both extrinsic and intrinsic job satisfaction. Seeking social support was positively correlated with perceived ill-health only. Self-blame was positively
correlated with health symptoms only. Wishful thinking was positively correlated with health symptoms and negatively with intrinsic job satisfaction. Finally, avoidance was both positively correlated with the two health outcomes and also negatively correlated with the job satisfaction outcomes.

Correlations between stressors and health, controlling for age, rank and tenure indicate that the majority of stressors are positively and significantly correlated with the two health outcomes (physical health symptoms and perceived ill-health). Exceptions are perceived ill-health, which is not related to career opportunities, relationships with the management, responsibility for the public, and equipment/IT. Significant correlation coefficients range from 0.10 to 0.30. Similarly, all stressors except equipment/IT are negatively and significantly correlated with both extrinsic and intrinsic job satisfaction. Correlation coefficients range from -0.14 to -0.31.

Stressors are significantly but not very highly correlated with the mediator coping variables, indicating that there is some mediation effect of coping on physical symptoms and job satisfaction. The strongest average significant correlations are noted for problem-focused coping and avoidance coping (r = 0.16 and r = 0.15, respectively).

**Effects of stressors and coping on health and job satisfaction outcomes**

A series of stepwise linear regression analyses were performed to determine whether information on coping responses improved prediction of physical health symptoms, job satisfaction, perceived ill-health, and major stressors levels beyond that afforded by changes in stressor values. The requirements of a ratio of 5:1 cases to IVs for each regression and the recommended minimum 100 cases were met (Tabachnick and Fidell, 1989). Table 5 displays results of the regression analyses of stressors and coping on the dependent variables. The analyses for perceived ill-health and physical health symptoms were controlled for age, education, and tenure, which were found to correlate with both stressors and coping variables. The analyses revealed that the outcome physical health symptoms was significantly predicted by three types of stressors: case workload balance (8% variance explained), work-home balance (1.7% variance), and workload (1% variance). Physical health symptoms increase as the stress perceived to be caused by these three stressors increases. Physical health symptoms were also predicted by problem-focused coping (1.6% variance) and avoidance coping (3% variance). They decrease as problem-solving coping increases, but increase as avoidance coping increases. The final model explains 15.3% of the variance in physical health symptoms. Perceived ill-health was significantly predicted by: case workload balance (3.7% variance explained) and workload (1.4% variance). Perceived ill-health increases as the stress perceived to be caused by case workload balance and workload increases. Perceived ill-health is predicted by avoidance coping (1%
variance). It increases as avoidance coping also increases. The final model explains 6.1% of the variance in perceived ill-health. Extrinsic job satisfaction was significantly predicted by: age as a control variable (1.8% variance explained) and case workload balance (7.7% variance). Extrinsic job satisfaction increases as age increases and as the stress perceived to be caused by case workload balance decreases. Extrinsic job satisfaction was also predicted by avoidance coping (1.5% variance) and problem-focused coping (3% variance explained). It increases as avoidance coping decreases and as problem-focused coping increases. The final model explains 14% of the variance in extrinsic job satisfaction. Intrinsic job satisfaction was significantly predicted by: age as a control variable (2.1% variance explained), career opportunities (8.3% variance), and case workload balance (1.8% variance). Intrinsic job satisfaction increases as age increases, and decreases as the stress perceived to be caused by career opportunities and case workload balance decreases. Intrinsic job satisfaction was also predicted by problem-focused coping (3.5% variance) and self-blame coping (1.8% variance). It increases as problem-focused coping increases but decreases as self-blame increases. The final model explains 17.4% of the variance in intrinsic job satisfaction.

Mediation effects of coping on the stress-health relationship

Three conditions need to be met for mediation: (a) that stress is related to coping behaviour; (b) that stress affects health; (c) that coping changes the relationship between stress and health (Baron and Kenny, 1986). Successful testing for mediation presumes that entering coping into the equation would reduce the significance of the relationship between stressors and outcomes. Specifically, problem-focused coping alone explained a small percentage of variance in health symptoms (1.6%) when entered in the equation (model explained: 12.3% variance), and partially mediated the effects of workload and of work-home balance on health symptoms, as indicated by the change in significance of the final model when the coping variables were entered in the equation. Avoidance coping alone explained 3% variance in physical health symptoms (model explained: 15.3% variance) and fully mediated the effects of workload on physical health symptoms, as indicated by the change from significant to non-significant relationships at the final model. Avoidance coping also partially mediated the effects of work-home balance on health symptoms, as indicated by the change in significance of the final model when coping was entered into the equation. Moreover, avoidance coping alone explained a mere 1% of variance in perceived ill-health when entered in the model (model variance explained: 24.7%), and partially mediated the effects of workload and of case workload balance on perceived ill-health, as indicated by the significance level of the model changing at the final model. Coping behaviour did not mediate the effects of the stressor variables on neither extrinsic nor intrinsic job satisfaction.
Discussion

The aims of this study were to assess the types of stressors experienced by police officers in Greece, to examine how these relate to health and job satisfaction outcomes, and to assess how coping behaviours are related to these stressors-outcomes relationships. The study fulfilled its purposes and revealed some interesting results.

The results of the first part of the study indicated the existence of 10 groups of stressors that police officers experience, ranging from stressors commonly found in the literature (e.g., work-life balance, workload) and stressors specific to police officers’ work (e.g., responsibility for the public, case workload balance). High internal reliabilities were found for all stressor categories. It is interesting to note that a number of the items reflect concerns for the level and quality of the police department, rather than stressors directly affecting the individual respondents. Specifically, Career Opportunities comprised of items such as ‘Unfair promotions’ and ‘Inadequate opportunities to present my work’ and ‘The fact that human potential is not used optimally’. Relationships with the Management reflected superiors’ attitudes towards police officers, and the interactions that had a negative impact on them (e.g., ‘Strict and autocratic supervision style by superiors’, ‘Lack of information and guidance’ and ‘Management inflexibility during decision-making’). Relationships with the Public and Responsibility for the Public conveyed a sense of duty and responsibility for the well-being of citizens, as well as a concern for the overall image of the Police and its relationship with the media (e.g., ‘Feeling that the police systems have affected police-citizen relationships negatively’, ‘Tendency by the mass media to accentuate mistakes made by the Police’, ‘Responsibility for some decisions that affect citizens’ lives’ and ‘Responsibility for citizens’ quality of life’). Lack of Support conveyed police officers’ concerns about the way that the police was organised, its relationship with the legal system, and needs in terms of building and staff infrastructure, and how these impacted on their work (e.g., ‘Vagueness of the legal system’, ‘Lack of sufficient numbers of staff’ and ‘Handling of doubtful of delicate issues’). The stressor category roles reflected responsibility and position-related issues, such as ‘Complaints/charges against subordinates’, ‘Responsibility for maintaining or improving a department’s level’ and ‘Undertaking responsibility for public events’. Work-home balance and workload are stressors commonly found in other occupations and covered in various stress measures. A similar but different stressor found to be important for police officers was case workload balance, which reflects the spillage of work into the personal life domain and covers ‘limited personal leisure time’, ‘Committal of weekends and holidays in order to complete cases’, and ‘Breadth and variety of cases’. Finally, stressors related to new technology and equipment were reported as important but were not found to be related to any of the assessed outcomes. This ten-factor solution of stressor categories was
chosen because it yielded the most lucid and comprehensive structure on both theoretical and statistical grounds. Having emerged from police officers’ accounts of their work and experiences, it also provides support for the assumption that although some stressors are common to all occupations, a detailed examination within occupations would yield more detailed and productive understanding of occupation-specific sources of stress. The ten stressor categories were strongly associated with both health and job satisfaction outcomes. Stressors affected negatively physical health and job satisfaction. These findings mirror those of the general literature on the relationships between stress and health and work outcomes. Although assessing the measure’s predictive validity was not part of the study, a number of these stressors were correlated to and were found to predict health and job satisfaction outcomes. The use of additional work and wellbeing outcomes in future studies on the psychometric properties of the scale would support these preliminary findings and enhance the reliability and validity of the scale.

Responses to Revised Ways of Coping Checklist revealed medium to low but significant correlations between coping and stressors, and coping and outcomes. Coping behaviours were associated with health and job satisfaction outcomes in different ways. Specifically, problem-focused coping behaviours were significantly related to both extrinsic and intrinsic job satisfaction, but did not seem to contribute to improving health. As a rule, health deteriorated with use of all coping behaviours that were not problem and action-directed, whereas satisfaction was improved by active coping. Police officers seem to use all five types of coping behaviours with equal frequency. They also seem to use more than one type of coping behaviour for each stressor. Some of the coping behaviours were strongly correlated with each other, implying more use of coping in general. For example, in order to deal with stress arising or related to career opportunities, participants utilised problem-focused coping, social support, wishful thinking, and also avoidance. Similarly, as a response to case workload imbalance, problem-focused coping, self-blame, wishful thinking, and avoidance coping all increase. The general tendency was that the use of all coping behaviours increases as the stress experienced by nine of the ten stressor categories increases (all except ‘equipment/IT’). The benefits and effectiveness of a general increased use of coping behaviours irrespective of the nature and specificity of the stressor has been noted in the literature (Zeidner and Endler, 1996). The strongest use was noted for problem-solving coping and avoidance coping. Although these behaviours seem to be mutually exclusive, the nature and controllability of the stressor often dictates that each is effective in different circumstances and at different stages of the coping process. Some situations are not pertinent to any direct type of coping. For example, an initial avoidance may allow for time to reflect on the situation or gather resources before a more effective coping behaviour is enacted. Similarly, avoiding the emotional aspect of a stressful situation and dealing with other more controllable aspects of the same stressor may yield better coping outcomes.
The final assumption of the study, posing mediation effects of coping on the stress-health relationship was partly supported. Five mediation effects were found of problem-focused coping and avoidance coping on the relationship between work-related stressors and the two health outcomes. These can be explained by the fact that, as discussed above, (a) use of multiple coping behaviours can be more effective in mediating stress-health relationships than a single response, (b) although frequency of use is related to efficiency, this is not a rule. In addition, the strongest overall relationships between coping and stressors and coping and outcomes were found for problem-solving and avoidance, but not for seeking social support, blaming one’s self, or wishful thinking. The latter three are defence behaviours presenting negation of reality (Falkum, 1997). Police officers seem to evade coping in ways that would be more emotive or that would imply distracting one’s thoughts and actions. Job satisfaction as affected by work stressors was not mediated by any of the coping behaviours. Rather, effects of coping on job satisfaction were independent of the stressors experienced and indicated that perhaps a general action-orientated attitude (problem-focused coping), as opposed to one of self-blame or avoidance, was the key for increased job satisfaction. The effects of such an attitude that translates into coping can be direct on the outcomes and act as salutogenic factors for job satisfaction.

One of the main background tenets for this study, that different occupations have different stressor profiles was supported empirically. Occupation-specific stressors depend on the nature of the job and the risks and challenges involved. For police officers, issues such as their image in the media and relationships with the public, responsibilities in the society and balancing case workload and spillage into their personal lives were important. This is exemplified by the good percentages of variance in outcomes explained by the stressors (5% to 12%). Case balance workload was a prominent explanatory variable, but should not be confused with or integrated into more generic categories of stressors. This study shows that not including such occupation-specific stressors in research on stress in the police and stress management programmes would limit our abilities to understand, explain, help, and control. It is important to have a tailored analysis of stressors, for assessing risks to health and designing interventions.

Future studies in collaboration with the police will focus on assessing the psychometric properties of the police stressor scale. In addition, the possible existence of non-linear relationships between stress and coping will be assessed. Relationships of non-linear, multiple and interactional nature that have been found in many psychological phenomena allow for a more complete model of mediation.

References


ASSESSING WORK STRESSORS IN THE MANUFACTURING SECTOR: THE WORK ORGANISATION ASSESSMENT QUESTIONNAIRE

S. KHAN\textsuperscript{1}, M. KARANIKA\textsuperscript{2}, A. GRIFFITHS\textsuperscript{2} & T. COX\textsuperscript{2}

\textsuperscript{1} EEF – The Manufacturers’ Organisation, UK
\textsuperscript{2} Institute of Work, Health & Organisations (I-WHO), University of Nottingham, UK

Introduction

Over the last five years many organisations report that there has been a significant increase in sickness absence attributed to mental health problems such as stress, anxiety and depression. Along with musculoskeletal disorders such as back pain, mental health problems have become the commonest reasons for absence from work in many organisations. Further evidence is seen from the UK government Department for Work and Pensions data where the mental health conditions have overtaken the musculoskeletal disorders as the main reason for receipt of incapacity benefit (Aylward, 2004).

A survey in September 2003 by EEF (a body representing employers from the manufacturing sector, employing approximately 900,000 employees) of its members, in collaboration with IRS Research, showed that 40\% of employers thought that stress was the top reason for an increasing number of cases of long-term sickness absence in the past five years (Silcox, 2004). The reason why there seems to be a general increase in stress was unclear but the problem needed to be addressed.

In 2001 EEF had published a guidance entitled “Managing Stress at Work” (http://www.eef.org.uk/UK/publications/guidance/public/publication11032004-2.htm). The guide advocated a risk assessment approach to work related stress. The British Health and Safety Executive (HSE) had also been working on a similar document “Tackling Work Related Stress” that gave managers guidance on improving and maintaining employee health and well-being and published later in the same year. Both publications highlighted that one significant purpose of a stress risk assessment was to identify the size of the problem in an organisation using a ‘stress’ questionnaire. Whilst the HSE booklet suggested that specialist advice should be taken before using a stress questionnaire, the EEF guidance gave a checklist of items that could be stressors in the workplace. This list could then be used to create a stress questionnaire by the organisation itself. However, it became clear from the EEF membership that there was a need for a stress questionnaire that was:

- Relevant to the manufacturing environment
- Easy to use
- Able to identify what was going well in the organisation
- Able to identify areas that needed improvement
Thus far, most of the approaches to, and literature on, stress has focused on the 'negative' aspects of work (what is 'bad' about an organisation) without exploring the positive aspects of work (the 'good' things about an organisation). Some scientifically validated questionnaires are currently available from consultancies, and some organisations employ external consultants to assist in these matters. These can be quite lengthy and provide information on an individual's non-work related stress as well as work-related stress. For some organisations this sort of provision suits their needs. For others, such an approach is too costly and they would prefer the option of using a freely available tool to assess stress in the workplace. This led to the need for the current study.

Method

A list of items for the study questionnaire was developed from the work done by the Institute of Work, Health & Organisations, funded by the HSE and other organisations over the last two decades (Cox, 1993), and then tailored to the specific sample and validated through interviews with representatives of the sector. The items were piloted on a small sample representative of the jobs in the manufacturing sector. Interviews were semi-structured, based on the nine categories of work design and management factors proposed by Cox et al. (2000). Interviewees were asked to describe what aspects of their jobs within each category they found important, what was good and what could be better, and how they perceived these related to their job satisfaction, health and performance. Information derived from these interviews informed the final choice of items and their precise wording for use in the study questionnaire. In addition to questions on work organisation, the study incorporated the General Well-being Questionnaire (Cox, Thirlaway, Gotts and Cox, 1983) which yielded a score of the extent to which respondents felt 'worn-out/exhausted'.

Five organisations in the manufacturing sector were approached through the EEF. The final sample for this study comprised of 524 participants from these organisations, from 11 different sites. They agreed to participate in the study in exchange for feedback on results and advice on the areas that needed improvement. Four sites were used for the re-test administration of the WOAQ. Test-retest intervals were: (i) same day, (ii) two weeks, and (iii) two months. 78 respondents completed the questionnaire on the same day, 32 at an interval of two weeks, and 46 at an interval of two months from Time 1. Response rates for the main study sample ranged from 28.4% to 77.0%. Response rates for the re-test samples ranged from 15.3% to 87.1%.

The average age was 41 years with a range of 17-64 years. Half were manual workers and about 20% were female. Table 1 shows the breakdown by job categories. Data from the EEF show this to be consistent with national findings for manufacturing – 25% managerial staff, 61% manual workers, and 14% other / non-manual employees.
Table 1: Breakdown of sample by job category

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>Managerial/supervisory</td>
<td>64</td>
<td>12.2</td>
</tr>
<tr>
<td>Manual</td>
<td>262</td>
<td>50.0</td>
</tr>
<tr>
<td>Non-manual</td>
<td>123</td>
<td>23.5</td>
</tr>
<tr>
<td>No job recorded</td>
<td>75</td>
<td>14.3</td>
</tr>
<tr>
<td>Total</td>
<td>524</td>
<td>100.0</td>
</tr>
</tbody>
</table>

A total of 156 respondents participated in the test – retest aspect of the study. The re-test participants were specific departments selected by the organisations, with instructions on how to select an as representative sample as possible. Mean age was 39 years (SD = 10.95), mean number of years at the organisation was 10 (SD = 8.70), 75% of respondents were males, 92% were married or cohabiting and 92% worked full-time. 18% of the re-test participants described their job as managerial or supervisory, 49% as manual and 33% as administrative, technical, or customer-related.

Results

Analyses performed on the items in order to assess their structure, reliability and validity, were Pearson’s correlation, Chronbach’s $\alpha$, split-half reliability statistics, principal component analysis and stepwise linear regression. Analyses were based on Time 1 measurement except for the test-re-test reliability analyses.

Principal component analysis with Varimax rotation was performed on the 38 items on a sample of 524 participants. It was assumed that categories were orthogonal and Varimax was chosen in order to minimise the number of variables with high loadings on each category. It simplified the interpretation of the categories. Outliers among cases were deleted prior to the analyses. The correlation matrix revealed relationships of R that were appropriate for factor analysis, as determined by the Kaiser-Meyer-Olkin test of sampling adequacy ($KMO = 0.93, > 0.60$) and the Bartlett sphericity test ($\chi^2 = 5385.97, df = 378, p < 0.01$).

Initial analyses yielded eight categories. However, after deletion of items with low communalities, examination of the scree plot, and consideration of the theoretical distinctions among the items, subsequent analyses yielded five categories. All categories were consistent and well-defined by the variables. In explaining and selecting the best component solution, expert judgement was called for, in addition to the statistical results. A 5-category structure, explaining in total 62.39% of the variance and incorporating 28 of the 38 items, was chosen as the best solution. The five categories were: Relationships with Management (nine items), Being Valued (reflecting reward and recognition issues) (seven items), Work-load Issues (four items), Relationships with Colleagues (two items), and Physical Environment (six items). All components produced acceptable to high internal reliabilities, with Chronbach’s $\alpha$ ranging from 0.76 to 0.91, all above the recommended minimum level of 0.70 (Nunally and Bernstein, 1994).
In order to analyse the Time 1 and Time 2 measurements and assess the stability over time of the variables measured, a new data matrix was created consisting of the categories that emerged from the principal components analysis. Missing values for the manifest variables were handled with list wise exclusion of the cases. Pearson’s correlations between Time 1 and Time 2 measurements were calculated in order to assess the test-re-test reliability of the scales. The correlations between the components as measured at different time intervals were significant at the $p \leq 0.01$ level. For any given measure, the test-re-test reliability decreases with time. For short-term measurement intervals, 0.80-0.90 $r$ coefficients of dependability values are normally expected for periods of up to three weeks. The $\alpha$ coefficients of stability for Time 1 vs. same day and Time 1 vs. two weeks in these analyses range from 0.66 to 0.96. When the measurement time interval increases (two months), coefficients of stability are expected to drop to 0.60. In our analyses, Time 1 vs. 2 months coefficients range from 0.58 to 0.94, which is acceptable.

Controlling for age and gender, the main predictors for job satisfaction were ‘relationships with management’ (accounting for 32.7% of the variance), ‘being valued’ (2.4% variance), ‘workhome balance and workload’ (1.3% variance), and ‘relationships with colleagues’ (0.9% variance). Job satisfaction increased as the stress perceived to be caused by ‘relationships with management’ ($\beta = 0.306, t = 4.123, p \leq 0.01$), ‘being valued’ ($\beta = 0.219, t = 3.092, p \leq 0.01$), ‘work-load issues’ ($\beta = 0.122, t = 2.269, p \leq 0.05$), and ‘relationships with colleagues’ ($\beta = 0.101, t = 2.125, p \leq 0.05$) decreased (as indicated by a higher score). The final model explained a substantial 37.4% of the variance in job satisfaction ($F(4, 316) = 47.101, p \leq 0.01$).

Controlling for age and gender, the main predictors for ‘worn-out/exhausted’ were ‘relationships with management’ (accounting for 10.3% of the variance), ‘relationships with colleagues’ (1.6% variance), and ‘work-load issues’ (1.1% variance). Females were more likely to report feeling worn-out/exhausted ($\beta = 0.184, t = 3.484, p \leq 0.01$). Feeling worn-out/exhausted decreased with age ($\beta = -0.126, t = -2.395, p \leq 0.05$). Similarly, reports of feeling worn-out/exhausted increased as the stress perceived to be caused by ‘relationships with management’ ($\beta = -0.224, t = -3.612, p \leq 0.01$), ‘relationships with colleagues’ ($\beta = -0.118, t = -2.156, p \leq 0.05$), and ‘work-load issues’ ($\beta = -0.125, t = -2.024, p \leq 0.05$) increased (as indicated by a lower score in the stressor variables). The final model explained 17.5% of the variance in worn-out/exhausted ($F(5, 306) = 13.016, p \leq 0.01$).

Controlling for age and gender, the main predictors for subjective health were ‘work-load issues’ (accounting for 18.3% of the variance), ‘relationships with colleagues’ (2.4% variance), and ‘physical environment’ (1.4% variance). Subjective health increased as the stress perceived to be caused by ‘work-load issues’ ($\beta = 0.307, t = 5.152, p \leq 0.01$), ‘relationships with colleagues’ ($\beta = 0.146, t = 2.843, p \leq 0.01$), and ‘physical environment’ ($\beta = 0.144, t = 2.419, p \leq 0.05$) decreased (as indicated by a higher score in the stressor variables). The final model explained 22.2% of the variance in subjective health ($F(3, 328) = 31.146, p \leq 0.01$).
The questionnaire also had a section for free text comments (free responses). There were similar numbers of comments for “worst aspect of work” (236) as for best aspect of work” (201). The majority of free text comments reiterated one or more of the numbered questions. No a significant area of work organisation was found that was not already covered by the main questionnaire.

Discussion

The primary aim of this study was to produce a short, scientifically valid and reliable questionnaire that was simple to use. The final Work Organisation Assessment Questionnaire fits onto one side of A4 sized paper. Examination of the questionnaire’s psychometric properties suggests that the questionnaire has reasonable validity and reliability. The participation of a large number of manual workers and the response rates for the questionnaire suggest that employees were willing to complete it. Subsequent investigation revealed that the majority did so within five minutes. There was a consensus of opinion that it was helpful to have questions that were not ‘leading’ in the way they were worded. For example, asking about “pace of work” with a scale that ranged from very good, good, not a problem, slight problem to major problem was more emotionally neutral than “I have to work very intensively” (e.g. http://www.hse.gov.uk/stress/manstandards.htm).

The five WOAQ stressor categories bear some similarity to those developed for the recently developed HSE Management Standards for Stress in Britain (see http://www.hse.gov.uk/stress/manstandards.htm). The issues covered are the same, but it is the combination of stressors and their importance that differs. This may be because the WOA was developed on a specific population, whereas the HSE Standards are more generic. The WOA questionnaire also includes items not covered in depth by the HSE Standards. For example, ‘relationships’ seem to be of two important types, ‘relationships with management’ and relationships with colleagues’. These are currently combined into one category in the HSE Standards. In addition, questions pertaining to specific aspects of the environment, such as ‘equipment/IT’, are not covered by the HSE standards.

The organisations that took part in the study found it particularly useful to be able to benchmark their results with the whole study population. At a glance, they could see whether their results were better or worse than the averages for the other organisations and this helped to put their results into perspective. All the organisations involved in the study had more ‘good results’ than ‘bad results’ but they had all been concerned, prior to the feedback, that they would just find just bad results. The ability to correlate stressor categories with “outcome” measures (job satisfaction, personal health, being ‘worn out’) were perceived as very useful in establishing what the priorities were for that particular organisation. Some organisations were concerned about only getting a ‘percentage’ figure for the question on bullying (mobbing) and harassment. They wanted to know the absolute
numbers of people who said they were often, sometimes, or rarely, bullied. Interestingly, organisations that had even a single case of bullying were keen to remind employees in the feedback that harassment/dignity at work policies existed and were there for employees to use.

Conclusion

The Work Organisation Assessment Questionnaire seems to be a practical, focused, solution-orientated, simple and user-friendly tool. It was been developed with the end-user’s needs and working environment in mind and is therefore in a strong position to be used as part of risk assessment for work stress in the manufacturing sector.

The questionnaire seems to be detailed enough to allow workplace interventions against each of the 28 items to be identified and broad enough to facilitate intra- and inter-business benchmarking. Whether this questionnaire is suitable and valid in other industrial / business sectors will require further research. The current questionnaire will be made available on the intranet for organisations to use free of charge, will be used to produce a national dataset for benchmarking purposes and to evaluate interventions.

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Corresponding author
Maria Karanika,
Institute of Work, Health & Organisations, University of Nottingham,
William Lee Buildings 8, Science & Technology Park, University Boulevard, Nottingham, NG7 2RQ UK

T: +44 115 84666 63 , F: +44 115 84666 25,
E: maria.karanika@nottingham.ac.uk

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OCCUPATIONAL HEALTH PSYCHOLOGISTS FOR HEALTHY, PRODUCTIVE AND EFFICIENT ORGANISATIONS IN FINLAND

S. KIVISTÖ

Finnish Institute of Occupational Health, Finland

The amended Act on Occupational Health Services 2001 defines the purpose of the occupational health service (OHS) in Finland quite extensively. It covers: 1) the prevention of work-related illnesses and accidents; 2) the healthiness and safety of the work and the working environment; 3) the health, working capacity and functional capacity of employees at the different stages of their work careers; 4) the functioning of the work community. The companies get half of their OH costs reimbursed from social security funds.

The aim of this study is to illustrate how extensive the use of psychological expertise is in the OHS in Finland, how cooperation works in the OH teams, and what the main tasks of the psychologists are.

The OH services help employers to maintain the healthiness, productivity and efficiency of their organisations. What is the conceptual frame for this kind of work in Finnish occupational health legislation? Does the concept of prevention allow occupational health units to benefit from occupational health psychology expertise?

All documents since the early 1970s emphasize the role of preventive activities as opposed to the treatment of illnesses. This discussion still continues today. However, the definition of prevention has not been analysed in any documents. The description of the purpose of OHS in the first Act gives the impression that the medical model of disease prevention is the applied model. The etiological agents in the OH context are the hygienic exposures which were adequate in the phase of the work life and industrial development at that time. Unfortunately, the adopted medical “occupational health hazard” model still dominates the preventive approach in official documents. In real life the development of OH services has evolved from that single model. What would be the modern concept of prevention in OH services which could give a solid theoretical base for the tasks stipulated in the new law?

Materials and methods

There are about 5,500 posts throughout Finland in the OHS units, of which 4% are psychologists, 39% nurses, 32% physicians, 15% auxiliary and office staff and 12% physiotherapists. In 2001, 35% of the total 1016 OHS units had
Results

The OHPs in Finland have worked in occupational health services since 1974. The number of OHP posts grew slowly in the 70s. The psychologists who started working in the OHS units had an optimistic pioneer spirit. The OHPs were free to develop their modes of practice, and the individual efforts were remarkable. The Finnish society was undergoing rapid change from an agricultural to an industrial and service society. The staff in the growing cities were young and energetic. Psychologists gave their contribution to workplace planning. The expression "constructive work" was added to the prevention concept. The rapid growth of OHP posts was expected. The first Act meant a remarkable social reform for the working-aged population, but its emphasis was more on hygienic and safety objectives, and the measures used to reach the objectives were defined by the terms of preventive medicine. There was not much use for OHP expertise in this area. Then the trade unions and the occupational safety system (in Finland OH services and occupational safety inspection form separate organisations) focused the efforts on mental work load issues. In the 90s the scope of OHSs broadened and in fact the prevention concept was questioned. The amended Act on Occupational Health Services 2001 includes both preventive and promotive elements in the OH objectives. What does this mean from the viewpoint of OHP expertise?

In general, companies mostly ask for help in workplace surveys, staff conflict situations, and management of organisational change. Usually physicians refer individual-focused tasks to psychologists, while nurses refer workplace focused tasks to them. A little more than a half of the psychologists use their time mostly on individual cases, and the rest more on organisational tasks. The work with individuals includes crisis therapy (48%), counselling (30%) and psychological assessments (20%). The psychologists would like to focus still more on primary prevention in organisations by training, disseminating information, by supporting supervisors and promoting the functioning of the work community.

Nearly half of the OHPs interviewed took part in the overall needs assessment and planning of OH services with the representatives of the organisation. Over 60% were satisfied with the multi-professional way of running the needs assessment and the maintenance of work ability (MWA), the Finnish concept of
workplace health promotion. However, nearly half of the psychologists felt that they did not know enough about the work of other OH professionals.

The OHPs in OHSs are “general practitioners” working on both individual and organisational level objectives. In 2001/2002 the time schedule was more in favour of individual counselling, crisis help and psychological assessments. The other half worked more on organisational development, solving workplace conflicts and workplace surveys.

There are two models of using OHP expertise in OHSs. One is the consultative expert model and the other is the team-member model. In the team-member model the psychologist takes part in services starting from the contract negotiations right up to the interventions and evaluation. However, the change in OHS towards commercially functioning OH enterprises will probably increase the model of part-time consultative work for OHPs in Finland.

**Discussion**

The OHS professionals, physicians and nurses, are facing new challenges defined by the new law. OH services use psychological expertise still to a minor extent, and the situation is rather uneven in different parts of the country.

Occupational health services offer an influential position for the OHPs to maintain the healthiness, productivity and efficiency of organisations. The preventive organizational approach is the main working area of occupational health psychologists, in addition to individual guidance and crisis help. However, the development of the OHS in Finland has neglected the theoretical transformation of the concept of prevention. This may mean difficulties in updating the grass-root level work in OH units in a society where the demands of work are changing continuously.

**Keywords:** Occupational health services, psychological expertise, concept of prevention
EXPOSURE TO VIOLENCE IN COMMUNITY HEALTHCARE: MODERATING EFFECTS OF ANGER EXPRESSION AND ANGER SUPPRESSION

P. LEATHER, A. SANTOS & S. CHUA
Institute of Work, Health and Organisations, University of Nottingham, United Kingdom

Introduction

Violence and anger in the context of mental health care

Violence towards health care workers is a serious workplace problem that appears to be on the increase (Nolan, Dallender, Soares, Thomsen & Arnetz, 1999), and nurses in particular appear to be at greatest risk (Arnetz & Arnetz, 2000). Exposure to violence has ramifications not only in terms of the physical and psychological injuries sustained by staff, but also in terms of the reciprocal decline in the quality of health care that they provide (Whittington, Shuttleworth & Hill, 1996; Cutcliffe, 1999). Further, these harmful effects are not only confined to acts of physical assault, but also derive from what is sometimes be referred to as psychological violence, e.g., verbal abuse, threat and intimidation (Greenberg & Barling, 1999; Leather, Lawrence, Beale, Cox & Dickson, 1998). What is clear from the emerging literature, then, is that the damaging consequences of patient violence, regardless of whether it is physical or psychological in nature, adversely affect both staff and patients equally (Cutcliffe, 1999; Greenberg & Barling, 1999).

The experience of anger is an emotion that is consistently implicated in the etiology of a violent exchange (e.g., Berkowitz, 1993; Lawrence & Leather, 1999). Nevertheless, the effects of anger on the part of staff during a confrontation have suffered a relative dearth of research attention. The aim of this study is to investigate the extent to which expressed or suppressed anger in staff serves as (1) a moderator for the effects of exposure to violence and (2) a predictor for the frequency of encountering violent exchanges.

Moderating effects of anger expression and suppression

The damaging consequences of exposure to violence include both obvious physical injuries, as well as a range of negative psychological symptoms, such as increased social withdrawal, absenteeism, feelings of guilt, loss of interest in work, loss of confidence and the appearance of self-doubts (e.g., Whittington et al., 1996; Bowie, 1996). Within work-related violence research, what is also needed is an assessment of the factors that may alleviate
these symptoms (Barling, 1996; Leather et al., 1998; Wykes & Whittington, 1991). For instance, the aversive effects of violence are buffered by a range of factors, such as the victim’s personal appraisal of violence (Cutcliffe, 1999), the availability of social support (Leather et al., 1998), and the form of coping strategy adopted (Wykes & Whittington, 1991; Kleber & van der Velden, 1996). In line with these effects, the present study examines the potential role of anger expression and suppression as a similar moderator variable.

In relation to physical health, the majority of research findings indicate that the habitual suppression of anger is damaging to physical well-being. Specifically, individuals who suppress their anger are more likely to develop a range of medical illnesses, such as rheumatoid arthritis (Harburg, Kasl & Tabor, 1969), lung cancer (Kissen, 1967), breast cancer (Greer & Morris, 1975), high blood pressure (Gentry, Chesney, Gary, Hall & Harburg, 1982) and coronary heart disease (Haynes, Feinleib & Kannel, 1980). Persistent suppression of anger is also associated with a greater risk of hypertension across all levels of job stress (Cotton, Matthews, Talbott & Kuller, 1986). Perhaps, not surprisingly then, suppressed anger has been found to have the potential to elevate mortality rates which result from all kinds of illnesses (Julius, Harburg, Cotton, & Johnson, 1986). This consistent pattern of evidence in relation to physical health, then, begs the question of whether the effects of anger suppression will be found with respect to psychological health.

Theoretically, anger expression can be postulated to have a beneficial psychological impact and anger suppression a negative impact. The expression of anger for example contributes to the release of tension and the rationalization of hidden conflicts (Luhn, 1992). Further, by imparting a sense of mastery and control over the situation (Novaco & Welsh, 1989), expressed anger generates feelings of superiority that assist the victim in the re-adjustment back to the work environment (Leach, 1994). It appears, therefore, that anger expression will alleviate the adverse effects of violence on psychological health, whereas anger suppression will aggravate the negative outcomes. While research findings on the negative effects of anger suppression are largely consistent, those on the effects of anger expression are less unequivocal. There is for example some evidence to suggest that anger expression may similarly lead to damaging health outcomes (VanderVoort, Ragland & Syme, 1996). Notwithstanding this possibility, the present study maintains the position that the impact of anger expression is positive, whereas that of anger suppression is negative, in view of the fact that when the negative consequences of expressed and suppressed anger were examined concurrently, stronger effects were obtained for the latter as opposed to the former (Spielberger, Johnson, Russell, Crane, Jacobs & Worden, 1985; Brondolo, Jelliffe, Quinn, Tunick & Melhado, 1996).
Anger expression and suppression in predicting exposure to violence

Although the likely predictors of violence are typically associated with the individual characteristics of the assailant and victim (Lanza, Kayne & Hicks, 1991), there is now an increasing recognition of the capacity of situational factors to constitute reliable predictors of violence (Cox & Leather, 1994; Lawrence & Leather, 1999). Within the mental health setting, this is reflected by the emerging emphasis on the role of staff-patient interactions in perpetuating episodes of violence (Whittington, 1994). This suggestion that anger expression and suppression might moderate exposure to violence is supported by the social-interactionist model of violence (Cox & Leather, 1994; Lawrence & Leather, 1999). According to this approach, violence is the culmination of an escalating cycle of conflict, in which individual perceptions of the disputant’s words, actions and posture assume particular importance (Gibbs, 1986; Siann, 1985). In line with this, some theorists have noted that an escalation of hostilities become inevitable especially when both the participants involved in the confrontation communicate strong anger (Tedeschi & Felson, 1994). From the social-interactionist perspective, this occurs because the expression of anger is perceived to be excessively aggressive, which results in the mutual perpetuation of the hostile exchange (Cox & Leather, 1994). With specific reference to the staff-patient interaction, the display of anger by staff may be seen by patients to be accusatory, insulting or disruptive, thereby raising the possibility of a violent response (Tedeschi & Felson, 1994). In the same vein, the finding that staff who adopt rigid and authoritative styles encounter more episodes of violence may be attributed to the fact that such interaction styles are more likely to be perceived by patients as being aggressive (Cooper & Mendonca, 1991). In contrast, anger suppression on the part of staff breaks the escalating cycle of conflict and stops further violence from resulting. On this basis, it is predicted that whereas anger expression will be associated with higher levels of exposure to violence, anger suppression will be related to lower levels of exposure.

In summary, the present study argues that while anger expression is likely to cushion the adverse effects of experiencing violence, it is also expected to bring about an increased exposure to violence. Similarly, even though the suppression of anger is predicted to aggravate the negative consequences of being a victim, it will be associated with reduced rates of exposure. To a large extent, then, this predicted pattern of effects resembles the paradox that is apparent in relation to staff training in dealing with violence. On the one hand, training reduces the physical and psychological injuries sustained from the exposure to patient violence (Lanza et al., 1991; Infantino & Musingo, 1985). On the other hand, however, trained staff are found to be assaulted more frequently (Walker & Seifert, 1994). The point to be emphasized here is that the current pattern of predicted effects is clearly not without precedent.
Method

Subjects and procedure

The study was conducted in a National Health Service Trust located in the central region of England. Within an overall sample of 434 employees from the different occupations engaged in health care work, the analysis was focused on the 202 responses that were made by the specific occupational group comprising nurses and health visitors. With 1600 questionnaires distributed, the selected group amounted to 12.6% of the maximum sample, and 46.5% of the returned responses. Within this sub-sample, 19% were male and 80% were female (missing entries = 1%). The age of respondents ranged from 18 years to 65 years (M = 38 years; SD = 9.5 years). The length of experience working in the organization varied from 6 months to 30 years (M = 9 years; SD = 7.9 years). The current paper reports only part of the data gathered and is concerned only with the measures relating to: (i) the frequency and types of violence that staff experience from patients; (ii) individual staff responses during a patient confrontation; (iii) staff reports of psychological symptoms of stress; and (iv) staff reports of their overall job satisfaction.

A questionnaire was developed following a series of semi-structured interviews with a small opportunity sample of twelve employees from the Trust. The interviews were conducted while accompanying staff following their normal work routine. Interviewees were encouraged to give their opinions regarding the key issues concerning the causes and consequences of patient violence, and the ways in which patient violence could be reduced or better managed. The draft questionnaire which resulted was then refined following its piloting with a small number of medical and management professionals within the Trust. The final questionnaire was distributed to all 1600 members of staff working in the Trust.

Assurances were given in a covering letter that individual responses were confidential and would not be made known to anyone other than members of the research team. Envelopes addressed to the research team, were enclosed for the return of questionnaires via the Trust’s internal mail system, from where they were passed unopened to the researchers. Permission to conduct the study was obtained from the ethics committee within the Trust.

Frequency and types of violence

The problem of under-reporting renders the use of official statistics unreliable as estimates for the occurrence of violence (Beale, Cox & Leather, 1996; Lanza, 1996). The under-reporting associated with non-physical aggression, such as verbal abuse and threats, is particularly widespread (Toscano & Weber, 1995). In the present questionnaire, the nature and frequency of violence was therefore measured by means of a two-part question
that investigated each of four specific forms of violence: (i) verbal abuse; (ii) threats and intimidation; (iii) the taking out of feelings on nearby objects; and (iv) physical assault. The first part of each question asked if respondents had ever been exposed to such violence, while the second part asked for the number of such incidents over a specified time period. For each form of violence, a time-frame of the last month was used, with the exception of physical assault, for which a time-frame of the last twelve months was utilized. The measures of exposure over the specified time periods correspond to interval data, for which the variance accorded permits a more sensitive measurement of any predicted effects. Hence, in testing the present hypotheses, inferential statistical analyses were conducted only for the second part of each question, i.e., the number of incidents over the specified time periods.

**Anger expression and anger suppression**

Anger expression and anger suppression were assessed using job-specific anger expression and job-specific anger suppression scales respectively (Brondolo et al., 1996). The anger expression scale consisted of five items. The anger suppression scale consisted of four items. Respondents rated on a 5-point scale the extent to which each item described their typical reaction during a confrontation (1 = very untypical; 5 = very typical). Higher scores on anger expression indicate a more characteristic use of anger expression during a confrontation; higher scores on anger suppression reflect a more characteristic use of anger suppression during a confrontation. The possible range of scores is 5 to 25 for anger expression and 5 to 20 for anger suppression.

**Overall job satisfaction**

Overall job satisfaction was assessed using the three-item scale of Cammann and colleagues (Cammann, Fichman, Jenkins & Klesh, 1979; Seashore, Lawler, Mirvis & Cammann, 1982). Respondents rated their agreement or disagreement with each item on a 7-point scale (1 = strongly disagree; 7 = strongly agree). The possible range of scores is 3 to 21, with higher scores indicating higher job satisfaction.

**Psychological symptoms of stress**

Psychological symptoms of stress were assessed using an adapted version of the three-item measure devised by Patchen (1970). Each item was measured on a 5-point scale (1 = less than once a month; 2 = about once a month; 3 = once or twice a month; 4 = about once a week; 5 = two or three times a week). A mean score is taken so that the possible range of scores is 1 to 5, with higher scores indicating higher levels of stress.
Results

Pre-analysis screening

Cases with missing data were excluded from the analyses as they amounted to a small and random percentage of the total sample. Preanalysis checks revealed that the data was significantly skewed. The skewed data was then transformed via the square-root procedure in order to meet the assumptions of normality, linearity and homoscedasticity that underlie multivariate statistical analyses. These assumptions were also checked and found to be satisfied for the other variables prior to conducting the analyses. Reliability analyses were also conducted on all scales prior to analysis. All scales exhibited alphas in the region of .7.

Nature and extent of exposure to violence

Table 1 depicts the nature and extent of the violence that nurses and health visitors have been exposed to (i) at some point in their careers, and (ii) over the past month/year (for non-physical aggression/physical assault respectively). From table 1, it is clear that a sizeable proportion of the nurses and health visitors in the current sample have been exposed to violence from patients. A substantial 81%, for example, have been victims of verbal abuse at some point in their careers, while over 50% have reported at least one such incident in the last working month. Even physical assault is not uncommon, with 39% of the sample reporting at least one such incident at some point in the past and more than 30% reporting such an incident in the previous twelve months.

Table I: Nature and extent of exposure to violence

<table>
<thead>
<tr>
<th></th>
<th>Respondents exposed at some point in career (percentage)</th>
<th>Respondents exposed over past month/year (percentage)</th>
<th>Mean occurrences in past month/year (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal abuse (N = 199)</td>
<td>164 (81.2%)</td>
<td>105 (52.8%)a</td>
<td>2.75 (4.79)a</td>
</tr>
<tr>
<td>Threat/intimidation</td>
<td>126 (62.4%)</td>
<td>77 (39.3%)a</td>
<td>1.89 (4.31)a</td>
</tr>
<tr>
<td>Violence on objects</td>
<td>98 (48.5%)</td>
<td>63 (31.8%)a</td>
<td>1.89 (4.57)a</td>
</tr>
<tr>
<td>Physical assault</td>
<td>78 (38.6%)</td>
<td>63 (32.0%)b</td>
<td>1.81 (5.14)b</td>
</tr>
<tr>
<td>(N = 198)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(N = 197)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a Refers to occurrences in past month; b Refers to occurrences in past year.
Moderating effects of anger expression and anger suppression

In testing for the moderating effects of anger expression and anger suppression, a series of 16 hierarchical multiple linear regressions were performed in accordance to the procedure described earlier (section 2.4.1). The 16 regressions were derived from the fact that there were 2 outcome variables, each of which was investigated separately for the influence of each of the 4 forms of violence and the 2 predicted moderator variables. Table 2 summarizes the results of the initial 8 regression analyses in which anger expression was the predicted moderator. Specifically, the β weights, t-values and significance levels are shown for each of the two main effects (exposure and anger expression) and their interaction. From table 2, it can be seen that increased exposure to violence of any form led consistently to lower levels of job satisfaction and higher levels of stress. It should be noted that the effect of physical assault on psychological symptoms of stress was not significant at the conventional p < .05 level. If, however, a slightly less stringent criteria for significance is adopted, i.e., p< .07, then this relationship is consistent with all of the other effects obtained. Precedence for relaxing the criteria for significance can be found in Broadbent (1995). Moreover, it is the uniform pattern of these results that is important, rather than the failure of a single relationship to reach significance by conventional standards. Thus, in keeping with this argument, a similar criterion for significance (i.e., p < .07) will occasionally be adopted, but only when there is a consistent pattern of results.

Table 2: Regression coefficients, t-values associated with anger expression as a moderator

<table>
<thead>
<tr>
<th>Overall job satisfaction</th>
<th>Psychological symptoms of stress</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Exposure to violence</td>
</tr>
<tr>
<td>Verbal abuse</td>
<td>β = -.23 t = -3.07**</td>
</tr>
<tr>
<td>Threat/intimidation</td>
<td>β = -.24 t = -3.19***</td>
</tr>
<tr>
<td>Violence on objects</td>
<td>β = -.19 t = -2.59*</td>
</tr>
<tr>
<td>Physical assault</td>
<td>β = -.18 t = -2.38*</td>
</tr>
</tbody>
</table>

*p<.07; *p<.05, **p<.01, ***p<.001

Table 3 summarizes the results of the remaining 8 regression analyses in which anger suppression was the predicted moderator. As was the case for anger expression, the β weights, t-values and significance levels are shown for each of the two main effects (exposure and anger suppression) and their interaction. From table 3, it can be seen that the effects of exposure to violence on both job
satisfaction and psychological symptoms of stress were replicated. There were no independent effects of anger suppression on either of the two outcomes. Unlike anger expression, anger suppression was found to moderate the effects of threat/intimidation, the taking out of feelings on nearby objects and physical assault, not only on one but on both the outcome variables. However, as was the case for anger expression, this moderating effect was not evident for violence in the form of verbal abuse, whether in relation to job satisfaction or levels of stress.

Table 3: Regression coefficients, t-values associated with anger suppression as a moderator

<table>
<thead>
<tr>
<th>Overall job satisfaction</th>
<th>Psychological symptoms of stress</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Exposure to violence</strong></td>
<td><strong>Exposure to violence</strong></td>
</tr>
<tr>
<td><strong>Anger expression</strong></td>
<td><strong>Anger expression</strong></td>
</tr>
<tr>
<td><strong>Interaction</strong></td>
<td><strong>Interaction</strong></td>
</tr>
<tr>
<td>Verbal abuse</td>
<td>Verbal abuse</td>
</tr>
<tr>
<td>β = -2.24</td>
<td>β = -05</td>
</tr>
<tr>
<td>t = -3.29***</td>
<td>t = -86</td>
</tr>
<tr>
<td>β = -1.66</td>
<td>t = -4.84***</td>
</tr>
<tr>
<td>β = 0.34</td>
<td>t = 0.84</td>
</tr>
<tr>
<td>Physiological symptoms of stress</td>
<td>Physiological symptoms of stress</td>
</tr>
<tr>
<td>β = -2.25</td>
<td>β = -06</td>
</tr>
<tr>
<td>t = -3.4**</td>
<td>t = -86</td>
</tr>
<tr>
<td>β = -2.61*</td>
<td>β = 0.33</td>
</tr>
<tr>
<td>t = 2.57**</td>
<td>t = 4.58***</td>
</tr>
<tr>
<td>β = 0.07</td>
<td>t = 1.03</td>
</tr>
<tr>
<td>β = 0.73</td>
<td>t = 2.44*</td>
</tr>
<tr>
<td>Violence on objects</td>
<td>Violence on objects</td>
</tr>
<tr>
<td>β = -2.2</td>
<td>β = -05</td>
</tr>
<tr>
<td>t = -2.68**</td>
<td>t = -81</td>
</tr>
<tr>
<td>β = -2.75##</td>
<td>β = 2.22</td>
</tr>
<tr>
<td>t = 3.1</td>
<td>t = 2.99**</td>
</tr>
<tr>
<td>β = 0.17</td>
<td>t = 0.05</td>
</tr>
<tr>
<td>β = 0.76</td>
<td>t = 2.62*</td>
</tr>
<tr>
<td>Physical assault</td>
<td>Physical assault</td>
</tr>
<tr>
<td>β = -2.2</td>
<td>β = -05</td>
</tr>
<tr>
<td>t = -2.7**</td>
<td>t = -66</td>
</tr>
<tr>
<td>β = -1.86§</td>
<td>t = 2.3*</td>
</tr>
<tr>
<td>β = 0.05</td>
<td>t = 0.63</td>
</tr>
<tr>
<td>§p&lt;07; *p&lt;.05; **p&lt;.01</td>
<td></td>
</tr>
</tbody>
</table>

In testing for the effects of anger expression and anger suppression as predictors of exposure to violence, a one-step multiple linear regression was conducted for each form of violence. Table 4 presents the β weights, t-values and significance levels associated with anger expression and anger suppression as the predictor variables. From table 4, it can be seen that whereas anger expression was not related to any of the exposure variables, anger suppression was a consistent predictor across all forms of violence. The nature of this relationship was such that as anger suppression increased, exposure to violence of any form decreased. This suggests that the more typical use of anger suppression is associated with a diminished likelihood of experiencing violence.

Table 4: Regression weights, t-values associated with anger expression and anger suppression as predictor variables

<table>
<thead>
<tr>
<th>Anger expression</th>
<th>Verbal abuse</th>
<th>Threat/intimidation</th>
<th>Violence on objects</th>
<th>Physical assault</th>
</tr>
</thead>
<tbody>
<tr>
<td>β = -0.03</td>
<td>β = -2.25</td>
<td>β = -1.63</td>
<td>β = -2.25</td>
<td>β = -0.03</td>
</tr>
<tr>
<td>t = -3.5</td>
<td>t = -2.25</td>
<td>t = -2.25</td>
<td>t = -2.25</td>
<td>t = -2.25</td>
</tr>
</tbody>
</table>

§p<07; *p<.05; **p<.01
Discussion

The results reported in the present study provide considerable justification for the claim that violence in community health services is a problem of significant proportions (Nolan et al., 1999; Crichton, 1995). The independent effects obtained in association with each form of patient violence also support the view that physical and psychological violence have the capacity to inflict substantial harm on victims (Greenberg & Barling, 1999; Wykes & Whittington, 1994). These results add to the extensive body of evidence demonstrating the wide range of harmful effects perpetuated by the experience of any form of violence (Giacalone & Greenberg, 1997; Leather et al., 1998; Whittington et al., 1996; Bowie, 1996).

On the whole, then, there was some evidence for the proposed moderating effects of anger expression and anger suppression on the consequences of experiencing violence. Specifically, 9 out of the 16 regressions that tested the moderating effects of expressed and suppressed anger were significant at the conventional $p < .05$ level and two more at the less stringent $p < .07$ level. With respect to violence in the forms of threat/intimidation, the taking out of feelings on nearby objects and physical assault, the relationship between exposure and job satisfaction was worsened by anger suppression, while the association between exposure and psychological symptoms of stress was both alleviated by anger expression and aggravated by anger suppression. Thus, the present results serve to substantiate the existing documentation of the negative consequences of anger suppression on physical health (e.g., Gentry et al., 1982; Haynes et al., 1980) with evidence of its equally adverse effects upon psychological health. More importantly, in recognition of the need to identify factors that reduce the harmful effects of experiencing workplace violence (Wykes & Whittington, 1991; Barling, 1996), this study demonstrates the previously unseen role of anger expression and anger suppression as effective moderators of the violence-outcome association.

In contrast to the above findings, there was no evidence for the moderating effect of anger expression on the relationship between exposure to violence and job satisfaction. This may be due to the reverse buffering effects of social support, that is, individuals who receive higher levels of support experience more psychological difficulties (Wykes & Whittington, 1994). In the context of health care, increased support may be harmful for a number of reasons. For instance, colleagues may indirectly attribute blame to the victim by suggesting that such incidents are avoidable (Breakwell, 1989), or they may trivialize the incident with the intention of distracting the victim (Kleber & van der Velden, 1996). In view that the expression of anger amounts to a show of distress (Luhn, 1992), and that support is offered to individuals who are seen to be suffering (Wykes & Whittington, 1994; Lam, 1999), increased social support following the expression of anger may, as a result, generate negative effects that nullify the beneficial outcomes expressing anger.
The obvious discrepancy in the moderating effects of anger expression and anger suppression is with respect to violence in the form of verbal abuse. In part, this may arise because verbal abuse, regardless of its potential consequences, remains a form of ‘low-level’ violence (Beale et al., 1996), which, rightly or wrongly, is perceived by many healthcare workers to be “part of the job” and to carry a smaller risk of physical harm than does threat/intimidation, the taking out of feelings on nearby objects and physical assault (Arnetz, 1998). While this does not mean that verbal abuse is not an important occupational stressor, it does suggest, however, that any moderating effects of anger expression and anger suppression are possible only when the violence encountered poses a more compelling risk of physical harm.

In relation to the effects of anger expression and anger suppression as predictors of exposure to violence, results indicate that whereas the expression of anger is unrelated to the rates of experiencing violence, the suppression of anger is associated with lower levels of exposure. While the consistency with which these effects are replicated across the four forms of violence renders it unlikely that they are spurious outcomes, the fact that causation is not discerned in correlational analyses introduces the possibility that expressed and suppressed anger may constitute outcomes rather than predictors of violence. In the present context, this would mean that while the experience of violence is unrelated to anger expression, higher levels of exposure culminate in reduced anger suppression. Indeed, such an interpretation is entirely plausible, for the reason that although the anger experienced as a result of encountering violence is consciously suppressed at work (Brady, 1999), the inhibition of angry feelings for prolonged periods of time is extremely difficult (Farrell & Gray, 1992). It follows, therefore, that the ability to suppress anger will be reduced with increased episodes of violence. Importantly, however, this account remains purely speculative in the absence of empirical evidence on which to determine the direction of causality.

Taking a broad perspective across both the moderating as well as predicting effects examined in the present inquiry, an interesting feature of the current results is the conflicting effects found between anger expression and anger suppression. In particular, while anger suppression moderated the exposure-job satisfaction relationship and correlated with exposure to violence, these effects were notably absent in the case of anger expression. This inconsistency between the impact of expressed and suppressed anger is not unique though, having already been reported by a number of earlier studies (e.g., Abel, Larkin & Edens, 1995). On the basis of past and present evidence, then, the current results would appear to be best understood by recognizing that the expression and suppression of anger may not exist on a unidimensional and bipolar scale (Johnson & Broman, 1987). Indeed, this view has been endorsed by the previous empirical demonstrations that anger expression and anger suppression are factorially orthogonal and independent dimensions of each other (Spielberger et al., 1985; Johnson & Broman, 1987). Therefore, the present results may not be contradictory, since there is, in effect, no reason to expect mutually consistent outcomes between anger expression and anger suppression.
References


The following references were taken from Cook (1981):

CAMMANN, FICHMAN, JENKINS & KLESH (1979)

SEASHORE, LAWLER, MIRVIS & CAMMANN (1982)

PATCHEN (1970)


PROMOTING POSITIVE WORK ENVIRONMENTS: THE ROLE OF THE CLINICAL MENTOR

M. LEDUCQ & G. A.WILLIAMS
School of Nursing, University of Nottingham, United Kingdom

Introduction

With some exceptions (Houston & Allt, 1999; Burisch; 2002; Leducq & Cox, 2003), the well-being of trainee health professionals has been neglected in occupational health psychology research. This is unfortunate as attention to safeguarding and promoting the well-being of trainees has implications for the future provision of a healthy and productive workforce. Furthermore, it is likely that early clinical experiences will have impact on the quality of care they deliver and their clinical decision-making (Houston & Allt, 1997; 1999). Owing to the centrality of formative clinical experiences, nursing and medical education usually entails provision of a mentor – an experienced, qualified professional – to oversee the trainee’s time on each clinical placement.

The literature indicates that, irrespective of occupation, the quality of the relationship between mentor and mentee is the critical ingredient (Ragins and Scandura, 1999; Baldwin, Dodd & Wrate, 1998, Spouse, 1996). One study in the United Kingdom (UK) of student nurses found links between the quality of the mentor relationship, trainees’ mental health, learning and risk of course drop-out (Baldwin et al., 1998). As estimates of the level of student nurse dropout throughout the UK ranges from 10-20% (RCN, 2004), there is much to be gained from reducing such a trend. It has been suggested that the main purpose of mentorship in healthcare settings is to increase and retain members of the professional workforce (Milton, 2004). In the UK, the professional regulatory body for nursing and midwifery, the Nursing & Midwifery Council (NMC), has recently proposed standards for effective mentorship, in line with guidance from the Department of Health. These standards require mentors to develop effective working relationships, understand the process by which students integrate into practice and the problems of transition at key points, whilst providing ongoing and constructive support (NMC, 2004). The need for investigation of the impact of this dynamic relationship on well-being during the training experience and beyond was previously identified in a longitudinal study (Leducq, 2002). In this paper, we will argue that research from occupational health psychology has much to contribute to an understanding of the processes involved in the mentorship relationship in complex health care settings and the potential effects on health. We shall propose a preliminary conceptual model based on a synthesis of theoretical constructs and research to promote positive work experiences for both mentor and mentee.
The role of the mentor in education and work

The derivation of the word ‘mentor’, and its allied concepts, appears to originate from the character of Mentor in Homer’s Odyssey. In the Odyssey, Mentor was the goddess Athena in human form who was sent down to provide a parent figure for Telemachus during the long absence of his father Odysseus. Mentor had a protective function for Telemachus but also served as his guide and role model. The classical approach to mentoring entails a dyad, whereby the mentor is the more senior, experienced figure in the relationship and the mentee is one who adopts an active learning role. From this perspective, the mentor-protegé dynamic should confer benefits to both parties – the mentor derives satisfaction from passing on knowledge and the mentee also develops new thinking and problem-solving strategies without needing to ‘reinvent the wheel’. In present-day parlance in educational settings, mentorship may involve an adult helping a school-aged child/adolescent to cope with the demands at school or in facing the challenges of everyday life. In occupational settings, mentorship could involve mentees acquiring requisite professional expertise and knowledge by working with a mentor who has already attained a higher occupational station. Many organisations have established mentoring systems for newcomers because of the presumed mutual benefits for employee and the organisation. The traditional model (Kram, 1983) incorporates two functions: (1) work-related and personal development; (2) psychosocial support. More recently, Scandura (1992) identified a third function of mentoring: role modelling via social referents. In this sense, the novice to the organisation comes to identify with the norms and values and behaviours of the role model (i.e., the mentor).

Evaluations of mentorship schemes have tended to focus on outcomes such as organisational commitment, job satisfaction and turnover. Effective mentoring functions are also recognised in the reduction of job-related stress in mentees (Sosik and Godshalk, 2000). There is some discrepancy in the literature regarding the role, function and effectiveness of mentors. Formal systems usually involve assigning mentors without the mentees’ input (the “blind date” approach). However, it has been argued that informal mentor-mentee relationships which involve some kind of psychosocial “matching” are more effective (Armstrong, Allinson & Hayes, 2002).

Mentorship in UK nurse education

Formal mentorship schemes are a mandatory requirement for the practical component in UK nurse training programmes. In addition to facilitating learning opportunities and professional development, mentors are required to make judgements on students’ competence and ultimate fitness to practise as qualified, registered nurses and are accountable to the professional regulatory body for such
assessments (NMC, 2004). Because of the clinical supervisory component, mentors in UK nurse education hold a somewhat different position to the classical role often adopted in more general occupational settings. Role conflict may emerge sometimes from the duality of role: source of psychosocial and professional support versus formal assessor and “gatekeeper” to the profession. As a result, mentorship schemes in nurse education may require an associate mentor who can fulfill some mentoring functions by also being a source of emotional support and advice. Mentoring in UK nurse education thus comprises more than the traditional dyadic relationship and could be complicated by its multidimensional nature.

Promotion of positive work environments in nurse mentorship

We concur with the view of Holden-Peters and Griffiths (2003) that occupational health psychology should include more focus on the beneficial effects of work on health and on strategies which promote healthy and happy workplaces. There is an emerging interest in the international nursing literature on developing positive work environments and subsequent benefits for recipients of health care (McGirr and Bakker, 2000). An example of such environments may be seen in the “magnet hospital status” awards in North America for success in attracting and retaining nurses, even in times of nurses shortage, and provision of organisational environments conducive to excellent nursing care (Aiken, Havens & Sloan, 2000). Positive nursing work environments have been characterised elsewhere by nurses being satisfied with themselves, their jobs, relations with colleagues and how they are managed. In order to promote such an environment, it has been identified that there should be sufficient levels of staff, positive working relationships and mechanisms for staff to make contributions about how work is organized. Other indicators of positive nursing work environments include recognition by the organisation and professional colleagues, adequate scope for personal and professional development, and opportunity for exercising control over work (Attridge & Callahan, 1990). If positive work environments can be created in such a way in nursing, it is likely that effective mentoring of trainee nurses would entail similar activities.

Most research on the effectiveness of mentorship schemes has focussed on the mentee’s experience. Those studies that have investigated both perspectives have reported divergence and lack of validation of the other’s perspective. Notably, mentors consider themselves to provide higher levels of psychosocial support than that experienced by mentees (Waters, McCabe, Kiellerup & Kiellerup, 2002). Within the interpersonal relationship, reciprocity appears to be pivotal to success. For example, there should be two-way communication and agreement between mentor and protégé so that there is congruence in expectations of the learning goals and methods of achieving them. Any
significant lack of synchrony may lead to difficult and strained mentor-mentee relationships (Godshalk & Sosik, 2002). In the nursing literature the mentor has been widely identified as the “lynchpin” in nurse education, yet the perspective of mentors and the effects on their well-being has been under-researched.

We consider the theoretical framework underpinning the effort-reward imbalance model (Siegrist, 1996) to provide a useful basis for further exploration of this area and the effects on health. Mentorship theorists predict specific costs and benefits for the mentor. For example, mentors report increased job satisfaction when their investment pays off and the mentee makes good progress; an additional benefit is recognition from the organisation. Potential costs to the mentor have received less attention (Ragins and Scandura, 1999). It is often assumed that mentors will have to invest more than they get back. We contend that the long-term benefits to the mentor may be substantial, particularly in seeing their protégés ultimately attain influential positions. We suggest that mentoring must be an intrinsically and extrinsically valued experience for the mentor in order to be beneficial and that a longer term orientation should be included in any analysis. Consequently, we argue that competent analyses of the effectiveness of mentoring should address the mentor-mentee dyad over time and integrate the balance between effort and reward from the perspective of both parties. The following conceptual model includes the types of factors that we propose as central to the success of the mentor-mentee relationship.

Mentorship in nurse education – A proposed conceptual model

To adequately assess the complex and dynamic relationships involved in mentorship in occupational settings, it has been recommended that multiple levels of analysis are used and conducted over time (Sosik, Godshalk and Yammarino, 2004). Multi-level analyses would encompass the dyadic relationship between mentor and mentee, intra-individual factors specific to each party, and variables related to the organisational context within which the mentor and mentee would be working. Figure 1 outlines the features of a proposed conceptual model that is intended to set the agenda for further empirical work in this area.

In the left side of the model, there are hypothesized variables integral to the mentee’s achievement of positive experiences whilst on placement. Initially, the mentee may perceive an array of challenges when introduced to an unfamiliar health care environment. The student nurse will be drawing on previous experiences in a healthcare context, although effects will be limited in the very early stages of training. Student nurses place high value on being accepted and integrated into the health care team. Fulfilling this need for belonging appears to be moderated or mediated by assimilation of professional and organisational norms through social comparison and affiliation (i.e., the middle section of the conceptual model). The mentor can facilitate this process by supporting and
guiding the student through the complex and dynamic ‘maze’ of the health care environment. The model incorporates the effect of organisational variables. For example, integration of the student into the team and the mentor’s availability to the student will both be influenced by team climate, competing work demands and organisational support. Through this process, mentees begin to attain an assortment of positive work outcomes (i.e., the right side of the conceptual model). Through progressive achievement of requisite clinical competencies in prior placements and during the current placement, the mentee acquires wide-ranging indicators of well-being (e.g., high levels of self-efficacy, self-esteem and engagement with work). The role of the mentor is pivotal to the mentee’s personal and professional development as they often act as ‘translators’ of emotionally charged situations in health care. Thus, the student nurse will be better equipped to make sense of such challenging situations and develop a stronger sense of coherence and meaning to the profession. There is a vast body of literature on stress and burnout in health care occupations. Burnout, in particular, is widely reported in nursing contexts but may be less likely if the student nurse begins to learn positive strategies from the mentor to avoid emotional exhaustion and depersonalisation of health care users and to promote a sense of personal accomplishment and engagement with work.

Conclusion

The mechanisms by which mentorship impacts on well-being and performance in nursing occupational contexts are complex and under-researched. Although there is a firm theoretical basis for mentorship in the organisational and management literature, much of which is derived from social exchange theory, it does not appear to have been assimilated thus far into nursing research. The current government agenda for promoting healthy working lives of the UK’s National Health Service workforce (Department of Health, 2000) coincides with the developing interests and concerns of occupational health psychology (Holden-Peters and Griffiths, 2003). Recent policy for optimising the clinical learning experience for student nurses is an opportunity for the discipline to provide input on creating positive working environments for both mentors and trainees and promoting their well-being and performance as health professionals.

References


Figure 1: The contribution of occupational health psychology to mentoring in nurse education - A proposed conceptual model

Challenges
- Primary appraisal of work context
- Need for integration & acceptance
- Mentors' workload & role demands
- Achievement of competencies

Moderators/Mediators
- Mentor behaviour
- Individual traits
- Mentor behaviour
- Individual traits
- Organisational climate
- Learning events
- Achievement of competencies

Positive Work Outcomes
- Indicators of well being:
  - Effort-reward balance
  - Job satisfaction
  - Low burnout
  - High engagement with work
  - High self-efficacy
  - Competency
  - High self-esteem
  - Flow states
  - Optimism
  - Social affiliation
  - Sense of coherence
  - Role clarity
  - Low turnover
OCCUPATIONAL HEALTH PSYCHOLOGY: THE
UK SITUATION AND AVENUES FOR
DEVELOPMENT

S. LEKA & J. HOUDMONT
Institute of Work, Health & Organisations, University of Nottingham, United Kingdom

Introduction

The term ‘Occupational Health Psychology, (OHP) was coined fourteen years ago by Raymond, Wood and Patrick (1990). Since then, the breadth of activity in the discipline has extended far beyond an initial focus on issues of work-related stress (Cox, Griffiths & Houdmont, 2003). In little over a decade, OHP has developed into a successful and self-sustaining discipline. This success is indicated by the fact that activities in the discipline are now underpinned and supported by, among other things, two discipline-specific international representative bodies (the European Academy of Occupational Health Psychology and the North American Society of Occupational Health Psychology) and two subject-specific scholarly journals (Work & Stress and the Journal of Occupational Health Psychology). However, growth of the discipline has lacked uniformity across Europe, both geographically and thematically.

The British situation exemplifies this disparity. There are a number of centres in Britain possessing active research interests in issues falling within the OHP remit. Cox (2001) identified five centres of activity in Britain that espouse OHP, including the Institute of Work, Health and Organisations (University of Nottingham), Robens Institute (University of Surrey), Institute of Work Psychology (University of Sheffield), Institute of Occupational Health (University of Birmingham) and the Institute of Occupational Medicine (University of Edinburgh). To this list could be added Goldsmiths College (University of London) and the University of Luton. However, within centres of OHP activity in the UK, there exists an imbalance between the three sustaining pillars of education, research and practice. For example, among all these institutions, only the Institute of Work, Health and Organisations offers an explicit OHP postgraduate qualification. The situation across Europe is similar, with clusters of vigorous OHP activity existing primarily in north and north-western European countries, but great swathes of the European continent remaining untouched by the discipline.

The discipline’s first decade

Much explicit OHP activity in the UK has historically been and remains channelled through activities of the European Academy of Occupational Health
Psychology (EA-OHP). The creation of a pan-European organisation to represent and shape the future of OHP in Europe was first suggested in 1997, during a series of discussions between the WHO Centre for Organisational Health and Development at the University of Nottingham, UK (later incorporated into the Institute of Work, Health and Organisations) and the Departments of Occupational Medicine at Skive Syghus and at Herning Syghus, Denmark. An ad hoc Organising Committee took shape during 1998 and 1999, culminating in the signing of a Memorandum of Agreement to establish the EA-OHP. The Academy was formally constituted in 1999 during the first European Workshop on Occupational Health Psychology organised by the Universities of Lund and Kristainstad, Sweden. At the Lund conference, it was decided to organise Academy activities around three Fora covering the founding objectives of the Academy: Education, Professional Practice, and Research. Each Forum is convened by a small group of Full Members, and all Members are free to participate in any of the Fora.

During the first decade of OHP's formal existence, a central activity involved outlining a consensus definition of the discipline, and the efforts supported and promoted by the EA-OHP. Achievement of definition by consensus was considered important because definitions inevitably determine the content and methods of related educational programmes and professional practice (Cox, Baldursson & Rial-Gonzalez, 2000). Moreover, an agreed upon definition allows better co-ordination of activities that ensure a discipline’s strategic development. In Europe, a consensus definition has been agreed upon, that regards OHP as concerned with the application of the principles of various areas of applied psychology to occupational health, including work and organisational psychology, health psychology, and social and environmental psychology (Cox, Baldursson & Rial-Gonzalez, 2000). This ‘interface’ definition in which the contribution of various areas of psychological specialty is implied, has a determining influence on the nature of issues that largely tax occupational health psychologists, namely, the psychological, social and organisational aspects of occupational health questions.

The 2001 Education Forum agreed a definition of OHP for the purposes of education and training in Europe based on that of Cox, Baldursson & Rial-Gonzalez (2000) that regards OHP as the application of the principles and practices of applied psychology to occupational health issues, and is thus the study of psychological, social and organisational aspects of the dynamic relationship between work and health. As such OHP is a separate and distinct discipline that has its focus on prevention of ill health within the context of the work environment (Leka, 2004).

It could be argued that OHP is now entering the second phase of its existence. The 1990s witnessed the laying of foundations and now, in the second decade of the discipline’s formal existence, it is timely to reflect, consolidate and build on those foundations a self-sustaining discipline that fulfils its potential to support healthy work on a global scale. This potential will only be achieved through the co-ordinated efforts of individuals and existing OHP networks.
Support networks and representation

The vision of the EA-OHP founding institutions was to establish a trans-European body that would encourage, nurture and shape the development of OHP in Europe in four main areas: education and training, research, professional practice, and policy formation. One of the most successful Academy activities has been the Annual Conference that has taken place in a variety of interesting locations including Lund (1999), Nottingham (2000), Barcelona (2001), Vienna (2002), Berlin (2003) and Oporto (2004). Year on year, the annual conference has grown in both in terms of the quality of submissions and delegate numbers. The recent Berlin 2003 conference attracted almost one hundred high quality peer reviewed presentations and approximately one hundred and thirty delegates representing twenty three countries, all of which can be taken as indicative of the truly international appeal of OHP.

With the advent in early 2004 of the Society of Occupational Health Psychology (SOHP) in North America, OHP is now served by two representative bodies whose activities are targeted at separate geographical areas but which nevertheless mirror one another in intention. Faced with new challenges that arise with the maturation of the discipline, it is more important than ever that the SOHP and EA-OHP work collaboratively to ensure the discipline presents a unified face to the world.

Both in Europe and North America formalised attempts have been made to encourage dialogue with the objective of furthering the discipline. The Education Forum of the EA-OHP has established an online discussion board to facilitate dialogue on educational issues. This resource has proven efficacious in stimulating discussion and importantly has triggered the interest of a number of institutions in creating new OHP postgraduate courses. A second online discussion board has been introduced on the website of the EA-OHP for general non-specific discussions. Following the success of these facilities, plans are afoot to develop further online discussion boards for both the Research Forum and Professional Practice Forum of the EA-OHP. A different, but no less effective, approach to the encouragement of networking has been adopted by the American Psychological Association through provision of an unrestricted international ListServe facility for sharing knowledge and information on all aspects of OHP. The ListServe is well used, particularly by researchers searching for appropriate tools and methodologies for studies. In early 2004 an interesting new development occurred with the creation of a further ListServe at the University of Colorado, targeted specifically at issues pertinent to OHP in Asia.

Education and training

As the embryonic discipline evolved in the early 1990s the importance of postgraduate education and training for long term sustainability of the discipline
came to the fore. In the UK, the Institute of Work, Health and Organisations (I-WHO) at the University of Nottingham, pioneered OHP education and training with inception of a Masters of Science (MSc) degree that reflected the Institute's research interest in OHP and the European consensus definition of the discipline. The course has been operational for almost a decade, during which time the qualification has been successfully achieved by some one hundred and fifty students, many of whom have subsequently secured employment utilising the skills and knowledge acquired during the period of study. A handful of other UK academic institutions have subsequently introduced optional postgraduate modules in OHP within Occupational Psychology MSc qualifications. In view of tremendous blossoming in OHP during the 1990s, it is perhaps surprising that no other university in the UK or elsewhere in Europe has sought to introduce a postgraduate qualification in OHP. Issues such as absence of course accreditation and professional recognition could have contributed to this picture.

Evaluation of US OHP training programmes suggests that graduates have successfully carved out their own niche in the job market and that demand for their professional services is growing (APA Science Directorate, 1997). Similarly, in the UK there is evidence of employers beginning to advertise for the services of occupational health psychologists and a number of academic Chairs in OHP have been created. However, the public profile of OHP remains low and many employers remain ignorant of the discipline.

It could be argued that the situation that will only alter following concerted efforts to increase availability of postgraduate OHP qualifications and the number of students pursuing these. The youthfulness of OHP is evident in the deficit of postgraduate study opportunities worldwide. In Europe, the only explicit OHP educational provision is through the Institute of Work, Health and Organisations in the UK. It is worthy of note that the introduction of an MSc in OHP by e-learning in January 2005 will allow the Institute to offer the qualification to an international distance learning cohort. Although the lack of OHP educational provision may be understandable in light of the relative youthfulness of the discipline, it is imperative that provision is widened if the discipline is to continue its upwards trajectory.

A further issue of importance relating to OHP education and training is the development of a core curriculum. The 2001 Education Forum of the EA-OHP highlighted the need for a domain analysis of OHP for purposes of informing a core curriculum that in turn could facilitate moves towards accreditation for recognised courses. The strategy document, 'Promotion of Education in Occupational Health Psychology in Europe: A strategy for the European Academy', presented to the Education Forum of the 2002 EA-OHP conference, restated the need for a core OHP curriculum and identified the shortcomings of developing this in the absence of an awareness of the competencies required of occupational health psychologists in organisational and academic practice. This situation further hinders course and professional accreditation.
To facilitate consensus it is imperative that in delineating a core curriculum the risk of over-prescription is avoided. Course providers must be able to tailor curricula to institutional foci and local needs. Indeed, no single course can prepare a professional occupational health psychologist for every conceivable situation that they may face in their work. Rather, "training in OHP should expose individuals to all... fields and sensitize them to the need for drawing in other professionals when their particular level of expertise is deficient" (Schneider et al., 1999). The provision of sufficient flexibility to tailor educational provision within a framework will prevent inhibition of creativity and facilitate its international evolution; a point eloquently conveyed by Adkins (1999), who noted: "To meet the evolving psychosocial needs of the working community, occupational health psychologists need to adapt and grow with organisational change. Continuing to refine and develop occupational health psychology principles will enable practitioners to confront the challenge of maximizing both workforce and organisational health."

**Qualification accreditation and professional certification**

There is a call both in Europe and North America for formal accreditation to be bestowed upon postgraduate OHP qualifications regarded by an authoritative body as providing high quality education and training in the discipline's core thematic domains (see, for example, NIOSH, 2002). At present no regulating body offers qualification accreditation; a matter of regret to OHP graduates keen to impress upon potential employers the formalised nature of OHP as a discipline and profession. Lack of accreditation may also hinder development of OHP in new constituencies. In the absence of a clear professional career structure course providers may shy away from introducing the subject for fear that potential students may prefer to pursue a qualification that constitutes a step towards certification of professional status, as is the case with the MSc in Occupational Psychology (OP) in the UK.

Little ground has been covered in pursuit of accreditation for OHP qualifications. In the UK, the British Psychological Society (BPS) is the most obvious body for the awarding of accreditation. However, at present it lacks the administrative wherewithal to accredit a degree course on the basis of its quality, only on the basis that it covers defined content within a specific traditional area such as occupational or health psychology. This is inappropriate for an interface discipline such as OHP. A preferential accreditation model for OHP would involve an internationally agreed framework syllabus that can be translated according to local teaching and research competencies and the nature of the regional employment market. To this end, it is now important that the European and North American OHP representative bodies dialogue with a view to generation of a universal consensus curriculum framework that will provide a
knowledge-grounding in the core thematic areas of OHP and international accreditation. Exploration of alternative potential accrediting bodies to the BPS, including pan-European bodies, may also be a worthwhile pursuit.

Defining a core OHP curriculum could also serve as the first step towards professional certification of OHP graduates. There is no OHP qualification available in Europe that leads to state or governing body recognition of competence to practice as an occupational health psychologist. This may help to explain the reluctance of educational institutions to introduce OHP courses; students are likely to be attracted to courses, such as those in Occupational Psychology (OP), where completion of the qualification constitutes the first step towards professional certification. Professional certification for occupational health psychologists must be a medium-long term goal of all those with a vested interest in the continued growth of the discipline. Professional certification needs to be preceded by development of consensus on a common syllabus framework and core curriculum if certification is to be continental or even international in scope.

**Regional clustering of OHP activity**

One current barrier to growth in OHP is its restricted geographical nature of activity. Beyond the UK and isolated geographical pockets in the Nordic countries, researchers, educators and practitioners in OHP work in relative isolation. The geographically disparate and often small scale nature of OHP activity hinders opportunity for developments in educational provision. Access to OHP education and training is challenging in much of central, eastern and southern Europe. However, access limitations alone do not explain that lack of OHP activity in these regions. The organisational (systems level) approach to work and health that focuses on prevention and good work design is largely the preserve of those working in the north and north-west of Europe. Outside of this small region the focus largely remains on clinical issues at work and individually focused actions. The remit of OHP remains unknown and often misunderstood. The challenge facing OHP now is to promote its unique perspective in these new markets.

The new MSc in OHP by e-learning offered from January 2005 by the Institute of Work, Health and Organisations is one vehicle by which to widen participation in OHP education in countries where the discipline remains underdeveloped. It is anticipated that over time the e-learning course will stimulate grass-roots research, practice and educational activities with a focus on the needs of regionally specific worker groups. Although at present the ever-growing number of individuals engaging with the activities of the EA-OHP suggests a healthy discipline, it is noteworthy that many of this number are established academics who have developed an interest in OHP after establishing a career in another area of applied psychology. The task of educating and training a
generation of individuals who consider themselves first and foremost occupational health psychologists now awaits.

Awareness raising in relation to OHP as a scientific discipline can also be achieved through organised and co-ordinated efforts towards expanding the network of the EA-OHP in Europe and beyond it. Collaboration with the SOHP would be critical towards this end. The role of the EA-OHP and the necessary next steps towards the growth of the discipline both on a European and on an international basis are discussed next.

**Strategic European and international development of OHP**

Within moves to foster an international approach to the evolution of OHP there is an important role for the International Co-ordinating Group for OHP (ICG-OHP), founded in November 2000 as a means of facilitating the development of research, professional practice and education in the discipline within an international framework. Representatives from the primary organisations involved in the establishment of OHP were invited to sit on the Group, including NIOSH, APA, EA-OHP, and the editors of the two main OHP-related academic journals: *Work and Stress* and the *Journal of Occupational Health Psychology*. It is now more necessary than ever that the group maintains an active role in the development of OHP on an international basis and with the addition of the SOHP.

The EA-OHP and SOHP have already entered into dialogue on a number of issues and displayed openness to the sharing of best practice and knowledge. An important goal now demands the unified efforts of these two bodies: the achievement of a single international perspective on OHP. At present, the North American and European schools of OHP ways contrast in certain ways. The first task in realising unity involves bringing together North American and European definitions of OHP into a single definition. The North American ‘hierarchical’ approach has its roots within psychology, bringing theoretical knowledge and interventions to the workplace from the subdiscipline of health psychology. As such it may be informally termed the ‘health psychology of work’ (Cox et al., 2000). In contrast, the European ‘interface’ perspective traces its history to the meeting of occupational health and applied psychology. The integration of a various perspectives and the incorporation of contextual factors gives the model a Psychological, Social and Organisational (PSO) form and implies a definition of OHP wherein it is a discipline, distinct from its closest neighbours, health and occupational psychology, that could perhaps be informally labelled ‘the work psychology of health’ (Cox et al., 2000). The challenge of securing a definition of OHP by international consensus necessitates continued dialogue between the EA-OHP and SOHP. Once achieved, the way could be paved for an international OHP syllabus framework and curriculum content.
In the absence of a state or governing body equipped to offer professional certification of competence to practice in OHP, dialogue between these organisations may also serve to lay the foundations of a new international executive body created with the explicit remit of certification. Any such awarding body would by necessity also take on a regulatory role involving complex legal and practical features. Creating a certification system for professional occupational health psychologists, comparable to Chartership available for Occupational Psychologists in the UK, is no small undertaking, but one worthwhile pursuing for the long-term sustainability of OHP as a discreet, professional discipline.

Perhaps the most important next step in the development of OHP is the crystallisation and the expansion of the networks sustained through the EA-OHP and the SOHP. A more structured approach and co-ordinated awareness raising actions are crucial to this end. The EA-OHP could actively pursue to establish working links with key stakeholders that could facilitate the promotion of the discipline on a pan-European basis. These could include education providers, health promoters, government representatives, employee and employers associations, and occupational health and safety associations. At least one champion could be identified in countries where the discipline is less, or not at all, developed. These champions could then work with the Academy to raise awareness on the discipline through the pursuit of education, training, research and consulting activities that could form part of a series of consultation meetings with other key stakeholders in each country. Other existing networks with similar interests and activities could be approached for collaboration. The WHO Network of Collaborating Centres in Occupational Health represents a good example. Awareness raising could also involve the wider distribution of the Academy’s publications: the Occupational Health Psychologist, and the... Key stakeholders that could play an important role in the development of the discipline on a pan-European and international basis could be invited to contribute to these publications.

An Academy task force that will actively work towards awareness raising and towards widening the existing European OHP network should be formed and take on responsibility through a clearly defined action plan with agreed yearly outcomes. It is important that the task force includes representatives from non-northern European countries.

Concluding comments

The discipline of OHP has come a long way in a short time. In a matter of only fourteen years since the term was coined, a professional discipline has evolved, the importance and value of which has captured the imagination of academics, occupational health professionals of various orientation, policy
makers and employers. Although the discipline has unrelentingly pursued an upwards trajectory, longevity cannot be taken for granted. Key to sustainability is education and professional training. Only with the advent of a generation of graduates who first and foremost consider themselves occupational health psychologists as opposed to industrial, organisational or occupational psychologists specialising in OHP will the discipline self-perpetuate. To this end, a variety of needs and challenges facing education and training in OHP have been outlined and the role of existing and new support networks and representative organisations in facing up to these challenges conjectured upon.

References


Keywords: Occupational health psychology, UK, EA-OHP
AN EXPLORATION OF SUPPORT REQUIREMENTS AND WORK ADAPTATIONS AMONG CHRONICALLY ILL EMPLOYEES

S. LEKA, F. MUNIR & A. GRIFFITHS
Institute of Work, Health & Organisations, University of Nottingham, United Kingdom

Introduction

Government initiatives in Britain in the 1990s demanded the optimisation of opportunities for all people of working age to become active members of the labour force (Disability Rights Task Force, 1998). Since the Disability Discrimination Act in 1995, an increasing emphasis has been placed on inclusion. In addition, European and British health and safety legislation and employers' guidance make it clear that employers need to design and manage 'healthy' work. Part of this requirement involves designing work to suit employees' needs and abilities. It has been made clear that these responsibilities extend to psychological, social and organisational matters, not simply to the physical working environment (Griffiths, 1998; European Commission, 1989; Health & Safety Commission, 1999; Health & Safety Executive, 1995).

Much research to date has focused on exploring the problems experienced by people with declared major disabilities and improving their access to work. Much less attention has been paid to employees with chronic illness or undeclared minor disabilities. Evidence suggests, for example, that by the age of 50, at least a third of the workforce is likely to be managing a chronic illness, usually cardiovascular or musculoskeletal disorders (Ilmarinen, 1994). Chronic illness can be defined as 'illnesses that are prolonged, do not resolve spontaneously and are rarely cured completely' (US Center for Disease Control and Prevention and National Center for Chronic Disease and Health Promotion, 1999). The World Health Organization reports chronic illnesses to be one of the most expensive health problems in modern industrialised societies (WHO, 1992). Common examples are: asthma, diabetes, arthritis, minor forms of epilepsy, dietary or digestive disorders (coeliac disease, inflammatory bowel disease), cardiovascular disease and psychological conditions such as anxiety and depression. These problems may or may not be caused by, or made worse by, work (i.e., they may or may not be work-related). Nonetheless they may require careful management if quality of life and performance at work is to be maximised. Such management may be carried out by employees themselves with or without the knowledge of their employers.

The scientific literature to date concerning chronic illness in the workplace has either focused simply on the incidence of work-related ill-health among
working people (e.g., Jones, Hodgson, Clegg & Elliot, 1998) or on documenting the role of ill-health in explaining early exit from the labour force (e.g., Kessler, Greenberg, Mickelson, & Wang, 2001; Ward, Harold, Smith & Whan, 2002). Many existing workplace policies and practices are intended solely to address these issues. Other procedures address the process and management of employees returning to work after long-term sickness absence. However, evidence from national statistics indicates that the majority of individuals who experience a chronic illness maintain continued employment (Daly & Bound, 1996). Many of these employees receive some kind of work adjustment such as reduced working hours, reduced work pace or adjustments to their physical work environment (Baanders, Andries, Riken & Dekker, 2001; Lerner Amick, Malspeis & Rogers, 2000; Daly & Bound, 1996). Other employees change employment or career in order to manage both their condition and their work better (Mancuso, Paget & Charlson, 2000; Daly & Bound, 1996). Whilst invaluable, a major limitation of such studies is that they give minimal information about health-related work limitations and work adjustments. There is little information on how employees manage their work, or on the factors that facilitate their continued employment. Evidence from studies on individuals with a disability indicates that where they find themselves in a work environment unresponsive to their needs, they experience lower levels of job satisfaction, psychological well-being and job productivity, and higher levels of absenteeism (Akabas & Gates, 1993). Equivalent published studies of employees with chronic illness do not currently exist.

The emerging literature suggests that some organisations already adhere to much of the good practice set out in Government guidelines on Employing Disabled People (Department of Employment and Education, 1999) by providing access to work, making appropriate workplace adjustments and in some cases promoting career opportunities for those with a disability (Szymanski, 1999). However, there is still much to achieve in order to provide a working environment that is inclusive and fair to those with a chronic illness. It is important to address shortcomings in our understanding of these employees. In particular, we need to examine their experience and circumstances at work, and the factors that facilitate their continued employment.

Research aim and objectives

This study explored chronic illness among staff in one large organisation of the education sector. Specifically, it sought to determine the prevalence of such illnesses, to establish the precise nature of the physical, psychological and social challenges arising from these health problems at work and to examine the practical requirements of disease management and the importance of support from management.
Method

Approximately 5,500 questionnaires were distributed of which a total of 2,172 (40%) was returned, representing a higher-than-average return rate for postal questionnaires. A third of respondents (734) indicated that they had at least one chronic illness. The data were analysed by use of frequency and logistic regression analyses.

Results

Sample characteristics

61% of the questionnaires were completed by women, compared with 39% completed by men. All occupational groups were represented, with the highest return rate from clerical/administration staff (24%) followed by academic staff (23%). Respondents’ age ranged from 17 years to 68 years, with an average of 42 years. In all, 34% of all respondents reported managing a chronic illness (734 employees). Data on ethnic origin indicated that 97% of the sample were white, 2% were Asian/Oriental and 1% represented other ethnic origins.

Classifying chronic illness

From the 734 reported chronic illnesses, eight illness classifications emerged. Five groups were clearly identified: asthma, arthritis, irritable bowel syndrome, migraine and diabetes (Table 1). For ‘depression and anxiety’ participants were grouped if they reported either depression, anxiety or a combination of both. Two groups were defined using the International Classification of Diseases (ICD 10; World Health Organization, 1999). ‘Musculoskeletal pain’ consisted of participants reporting pain anywhere along the musculoskeletal system (e.g., back, shoulders, neck, arms, elbows, wrist and lower limbs). For ‘heart disease’, participants were included if they reported myocardial infarction, angina, heart failure, stroke and hypertension. An additional group, classified as ‘Other’, represented either smaller numbers of other reported chronic illnesses (n = 46), or those reporting suffering from musculoskeletal pain for less than three months (n = 9), and from migraine or irritable bowel syndrome for less than 12 months (n = 14). A further number of participants (n = 55) did not state their illness, and were classified as ‘unknown’ (Table 1).

The clear majority of respondents (90%) reported that their condition had been diagnosed by a medical practitioner, and 63% of respondents were using prescribed medication or special equipment (e.g., a nebuliser or injections) for their condition. Approximately a quarter of the group frequently used their medication or equipment at work, whilst 22% used them sometimes. The remainder did not need to use special equipment or medicine at work. Almost all respondents found it easy to use their medication/equipment at work.
Table 1: Categories of chronic illness

<table>
<thead>
<tr>
<th>Category</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression &amp; anxiety</td>
<td>124</td>
<td>(16.9)</td>
</tr>
<tr>
<td>Asthma</td>
<td>96</td>
<td>(13.1)</td>
</tr>
<tr>
<td>Musculoskeletal pain</td>
<td>95</td>
<td>(12.9)</td>
</tr>
<tr>
<td>Irritable bowel syndrome</td>
<td>92</td>
<td>(12.5)</td>
</tr>
<tr>
<td>Arthritis</td>
<td>78</td>
<td>(10.6)</td>
</tr>
<tr>
<td>Migraine</td>
<td>44</td>
<td>(6.0)</td>
</tr>
<tr>
<td>Heart disease</td>
<td>44</td>
<td>(6.0)</td>
</tr>
<tr>
<td>Diabetes</td>
<td>37</td>
<td>(5.0)</td>
</tr>
<tr>
<td>Other</td>
<td>69</td>
<td>(9.5)</td>
</tr>
<tr>
<td>Unknown</td>
<td>55</td>
<td>(7.5)</td>
</tr>
</tbody>
</table>

The clear majority of respondents (90%) reported that their condition had been diagnosed by a medical practitioner, and 63% of respondents were using prescribed medication or special equipment (e.g. a nebuliser or injections) for their condition. Approximately a quarter of the group frequently used their medication or equipment at work, whilst 22% used them sometimes. The remainder did not need to use special equipment or medicine at work. Almost all respondents found it easy to use their medication/equipment at work.

Severity and symptoms of chronic illness

The majority of respondents (59%) had been managing their chronic illness for between one and ten years (see Table 2), and 88% reported their illness was mild to moderate in severity.

Table 2: Number of years with chronic illness

<table>
<thead>
<tr>
<th>Length of time with chronic illness</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than a year</td>
<td>5</td>
</tr>
<tr>
<td>1-10 years</td>
<td>59</td>
</tr>
<tr>
<td>11-20 years</td>
<td>23</td>
</tr>
<tr>
<td>21-30 years</td>
<td>9</td>
</tr>
<tr>
<td>31+ years</td>
<td>4</td>
</tr>
</tbody>
</table>

Of those employees reporting a chronic illness, nearly half experienced pain as a symptom. Statistical analyses (logistic regressions) revealed that those with musculoskeletal pain, irritable bowel syndrome and migraine were more likely to experience pain than respondents with other illnesses (Table 3).
### Table 3: Symptoms experienced with chronic illness

<table>
<thead>
<tr>
<th>Symptoms experienced</th>
<th>(All conditions)</th>
<th>Condition most associated with each symptom*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>Musculoskeletal pain, Irritable bowel syndrome, migraine</td>
</tr>
<tr>
<td>Pain</td>
<td>46</td>
<td>Migraine</td>
</tr>
<tr>
<td>Dizziness</td>
<td>11</td>
<td>Migraine</td>
</tr>
<tr>
<td>Tiredness/fatigue</td>
<td>49</td>
<td>Migraine</td>
</tr>
<tr>
<td>Lack of concentration</td>
<td>30</td>
<td>Migraine, depression &amp; anxiety</td>
</tr>
<tr>
<td>Lack of clear thinking</td>
<td>22</td>
<td>Depression &amp; anxiety</td>
</tr>
<tr>
<td>Anxiety/tension</td>
<td>40</td>
<td>Depression &amp; anxiety</td>
</tr>
<tr>
<td>Feeling low</td>
<td>46</td>
<td>Depression &amp; anxiety</td>
</tr>
</tbody>
</table>

*derived from logistic regressions

### Chronic illness and work

About a quarter of respondents reported that their medical practitioner had identified work as a contributing factor to their chronic illness (i.e., their illness was caused by, or made worse by, work). Across the different illness groups, statistical analyses (chi-square) showed those with depression and anxiety were most likely to report work as a contributing factor to their illness (as identified by their medical practitioner) than other groups, particularly if they were members of academic or research staff or worked in clerical/administration. Of those in manual jobs with a musculoskeletal pain, 15% of respondents reported their medical practitioner had identified work as a contributing factor. When asked whether their chronic illness affected their work on a daily basis, 40% of respondents agreed. Table 4 indicates the number of respondents listing a particular condition as their major illness, together with the proportion of each group that reported work as contributing to that condition and work being affected on a daily basis by that condition.

### Table 4: Work-related conditions and effects on work (all conditions)

<table>
<thead>
<tr>
<th>Chronic illness</th>
<th>Work contributing factor to condition %</th>
<th>Work affected on a daily basis %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Musculoskeletal pain</td>
<td>31</td>
<td>54</td>
</tr>
<tr>
<td>Depression &amp; anxiety</td>
<td>58</td>
<td>60</td>
</tr>
<tr>
<td>Irritable bowel syndrome</td>
<td>26</td>
<td>23</td>
</tr>
<tr>
<td>Asthma</td>
<td>9</td>
<td>15</td>
</tr>
<tr>
<td>Migraine</td>
<td>29</td>
<td>41</td>
</tr>
<tr>
<td>Heart disease</td>
<td>23</td>
<td>27</td>
</tr>
<tr>
<td>Diabetes</td>
<td>16</td>
<td>32</td>
</tr>
<tr>
<td>Arthritis</td>
<td>11</td>
<td>22</td>
</tr>
</tbody>
</table>

243
Of the 305 respondents who reported their chronic illness affected work on a daily basis, 80% felt their work made their condition worse, 68% reported that they worried about their chronic illness affecting their job performance, and 63% were concerned their chronic illness would affect their future work prospects. Statistical analysis showed these concerns were represented across all ages, occupational and chronic illness groups, and by both men and women. Other important issues identified from respondents' comments concerned the contribution of work itself to the condition, lack of support and understanding, feelings of isolation, feelings of stress and pressure to perform without any consideration of their illness, particularly for those working in academic positions and in clerical/administration posts.

**Work adjustments**

Respondents were asked whether any adjustments had been made to their work to help them manage their illness (Table 5). This was a ten-item question, of which four items concerned work demands (different job tasks, clearer job tasks, reduced workload and different workplace), and three items concerned adjustments to the physical work environment (physical demands, physical work environment, and provision of special equipment). Two items concerned flexible and reduced working hours, and one final item concerned received social support.

A minority (16%) of respondents had received some kind of work adjustment to the demands of their job, 16% had received some kind of work adjustment to their physical work environment and 7% had received social support related to their illness. For those who had not received any kind of work adjustment, 44% reported they would like some kind of adjustment to the physical demands of the job, 42% reported they would like flexible working hours, 15% reported they would like some kind of adjustment to the physical work environment and 15% indicated they would like to receive social support at work.

<table>
<thead>
<tr>
<th>Aspects of work</th>
<th>Adjustments received %</th>
<th>Adjustments asked for but not made %</th>
<th>Adjustments desired %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduced working hours</td>
<td>6</td>
<td>6</td>
<td>16</td>
</tr>
<tr>
<td>Flexible working hours</td>
<td>13</td>
<td>14</td>
<td>28</td>
</tr>
<tr>
<td>Different job tasks</td>
<td>5</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Clearer job tasks</td>
<td>5</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Reduced workload</td>
<td>2</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>Different workplace</td>
<td>4</td>
<td>3</td>
<td>14</td>
</tr>
<tr>
<td>Adjustment of physical demands (e.g. lifting)</td>
<td>8</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Adjustment of physical work environment (e.g. access)</td>
<td>1</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Provision of special equipment (e.g. chair)</td>
<td>7</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Social support (e.g. listening &amp; understanding)</td>
<td>7</td>
<td>1</td>
<td>14</td>
</tr>
</tbody>
</table>
All 2,172 respondents, including those without a chronic illness, were asked to indicate from a list of ten items what they considered would be useful for the effective management of chronic illness at the workplace. The latter group include managers and colleagues of those with a chronic illness. Of those reporting a chronic illness, the majority (37%) requested clear policies on the management of illness at work, followed by leaflets on how to manage those conditions at work (36%), and increased awareness of organisational-wide services such as the Occupational Health Unit (34%). Over half (51%) of respondents without chronic illness requested increased awareness of organisational-wide services such as the Occupational Health Unit, followed by increased availability of information on chronic illness on the University website (50%), and leaflets on how to manage those conditions at work (45%). Further details are available in Table 6.

Table 6: Respondents’ suggestions for the effective management of chronic illness at the workplace

<table>
<thead>
<tr>
<th>Effective management of chronic illness (CI)</th>
<th>% With chronic illness</th>
<th>% Without chronic illness</th>
<th>% Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policies on the management of CI at work</td>
<td>37</td>
<td>39</td>
<td>38</td>
</tr>
<tr>
<td>Leaflets on how to manage CI at work</td>
<td>36</td>
<td>45</td>
<td>42</td>
</tr>
<tr>
<td>Increased awareness of University services (e.g., Occupational Health Unit)</td>
<td>34</td>
<td>51</td>
<td>45</td>
</tr>
<tr>
<td>Information on CI on website</td>
<td>31</td>
<td>50</td>
<td>44</td>
</tr>
<tr>
<td>Formal/official availability of flexible working hours</td>
<td>28</td>
<td>46</td>
<td>40</td>
</tr>
<tr>
<td>Training for supervisors on managing staff with CI</td>
<td>27</td>
<td>38</td>
<td>34</td>
</tr>
<tr>
<td>Training for all staff to raise their awareness (e.g., Counselling Service)</td>
<td>24</td>
<td>35</td>
<td>31</td>
</tr>
<tr>
<td>Better access to facilities/services (e.g., Counselling Service)</td>
<td>22</td>
<td>33</td>
<td>29</td>
</tr>
<tr>
<td>Provision of ‘ergonomically’ designed equipment</td>
<td>20</td>
<td>34</td>
<td>29</td>
</tr>
<tr>
<td>Policy information on workplace adjustments</td>
<td>18</td>
<td>24</td>
<td>29</td>
</tr>
</tbody>
</table>

Discussion

The study showed that employees managing chronic illnesses are more likely to report work as a contributing factor to their illness if they deal with depression and anxiety. Of the 305 respondents who reported their chronic illness affected work on a daily basis, the majority felt their work made their condition worse, worried about their chronic illness affecting their job performance, and were
concerned their chronic illness would affect their future work prospects. Other important issues identified from respondents' comments concerned the contribution of work itself to the condition, lack of support and understanding, feelings of isolation, feelings of stress and pressure to perform without any consideration of their illness, particularly for those working in academic positions and in clerical/administration posts.

In relation to work adjustments, only a minority of respondents had received some kind of work adjustment to the demands of their job and to their physical work environment or had received social support related to their illness. Those who had not received any kind of work adjustment, reported they would like some kind of adjustment to the physical demands of the job or to the physical work environment, flexible working hours, and social support at work.

In addition, of those reporting a chronic illness, the majority requested clear policies on the management of illness at work, leaflets on how to manage those conditions at work and increased awareness of relevant organisational services. Over half of respondents without a chronic illness requested increased awareness of relevant organisational services such as the Occupational Health Unit, followed by increased availability of information on chronic illness on the University website and leaflets on how to manage those conditions at work.

**Conclusion**

The study findings confirmed the widespread prevalence of chronic illnesses among employees and highlighted the importance of organisational support systems for their effective management at work. These should range from the policy to the individual level.

**References**


ASSESSING PSYCHOSOCIAL RISKS AT WORK – AN INTEGRATED METHOD FOR ASSESSING WORKLOAD

K. LINDSTRÖM
Finnish Institute of Occupational Health, Helsinki, Finland

As of 2002, the new Finnish Occupational Health Service Act and Occupational Safety Act have stipulated that every workplace must assess the risks at work and in the work environment. The Occupational Health Service Act describes workload, meaning in practice nearly the same issues and contents as the risks mentioned in the Occupational Safety Act. It is mainly the way in which the risks or loading factors are defined, which differs somewhat between these two Acts. According to the law, the employer bears the responsibility to organize the assessment of risks or loading factors. In practice, the assessments are carried out by a group including the employer's and employees' representatives as well as an OHS expert.

A new integrated assessment method was constructed by the Finnish Institute of Occupational Health to support the OHS activities. The method covers the main risks at work or the main types of workloads to be assessed. The target area is defined before starting the assessment procedure. Usually it is a workarea for people doing the same kind of work, or it can be a working group, or the work of an individual worker. At workplace level, risk or workload assessment means that first the entire workplace is divided into target areas, work groups or individual jobs. The assessments are then carried out systematically, and a report is written about the issues needing to be improved or changed.

The Integrated Finnish Assessment Method of workload (IFAM) is based on what is known from research on various workloads or risk factors and their adverse effects on health or safety. The IFAM manual describes the method itself and instructs how to carry out a workload assessment at the workplace. The legislative and research background is described and instructions are given on how to utilise the results in practice.

The five main content areas covered by the method are: physical workload (9 items); safety risks at work (7 items); psychological workload (7 items); social workload (7 items); load from working-hour arrangements (4 items + 7 items for shift work).

Each item within the content area contains a definition of a satisfactory situation and a definition of a situation needing improvements. The definitions are two or three sentences long. The assessment of each item is made on a three-point scale (1-3): clear need for improvement (1); some need for improvement (2); no need for improvement (3).
The assessment of psychological and social work load includes the following items:

<table>
<thead>
<tr>
<th>Psychological workload</th>
<th>Social workload</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Clarity of work goals</td>
<td>- Socially isolated work</td>
</tr>
<tr>
<td>- Time pressure and amount of work</td>
<td>- Quality of social interaction/collaboration</td>
</tr>
<tr>
<td>- Job control (amount and speed)</td>
<td>- Getting enough information about the task</td>
</tr>
<tr>
<td>- Learning and challenges at work</td>
<td>- Leadership practices</td>
</tr>
<tr>
<td>- Interfering things at work</td>
<td>- Equality and appreciation of diversity</td>
</tr>
<tr>
<td>- Responsibilities</td>
<td>- Bullying and harassment</td>
</tr>
<tr>
<td>- Feedback from completed work and appreciation</td>
<td>- Situations evoking negative emotions</td>
</tr>
</tbody>
</table>

The definition of each item is based on existing research results concerning the specific risk or load factors. The main sources of the research are also referred briefly to give the evidence base.

After the assessment round at the workplace, the results are summarized and feedback is given, both to the employer and employees. Whenever more comprehensive evaluation is needed, other more specific methods are suggested in the method manual for each content area. Also a more focused assessment should be done at individual level if an individual employee has a justified reason to ask for it.

Thus far the integrated assessment method has been piloted in practice and the feedback from the occupational health personnel has been positive.

Source

MULTILEVEL ORGANIZATIONAL INTERVENTION IN A HEALTH CARE ORGANIZATION

K. LINDSTRÖM¹, G. MOLANDER², L. MULTANEN¹ & M. JOENSUU¹
¹Finnish Institute of Occupational Health, Helsinki, Finland
²University of Helsinki, Helsinki, Finland

Introduction

The work in elderly care institutions is usually perceived to be physically heavy, and also the valuing of this work is on a lower level than that in acute health care. It is therefore more difficult to find and hire personnel. The personnel themselves also feel that the society, the general public and the employers do not value their work sufficiently. At the time of this organizational intervention study, the situation in Finnish elderly care was being discussed a great deal and criticized by the public and the media. The quality of care of elderly people and the personnel’s too high physical and mental work load received a lot of attention.

The general job stressors of elderly care personnel are quite well-known (Elovainio et al., 1997). For planning an organizational intervention, however, the organizational structure and culture should also be taken into account, as well as the type of patients and the way in which the care is financed, and also the future the prospects of the organization.

The organizational intervention can be primary prevention, secondary prevention or tertiary prevention, depending on the focus and goals. The prevention of occupational stress is defined as a primary prevention (Hurrell & Murphy, 1996). Some parts of it can also be seen as secondary prevention aiming to help the personnel to cope with their stress reactions in difficult or loading work situations. The primary prevention interventions in health care can focus on the collaboration of the personnel, and with the patients and their relatives, or on improving the work organization, daily care routines and job design. In elderly care, as in health care in general, however, also the care competence and the quality of care can be part of the interventions.

Objectives

The aim of this intervention study was to evaluate the effects and impacts of an individual and organizational focused intervention program on psychosocial factors at work and the employees' well-being in an institution for elderly care. Special attention was paid to the intervention process, and the
association between the participation activity of the personnel and the perceived effects on psychological and social factors at work and competence for care work.

Design

The intervention itself was based on the model of the Finnish Maintenance of Work Ability (MWA) (Lindström et al., 2001) combined with participatory organizational interventions and local tailored projects at ward level. In the training and development events, and throughout the whole process, the so-called conference method with democratic dialogue was applied. The process started with participatory search seminars and included participatory evaluation seminars after each half year and at the end of the whole intervention. During the two-year period, these annual joint follow-up and evaluation seminars were organized for a smaller number of participants in order to get feedback about the success of the process and about wishes for the next year's program. Good practices were collected during the process and demonstrated to the other units.

Method

The perceived changes in psychosocial factors in the work and well-being of the employees during the intervention program were measured by a questionnaire after the intervention. The questionnaire contained also 23 questions about satisfaction with psychosocial factors at work. When these questions were factor-analysed, six factors were derived, and the sum-scales used in this study were formed based on these. These were work organization and collaboration, supervisory support, job discretion, job demands, effort-reward balance and competence demands.

The personnel answered also directly in an open question and with structured questions, evaluating the benefits or drawbacks they perceived in the organizational intervention program. Seven structured questions dealt with changes in their own professional competence, mental and physical work load and functional capacity, collaboration and work content, social climate, adopting common values and goals in own work unit, capability to deliver the services to the patients, and preparing to meet the future challenges at work. In addition, during the process, the immediate perceptions and evaluation of the participants were collected after each training and development session.

The participation of the individuals was registered in each training or development event. They were also asked in the questionnaire about the frequency of their participation. In this paper the subjective reporting of the participation is used.
Table 1: The total individual participation rates for the training and development events in the whole organization, and at nursing home level, by the nursing homes based on self-reports

<table>
<thead>
<tr>
<th>Nursing home</th>
<th>Number of respondents</th>
<th>Response rate %</th>
<th>0 %</th>
<th>1-3 %</th>
<th>4-6 %</th>
<th>7-10 %</th>
<th>More than 10 %</th>
<th>Total %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>209</td>
<td>71</td>
<td>11</td>
<td>31</td>
<td>26</td>
<td>21</td>
<td>11</td>
<td>100</td>
</tr>
<tr>
<td>2</td>
<td>59</td>
<td>86</td>
<td>3</td>
<td>10</td>
<td>39</td>
<td>26</td>
<td>23</td>
<td>100</td>
</tr>
<tr>
<td>3</td>
<td>46</td>
<td>64</td>
<td>14</td>
<td>14</td>
<td>27</td>
<td>27</td>
<td>19</td>
<td>100</td>
</tr>
<tr>
<td>4</td>
<td>88</td>
<td>68</td>
<td>11</td>
<td>24</td>
<td>26</td>
<td>28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All</td>
<td>402</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

The target organization was an institution for the care of elderly people, consisting of five different kinds of nursing homes with altogether 950 patients/residents, and 34 work units. The employees totalled 600, most of whom were nurses and auxiliary personnel. 25% of them were older than 45 years and most of them were women. This evaluation was focused at four nursing homes and their personnel. One nursing home was excluded from the evaluation partly because it had been founded quite recently. Also the administrative personnel from the central management were excluded, although the entire personnel of the organization participated in the multilevel development organization intervention. The levels of the interventions were:

- whole organization level covering entire personnel;
- single nursing home level;
- ward level.

The approach and the content of the intervention in the whole organization and at the nursing home level included:

- a participatory planning process of the content of the intervention program, using the 'conference method'
- the promotion of a team-based and learning organization, as well as the principles of a healthy organization in the whole organization;
- lectures and group discussions for the entire personnel on topics of elderly care.

At ward level:

- a participatory MWA group in each work unit, responsible for carrying out a local mini-project at group level dealing with topics chosen by the personnel, e.g., age management and reorganizing of patient care;
- evaluation seminars annually and at the end of the project.
Results

The participation activity of the employees from the four nursing homes in the intervention program events is shown in Table 1. About 10% not participate at all in the intervention at organization level; this can be seen as quite low, considering that participation was voluntary. Most of the employees participated at least four times in some intervention. The overall participation rate in the intervention events was higher for those employees who were older and had longer work experience.

The high rate of participation in the whole organization and at nursing home level correlated positively with better perceived job discretion or better opportunities for personal development and growth. The higher participation rate in the whole organization and the nursing home level correlated also significantly with greater satisfaction with work organization and collaboration. Participation in the specific pilot projects only at ward or work unit level did not correlate with any job or organizational factors.

The high individual overall participation rate in the interventions was also positively related to perceived improvements in psychosocial factors at work, such as job content and collaboration, and future challenges of own work unit. According to the qualitative data, positive aspects in the intervention were the support and commitment of the management, and combining the development of patient care with the personnel's well-being intervention in the same project. Improved professional competence was clearly related to the frequency of participation of the personnel in the intervention events of the whole organization and at ward level. The main obstacles were the employees' lack of time, and unexpected issues in the work unit during the project.

The evaluation of the whole intervention programme was done from four perspectives: actual situation in the nursing home (contextual), effectiveness, learning and future prospects (Table 2). The overall intervention process was evaluated as having been successful.

When looking at the actual situation of this nursing home organization, 61-73% of the employees reported that the intervention had been useful for their individual physical and mental functional capacity. Somewhat fewer, 38-64% reported that the quality of their service delivery had improved. Especially the employees of the two biggest nursing homes had a somewhat more positive opinion of the change in their actual situation regarding the quality of services and their own functional capacity.

The effectiveness of the program, as indicated by achieving its main goals, namely improving social relations and work climate, as well as job content and collaboration, was perceived to be improved by 31-63% of the respondents. Here again the personnel from the two biggest nursing homes reported somewhat more positive changes.
Table 2: The correlations (Pearson’s r) between the various participation rate measures and perceived benefits of the project (n=402) (*Statistically significant at p<0.05 level, ** at p<0.01 level)

<table>
<thead>
<tr>
<th>Benefits reported</th>
<th>Frequency of individual participation at different levels of the organization</th>
<th>In whole organization and at nursing home level</th>
<th>Only at ward level</th>
<th>Focused pilot projects within one nursing home</th>
<th>Total intervention program and training at unit level</th>
<th>Total (including intervention program and own and training external)</th>
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The learning perspective covered both improved individual professional competence, and promoting common values and visions of the work unit. The common values and visions were promoted most in the biggest nursing home.

The future perspective means coping with the future challenges. 38-67% of the respondents saw that the intervention program had been useful in this respect.

These perceived benefits from the program were also related to the rate of participation in the various intervention activities (Table 2). The participation rate measures did not correlate with the issues seen as the actual problems, i.e., the mental and physical functional capacity of the personnel. The participation frequency was related to the improved job content and collaboration as well as to improved knowledge about common values and visions.

Conclusion

The use of a participatory organizational intervention with high individual participation and supervisor commitment gave positive results at both nursing home
level and individual level. The temporary and local context of the nursing homes had, however, a major effect on the success of the program. The role of an outside consultant as a process facilitator was crucial for carrying out the program.

The main benefits were derived when developmental activities were carried out in the whole organization and at nursing home level. They contributed positively especially to job content and collaboration, and facilitated the adoption of common values and visions. The interorganizational, interprofessional and multilevel training and development was seen to be more effective and to promote learning better than only at one ward level or focused only on small groups.

From the perspective of learning, adopting common values and visions was successful when the participation rate was high in all training and intervention events. The promotion of future perspectives was also related to the high participation rate. Although the employees felt that the organizational intervention benefited the actual situation, including the high mental and physical workload, it was not related to the high frequency of participation. The actual situation, however, was important when considering the implementation and impact of the program, because all interfering events at nursing home level lowered the participation and consequently also the positive effects.

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JOB STRESS PERCEPTION: THE FUNCTION OF OCCUPATION, GENDER, TENURE AND AGE

C. LIU, P. SPECTOR & L. SHI
Illinois State University, University of South Florida, Beijing Normal University

Introduction

Job stress models have emphasized the functions of both environmental and personal factors on employees' stress processes (e.g., Katz & Kahn, 1978; Beehr & Newton, 1978). According to the ISR model (Katz & Kahn, 1978), the enduring properties of the person (genetic, demographic and personality) play important roles in employees' perceptions of the objective environment. Demographic differences, such as gender, age and tenure, can have a substantial impact on employees' stress perceptions. However, these individual difference variables have not been sufficiently studied. Furthermore, in the stress literature, few studies have compared employees' stress perceptions across occupations. Some researchers have collected data from multiple jobs (e.g., Spector & Jex, 1991). However, there is a lack of research that studies the occupation-specific stressors and strains. Nonetheless, the occupational and individual differences may contribute significantly to employees' job stress perceptions and reactions (e.g., Pousette & Hanse, 2002; Narayanan, Menon & Spector, 1999). It has also been suggested that certain objective environments may be stressful for a specific occupational/demographic group (Narayanan, Menon & Spector, 1999).

It has been shown that the qualitative approach is more appropriate for studying group-specific stress (Liu & Spector, in press; Narayanan et al., 1999; Parke, 1985). Therefore, the purpose of this study was to use both qualitative and quantitative approaches to investigate the occupation-, gender-, age- and tenure-specific stressors and strains. First, two jobs were examined in this study: faculty and university support staff. We postulated that employees doing different jobs would report different types of job stressors and strains, as investigated by the qualitative data.

Hypothesis 1. Using the quantitative approach, we hypothesized that lower-level employees (e.g., university support staff) would have a higher level of interpersonal conflict, and lower level of job autonomy than employees at a higher level position (e.g. faculty). Support staff would also perceive more emotional problems, job dissatisfaction, turnover intentions and physical problems than faculty members.

Secondly, gender differences have been reported in the stress literature. Such differences have been explained from the genetic, biological and societal structural aspects (Jick & Mitz, 1985; Greenglass, 1991). Using the qualitative approach, we postulated that male and female employees would report different types of job stressors and strains.
Hypothesis 2. Using the quantitative approach, we hypothesized that female employees would experience a higher level of emotional problems, job dissatisfaction, turnover intentions and more physical problems than male employees.

Method

The participants were 103 university faculty (including full professors, associate professors, assistant professors and instructors) and 76 support staff in a southern university in the United States. Seventy reported as male and 108 reported as female. The response rate was 47.5%. The Stress Incident Record (SIR) technique (Keenan and Newton, 1985) was used to collect qualitative data. 3 job stressor and 6 job strain scales were administered to collect the quantitative data. Organizational constraints were measured with the Organizational Constraints Scale (OCS) developed by Spector and Jex (1998). Interpersonal conflicts were measured with the 4-item Interpersonal Conflict at Work Scale (ICWS, Spector & Jex, 1998). Autonomy was measured by a 3-item subscale from the Hackman and Oldham’s (1975) Job Diagnostic Survey (JDS). Frustration was measured by a 3-item frustration scale (Peters & O’Connor, 1980). Depression was measured by a 9-item Patient Health Questionnaire developed by Spitzer, Kroenke and Williams (1999). Negative emotions at work were measured with a 5-item subscale of the Job-Related Affective Well-being Scale (Van Katwyk, Fox, Spector & Kelloway, 1999). Job satisfaction was measured with the 3-item overall job satisfaction scale from the Michigan Organizational Assessment Scale (Cammann, Fichman, Jenkins & Klesh, 1979). Intent to quit was assessed with a single item measure (Spector et al., 1988) that asked how often the person had been seriously considering quitting. Finally, physical strain was assessed with the Physical Symptoms Inventory (PSI) developed by Spector and Jex (1998).

Results

The qualitative analyses revealed top job stressors (lack of job control, interpersonal conflict, organizational constraints and workload), psychological strains (anger, frustration and anxious), and physical strain (being tired), across all groups. Specific strains were found for different occupational groups. Specifically, faculty reported more anger and less frustration than university support staff. Men and women differed in the job stressors reported. Female employees had more incidents of lack of control and interpersonal conflicts than male employees. Employees over 40 years of age reported more workload problems than the relatively younger group.
The quantitative results also showed significant differences between occupational and demographic groups. Faculty had fewer direct conflicts, interpersonal constraints, lower level of turnover intention, and fewer physical symptoms than university support staff. Female employees experienced more psychological and physical problems than male employees, such as turnover intention, depression, physical symptoms and overall job strains. Employees under 40 years of age had a higher level of turnover intention than the relatively elder group.

**Conclusion and limitations**

The empirical findings provide support for the existing job stress models. Both quantitative and qualitative analyses revealed common job stressor and strains across different groups. As predicted, occupation-, gender-, age- and tenure- specific stressors and strains were also found. Therefore, it is important to consider these factors when designing stress management programs for organizations.

Despite the above findings, there are some limitations in this study. First, we have examined job stress for two types of jobs – faculty and university support staff. Even these two jobs are different in their social status and occupational level, it would be important to include more jobs, such as occupations in the business world, in order to better generalize the results. Second, due to the limitation of our dataset, we used 40-year-old as the cutoff score for age-group comparison. Future studies need to collect more detailed information on age and other demographic variables in order to better study the function of these variables in employees’ stress perceptions.

**References**


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Note **$p < .01$; *$p < .05$.**

Table 2: Quantitative comparisons on the occupation and gender: independent t-tests for job stressors and strain

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**Physical strains**

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Note. **p < .01; *p < .05
A CONCEPTUAL FRAMEWORK FOR
WORKLOAD MANAGEMENT

W. MACDONALD 1 & P. MILLER 2

1La Trobe University, Australia
2National Occupational Health & Safety Commission, Australia

Introduction

Excessive quantitative or qualitative job demands and associated time pressures have been clearly identified as potential occupational stressors, and job demands are among the most frequently identified occupational stressors for full-time employees, with increasing numbers of people reporting that work demands are negatively affecting their health (Charyszyn & Tucker, 2001; Cooper, Dewe & Driscoll, 2001; Paoli & Merllie, 2001; Wooden, 2001; Wright & Lund, 1996). In Europe, for example, findings from surveys in 1990, 1995 and 2000 have shown strong links between intensity of work (high speed, tight deadlines) and reported health problems, and over 50% of respondents in the 2000 survey reported that they worked at high speed or to tight deadlines for at least a quarter of their working time (Paoli & Merllie, 2001). Further, the experience of stress and health problems was strongly associated with these working conditions, particularly when the work was highly repetitive. In some cases, workloads are such that people typically work until their tasks have been finished, rather than for pre-determined hours; for example, among Australians working longer than 49 hours per week, most report that their workloads are ‘open-ended’ in this way (Heiler, 2001; Queensland Government, 2001). While such regimes may produce high performance in purely quantitative terms, their effects on performance quality are more questionable. It is therefore important that occupational workload levels are well managed, with sufficient time allowed for work performance to promote both productivity and employee well-being (Macdonald, 2003).

In common usage, ‘workload’ refers to the amount of work that has to be completed. In more technical terms, however, its meaning varies between different professional disciplines and the procedures used to assess workload vary substantially, depending on the type of professional who performs the assessment. Such assessments can be of considerable practical importance because they influence decisions concerning staffing levels, production targets or quotas, and in the case of work that is externally paced, the rates at which assembly lines move or processes operate. Levels of these work system parameters can have significant effects on the quantity and quality of work performed, and on worker health and well-being. It is argued in this paper that in determining these levels, and in managing people’s workloads more generally, it is important to distinguish factors that induce capacity-limited performance
deterioration when demands exceed capacity, from those that induce motivation-limited deterioration such as when morale is low. To achieve this, it is important to have a clear understanding of the nature of 'workload' as people experience it and to ensure that workload is appropriately assessed (see Macdonald, 2003).

Approaches to workload assessment

1. Industrial engineering. In this domain the term 'work measurement' refers to assessment of the amount of time required for work performance (Kanawaty, 1992). Various formal and semi-formal work measurement methods are used for this purpose. These include 'time study' whereby representative samples of task performances are directly timed to establish 'standard' times for the performance of specific tasks, and 'predetermined motion time systems' (PMTS), of which there are a considerable variety (Kanawaty, 1992; Shikdar & Das, 1995). Use of a PMTS entails analysis of a specific task to identify its component actions and assign a standard time for each component, using a database of standard times for a wide range of possible component actions or operations (e.g., varying difficulties of 'read', 'get' or 'put'). The sum of the component action times provides a total standard time for performance of the whole task – typically with the addition of a time allowance of around 15% to cover 'personal' time and to allow recovery from fatigue.

All PMTS of this generic type (i.e., not specific to a particular type of work) are based on the premise that the physical or psychological difficulty of the work is no greater than 'average'. If the work is physically heavy, a substantially longer fatigue allowance might be included, but such systems are not designed to cater for physically demanding work, and users of PMTS usually do not have training in the assessment of physical demand levels. Neither are generic PMTS designed to cater for work with significant perceptual or cognitive demand and such demands tend to be under-recognised by people who have no specialist training (Hoffmann et al., 1993).

The application of such methods to establish work rates, staffing levels or production targets should – theoretically – ensure that workloads are appropriate. However, if the work imposes high perceptual, cognitive and/or psychomotor demands, the standard times allowed for information intake, decision-making and/or response execution are likely to be inadequate so that use of a PMTS system in such cases will result in excessive 'workload' for job incumbents (Hoffmann et al., 1993; Macdonald, 2001). Some less generic, more industry-specific PMTS have been developed, which might reduce the risk of work demands being under-estimated since they have been designed for a more clearly defined task set. Also, some job-specific systems have been developed which specify, for example, standard service time per customer (e.g., in a shop or a telephone call centre), or standard time per specified nursing or medical procedure (see Macdonald, 2005a). Job-specific 'work measurement' approaches
share with the more generic time study and PMTS approaches a very narrow focus on a subset of the demands of specific work elements rather than on demands of the overall job. At best, they will be practicable only in the case of jobs that are performed in exactly the same way by large number of people.

2. Physical ergonomics. Ergonomists assessing physically demanding work determine ‘workload’ or ‘demands’ in terms of the levels of physical effort expenditure required during task performance, based on the forces that must be exerted and on the overall level of physical energy expenditure, taking account of environmental temperature. In this context, ‘work measurement’ focuses on the assessment of physical energy expenditure using metabolic prediction models or on biomechanical load using methods such as the University of Michigan 3D-Static Strength Prediction Program (see Wilson, 2005).

Such assessment methods can be used to support the re-design of particular work tasks to avoid imposing excessive demands in terms of criteria such as recovery time or injury risk, but are of limited value in determining appropriate staffing levels, production targets or work rates.

3. Human factors psychology (i.e., cognitive ergonomics). Within this domain, ‘workload’ (sometimes called ‘mental workload’) is a well developed construct for which a variety of validated measurement techniques are widely used to assess task-specific workloads. Typical purposes of such measurement are to identify ‘overload’ conditions, so that either the task can be re-designed or additional operators can be made available to ensure that people are able to cope effectively with demands without undue time pressure or stress, such as would threaten performance quality and/or system safety (see Tsang & Wilson, 1997; Wickens & Hollands, 2000).

This approach to workload assessment, like that of physical ergonomics, is based on the general premise that human performance capacities have finite limits and that workload levels should not exceed these limits. A large body of research has clearly documented and in some cases quantified human cognitive and psychomotor limits; for example, information processing limitations are described by the Hick-Hyman Law, and by Fitts’ Law (see Proctor & Van Zandt, 1994). These limitations in the rate at which people can process information have important implications for workload, because information processing time is the major component of overall response time, accounting for 70-300 ms out of a total 113-528 ms response time (Sanders & McCormick, 1993; other components of response time are delays associated with the operation of sensory organs and muscular systems and neural transmission delays).

In this domain, workload (also termed ‘mental workload’) is determined by the margin between self-perceived work demand level and perceived coping capacity. When the margin is small or non-existent, high workload is experienced; when the margin is large with plenty of (perceived) ‘spare’ capacity, workload is experienced as low. Specific definitions of workload vary, with some focusing only on cognitive demands in relation to the individual’s cognitive resources, but broader definitions also encompass physical task demands and related resources, along with effort
expenditure, perceived (in)adequacy of performance and negative affective states. These broader views have been widely applied in the development of workload measurement methods (Tsang & Wilson, 1997). For example, one of the most widely used methods for measuring workload is the NASA Task Load Index (TLX), which obtains subjective ratings on the following six dimensions of ‘workload’: physical demand; mental demand; temporal demand; effort required; own performance adequacy; negative affect such as frustration and stress (Hart & Staveland, 1988). There is empirical evidence that high workload levels as assessed by tools such as the TLX are associated with a higher risk of errors, different performance strategies (in situations where this is possible) which might include riskier behaviours, higher fatigue and higher stress. However, workload assessment in this domain has focused almost entirely at the level of specific tasks rather than of whole jobs, and there has been no consideration of relationships between workload level and potential ‘rewards’, including job satisfaction.

4. Health and organisation psychology. Within the domain of health and organisational psychology, ‘workload’ is a poorly theorized construct (Kasl, 1998). Work demands are viewed primarily as stressors, despite evidence that high workloads are not necessarily stressful and may in fact be experienced as satisfying, engaging, invigorating or exhilarating – depending on a variety of other factors. Further, there is usually little concern with performance quality, or with the performance strategies that people may adopt to cope with varying workload levels and achieve particular outcomes. Rather, focus is typically on employee health and well-being as it relates to job demands. Consistent with this, capacity-limited performance deterioration due to demands exceeding capacity is not distinguished from motivation-limited deterioration that might occur when morale is low (Macdonald, 2003a).

A conceptual framework to support more effective workload management

Given that workload levels are closely linked to work performance and that in the ‘real world’, workload management must promote effective work performance, it is proposed that a conceptual framework combining elements of several of above approaches will more effectively support workload management. Figure 1 depicts such a framework, integrating the ergonomics concept of workload with a transactional view of stress and the Demand-Control-Support model. Work, workplace and organisational characteristics are divided into three main categories: demands encompasses factors that inherently demand expenditure of mental and/or physical effort, consistent with the ergonomics concept of workload; coping resources (both positive and negative) are subdivided into individual factors, and workplace and environmental factors; control can influence both the availability of coping resources and individual motivation to cope, as well as enhancing skill development and satisfaction.
Figure 1: Conceptual model of the determinants of workload and its effects on performance, health and wellbeing.

This model shows that performance is influenced by people’s experience of workload and their perceived risk of failure to cope adequately with demands, both of which affect choice of performance strategies and associated effort. Depending on the nature of available feedback, actual performance affects self-evaluation, which feeds back to influence workload. There are also feedback effects of performance self-evaluation on well-being, which influences individual coping resources. (For further details, see Macdonald, 2005b, in press.)

The important role of self-perceived performance within this model is substantiated by data from recent research by the authors in which data were collected at several points in time (rounds) within each of two work sites, using a questionnaire based on a model similar to the present one. Objective information about work and job characteristics was also documented, along with measures of adrenaline, noradrenaline and cortisol at one of the sites. Sequential regression analyses (round one data only) were performed for each of the following: Upper Body Discomfort (DISC), Wornout (WOR; General Well-Being Questionnaire), Stress (STRE; Stress Arousal Check List), Arousal (AROU; Stress Arousal Check List) and Job Satisfaction (J.SAT; Job Diagnostic Survey).

Blocks of factors were entered into the regression models in the following order: Personal & Non-Work Factors (demographics, conflict between home/work, stress at home, current health / injury); General & Temporal...
Demands (total hours, time pressure, too much to do, unpleasant working hours, increasing workload pressure, responsibility); Specific Work Demands (static & dynamic physical, care & vigilance, cognitive, emotional, errors have important consequences); Contextual Demands & Impediments (interruptions/disruptions, impediments, uncertainty about work requirements, performance uncertainty, career uncertainty, conflict); Job Control & Variety (skill utilisation, work variety, decision latitude, influence); Support (coworkers, supervisor, senior management); and finally, Self-Perceived Capacity & Performance Quality (SPCPQ) as Block 7.

The effects of adding SPCPQ to the model are shown in Table 1. It can be seen that this variable had a very substantial effect on Wornout and Stress scores at both sites, in addition to the effects of variables representing Demands, Coping Resources and Control; at site one it also had a substantial effect on Arousal. Discussion of the reasons for the difference between sites in the effect on Arousal is beyond the scope of the present paper; in brief, it was thought to be due to identified differences between the sites in both job characteristics and personal coping resources.

Table 1: Variance accounted for in each of five dimensions of well being (discomfort, wornout, stress, arousal and job satisfaction) at two work sites, showing the effects of adding a score for Self-Perceived Capacity and Performance Quality (SPCPQ) as the final block in each sequential regression analysis

<table>
<thead>
<tr>
<th>WORK SITE ONE</th>
<th>WORK SITE TWO</th>
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<td>DISC</td>
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<tr>
<td>$R^2$ change due to SPCPQ</td>
<td>.05</td>
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<tr>
<td>Resultant $R^2$</td>
<td>.37</td>
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<tr>
<td>Adjusted $R^2$</td>
<td>.24</td>
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Some implications

Both the conceptual model and the empirical data outlined above indicate that, in order to minimise stress and fatigue and in some circumstances to optimise arousal level, workload management strategies should specifically address self-perceived capacity and performance quality, in addition to levels of demand, coping resources and control. It is hypothesized that strategies to support SPCPQ need to vary with the type of work and job.

Where work procedures are clearly defined, with little scope for individual variation in strategy, it is likely that management of work demands should be a major priority. This could be achieved more effectively than currently if greater use were made of analysis methods developed by cognitive and physical
ergonomists to identify and assess specific aspects of work task demands. Based on evidence such as that reported by Macdonald (2001), it is argued also that such analyses should identify and evaluate the trade-offs that individuals are making between performance speed and performance quality; between performance speed and safety; and the effects of such trade-offs on individual well-being and system productivity.

For jobs where the work is less repetitive, particularly where individuals have a greater degree of control and the possibility of using different performance strategies, the comprehensive identification and assessment of specific task demands is impracticable. In this case, management to enhance coping resources is probably of primary importance. If individuals have scope for varying their performance strategies, analyses to identify and evaluate the strategies they use to cope with varying workload levels may also be important, because such strategies might entail trade-offs between performance speed and quantitative output, and/or speed against performance quality, with possible implications for overall system effectiveness as well as for individual well-being (including job satisfaction). Individual coping strategies might also entail direct trade-offs between maintaining good work performance and maintaining individual well-being. In many cases it would also be helpful to monitor levels of perceived workload. A more detailed discussion of workload management strategies, based on the present model, is presented by Macdonald (2005b, in press).

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DEVELOPING OCCUPATIONAL STRESS RESEARCH IN A SOUTHERN EUROPEAN COUNTRY: A CASE STUDY ON PORTUGUESE HEALTH PROFESSIONALS

T. MENDONÇA MCINTYRE
*University of Minho, Portugal*

Historically, occupational stress research has been pioneered and advanced in Northern and Eastern Europe, as well as in North America. In contrast, in countries from Eastern and Southern Europe, this field of research has been slow to develop. The integration of Southern European countries in the European Union has imposed new demands in terms of occupational health, such as the participation in convention n°. 155 of the International Organisation of Work on Safety, Health and Work Environment, which follows the EU directive n°. 89/391. In Portugal, this has translated into new legislation, which addresses Portuguese companies in terms of defining organisation and functioning of safety, hygiene and health activities at work. This paper will present a case study on the development of a line of research in the domain of occupational stress in a country where political sociocultural and scientific support for this type of research is virtually non-existent.

The literature on occupational stress and the main theoretical models underlying this research, such as the Job-Demand-Control Model (Karasek & Theorell, 1990), has questioned the generalizability of these findings and models across different socio-political and cultural contexts (e.g., Maes & Verhoeven, 2003). Considering the fact that the different regions of Europe present wide diversity in terms of working life conditions and values, it seems pertinent to investigate the specificities of the sources of work stress and health outcomes in Portuguese workers. Furthermore, it is important to identify the specific predictors of these health outcomes as well as to test existing models of the relationship between job conditions and outcomes in a country that does not have a tradition of research in Occupational Health Psychology.

This paper presents a case study on Portuguese health professionals, which addresses three main goals: 1. to describe the nature and extent of occupational stress in this population and in comparison to international findings; 2. to investigate variations in work stress with work context and profession (doctors, nurses, administrative staff and diagnostic technicians); 3. to test the validity of Northern and Western European models, such as the JDC model and the Job Demand Control Social Support Model, in Portuguese health professionals.
The studies presented will illustrate the progression from a more descriptive, problem-defining line of research to a more explanatory and intervention-generating research strategy. The paper will discuss the impact of this type of scientific approach on policy and action in a country in which profound changes in management, health policy and education are taking place. Final considerations will be presented on lessons learned from this line of research for the development of Occupational Health Psychology in Portugal and possibly other European countries that are not mainstream.
CURRENT STATUS AND FUTURE DEVELOPMENT OF OHP IN EUROPE

S. E. MCINTYRE & T. MENDONÇA MCINTYRE

1 Instituto Superior da Maia, Portugal
2 Universidade do Minho, Portugal

Introduction

Within Psychology, the area of Occupational Health Psychology (OHP), is a recent specialty and is assuming an ever increasing importance in research and its practical applications (Barling & Griffiths, 2003). The interest in OHP has been steadily increasing on the part of Psychologists and other professionals in Europe and in the United States of America. Beyond the intrinsic interest that the field has, there are other external forces that are creating the need for further development and depth, such as flexible work and production processes, job and communication globalisation, new models of management and the increase in prevalence and costs of job-related illnesses. As has happened in other fields, as OHP develops new professional issues surface. This article will outline some indicators of the development of the field of OHP in Europe and explore some avenues for future expansion.

Important indicators of the development of OHP

In the evolution of a specialty area, there are milestones that occur along the way. These milestones allow the normal development of the specialty and permit an increasing sophistication in the field. Among these are scientific and professional societies, specialty journals, and education and training. Currently, Occupational Health Psychology (OHP) has seen the emergence of these milestones both in the United States and in Europe.

Scientific and professional organizations

One of these milestones is the creation of scientific and professional societies, which promote research and application in the field, and support the publication of new scientific and professional journals specific to the area (Belar & McIntyre, in press). Professional societies have emerged, such as the European Academy of Occupational Health Psychology, which was created in 1999. A new society (Society of Occupational Health Psychology or SOHP) will begin in the United States in the fall of 2004. These societies have organized specialty conferences in OHP and several publications dealing with the definition and implementation of
the principles of OHP in the workplace, which seem to have established a good base in both continents.

An essential element in establishing a new field is in defining what it is and in how it differs from other, possibly related fields. EA-OHP in Europe and NIOSH-APA, in the US, have contributed to the definition of OHP but with slightly different emphases. The National Institute for Occupational Safety and Health (NIOSH, 2000) defines OHP in the following way: “OHP concerns the application of psychology to improving the quality of work life, and to protecting and promoting the safety, health and well-being of workers” (p. 2). It is understood that “protecting health” involves the intervention in the work environment in order to reduce exposure to work conditions that might be harmful to employees health. “Promoting health” would refer to interventions more centered on the individual so that he might be equipped with the knowledge and resources needed to improve his/her health and to better resist the work environment pressures (Levi, 1990). Occupational Health Psychology, therefore, is a convergence of the areas of Health Psychology, Public Health, and the area of Preventative Medicine all within an organizational context (Quick, 1999).

A European definition is advanced by EA-OHP: “The contribution of applied psychology to occupational health... It reflects both the current nature of the discipline (in terms of education, research and practice) and the epistemological analysis of the terminology... The definition includes both the health psychology of work and the work psychology of health. Considering the discipline from the point of view of just one of these two approaches leaves out much of importance, and is, to this extent, inadequate.” (Cox, Baldursson, & Rial-Gonzalez, (2000, p. 101-104).

The European Academy of Occupational Health Psychology (EA-OHP) was launched in 1999. EA-OHP has fostered the beginning of a common approach to OHP and its development across national boundaries and can act as a catalyst in the maturing OHP field. The mission statement of EA-OHP is: “The European Academy of Occupational Health Psychology (EA-OHP) develops and promotes research, practice and education in Occupational Health Psychology throughout Europe, and worldwide” (Cox & Houdmont, 2003).

An important activity of EA-OHP is the organization of an annual conference that promotes OHP, which has been held in Lund, Sweden (1999), Nottingham, UK (2000), Barcelona, Spain (2001), Vienna, Austria (2002), and Berlin, Germany (2003). The upcoming 2004 conference will be held in Oporto and will address the theme “Healthy, productive and efficient organizations”.

Besides the organization of annual conferences, the EA-OHP has had a number of initiatives to help create a space for discussion and collaboration, such as the founding of three groups or forums in education, professional practice and research, and the website discussion boards, which include the Education Forum and General OHP discussion boards. The Educational Forum has published a consultation document (EA-OHP, 2002) which lists the providers of education in
OHP, Occupational Heath and Safety, suggestions concerning accreditation in OHP, and ways to promote regional and international collaboration.

There are other societies that have some overlap with EA-OHP and also address OHP issues, such as the European Association of Work and Organizational Psychology (EAWOP), the European Health Psychology Society (EHPS), the Society of Industrial-Organizational Psychologists, Div. 14 of the American Psychological Association (SIOP), the International Association of Applied Psychology (IAAP) and the Stress and Anxiety Research Society (STAR).

**Specialty journals**

The field of OHP is well-served by having two excellent journals, *Work & Stress*, which began in 1987 (official journal of the EA-OHP) and the *Journal of Occupational Health Psychology*, which started in 1996 under APA (Barling & Griffiths, 2003). Having such high quality journals helps to define the field and encourage other scientists or scientist/practitioners to invest in the area. There are also journals which address OHP issues, such as the journal *Anxiety, Stress and Coping*, *Stress Medicine*, the *Journal of Organizational Behavior*, and *Psychology and Health*.

**Regulation and training**

The regulation of Psychology in Europe is quite varied and is implemented in different forms within the member states. For example, licensing procedures exist in England, Holland and Austria, but not in Portugal, Italy or Greece (Belar & McIntyre, 2003). Kryspin-Exnersis & Pal-Handl (2004) report on a six-university working group trying to define minimum European-wide standards in Clinical Psychology. This group recognizes that “training standards for clinical psychologists are not the same in every country but are generally closely tied to registration and licensure standards” (p. 4). They divide Europe into roughly three groups:

1. Countries in which the postgraduate education is legally established and in which obligatory qualification systems may be found, such as in Austria.
2. Then there are those countries in which the professional organizations define the qualification guidelines but without having a legal basis for those guidelines. Great Britain would fall into this category.
3. Finally, there are those countries in which neither a legal basis exists nor exists a professional organization to define the qualification guidelines. In this category would fall countries such as Greece, Portugal and many of the newer member EU states.

In those countries where regulation does not exist, there is no mechanism to control the quality of the preparation of the Psychologist, the use of the name
Psychologist, as well as having some kind of centralized organism to help disseminate knowledge and organize meetings or conferences. As a result of this, there is no way to ensure the quality of the training programs, if the content of the program is adequate or not, and how much, and what type of training is necessary to have the proper theoretical foundation for the specialty area.

The EA-OHP report of the “Working Group of the Education Forum” (Griffiths, Cox & Leka, 2002) reviewed education programs in OHP in Ireland, Britain and USA and identified 13 providers of education in occupational health psychology, 4 in Europe and 9 in the USA. In Europe, 3 of the programs were at the Master’s level and in the USA, OHP training is at the doctoral level through a concentration of supplementary training modules. The USA programs were mostly supported by grants given by the National Institute of Occupational Safety and Health (Fox & Spector, 2002) whereas in Europe there has not been an equivalent organized effort to promote OHP training.

**Future avenues for the expansion of OHP in Europe**

Despite the developments outlined above, OHP in Europe is not as well established in Southern and former Eastern European countries as in Northern and Central Europe, as may be ascertained, for instance, by the distribution of attendance in specialty conferences and authorship in the specialty journals. With the addition of 10 new countries to the European Community, Europe is now very different than it was at the beginning of this year, which has implications for OHP development. At the moment, in Europe, most of the advances and development of OHP occurs in a few highly industrialized countries where either Psychology is well implanted or there is a tradition of interest in psychosocial workplace factors. This is not the case for many of the newer and/or poorer countries in Europe. In these countries, Psychology is still very young, fragmented and not at all regulated (Belar, McIntyre & Matarazzo, 2003). As a result, this impacts the potential development of new disciplines, such as OHP. In order to determine how to further expand the influence and impact of OHP in Europe, more information concerning research, training and implementation at the European level, for each country, is needed. Despite this lack of information, there are some suggestions that may be advanced that concern regional expansion, education and training, funding and policy.

*Regional expansion*

Since OHP development in Europe has been concentrated in a few well developed countries, there is a need to promote OHP development at a regional level, especially in the new EU countries and in Southern Europe. These countries face new organizational and health challenges with the globalization of
markets and economies, experiencing massive changes to be able to compete and reach EU standards. Therefore, OHP applications are particularly relevant for these populations. One way to promote this regional development would be through some kind of local representation linked to a society or organization, such as EA-OHP. Whether or not EA-OHP develops local groups which are linked directly to EA-OHP provides guidance on how to develop local groups or provides more of a European framework for furthering OHP, is a decision left to EA-OHP. Local groups can be useful in bringing to the regional level the knowledge and expertise, adapted to the local situation, necessary to promote OHP.

Another way to promote regional development is through activities directed at target groups, such as students and young researchers or professionals. This can be done through undergraduate courses, conferences that are more active locally, and a more effective professional and research networking.

**Education and training: targeting key groups for the future**

In order to motivate future workers in the field, they must have some kind of exposure early on in their education. Psychology is a very popular subject all over the world and not all aspects of Psychology are given equal treatment. Being exposed to what is OHP early on in undergraduate programs, pointing out its potential to impact everyday life and improve the well-being of workers and organizations, could help to generate interest in the field.

Most of the education and training programs mentioned above focus on postgraduate training. It would be key to encourage OHP undergraduate courses or modules. To support these courses, it would be helpful to provide sample curricula on subjects of OHP available for those universities which do not offer courses in OHP. These instructor guides could be made available on the internet and would help newer members put together a consistent teaching on the subject. This is already being done for I-O by the Education and Training Committee of the Society for Industrial and Organizational Psychology and includes a 15 part series on key subjects within I-O (Boutelle, 2004). These summaries are designed for teachers, include sample “powerpoint” slides as well as text, and are available for anyone to download and use in their presentations.

Going beyond the journals is also necessary in order to promote and advance OHP among professionals and nonpsychologists. An example would be having publication series with short books on timely issues; basic knowledge as well as a more advanced knowledge is fundamental to giving access to OHP to a wider audience.

Doctoral students are another important target group for OHP development. Having conferences with accessible prices, which are well publicized locally and provide training and practical application of key concepts in a workshop environment, with leading researchers (including the “how to’s”, statistics, mentors, cutting edge research, etc.) is likely to attract doctoral students and young
professionals. Defining key groups and countries, having scholarships, designing work initiatives, all of these may allow students better access to the knowledge, and maybe even more important, to key people and relationships, that would allow OHP to be established in a country where Psychology is not well-established.

**Funding resources**

Arguably, one of the most important ways to promote a discipline is to provide funding for research. For this to happen, the funding institutions, be they public or private, must be aware of the existence of the discipline as well as its relevance in the real world. In a discipline like OHP, private enterprise may also be a good partner if convinced of the practicality and applicability of OHP research projects. The use of the “action research model” of Kurt Lewin (Berry, 1998) is particularly relevant here and could serve to win over key decision makers who are not aware of the importance (or of the distinctiveness) of OHP. Having access to funding will attract researchers in times when funding is particularly scarce. Some of the potential funding entities would be the World Health Organization (WHO), the local national science societies, the European Union, etc.

The professional societies could make an important contribution in this area. Although research is absolutely vital to understand better a particular area, it is also necessary to demonstrate its usefulness in improving the quality of life of people, in understanding better the processes involved in occupational health changes so that meaningful interventions may be made, how OHP knowledge can improve productivity without sacrificing the individual or the family, etc. This applied knowledge is important in lobbying for OHP support at the governmental level. It is necessary to lobby governments and institutions at a high level in order to get past the initial inertia of obtaining funding for a new discipline. This requires dedication and resources, as well as perseverance, to slowly win over the decision makers.

**Conclusion**

Despite its young history, Occupational Health Psychology has reached considerable development, especially in the U.S., the UK and Northern Europe. The European Academy of Occupational Health Psychology has had an important role in this development and can be a catalyst for future expansion of the field.

This paper has outlined some avenues for strategic development, which are summarized below:

1. Promoting the regional expansion of OHP, which takes into consideration the country’s specific needs and profile in the development of Psychology as a discipline.
2. Targeting key groups in terms of the development of education and training programs and curricula, such as undergraduate and doctoral students and young researchers.

3. Promoting OHP to research funding entities and policy makers in order to foster support for research networking and applications of OHP.

The annual EA-OHP conferences are an excellent opportunity for attracting students, establishing networks and being a catalyst for the development of OHP at a local level. The creation of a nationally representative network of OHP professionals and researchers who may be able to build on these initiatives locally is a key step in moving OHP forward in Europe.

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INVESTMENT IN EMPLOYEE HEALTH – IMPLICATIONS FOR ORGANISATIONAL PERFORMANCE?

K. MEARNS & L. HOPE

1 Industrial Psychology Research Centre, University of Aberdeen, United Kingdom
2 University of Portsmouth, United Kingdom

Introduction

A recent study conducted in the offshore oil industry (N = 1,374) concluded that investment in employee health manifests in positive evaluations of health and safety climate and is associated with fewer risk-taking behaviors and greater workplace commitment (Mearns & Hope, 2004). However, the literature indicates a lack of instruments to measure health climate and improved methods are required if the impact of health investment is to be monitored in organizations, particularly in terms of its impact on the attitudes and behaviours of the workforce and subsequently the performance of the organization. The current research aims to develop improved indicators of worksite health climate and to investigate the hypothesis that support provided by the organization (both generally and specifically for health and well-being) builds a positive perception of health climate, which in turn impacts on personal health behaviour, citizenship behaviour and rule compliance.

Organizational health climate

Organizational climate has been found to play an important role in the effectiveness of health promotion programmes and worker participation in such programmes (Rost, Connell, Schechtman, Barzilai & Fisher, 1990). Ribisl and Reischl (1993) identified ‘a climate for health’ that is subsumed within a more general organizational climate. Their analyses indicated that health climate differed significantly across worksites and that the organizational health climate was strongly associated with exercise behaviours, smoking behaviours, nutrition, job stress and job satisfaction. According to Pender (1989) and Stokols (1992), the health behaviours of an organization will be influenced by its social structure, and Pender (1989) suggests developing a ‘health strengthening environment’ which directly promotes and facilitates healthy behavioural norms.

Offshore workers have been identified as a population group exposed to both workplace and lifestyle hazards. Due to the remoteness and dangerous nature of the offshore work environment it is necessary that employees are medically fit to work offshore, can cope in emergency situations and will not suffer from health problems due to their work tasks. It is also necessary to identify, regulate and
monitor potential workplace hazards and health risks. Offshore workers also report high levels of unhealthy lifestyle habits, for example a lack of exercise, smoking and a poor diet, which have been identified as risk factors for coronary heart disease and other health complications (Mearns & Fenn, 1994; Horsley & MacKenzie, 1996; Parkes, 1998). Thus, offshore workers have been identified as a group who could benefit from health interventions by tackling some of the risk factors they appear susceptible to.

**Perceived Organizational Support**

The construct of Perceived Organizational Support (POS) was first developed by Eisenberger, Huntington, Hutchison & Sowa (1986) and reflects employees' beliefs about an organization's support, commitment and care towards them. POS has been found to be significantly associated with employee behaviours and attitudes including trust in the organization and organizational commitment, which refers to the identification with an organization's goals and being willing to expend effort for the organization (Eisenberger, Fasolo & Davis-LaMastro, 1990). In response, employees who perceive organizational support feel an obligation to the organization's welfare, an identification and incorporation of organizational membership into their social identity, and a belief that good performance is recognized and rewarded. Furthermore, employees must feel that organizational support afforded to them is discretionary, necessary for aiding the organization, and is a reward for performances.

**Organizational Citizenship Behaviours**

Organizational Citizenship Behaviour (OCB) describes those individual behaviours in the workplace that are not directly recognized by an organization's formal reward system yet serve to promote the general well-being of the company (Smith, Organ and Near, 1983). Organizational citizenship behaviours are not enforceable or determined by a formal employment contract and are only undertaken at the discretion of individual employees (Organ, 1988). Due to the fact that OCBs go beyond prescribed job requirements, are not clearly specified, and are hard to measure formally, they are not easily enforceable by the threat of sanctions or incentive of rewards. Podsakoff, MacKenzie, Paine and Bachrach (2000) review much of the literature examining OCBs and conclude that whilst much of the research has considered the factors that determine citizenship behaviours, relatively little effort has been spent concisely defining OCBs and their associated benefits. They report that although around 30 different forms of citizenship behaviour can be identified, many of them overlap and can be organised into seven distinct dimensions: 1) Helping behaviours; 2) Sportsmanship, 3) Organizational loyalty; 4) Organizational compliance; 5) Individual initiative, 6) Civic virtue; 7) Self development.
Podsakoff et al. (2000) point out that at the time of their review only 5 research papers had empirically examined whether organizational citizenship behaviours actually do influence organizational performance and effectiveness. One of the first studies to have examined the effect of OCBs on organizational performance was conducted by Karambayya (1990). Her findings indicated that those employees who worked in high performing work units actually exhibited more citizenship behaviours than their colleagues who were working within low performing work units. However performance in this study was judged subjectively without an objective criterion, and more recent studies have addressed this limitation (Podsakoff et al., 2000). The more recent studies (Podsakoff & MacKenzie, 1995; MacKenzie, Podsakoff & Ahearne, 1998; Walz & Niehoff, 1996) within various occupations, such as insurance agencies, paper mills and pharmaceutical sales teams, have attempted to consider the benefits of OCBs through using more objective units of unit performance. Podsakoff et al. (2000) analysis of studies examining the benefits of OCBs on work unit performance concludes that there is indeed support for the original hypothesis made by Organ (1988) that organizational citizenship behaviours are related to organizational effectiveness. In particular, Podsakoff et al. (2000) found that certain OCB dimensions, such as helping behaviours, sportsmanship and civic virtue, were found to enhance organizational performance.

**Investment in employee health**

The above discussion has highlighted several points regarding organizational investment in the workforce. Podsakoff et al. (2002) meta-analysis findings indicate that discreitional actions such as OCBs do have significant benefits for organizations in terms of their social environments and actual production levels. Rhoades and Eisenberger (2002) have demonstrated that perceived support from an organization can result in employees showing increased organizational citizenship behaviours and commitment towards the organization. Coyle-Shapiro (2002) has also demonstrated that employees have certain expectations of the organization they work for, if they feel those expectations have been met and trust that they will continue to be met, they will demonstrate organizational citizenship behaviours and commitment to the organization.

In the hostile offshore working environment, where an aging workforce is exposed to a number of occupational and lifestyle risks, it would seem logical that organizational investment in health would provide strong indication of organizational support for well-being, and thus result in reciprocal actions by the workforce. Support for the idea that organizational investment in health results in positive employee behaviours was found in the first phase of the current research project. The present phase of the project intends to examine this finding further, and to explore the hypothesis that organizational support for the health and well-being of offshore employees helps to build a positive perception of the
installation’s health climate, and thus the organization’s support for the well-being of workers. This positive perception, in turn, impacts on personal health behaviours, organizational citizenship behaviours and rule compliance.

Method

Building on the results of the previous study (Mearns & Hope, 2004), two new questionnaires were designed for distribution in the offshore environment. The following paragraphs describe the sample obtained and outline the content of the ‘Your Health at Work’ questionnaire, which was targeted at the offshore workforce and the ‘Medics Health at Work’ questionnaire, which was targeted at the offshore medics.

Sample

Data were collected from 17 offshore installations operated by six different companies in UK waters. Completed questionnaires were returned by 609 personnel representing a response rate of 31%. In terms of worksite demographics, 35% of the sample were supervisors, 19% of respondents had worked on their installation for less than a year while 45% indicated they had worked on their installation between one and five years. In addition, 22% had spent six to ten years on their installation while 14% had been on their installation for more than 10 years. Finally, 10% of all respondents were aged 20-30 years and 26% of respondents were aged between 31-40 years old. The greatest proportion of respondents (37%) fell into the 41-50 years band, whilst around a quarter (27%) were older than 51 years of age.

Health at work questionnaire for the workforce

Health on this installation – This section focused on the health-related activities that were possible to undertake on the installations. The objective was to gain an insight into the degree to which health-related behaviours were facilitated on the installation. Respondents were required to indicate their agreement, on a 5-point Likert-type scale (1 = Strongly Disagree / 5 = Strongly Agree), with 20 statements describing the health activities that can be undertaken on the installation. The statements referred to getting advice about health issues, being able to exercise regularly, being able to relax, being able to avoid unhealthy products and being able to take part in organized health activities. The activity items were based on items included in measures of health promotion at work, such as Golaszewski, Barr & Pronk’s (2000) health promotion measures.

Support from the operator – This section asked respondents how they felt about the general support provided by the organization largely responsible for the installation. Respondents were asked to indicate their agreement, on a 5-point
Likert-type scale (1 = Strongly Disagree / 5 = Strongly Agree), with 20 statements describing the operating company’s commitment to the well-being of employees, the importance placed upon the needs and opinions of employees, and the value that is placed upon the work done by employees. These items were to be used for generating an index of perceived operator support (POS) and were taken from scales used by Eisenberger et al. (1986) and by Basen-Engquist, Hudson, Tripp and Chamberlain (1998).

Support from the supervisor & workmates – The aim of this section was to measure the degree the support provided by supervisors and workmates in terms of the respondent’s well-being and completion of work. It consisted of 8 statements concerning the immediate supervisor and 8 statements concerning work colleagues. Respondents were required to indicate their agreement, on a 5-point Likert-type scale (1 = Strongly Disagree / 5 = Strongly Agree), with those statements. The items for this section were taken from Basen-Engquist et al. (1998) health climate measures.

Your health – This section asked respondents about their health, fitness and dietary habits, e.g. avoiding unhealthy foods, smoking and exercise. This was done in order to get an overview of employee health habits and to develop an overall measure of the state of employee health on each installation. Respondents were also required to provide their height and weight so their Body Mass Index could be calculated. Finally, respondents were asked to indicate whether they had taken part in any health promotions activities in the past year and also whether they received useful health promotion advice in the past 12 months.

Taking action – This section asked respondents about the positive actions they take in regard to the installation, particularly those involving actions that are beyond the confines of a job role, and can be termed as OCBs. Respondents were required to indicate the extent to which, on a 5-point Likert-type scale (1 = Not at all / 5 = To a great extent), they engaged in a range of OCBs including making suggestions to improve and revise work procedures, taking action to improve the organization and the installation, informing management about unproductive or unsafe practices and speaking up about work issues or rules. The items for this scale were taken from Coyle-Shapiro & Kessler (2000) and Tsui et al. (1997), and were designed to measure the level of organizational citizenship behaviours that respondents feel they demonstrate whilst working on the installation.

Satisfaction with occupational health management – This section measured the level of satisfaction respondents have with the occupational health management on their installation. Respondents were required to indicate the extent to which, on a 5-point Likert-type scale (1 = Very satisfied / 5 = Very dissatisfied), they were satisfied with 13 occupational health activities managed by the installation.

Support for health – The aim of this section was to develop an index of the perceived support for employee health that is provided by supervisors and workmates. Respondents were required to indicate their agreement, on a 5-point
Likert-type scale (1 = Strongly Disagree / 5 = Strongly Agree), with 14 statements, 6 for supervisors and 8 for workmates, describing the role that their colleagues play in their health. Items were taken from the scale developed by Ribisl & Reischl (1993) used to measure the co-worker support element of health climate.

Safety behaviour – Respondents were asked to indicate whether, on a 5-point Likert-type scale (1 = Strongly Disagree / 5 = Strongly Agree), they showed a range of safety behaviours. In total 9 items describing certain safety behaviours were incorporated in the section. Items referred to monitoring the safety behaviours of workmates, correcting potential safety problems, informing management about safety problems and reporting near misses, minor accidents and hazardous working conditions. This scale was used to build a safety behaviour index measuring the level of safety related behaviours undertaken by installation employees.

You and this installation – This section referred to the commitment that respondents felt in regards to the installation they worked on. Respondents were asked to indicate whether, on a 5-point Likert-type scale (1=Strongly Disagree / 5 = Strongly Agree), they agreed with a range of statements describing feelings about working on the installation. In total 7 items describing feelings of organizational commitment were incorporated in section 10. The items were taken from a measure used by Coyle-Shapiro & Kessler (2000).

Health at work questionnaire for medics

The questionnaire developed for the installation medics served the purpose of assessing the facilities and resources that were available for employee health and well being on the various installations. The survey allowed an assessment of the organizational commitment, and facilities provided, for health screening and surveillance, employee physical fitness, smoking cessation, stress management and healthy eating. The medic’s questionnaire also measured the general levels of organizational support for health management and the role of the medic in health promotion. Furthermore, the questionnaire obtained objective numerical data in regard to sick bay visits for injuries and illness. Space was also provided for medics to discuss related issues that may not have been tackled directly by questionnaire.

Results

The current study assessed the health climate on 17 offshore installations (N=609) and aims to investigate the hypothesis that support provided by the organization (both generally and specifically for health and well-being) builds a positive perception of health climate, which in turn impacts on personal health behaviour, citizenship behaviour and rule compliance. A new survey tool has been developed to assess perception of health climate relative to reported investments/facilitation of health in the workplace. The health climate tool
includes measures of organisational support, supervisor and colleague support, health behaviours, management of occupational health and communication about health issues. Self-reported behavioural measures allow for the calculation of the Health Behaviour Index (HBI) score. Worksite commitment and organisational citizenship have been included as self-reported outcome measures. In addition, a worksite audit for a healthy lifestyle has been directed at the offshore medics as a separate source of data about organisational investment in health. The audit evaluates resources (time, financial, etc.) for health promotion and general occupational health activities, access to occupational health plans and priorities and issues related to medic training and occupational health management. The data is currently being analysed to determine the impact of health management activities on employees at the individual and installation level.

Acknowledgements

The Offshore Division, Hazardous Installations Directorate of the UK Health and Safety Executive sponsored this project and we would like to thank Ron Gardner and Gillian May of the HSE for their support and guidance. We would also like to acknowledge the participation of the following 6 organizations in the current research: Amerada Hess Limited, BP plc, Chevron Texaco (UK), Lundin Petroleum, Marathon Oil UK Limited and Transocean SedcoForex and to thank all the personnel who took the time to complete the questionnaires. The views presented here are those of the authors and should not be taken to represent the positions or policy of the organizations involved or the Health and Safety Executive.

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BURNOUT AMONG NORWEGIAN POLICE OFFICERS: ANTECEDENTS AND CONSEQUENCES

A. MIKKELSEN 1 & R. BURKE 2

1 University of Stavanger, Norway
2 York University, Canada

There is evidence among police officers of a link between the experience of workplace stressors and dissatisfaction and negative health outcomes (Adollahi, 2002). In addition, organizational stressors are both the most common and have the strongest association with dissatisfaction and psychological distress.

A related and large body of research on work and health has focused on the concept of burnout (Shirom, 1989, 2002). Somewhat surprisingly, burnout research has rarely been conducted using police samples (Schaufeli & Enzmann, 1998). A review of this body of work shows findings consistent with those reported in non-police samples and extends this work to new areas reflecting the unique aspects of policing (Jackson & Maslach, 1982; Maslach & Jackson, 1981).

Burnout is typically seen as a syndrome of emotional exhaustion, cynicism and reduced personal efficacy (Maslach, 1982; Maslach, Schaufeli & Leiter 2001). Kop and Euwema (2001) found a positive relationship between levels of burnout of Dutch police officers and a positive attitude toward the use of force, the self-reported use of force, and the independently observed use of force. Kop, Euwema and Schaufeli (1999), in the same sample, reported that burnout was associated with a lack of reciprocity between investments and outcomes in the relations that officers have with the public, work colleagues and their organization. Burke (1988), in a large sample of Canadian police officers, reported that work-family conflict was associated with levels of burnout. In addition, antecedents such as work setting characteristics, lack of social support and both work and non-work stressors as well as outcomes including psychosomatic symptoms, negative feeling states, intention to quit and self-reported physical health were significantly associated with levels of burnout. Schaufeli and Buunk (2003) report that police officers in the Netherlands have relatively low levels of clinical burnout (about 1%) compared to other occupations.

This study had two research objectives and one practical objective. The first was to empirically determine predictors of the three burnout components; the second was to ascertain the role burnout plays in predicting a variety of work and psychological health outcomes; and the third, using the findings that emerged, was to offer practical interventions to police management interested in building a healthy organization.
Two research models were developed to guide selection of variables to be included in the study as well as data analysis. In the first model, an examination of predictors of burnout components, four blocks of predictors were included: personal demographics (e.g., age, gender, marital and parental status), work situation characteristics (e.g., size of force, level of position), job demands (quantitative, sensorial, cognitive, emotional) and coping and social resources (e.g., active coping, social support). In the second model, an examination of the effects of burnout on work and health outcomes, the burnout components were added as a fifth block of predictors following the first four blocks. The relationship of these blocks of predictors with work outcomes (e.g., job satisfaction) and health outcomes (e.g., psychosomatic symptoms) was then determined.

**Method**

The sample consists of 766 randomly selected police officers from Norway. The response rate was 69%. Most respondents were male (84%), married (82%), had children (88%), held constable positions (62%), worked 5 or less hours of overtime per week (75%), held fairly long police tenure (21 years or more, 39%) and were born in 1960 or before (42%).

Three components of burnout (exhaustion ($\alpha = .86$), cynicism ($\alpha = .78$) and professional efficacy ($\alpha = .80$) were measured by the Maslach Burnout Inventory – General Survey (MBI – GS) developed by Schaufeli et al. (1996). Work characteristics, psychosocial factors and work outcomes were measured by scales from the Copenhagen Psychosocial Questionnaire (COPSOC) developed by Kristensen and Borg (2001) (alpha .58 -.83). Active coping was measured by a twelve items scale ($\alpha = .40$) developed by Finset et al. (2002). Two work-family issues were included based on the work of Tørgen et al. (2001): Work-family conflict ($\alpha = .83$) and spouse concerns ($\alpha = .79$). Subjective health complaints were measured by a 29 items scale ($\alpha = .89$) developed by Eriksen, Ihlebaek and Ursin (1999). Post traumatic stress symptoms were measured by a ten item scale ($\alpha = .92$) developed by Knudsen et al. (2002). Suicidal ideation was assessed by a four items measure ($\alpha = .84$) developed by Paykel et al. (1974).

**Results**

*Predictors of burnout components*

Table 1-5 shows the main summaries of each of the hierarchical regression analyses. First, all blocks of predictors accounted for significant amounts or increments in explained variance on levels of emotional exhaustion. Police officers working in urban settings reported greater exhaustion ($\beta = .11$). Police
officers indicating higher quantitative demands, lower sensorial demands, greater responsibility, greater emotional demands and greater demands for hiding emotions, and reported higher levels of emotional exhaustion (β s = .21, -.12, .11, .10 and .08 respectively). Finally, police officers indicating fewer social relations, less social support and less sense of community reported higher levels of exhaustion (β s = -.12, -.10 and .08 respectively).

Second, all four blocks of predictors accounted for significant amounts on increments in explained variance on levels of cynicism. Police officers having longer police tenure and police officers in larger departments reported less cynicism (β s = .24 and -.13 respectively). Police officers reporting greater role conflict, greater demands for hiding emotions, less information, more quantitative demands, fewer sensorial demands and few cognitive demands reported higher levels of cynicism (β s = .19, .14, -.16, 10, -.09 and -.09 respectively). Finally, police officers indicating less social support, and police officers using more active coping, reported higher levels of cynicism (β s = -.13 and .07 respectively).

Third, all four blocks of predictors accounted for significant amounts on increments in explained variance on professional efficacy. Men reported higher levels of professional efficacy than did women (β = -.13). Police officers working continuous shift work reported lower efficacy (β = -.12). Police officers reporting greater cognitive demands also reported greater efficacy (β = .23). Finally, police officers indicating greater social support and police officers indicating a stronger sense of community reported higher levels of efficacy (β s = .13 and .11 respectively).

Work demands accounted for the largest amount or increment in explained variance on all three burnout components. In addition, the four blocks of predictors accounted for relatively large amounts of variance on both emotional exhaustion and cynicism.

Predictors of work outcomes

Table 2 shows the main results of hierarchical regression analyses examining the relationship of four blocks of predictors with three work outcomes: job satisfaction, organizational commitment and meaningful work.

First, all four blocks of predictors accounted for significant amounts on increments in explained variance on job satisfaction. Police officers at higher organizational levels reported more job satisfaction (β = .11) as did police officers working regular day shifts (β = -.10). Police officers having more satisfying leadership indicated greater job satisfaction (β = .26) as did police officers reporting more information (β = .17). Finally, police officers reporting less cynicism also reported more job satisfaction (β = -.17) as did police officers reporting greater exhaustion (β = -.16).

Second, all four blocks of predictors accounted for significant amounts on increments on organizational commitment. Police officers reporting more
information also reported higher levels of organizational commitment ($\beta = .18$) as did police officers reporting emotional demands and role conflict ($\beta s = .16$ and .10 respectively). Finally, police officers indicating less cynicism and police officers indicating more professional efficacy reported higher levels of organizational commitment ($\beta s = -.20$ and .12 respectively).

Third, three blocks of predictors accounted for significant increments in explained variance on meaningful work (not personal demographics). Police officers indicating greater role clarity, police officers indicating greater cognitive demands, and police officers reporting more information also indicated more meaningful work ($\beta s = .21$, .17 and .13 respectively). Finally, police indicating less cynicism and police officers indicating more professional efficacy also reported higher levels of meaningful work ($\beta s = -.36$ and .18 respectively).

Work demands again accounted for the largest amount or increment in explained variance on the three work outcomes. Access to information also had a significant and independent relationship with all three work outcomes. The four blocks of predictors accounted for a large amount of variance on both job satisfaction and meaningful work.

**Burnout and work-family issues**

Table 3 shows the main results of hierarchical regression analyses in which two work-family measures were regressed on the four blocks of predictors. In both cases, all four blocks of predictors accounted for significant amounts or increments in explained variance on work-family conflict and spouse concerns. Police officers working regular shift work reported more work-family conflict ($\beta = .09$) and police officers at higher organizational levels reported more work-family conflict ($\beta = .09$). Police officers reporting greater quantitative demands, police officers reporting greater demands to hide emotions and police officers reporting more role conflict also indicated higher levels of work-family conflict ($\beta s = .17$, .13 and .10 respectively). Finally, police officers indicating higher levels of exhaustion also reported more work-family conflict ($\beta = .32$).

Considering spouse concerns, police officers having other officers as spouses/partners indicated fewer spouse concerns ($\beta = -.11$). Police officers working in larger departments indicated fewer spouse concerns ($\beta = -.12$). Police officers indicating greater quantitative demands, police officers indicating greater demands to hide emotions and police officers reporting greater emotional demands indicated higher levels of spouse concerns ($\beta s = .12$, .12 and .11 respectively). Finally, police officers indicating higher levels of exhaustion and police officers indicating more cynicism reported greater spouse concerns ($\beta s = .20$ and .15 respectively).

Work demands again accounted for the largest amount of variance on the two work-family measures. Hiding emotions and emotional exhaustion had significant and independent relationships with both work-family measures. The four blocks of predictors also accounted for a large amount of variance on both criterion measures.
Burnout and psychological health

Table 4 presents the results of hierarchical regression analyses in which three measures of psychological health were regressed on the four blocks of predictors. First, three blocks of predictors accounted for significant amounts or increments in explained variance on levels of subjective health complaints (not work situation characteristics). Officers having more education indicated fewer health complaints (β = -.08). Officers indicating greater cognitive demands reported more subjective health complaints (β = .14). Finally, officers reporting greater emotional exhaustion also reported more health complaints (β = .49).

Second, two blocks of predictors accounted for significant increments in explained variance on post-traumatic stress syndrome indicators (not personal demographics or work situation characteristics). Police officers indicating higher levels of role conflict and police officers indicating greater demands to hide emotions reported more post-traumatic symptoms (β = .10 and .07 respectively). Finally, police officers reporting higher levels of emotional exhaustion and police officers indicating less professional efficacy also reported more post-traumatic symptoms (β s = .46 and -.07 respectively).

Third, three blocks of predictors accounted for significant amounts and increments in explained variance on suicidal ideation (not work situation characteristics). Married police officers indicated less suicidal ideation than did single officers (β = -.16). Police officers reporting higher levels of emotional exhaustion and police officers indicating greater cynicism reported more suicidal ideation (β s = .20 and .11 respectively).

Burnout components accounted for the largest amount of variance on each of the three indicators of psychological health. Emotional exhaustion had a significant and independent relationship with each outcome measure. The four blocks of predictors only accounted for moderate amounts of variance on these outcomes however.

Burnout and psychosomatic health

Table 5 presents the results of regression analyses in which four measures of psychosomatic health were regressed on the four blocks of predictors. First, three blocks of predictors accounted for significant amounts or increments in explained variance on self-reported overall health (not work situation characteristics). Police officers indicating less favorable leadership and police officers reporting greater quantitative demands also reported poorer general health (β s = .09 and .10 respectively). Police officers indicating higher levels of emotional exhaustion also reported poorer overall health (β = -.23). Second, two blocks of predictors accounted for significant increments in explained variance on medication use (not personal demographics or work situation characteristics). Police officers reporting higher levels of exhaustion also indicated greater medication use (β = .22). Third, three blocks of predictors accounted for significant increments
in explained variance on whether any sick days had been taken during the past six months (not personal demographics). Police officers reporting less information, officers reporting greater sensorial demands and officers reporting less favorable leadership also indicating having taken sick days ($\beta$ s = -.11, .11 and -.10 respectively). Finally, police officers indicating higher levels of emotional exhaustion were more likely to have taken sick days ($\beta$ = .21).

Fourth, all four blocks of predictors accounted for a significant amount or increment in explained variance on number of sick days taken. Single police officers took more sick days ($\beta$ = -.09). Officers at lower organizational levels and officers with longer police tenure took more sick days ($\beta$ s = -.13 and .24 respectively). Finally, police officers reporting greater emotional exhaustion took more sick days ($\beta$ = .15).

Emotional exhaustion showed an independent and significant relationship with the four psychosomatic health measures. The four blocks of predictors accounted for only a small amount of variance in each instance however.

**Discussion**

The findings were consistent with previous results as well as extending our understanding of the effects of burnout in work settings. Both work demands and social resources contributed significantly to each of the three burnout components. Work demands, not surprisingly, had the strongest relationship with all three. Consistent with earlier work, personal demographics and work situation characteristics had weaker and inconsistent relationships with burnout components (Burke & Richardsen, 2001; Schaufeli & Enzmann, 1998).

The research model accounted for significant variance in all work outcomes. Both job demands and burnout components had strong relationships in all cases. Cynicism, which had previously been found to be prevalent among police officers (Schaufeli & Enzmann, 1998) had significant and independent relationships in each case. Both job demands and burnout components accounted for significant increments in explained variance on the two work-family measures. Exhaustion had significant and independent relationships with both. Again, job demands and burnout components accounted for significant increments in explained variance on all three measures of psychological health with burnout contributing more than job demands. Exhaustion had significant and independent relationships with all three measures. There is considerable evidence that exhaustion emerges as the strongest predictor of most individual work and well-being outcomes (see Burke & Richardsen, 2001, Schaufeli & Enzman, 1998; Schaufeli & Buunk, 2003).

Consistent with previous work, both job demands and burnout components contributed less strongly to psychosomatic health outcomes (see Schaufeli & Enzmann, 1998, for similar conclusions). But burnout components, specifically
exhaustion, had a significant and independent relationship with all four psychosomatic health indicators. Shirom and his colleagues have argued for such a relationship in spite of previous inconsistent or weak findings. They argue that exhaustion is most likely to have such effects, not only on self-reports of physical health, but on physiological markers as well as specific disease entities.

Some writing has identified possible interventions to reduce levels of burnout (Burke & Richardsen, 2001; Schaufeli & Enzmann, 1998; Schaufeli & Buunk, 2003). Our findings suggest two fruitful targets for intervention: reducing job demands and improving social resources.

Our data provide some directions for changes in the work environment (Maslach & Leiter, 1997). Useful initiatives would involve making more information available to officers, clarifying job roles and desired approaches to policing, allowing officers greater input and influence in the conduct of their assignments, training senior police supervisors in human resource management skills and encouraging greater candor within the force in the day-to-day pursuit of their jobs.

Improving social and coping resources might involve education in active coping and positive life-style behaviours. In addition, capitalizing on the usually strong camaraderie existing in police forces, using this resource to more formally encourage and empower peers to solicit and provide consecutive social support. The development of mentoring systems, buddy arrangements and team policing are useful initiatives.

References


### Table 1: Predictors of burnout components

<table>
<thead>
<tr>
<th>Burnout Component</th>
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<th>R²</th>
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<td>.01</td>
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<td><strong>Professional Efficacy (N = 632)</strong></td>
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### Table 2: Burnout and work outcomes

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### Table 3: Burnout and Work-Family Issues

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### Table 4: Burnout and Psychological Health

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<tr>
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<td>.35</td>
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### Table 5: Burnout and Psychosomatic Health

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<td>.01</td>
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Basic issues

According to the AH model [1,2], human behaviour in a real working situation depends on the worker’s perception of his/her:

- Abilities (defined as basic human traits like intelligence, perception abilities, decision making flexibility, reaction abilities)
- Personality (defined as anxiety level, stress resistance, behavioural type)
- Health (defined as a state of general well-being, not only the absence of illness – according to the WHO definition)
- Fitness for duty (defined as a state without presence of psychoactive legal or illegal substances and without negative impacts of psychosocial stressors)
- Knowledge (defined as knowledge received in formal educational process and as skills achieved in special trainings)
- Experience (defined as experiences achieved at real work [3])
- Motivation (defined as willingness of the individual to take part in the activity and to persist at workplaces).

Objectively collected data about human abilities, personality, health, fitness for duty, knowledge, experience and motivation are integrated in the human potential availability.

The worker’s perception of potential availability is defined as actual availability in the AH model. The self-estimation of actual availability is the perceived level of well-being. This is the individual self-estimation of ability to persist at work and to perform the required task. According to the AH model, the perceived level of actual availability determines the workers’ behaviour and their performance in the real working situation. The evaluation of actual availability offers the possibility to estimate and to predict human behaviour in the real working situation [4,5]. The adequate level of actual availability, self-estimated by workers, assures a stable level of safe system operation. The adequate level of actual availability prevents human errors due to unfitness, health problems, inability, perceived stress or due to the lack of motivation [6,7].
Research goal

According to operational data, there were significant differences in the system's performance between the nuclear power plant and the thermal power plant. The interest of thermal power plant's management resulted in the thermal power plant performance level reaching that of the nuclear power plant.

Collected data of actual availability are a possible input for the evaluation of human availability. According to the results of root cause analyses, the performance level of a complex system depends mostly on the level of human availability [8].

The basic hypotheses were that there are differences in the level of potential availability and in the level of actual availability between the two systems.

Method

Techniques

In the determination of potential availability, psychodiagnostic procedures were used. With the application of standardised tests, levels of general intelligence, perception and reaction abilities were determined. Questionnaires for the determination of personality structure, stress resistance and anxiety were used. In the determination of actual availability, the Questionnaire of Actual Availability (QAA) was implemented.

The normalized values for QAA are the following:

- The first level – excellent level of well-being: values below 2.0
- The second level – adequate level of well-being: values between 2.0 and 2.5
- The third level – manifestation of fatigue: values between 2.5 and 3.0 (the need for daily rest)
- The fourth level – exhaustion: values above 3.0 (the need for longer rest or holidays)
- The fifth level – burnout: values above 4.0 (the need for sick leave and therapy)

Sample

35 male operators from the nuclear power plant (NPP) – mean age 34.3
55 male operators from the thermal power plant (TPP) – mean age 35.7

Procedure

1. Potential availability data were collected during the regular periodical psychological exam.
2. Actual availability data were collected during on-site measurements in both control rooms.
Measurements times for the determination of actual availability data were at 7:00, at 11:00 and at 13:00 in the day shift and at 23:00, at 01:00, 03:00 and at 05:00 in the night shift.

The operational status of both plants during measurement days was stable, without transients and scrams.

**Results**

*The level of education and additional training*

The level of basic education was much higher in the NPP. A minority of operators had the fifth degree of education. Shift supervisors and assistant engineers had a university degree. There were no engineers in the shift crew at the university level in the thermal plant, all operators were technicians. The dominant education level in the TPP was the fifth degree.

Operators in the NPP had passed intensive training in the USA and they have to pass simulator training every year. All NPP operators have external licensing.

In TPP there was no external licensing. There was only on-site training in the form of assistance at the work place. Training and retraining were less extensive and less formal than in the NPP. There was no simulator training.

*The level of basic abilities*

<table>
<thead>
<tr>
<th></th>
<th>TPP; N = 55</th>
<th>NPP; N = 35</th>
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<td>General intelligence [points]</td>
<td>28.27</td>
<td>30.90</td>
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<td>47.40</td>
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<td>1.50</td>
<td>0.17</td>
<td>0.3291</td>
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<tr>
<td>Simple reaction time [s]</td>
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<td>40.30</td>
<td>12.95</td>
<td>5.0104***</td>
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<tr>
<td>Reaction time [s]</td>
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<td>44.30</td>
<td>4.37</td>
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<td>3.4378**</td>
</tr>
</tbody>
</table>

There were no statistically significant differences in the level of general intelligence (tested with D-48) between the two groups, although the general intelligence level was slightly higher in the group of NPP operators. Basic intellectual abilities in both groups were above the population’s mean. Also in the level of perceptual abilities there were no statistical significant differences between the two groups. Perceptual abilities were fast, precise, in time. They were above the population’s mean. There were statistically significant differences between the two groups in the level of reaction abilities. Reactions were faster but less precise in the group of NPP operators.
General and specific abilities of operators in both systems were excellent. They were able to make fast and precise decisions on the basis of in-time, adequate perception.

*The structure of personality*

<table>
<thead>
<tr>
<th>Table 2: The structure of personality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reproduction [points]</td>
</tr>
<tr>
<td>M</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>Reproduction [points]</td>
</tr>
<tr>
<td>Impulsion [points]</td>
</tr>
<tr>
<td>Self protection [points]</td>
</tr>
<tr>
<td>Deprivation [points]</td>
</tr>
<tr>
<td>Oppositionality [points]</td>
</tr>
<tr>
<td>Exploration [points]</td>
</tr>
<tr>
<td>Aggression [points]</td>
</tr>
<tr>
<td>Psychopathology [points]</td>
</tr>
<tr>
<td>Anxiety [points]</td>
</tr>
<tr>
<td>Decrease in stress resistance</td>
</tr>
</tbody>
</table>

The basic structure of personality was a bit more stable in the group of NPP operators. Perceived stress due to the responsibility for safe and stable operation was a bit higher in the group of NPP operators. This awareness raised the perceived level of depression to the interval of apprehension, below the interval of anxiety. The manifested level of psychopathology was higher in the group of TPP operators. The evaluation of personality structure was one of selection criteria in the recruitment procedure of NPP operators, while it was not taken into account in the recruitment procedure of TPP operators. This fact resulted in the consequent manifestations of psychopathology, as is presented in the table.

*The health status*

According to the results of regular medical exams, performed by occupational health physicians, all operators were estimated as healthy, able to perform their task without any limitation. In the estimated level of health status there were no differences between the two groups of operators.

*The level of perceived actual availability in the day shift*

Biological rhythms have a positive impact on the level of availability [9] during the morning shift. The highest level of actual availability should be between 8 and 11 o’clock in the morning. During the morning shift a lot of
maintenance activities, testings and calibrations were going on. The most extensive additional activities in the system were going on between half past 7 and 2 o’clock in the afternoon. During these extensive additional activities the second, the third and the fourth measurement of actual availability were performed. The perceived level of actual availability was much better in the group of NPP operators during the whole day shift.

The differences between both groups were statistically very significant. The perceived levels of actual availability of NPP operators were at the first and at the second level – at the intervals of excellent and adequate well-being, without perceptions of fatigue. The difference in the perceived level of actual availability between the two groups had increased to the half of interval at the QAA. During the day shift the perceived level of actual availability was lower in the TPP. Residual availabilities in this group were lower. According to the AH model the adequacy of behaviour was lower than it was evident from system performance estimations.

The level of perceived actual availability in the night shift

Table 4: The difference in the level of perceived actual availability in the night shift

<table>
<thead>
<tr>
<th>Level of actual availability</th>
<th>Differences in means between TPP and NPP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1st meas</td>
</tr>
<tr>
<td>Physical fatigue</td>
<td>0.50***</td>
</tr>
<tr>
<td>Mental fatigue</td>
<td>0.63***</td>
</tr>
<tr>
<td>Exhaustion</td>
<td>0.62***</td>
</tr>
<tr>
<td>Decrease in motivation</td>
<td>0.49***</td>
</tr>
<tr>
<td>Decrease in concentration</td>
<td>0.88***</td>
</tr>
<tr>
<td>Depressed mood</td>
<td>0.59***</td>
</tr>
<tr>
<td>Stress</td>
<td>0.51***</td>
</tr>
<tr>
<td>Fitness for duty</td>
<td>0.57***</td>
</tr>
</tbody>
</table>
At the beginning of the night shift the perceived level of actual availability in the TPP was at the second level. The perceived level of actual availability in the NPP was at the first level – excellent well-being. The difference between the two groups was statistically significant, differences were about half of the interval at the QAA.

Perceived levels of actual availability were statistically significant between the two groups in all parameters.

On average the perceived level of actual availability was higher in the group of NPP operators. The difference between both groups was the largest at the third measurement. Negative impacts of biological rhythms were evident in the perception of actual availability. The residual availability to perform the required task was much lower in the night shift. Keeping the adequate and stable level of performance was much more demanding for operators of both systems in the night shift.

Table 5: Absolute values of perceived actual availability

<table>
<thead>
<tr>
<th>Level of actual availability</th>
<th>1st meas – day</th>
<th>4th meas – day</th>
<th>1st meas – night</th>
<th>4th meas – night</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TPP</td>
<td>NPP</td>
<td>TPP</td>
<td>NPP</td>
</tr>
<tr>
<td>Physical fatigue</td>
<td>1.78</td>
<td>1.43</td>
<td>2.53</td>
<td>1.91</td>
</tr>
<tr>
<td>Mental fatigue</td>
<td>1.91</td>
<td>1.53</td>
<td>2.59</td>
<td>2.03</td>
</tr>
<tr>
<td>Exhaustion</td>
<td>1.95</td>
<td>1.69</td>
<td>2.98</td>
<td>2.50</td>
</tr>
<tr>
<td>Decrease in motivation</td>
<td>1.84</td>
<td>1.60</td>
<td>2.78</td>
<td>2.28</td>
</tr>
<tr>
<td>Decrease in concentration</td>
<td>1.96</td>
<td>1.41</td>
<td>2.53</td>
<td>1.90</td>
</tr>
<tr>
<td>Depressed mood</td>
<td>1.94</td>
<td>1.67</td>
<td>2.63</td>
<td>2.22</td>
</tr>
<tr>
<td>Stress</td>
<td>1.89</td>
<td>1.58</td>
<td>2.48</td>
<td>1.94</td>
</tr>
<tr>
<td>Fitness for duty</td>
<td>1.89</td>
<td>1.56</td>
<td>2.64</td>
<td>2.11</td>
</tr>
</tbody>
</table>

Conclusion

According to obtained results there was a significant difference in the level of actual availability between both plants. Crucial influential factors determining the differences between crews of the two systems were identified. On the basis of these results humanization measures – interventions in the human part of the thermal plant system – to reduce differences between the two systems were identified.

The most adequate interventions are the following:

- **Procedure of selection and recruitment:** According to the obtained results in the recruitment procedure more attention should be paid to the level of specific abilities, basic structure of personality, level of psychopathology, anxiety and stress resistance. These parameters had a
strong influence on the level of actual availability. Among listed parameters
the differences between NPP operators and TPP operators were very
significant. Selection procedure should be adapted also to the ages of
candidates and their previous experiences.

- **Education:** A basic level of education had positive influence on the level of
actual availability. Higher level of education offers better knowledge and
understanding of the system’s functioning. Adequate basic education
assures also better comprehension of productional situations.

- **On-site training:** Additional simulator training offers the possibility of
reaching skills for handling unusual operating situations, hence this training
is recommended.

Operation of a complex system demands the availability of technological and
human parts of the system. The QAA and AH model offer the possibility of
estimating the human part of the production systems and in field evaluation of all
interventions in this part of the system. This is an indispensable condition for
achieving a stable and safe operation of the complex system. On the basis of
research results, humanization interventions in the system were started. The
majority of interventions were focused on the recruitment procedure, on-site
training and reorganization. New demands on the market of energy consumption
have proved all of these interventions. With these interventions, a higher level of
TPP performance has been achieved.

**References**


Address for correspondence: Marija Molan ( marija@molan.ws ); Gregor Molan (gregor@hermes.)
A QUALITATIVE STUDY OF OCCUPATIONAL HEALTH STAFF, HR MANAGERS & LINE MANAGERS’ PERSPECTIVE OF CHRONIC ILLNESS AT WORK

F. MUNIR, H. LONG, A. GRIFFITHS, S. J. COX, C. HASLAM & S. LEKA
Institute of Work, Health & Organisations, University of Nottingham, United Kingdom

Introduction

Chronic illnesses are reported to be one of the most prevalent and increasing health problems in both western and developing countries (World Health Organization, 1992). They are represented in a considerable proportion of the working population, particularly older workers (Health and Safety Executive, 2003) and are recognised as one of the most expensive health problems facing modern industrialised countries (WHO, 1992), accruing costs not only for healthcare providers but also for employers. Where organisations fail to provide adequate support or adjustments for employees with chronic illnesses, the costs are likely to be substantial. Among others, these costs include low productivity, high rates of sickness absence and staff turnover and potentially losing out on highly skilled workers (e.g., Kessler et al., 2001; Lerner et al., 2000; Baanders et al., 2002). Despite this, efforts to address ill health at work have largely focused on the prevention and intervention of work-related illnesses and injuries (e.g., Health & Safety Executive, 2003) or of physical disabilities. Few employers and researchers have addressed key issues surrounding the employment and management of employees with chronic illnesses such as cancer, inflammatory bowel disease and arthritis. Without employers’ cooperation and responsiveness, such conditions may have a considerable impact on employees’ work performance and employment.

Specifically, important factors that have not been sufficiently addressed in research and by employers in the management of employees with chronic illnesses, are the provision of work adjustments and support. There is now evidence that successful sustained employment for the chronically ill can be achieved by employers providing appropriate work adjustments and support (e.g., Employers’ Forum on Disability, 2003). This is reinforced by legislation which requires employers to make reasonable work adjustments where appropriate, to enable not just those with a disability but those with a chronic illness to continue working productively with minimal disadvantage (Disability Discrimination Act, 1995). Current approaches to work adjustments however, are often unsuccessful. Research suggests that this is due, in part, to a limited view of work adjustments as technical changes to a job such as access and equipment,
work station redesign or reduced work hours (Gates, 2000). In addition, many employers view individuals with chronic illnesses as functionally capable to carry out their work and are consequently not provided with adequate support (Gates, 2000). Evidence from the medical and health literature indicate that a high number of individuals with a chronic illness such as depression and inflammatory bowel disease fluctuate in functional capacity according to the presence of episodic symptoms and can experience fatigue and medication side effects which can affect work (e.g., Haslam et al., 2004; Cox et al., 2004). Many employers, however, do not understand the effects of medication or episodic symptoms, and much of this stems from their lack of knowledge of chronic illnesses. This may partly be due to the reluctance of employees’ disclosing their illness. However, Cox et al. (2004) found in a study of employees with inflammatory bowel disease that for those employees who disclosed their illness, there was minimal practical and social support available that directly related to their illness such as flexibility in working arrangements, team working (to allow for periods of ill-health) and a knowledgeable and supportive social environment at work. Employees with minimal support within these areas were more likely to leave work, retire early or experience psychological distress at work.

Overall, current research and employers have not taken into account the psychosocial context which consequently impacts individual self-esteem and well-being and has repercussions for individual job performance, job satisfaction and work retention, as well as overall work group productivity. Gates (2000) argues that successful employment is not just a function of the individual’s chronic illness symptoms and characteristics. It is also the function of the responsiveness of the work environment to the needs of the employees with disabilities (or chronic illness). Organisational responsiveness, expressed through management practices and Organisational culture that supports diversity, influences individual employment outcomes (Gates, 2000). The relationship between Organisational responsiveness and employee well-being and behaviour has been well-documented for the general workforce as well as for employees with disability specifically (e.g., Roessler & Gottcent, 1994). Akabas & Gates (1993) found employees with disabilities perceived their organisations as moderately responsive at best. Such employees reported unfair treatment because of their conditions, such as denied benefits or time off, unwanted transfers and underutilization of skills. Akabas & Gates found lower levels of job satisfaction, psychological well-being and job productivity, and higher levels of stress, absenteeism and staff turnover among those employees with a disability working in an unresponsive environment.

The review of the above literature suggests the need to learn more specifically about factors affecting employers’ perspectives of chronic illnesses and work adjustments. Sampling from a range of occupational sectors, this study used a qualitative, in-depth approach to investigate employers’ knowledge and perception of chronic illnesses and their impact on working life. Specifically,
Based on theoretical perspectives drawn from a previous study, the interviews collected data on the effects of three factors influencing management at the organisational level: organisational policies and practices, team climate & culture, provision of training in the management of illnesses; and four factors influencing employer management at the individual level: awareness of policies, familiarity of chronic illnesses, level of responsibility toward management and support, and perceptions toward disclosure of chronic illness at the workplace.

Method

Participant selection

Fifty organisations in the UK were randomly selected and invited to participate in the study by the research team. The organisations were selected from the Thomson Business Search Pro CD Rom directory (2003) and recruitment techniques included mail shots, telephone calls and e-mails to organisations. Eight organisations expressed an interest in the study out of which four were selected to take part. The selected organisations were chosen to represent a range of organisational size and work sectors: manufacturing, transport and public administration. Two of the organisations were in the private sector and two in the public sector. The sampling strategy was to recruit and interview 'players' throughout the organisation who were the carriers of organisational responsiveness toward employees with chronic illness. These were occupational health staff, attendance managers, line managers and representatives from human resources and trade unions. The research team recruited participants through an established contact in each organisation. In each case, this was the head of occupational health service. Staff within each organisation were made aware of the research by the established contact person and volunteered to participate in the study.

This paper presents findings from three of the organisations (two public sectors and one private sector). Forty-five participants were interviewed in total. The number of interviews carried out in each organisation depended upon the size of the organisation and the number of staff having responsibility for employees with chronic illnesses (see Table 1). Across the three organisations, 29 of the participants were female and 16 male. Participant age ranged from 25 to 57 years and tenure ranged from 3 to 30 years.

Research instruments and analyses

A template interview schedule was developed to be used with all participants. The interview schedule was developed using findings from a previous study from which theoretical perspectives were drawn on the management of chronic illness at work. The schedule covered: participants job role, level of experience of
managing employees with chronic illnesses, knowledge of chronic illnesses, training and skills in managing such employees, awareness and knowledge of organisational policies relevant to chronically ill employees, and communication of available support to those employees. The interview schedule was piloted and refined in the light of pilot studies (slight changes to the wording of some questions were made). All participants received the same interview schedule with some questions rephrased according to the participants' job role. Due to time constraints, participants were interviewed via telephone. Each interview lasted approximately 45 minutes and all participants agreed to the audio taping of the interview. The recorded material was fully transcribed. The transcribed data were analysed by the sorting of verbatim material into emergent themes using the method described by Knodel (1993). The reliability of the analysis was ensured through systematic review of the data by three members of the research team. No major differences were found in the themes between organisations. The findings are therefore summarised under the themes along with illustrative quotes.

**Results**

Demographic profiles of the participants \((n = 45)\) in the three organisation samples are shown in Table 1.

**Table 1: Participant details across the three organisations**

<table>
<thead>
<tr>
<th>Sample</th>
<th>Line manager</th>
<th>Human resource</th>
<th>Attendance manager</th>
<th>Trade Union</th>
<th>Occupational health</th>
<th>Total per organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organisation 1</td>
<td>5 (2 female, 3 male)</td>
<td>2 (1 female, 1 male)</td>
<td>5 (4 female, 1 male)</td>
<td>-</td>
<td>3 female</td>
<td>15</td>
</tr>
<tr>
<td>Organisation 2</td>
<td>4 (2 female, 2 male)</td>
<td>7 (6 female, 1 male)</td>
<td>-</td>
<td>-</td>
<td>9 female</td>
<td>20</td>
</tr>
<tr>
<td>Organisation 3</td>
<td>5 male</td>
<td>1 male</td>
<td>-</td>
<td>2 (1 female, 1 male)</td>
<td>2 (1 female, 1 male)</td>
<td>10</td>
</tr>
<tr>
<td>Total per occupational group</td>
<td>14</td>
<td>10</td>
<td>5</td>
<td>21</td>
<td>14</td>
<td>45 in total</td>
</tr>
</tbody>
</table>

**Organisational policies and practices**

All participating organisations had good policies on diversity and disability management. Most participants had some level of knowledge and awareness of
their organisations' policies and practices on supporting those with a disability or chronic illness. The policies they were most aware of were absence and return to work. Occupational health staff had the most knowledge and line managers had the least. Nearly all participants felt although their organisation had policies that were supportive, it was not clear how these were accessed.

'They’re very good at adapting the workplace to meet the needs of the workforce... I have no idea to their access.'

As a result, participants felt chronically ill employees had low awareness of the provision of services and support available to them, and may therefore not be receiving the support they need.

'The information is on the intranet and on notice-boards... managers (also) have copies of policies and employees should have access to them... but I don’t think the information is made sort of openly available.'

Part of the issue lies with the line manager perceived by the other participants to be in control of filtering down this information to their team and providing the necessary support.

'I suppose that support is up to the manager and I think that’s very variable.'

'Attendance managers divulge the information (policies and practices) to line managers who then have the responsibility to filter that information into their teams.'

'I may send out information reminding managers that we have these services, unfortunately, my letter is probably 1 of 30 which is going to end up on their desk that morning.'

Familiarity of chronic illnesses

Most line managers had little or no knowledge about chronic illnesses. A few reported detailed knowledge of particular chronic illnesses because of disclosure by employees.

'The lady who is suffering from the Swedish sounding one (Sjogren's syndrome), very kindly sent me something off the email, the internet, explaining all about the problems it causes.'

Several line managers had knowledge of certain chronic illnesses through the experiences of friends and family or themselves.

'I probably have a personal interest in asthma... two members of the family are asthmatics so I have a lot to do with them.'
Provision of training in the management of chronic illnesses

Occupational health staff reported that although they received training on employee health, they had little or no training on specific chronic illnesses. This raised concerns regarding professional practice, particularly for nurses.

‘Once you’re out of general practice, you aren’t so au fait with different medications, brand names – pharmaceutical companies change names so somebody might be on an insulin I’ve never heard of. You do feel sometimes you’re a little bit... But you’ve got to keep reading, you’ve got to keep up to date and abreast a lot, haven’t you.’

Line managers, who have the most contact on a day-to-day basis with chronically ill employees, reported receiving no training on the knowledge of chronic illness and on managing such employees. Occupational health staff were the most concerned about this lack of training and awareness for line managers.

‘I think if line managers were made more aware that they (employees) could get help... such as Access to Work, and things like that, which people don’t know about...’

‘I would say its very low. Because some of the things you would classify as a chronic illness they wouldn’t even think it was chronic.’

Team climate & culture

Except for occupational health staff, participants reported different attitudes toward certain illnesses. For example, some staff stigmatised certain illnesses. This was especially the case for depression and stress.

‘In my experience, it’s a bit wider than depression and anxiety... and obviously depression is sometimes, and it sounds bad to say, a cover for something else... not a cover as such... but there are other things, aren’t there.’

The working relationships and organisational cultural norms within the team or department also impacted on how support was provided. For example, most line managers reported that once they were made aware of an employee’s chronic illness (either through the employee themselves, or through observing an employee not feeling well), line managers were keen to offer support. However, some employees refused to acknowledge the problem, making it difficult for the organisation to help.

‘It’s culture again... people don’t always want help but if they don’t get any help, how low are they going to sink, in a way?. Its such a balance... If they see other people finished on medical grounds it can be quite scary for them.’
Sometimes an illness such as breast cancer, can affect the whole team’s morale. All occupational health services try and alleviate concerns.

'It puts a dampener on things for quite a while, people are shocked. We try and support them wherever we can. We use our counsellor and a health promotion campaign...'

Responsibility toward management and support

Line managers and human resource representatives felt it was the employees’ responsibility and choice to access available services offered by the organisations (e.g., OH services, counselling, EAP). Occupational health staff felt it was the line managers’ responsibility to ensure employees were able to get the help and support they required, as line managers were usually the first point of contact for many chronically ill employees accessing support.

'They go to their manager who point them in our direction... we would actually encourage the manager to support them, and if there are any problems, re-refer them.'

In terms of receiving work adjustments, occupational health staff carry out assessments, but the decision of whether any recommendations are implemented lie with the line manager.

'In any condition that can impact on work I do a risk assessment of their working conditions, the work itself, and make recommendations. I would involve their line manage it they would allow me to... Its often hard if they don't as it's the manager who has to make the decision.'

Perceptions toward employee disclosure of chronic illnesses

Nearly all participants acknowledged that employees may not want to disclose their illness, because of embarrassment, denial of the illness, pride or fear for their job.

'There’s a particular case I can think of, an older worker who was finding it difficult to keep up, and however much you try to sort of talk to him about it (musculoskeletal pain), he didn’t want, it was a pride thing.'

'I suppose people who are in the midst of a depressive illness won’t want particularly to talk about it, they might be worried about confidentiality... and that they probably don’t think there’s a solution to it.'

In terms of to whom disclosure should take place, all participants felt employees should disclose to their line managers, regardless of any perceived repercussions such as stigma, low support or denied promotions. This was mostly due to the set up of organisational procedures.
‘There’s no choice, is there? Their employing manager is their manager, and under the sickness absence policy they will have to declare it.’

Discussion and conclusion

Adopting a qualitative methodology, this study explored employers’ knowledge and perception of chronic illnesses and their impact on working life. The main finding to emerge from this study is that line managers are reported to have the most responsibility for providing support for employees but do not possess the necessary skills or training to do so. This is further complicated by the stigma attached to certain conditions, reluctance to disclose and pressure from certain work/team cultures of being perceived as fit to work. Overall, the findings from the study suggest that simply introducing organisational policies and practices to support employees with chronic illnesses is not sufficient in the management, retention and rehabilitation of such employees. Organisations need to raise awareness of services and provisions among employees, tackle the issues of disclosure, and raise employer knowledge of chronic illness, if organisations are to be successful in promoting the participation of chronically ill employees.

References

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USING PROCESS EVALUATION TO UNDERSTAND THE IMPACT OF INTERVENTIONS

K. NIELSEN, H. FREDSLUND & K. CHRISTENSEN
National Institute of Occupational Health, Denmark

Introduction

The classical and still standard methodological paradigm for intervention research is the experimental design and its various quasi-experimental alternatives (Randall, 2002). However, it is increasingly recognised that these do not offer the full explanation for outcomes. There are important factors that neither experiments nor quasi-experiments can control. Therefore, in recent years there has been an increasing interest in the design of evaluation of intervention projects. Whilst many studies focus on the content of interventions and their immediate effects on work stressors and employee health and well-being, less research has focused on the processes that may help interpret these effects (Hurrell and Murphy, 1996). In this paper process is defined as “individual, collective or management perceptions and actions in implementing any intervention and their influence on the overall result of the intervention” (Nytrø, Saksvik, Mikkelsen, Bohle and Quinlan, 2000). Job redesign and organisational change require both an accurate assessment of job stressors and knowledge of the dynamics so that potentially undesirable outcomes can be better understood and subsequently minimized (Hurrell et al., 1996). Important processes occur that can influence the quality of the evaluation design, the interpretability of results and the utility of the study. Examples are: a) poor programme implementation; b) interference with the control group; c) poor retention of participants in programme and control conditions; d) receipt of incomplete or inconsistent programmes; and, finally e) attrition or incomplete follow-up measurement (Lipsey and Cordray, 2000). In support of this claim, results from a recent study suggested that organisational and contextual factors predicted work content stressors and therefore these should be considered when evaluating interventions aimed at changing individual or group-level factors (Hemingway and Smith, 1999). Despite the awareness of the pertinent need to understand implementation strategies and processes, there is still relatively little published research that provides us with information on how to evaluate such strategies and processes (Saksvik, Nytrø, Dahl-Jørgensen and Mikkelsen, 2002). This may be due to a reluctance of organisations, researchers and publishers to publish unsuccessful research projects (Nytrø et al., 2000). However, in a recently published process evaluation of an intervention project a range of issues were identified, which
helped to understand the somewhat disappointing results of the project and thus offered the opportunity of learning from failure (Saksvik et al., 2002).

This paper presents the results of an intervention study in four canteens in Denmark and offers an example of how process evaluation can be used to interpret the impact of interventions. The lack of a theoretical basis in process evaluation has previously been highlighted as a potential problem in developing high quality and valid explanations in that methods and interpretation depends on the experience and values of the individual researcher (Saksvik et al., 2002). Therefore the following study was based on the process evaluation tool developed by researchers at the National Institute of Occupational Health (Fredslund and Strandgaard, 2004). First, the survey results are briefly presented; second, these are interpreted using the data collected through the process evaluation and, finally, the results are then discussed in terms of how process evaluation can be used to understand the contextual processes behind risk management.

Methods

The study presented here is part of a larger project investigating the working conditions and health and well-being in a number of female-dominated workplaces in Denmark. The main objectives of the project were two-fold: a) to illuminate ways in which the working environment in female-dominated professions influences employee health and well-being, absenteeism and exclusion from the labour market; and b) to increase knowledge about the opportunities of reducing such problems through work-related interventions. The design of the project was such that researchers from the NIOH conducted the evaluation of the project whilst occupational health practitioners and organisations conducted the project. The case study took part in the canteens in four hospitals/elderly care homes in Copenhagen. Two canteens acted as intervention groups (A, B) whilst the remaining two canteens acted as comparison groups (C, D). A survey including demographic information, information on life style, working conditions and health and well-being was conducted in two rounds: one before and one after the interventions. The survey instrument mainly consisted of scales from the COPSOQ (Copenhagen Psychosocial Questionnaire). In all, 118 employees (response rate 85%) returned the questionnaire at time one whilst 104 (response rate 74%) employees participated in the study at time two.

Further, between round one and two of the survey, a thorough process evaluation was conducted to provide an in-depth understanding of processes. At workplaces A and B (intervention groups) this involved: 1) stocktaking and final reports from the occupational health practitioners; 2) continuous workplace observations during the implementation process; and 3) group and individual interviews with staff, managers and key stakeholders at the end of the
implementation. At organisation A, we interviewed the manager, a middle manager, and 8 employees (from among about 50). At organisation B, we interviewed the manager, a middle manager, and 6 employees (from among about 30). In addition, we interviewed the two occupational health practitioners responsible for the project. At organisation C we interviewed one manager and one employee and at organisation D we interviewed one manager. Furthermore, the second questionnaire round included specific process evaluation questions.

The overall strategy for interventions was as follows: 1) universal solutions to work stress are unlikely to be successful because work stress problems often require solutions targeted to problems more or less unique to the organisation (Hurrell & Murphy, 1996). Therefore a thorough risk assessment was conducted and interventions were developed in collaboration with staff; 2) it is thought that conducting research in organisational settings without actively involving employees often results in little understanding of the micro-environment or local context and can lead to inappropriate interventions (Cornwall & Jewkes, 1995). Further, a participative approach is important to ensure buy-in of key stakeholders and employees (Cotton, 1993; Goldenhar, LaMontagne, Katz, Heaney and Landsbergis, 2001). Therefore a participative approach was applied and in collaboration with staff, a number of ad-hoc working groups were established focusing on specific themes, e.g., ergonomics. Finally, it was assumed that planning and implementing several interventions would achieve an overall growth effect where participants would experience greater self-efficacy. Specific interventions included individual health profiles, weight loss courses, social activities, workshops with external consultants and activities to improve communication and collaboration (Blaedel, Hansen, Klausen, Kristensen and Maarbjer, 2003).

As interventions were a mix of individual level and group level interventions, a mix of analyses was used, including paired analyses at the individual level whilst organisational level measures were analysed using linear mixed models. In this paper, only measures expected to change due to interventions are reported. These were among others opportunities for personal development, job satisfaction and social support. These were all measured at the workplace level assuming that these may be due to cultural changes in the workplace and therefore it is meaningful to include both employees who participated in the study at both times but also people who only responded at one time. To this end, linear mixed models were conducted. However, some measures are only meaningful when looked at the individual level. These are: Body Mass Index (BMI), cognitive stress reactions and vitality (Setterlind and Larsson, 1995). BMI is only meaningfully measured by means of changes in individuals who participated in the study at both times and as health outcomes can be influenced by many other factors than the interventions these were also analysed at the individual level. To analyse these factors, linear regression was used. Finally, a single item measuring the prevalence of gossip in the workplace over the past year was analysed using logistic regression.
Results

Effect evaluation

In this section the results of the quantitative analyses are presented. First, linear mixed models were used to explore the changes in workplace measures. The results of these can be seen in table 1. Workplace B and D experienced an increase in opportunities for development, whereas organisation A and C reported a slight decrease. A similar pattern was observed for both job satisfaction and social support. All changes are not significant but this may be due to the low sample sizes. The pattern, however, is consistent across all measures. Finally, logistic regression was used to analyse the changes in the prevalence of gossip in the workplace. The results indicated that in organisations B and D the prevalence of gossip decreased significantly between time 1 and 2.

### Table 1: Workplace level – changes in mean score level controlled for education and baseline level

<table>
<thead>
<tr>
<th>Variable</th>
<th>Workplace</th>
<th>Change</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opportunities for development</td>
<td>A (intervention)</td>
<td>-4.2</td>
<td>(-9.2; 0.8)</td>
</tr>
<tr>
<td></td>
<td>B (intervention)</td>
<td>6.3*</td>
<td>(0.1; 12.5)</td>
</tr>
<tr>
<td></td>
<td>C (comparison)</td>
<td>-9.9**</td>
<td>(-17.1; -2.6)</td>
</tr>
<tr>
<td></td>
<td>D (comparison)</td>
<td>4.4</td>
<td>(-1.8; 10.6)</td>
</tr>
<tr>
<td>Job satisfaction</td>
<td>A (intervention)</td>
<td>-3.2</td>
<td>(-9.6; 3.3)</td>
</tr>
<tr>
<td></td>
<td>B (intervention)</td>
<td>13.7**</td>
<td>(5.5; 21.9)</td>
</tr>
<tr>
<td></td>
<td>C (comparison)</td>
<td>2.9</td>
<td>(-6.2; 12.1)</td>
</tr>
<tr>
<td></td>
<td>D (comparison)</td>
<td>11.6**</td>
<td>(3.7; 19.5)</td>
</tr>
<tr>
<td>Social support</td>
<td>A (intervention)</td>
<td>.02</td>
<td>(-6.9; 7.3)</td>
</tr>
<tr>
<td></td>
<td>B (intervention)</td>
<td>9.0*</td>
<td>(0.3; 17.7)</td>
</tr>
<tr>
<td></td>
<td>C (comparison)</td>
<td>-2.6</td>
<td>(-12.8; 15.7)</td>
</tr>
<tr>
<td></td>
<td>D (comparison)</td>
<td>7.1</td>
<td>(-1.5; 15.7)</td>
</tr>
</tbody>
</table>

* p < .05, ** p < .01

As can be seen in table 2, BMI increased in organisation D, but decreased slightly in the remaining three organisations. Organisations A and C reported a significant increase in cognitive stress reactions, whereas the increases for organisations B and D were non-significant. Although, no changes were significant with regards to vitality a clear pattern emerged. For organisations A and C, a decrease in vitality appeared whereas for organisations B and D there was an increase in vitality.
### Table 2: Individual level – mean change score level controlled for education and baseline level

<table>
<thead>
<tr>
<th>Variable</th>
<th>Workplace</th>
<th>Change</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BMI</strong></td>
<td>A (intervention)</td>
<td>-5.7</td>
<td>(-21.7, 10.3)</td>
</tr>
<tr>
<td></td>
<td>B (intervention)</td>
<td>-3.1</td>
<td>(-20.6, 14.3)</td>
</tr>
<tr>
<td></td>
<td>C (comparison)</td>
<td>-4.0</td>
<td>(-22.8, 14.7)</td>
</tr>
<tr>
<td></td>
<td>D (comparison)</td>
<td>9.4</td>
<td>(-4.4, 23.1)</td>
</tr>
<tr>
<td><strong>Cognitive stress reactions</strong></td>
<td>A (intervention)</td>
<td>21.7*</td>
<td>(7.4, 36.1)</td>
</tr>
<tr>
<td></td>
<td>B (intervention)</td>
<td>16.3</td>
<td>(0.0, 32.6)</td>
</tr>
<tr>
<td></td>
<td>C (comparison)</td>
<td>23.1*</td>
<td>(5.8, 40.5)</td>
</tr>
<tr>
<td></td>
<td>D (comparison)</td>
<td>5.7</td>
<td>(-7.3, 18.7)</td>
</tr>
<tr>
<td><strong>Vitality</strong></td>
<td>A (intervention)</td>
<td>-5.0</td>
<td>(-22.5, 12.6)</td>
</tr>
<tr>
<td></td>
<td>B (intervention)</td>
<td>1.6</td>
<td>(-17.5, 20.8)</td>
</tr>
<tr>
<td></td>
<td>C (comparison)</td>
<td>-4.4</td>
<td>(-24.8, 16.0)</td>
</tr>
<tr>
<td></td>
<td>D (comparison)</td>
<td>8.8</td>
<td>(-6.4, 24.0)</td>
</tr>
</tbody>
</table>

* p < .05; ** p < .01

### Summary

As can be seen in Tables 1 and 2, the quantitative results revealed an unexpected pattern: it would have been expected that organisations A and B, the intervention workplaces, would have experienced positive changes. However, this was only the case for organisation B. Also unexpected was the finding, that organisation D, one of the comparison workplaces, experienced similar changes to those observed in organisation B. The data collected during process evaluation was used to understand these findings.

#### Process evaluation

Seen from the outside it is surprising that the outcomes of the interventions were contrary to expectations. We were dealing with two similar intervention groups, and the content of the interventions at the two workplaces were very similar. In the process evaluation we found several phenomena which could contribute to understanding the apparently surprising results of the effect evaluation.

Overall interpretations of the process evaluation of the two intervention groups were as follows: a) the project organisation did not work as intended. There were established several ad hoc working groups with different tasks but it became clear during the interviews that there was some confusion as to how roles and responsibilities should be allocated; b) the desired cooperation between the two canteens with regards to interventions, including the exchange of experiences, was never established; c) the overall external project management for both of the intervention groups underwent many changes, including the replacement of the leading project manager, d) In general a large share of the employees participated in the activities of the intervention and the overall evaluation was positive.
But there were also several differences between the two contexts the interventions were implemented in, of which we only mention the most important found in the process evaluation:

At workplace A the process evaluation highlighted several factors that affected the processes. First, the workplace had recently been through several organisational changes, e.g., fusions with other workplaces, and employees reported a high level of 'change fatigue', however, as many changes had been made it was also reported that the organisational structure was highly developed and thus the scope for further development was limited. Second, there existed some fundamental conflicts in the group of employees at workplace A that seemed to take up a lot of energy. The interventions addressed these problems to some extent, but the employees did not feel that these problems were solved through the interventions. Third, the implementation of the intervention was affected by the fact that the overall administration introduced a no smoking area at the whole workplace at the time as the interventions were implemented. That caused a negative atmosphere and disagreements among the employees during the intervention phase.

At workplace B the implementation of the interventions started at the same time as a new manager was employed. This seemed to be crucial for the implementation processes. The new manager had a radical different approach to leadership than the former, including a wish to decentralise the organisation. The process evaluation indicated that the new manager would have implemented similar changes, e.g., autonomous groups, regardless of the project. Thus, the intervention received maximum support from the immediate manager and the two types of changes seemed to complement each other. The employees found that the new manager had a great impact on the implementation of the interventions, but they had difficulties in distinguishing which positive effects were caused respectively by the interventions or by the new manager. This is an example of how difficult it is to tell whether the results that appear in an effect evaluation are caused by an intervention or by other organisational conditions or changes.

The differences between the two intervention groups are reflected in the fact that an overview of implemented activities shows that only 4 out of 12 activities at workplace A had been initiated or completed at the time of evaluation whereas in workplace B this was the case for 12 out of 13 (Blædel et al., 2003).

At both workplaces the employees felt that the intervention resulted in increased pressure of work, because they only got sufficient temping staff to cover some of the time spent on meetings, etc. during the intervention phase. But at workplace B the employees found that the increased pressure of work and other new demands caused by the interventions were partly balanced by increased influence and more engagement in the work.

Finally, the process evaluation highlighted the fact that two different consultants had been responsible for the project in each intervention group and that they had different approaches to the interventions. In intervention group B, the focus was on the individual, whereas the other intervention group focused on worksite issues as
Further, the consultant in canteen B had been more directive, whereas the other consultant in intervention group A used a more process-oriented, participatory implementation strategy. The different strategies had different impact on the process.

In the comparison groups, a less thorough process evaluation was conducted. It is therefore difficult to make any valid conclusions as to how differences in outcomes between the two groups should be interpreted. However, it was reported by one of occupational health practitioners that comparison group D resented being ‘reduced’ to be the comparison group and therefore bought similar services from the occupational health service as those delivered to the intervention groups.

**Discussion**

As can be seen in this study, results were contrary to expectations, i.e., that changes would be detected in the intervention groups above those identified in the comparison groups (it should be noted that comparison groups should not be considered static – changes are likely to take place here as well). Similar results have been found in a study in a public health agency. Whilst one intervention group experienced negative or negligible results another intervention group experienced mixed results (Landsbergis and Vivona-Vaughan, 1995). Thus the importance of conducting thorough process evaluation in order to understand unexpected results was confirmed in this study.

The paper presents several important issues, which should be addressed when conducting intervention research within occupational health psychology.

As mentioned above, process evaluation is important as it allows you to understand processes by which results come about. It is clear from this study that although quantitative results were contrary to expectations, learning could be extracted from the study to understand why unexpected results happen and how we can reduce or avoid these in the future. For example, is it possible that part of the explanation as to why the two intervention groups differed could be explained by other initiatives and structural changes going on in intervention group A and B.

Whilst workplace A went through a turbulent period with other initiatives possibly ‘contaminating’ the effects of the interventions, the organisational changes in workplace B, primarily that of the appointment of a new immediate manager, were found to support the interventions. This problem has previously been found in the study by Saksvik et al. (2002), who concluded that the problems they met in their study were not so much dependent on the design of the study as on the structural changes and complexity of the modern-day working environment. With regards to the differences in the effect evaluation between comparison groups, part of the explanation seemed to be ‘compensatory rivalry’, i.e., that comparison group D resented being the comparison group and thus worked harder to become better, in fact they even bought services similar to those delivered to the intervention groups from the occupational health service. Kristensen (submitted) has introduced a
distinction between programme failure and theory failure in an attempt to explain why intervention projects may not bring about the expected changes. A programme failure happens when an intervention was not implemented as expected whereas one can speak of theory failure when the theoretical underpinnings do not hold, i.e., when the intervention is successfully implemented but did not have the intended effect. Programme failure has also been termed as type III error: that an intervention is ineffective because its delivery is unsuccessful (Lipsey et al., 2000). Based on the process evaluation there are indications that the lack of expected results in canteen A could be explained by programme failure. Similar interventions were planned in both intervention groups. In canteen B, the expected changes occurred, mainly due to the commitment of the immediate manager, and it was reported that interventions were implemented. This indicates that in canteen B implementation was successful and interventions were based on sound theory and therefore that the lack of change in canteen A may be due to the unsuccessful implementation of interventions. This is further supported by the fact that also positive changes were found in comparison group D where similar services were bought from the occupational health service. Nytrø et al., 2000, have previously warned that it is not always easy to tell the content of an intervention or to identify the nature of the implementation process. Introducing the concept of programme and theory failure enables the evaluator to conclude whether the intervention itself might have been successful under other circumstances.

The process evaluation of the intervention groups was fairly extensive in this study. Qualitative process evaluation is not only useful as a means of interpreting quantitative results. As many intervention studies are often most meaningfully implemented at local levels, e.g. teams or departments, it is often difficult to make valid quantitative analyses. In small samples type II errors are likely to occur, i.e., that due to the small sample sizes differences are not found which do exist. Thus qualitative process evaluation becomes an important triangulation tool. However, it should be recognised that process evaluation is time-consuming and requires many resources and that, outcome evaluation is still important as it is an important tool to persuade key stakeholders and decision-makers that action should be taken (Goldenhar et al., 2001). A limitation of this particular study was the reduced process evaluation in canteens C and D. Interviewing only one manager or one employee did not allow us to draw any conclusions as to why the two canteens differed. It is not an unknown phenomenon that managers are reluctant to admit to failure and therefore it is likely that they try to make the study appear more successful than it was thereby producing an incomplete picture of the intervention project. It is essential when conducting process evaluations to include both managers and employees in order to gain an insight in the processes of an intervention project.

In conclusion, although this study would, at a first glance, appear unsuccessful as it did not bring about the expected changes in the intervention groups, process evaluation in this study allowed us to draw learning at two levels: 1) it helps us
interpret the outcomes of effect evaluation for this project and make tentative conclusions as to whether the unexpected results were due to programme or theory failure; 2) as it seems that unexpected results were due to programme failure rather than theory failure it allows us to replicate interventions in other settings minimising the number of pitfalls associated with a given intervention (Goldenhar et al., 2001). This supports the claim by (Saksvik et al., 2002) that it is important to learn from apparently failed studies. In this respect it may be useful to redefine the concept of failure to concern studies where nothing can be learned from them rather than studies that did not bring about the expected changes.

References


THE ROLE OF SUPPORT, CONTROL AND ORGANISATION-SPECIFIC STRESSORS IN ADDRESSING THE CONSEQUENCES OF MANAGERIALISM IN A PUBLIC SECTOR AGENCY

A. J. NOBLET¹, J. MCWILLIAMS¹ & J. J. RODWELL²

¹ Deakin University, Australia
² Macquarie University, Australia

Objective

The primary objective of this study was to employ an augmented Demand-Control-Support (DCS) model to investigate the impact of managerialism on the well-being of public sector employees. Managerialism is the process of applying private sector management practices to public sector organizations (Dixon et al., 1998). These practices aim to make organizations more results-oriented and have a heightened emphasis on efficiency, effectiveness and quality. Although there are clear signs that managerialism contributes to excessive stress, dissatisfaction and reduced commitment (e.g., Korunga et al., 2003), further research is needed to test the mechanisms through which managerialism impacts on employee-level outcomes. This study will be guided by the generic variables contained within the DCS model, as well as more organization-specific stressors that have been identified by study participants.

The DCS proposes that the risk of psychological and physical illness (referred to as strain) increases when the demands of a situation exceed the levels of job control and social support available to the individual (Karasek et al., 1981). High strain jobs therefore represent those situations where the demands are not matched by adequate levels of decision-making authority and/or support from supervisors and colleagues. While the DCS has been found to offer key insights into the work-strain relationship, this and other generic models (e.g., the Full Mediation Generic model) have been criticised for focusing too heavily on a narrow range of generalised work characteristics and ignoring more situation-specific variables (Fletcher and Jones, 1993, Sparks and Cooper, 1999). These views are supported by recent studies indicating that combined generic and situation-specific models account for significantly larger proportions of strain than if the generic model is used alone (e.g., Beehr et al., 2000, Noblet et al., 2003). On the basis of this research, the proposed pilot study will investigate both the generic variables contained within the DCS and stressors that are specific to the public sector agency involved in the present study. Identifying and measuring these two sets of variables will maximize opportunities for identifying work characteristics that are particularly influential in the strain experienced by study participants.
Design

A cross-sectional research design was used to explore the issues that contribute to employee well-being in an organization that had undergone substantial change towards managerialism. Qualitative methods, involving semi-structured focus group discussions, were first employed to identify the organisation-specific sources of stress. These organisation-specific stressors, along with the generic variables contained within the DCS, were then used to develop a self-report questionnaire that could identify those working conditions that were closely associated with employee well-being, job satisfaction and organisational commitment.

The questionnaire used in the present study was designed to measure three dependent variables (psychological health, job satisfaction and organisational commitment) and four independent variables (job demand, job control, social support and organization-specific stressors). Self-perceived psychological health was measured using the GHQ-12 (Goldberg and Williams, 1988), whilst the 15-item scale developed by Warr et al. (1979) was used to measure job satisfaction. Job commitment was measured using Porter, Steers, Mowday and Boulian’s (1974) well-known job commitment scale (consisting of six items). Participant perceptions of the amount of control they experienced at work were measured using the nine-item decision latitude scale developed by Karasek (1985); the Quantitative Workload scale (Caplan et al., 1980) was used to measure job demands; and support from work and non-work sources was measured by using the social support scale developed by Etzion (1984). The job-specific stressors scale was based on the results of a small qualitative study involving a cross-section of staff members (N = 11). In this study, a semi-structured focus group was undertaken to identify the sources of stress experienced by participants. The results revealed 27 separate stressors that were experienced by participants. Member validation checks and comparisons with the occupational stress literature (e.g., Cox and Cox, 1993) indicated that the overall analysis had satisfactory levels of internal and external validity.

Methods

The study sample consisted of staff from a department within a medium-sized Australian public sector organization. A number of different occupational groups were represented in this department, including engineers, human resource management personnel and clerical staff. The questionnaires were sent to employees’ home addresses and, once they had completed their questionnaire, employees were asked to return the questionnaire in a reply-paid envelope. Employees received reminder emails five and ten business days after the initial survey distribution. A total of 207 (59%) staff members completed and returned their survey questionnaires.
Results

A three-step hierarchical regression was initially performed for each of the target variables: psychological health, job satisfaction and organisational commitment. The demographic variables, age and length of time in current position, were entered into the regression equation first to control for possible confounding effects. No relationship was found between the demographic variables and the outcome variables. The demographic variables were removed from subsequent analyses. The DCS variables – job demand, job control, and work and non-work support – were entered into the second step so as to identify each of those variable’s unique contribution to the dependent variables. Step three in the regression contained six organisation-specific stressors. The six organisation-specific stressors used in the regression analysis were selected by taking those stressors that were rated by at least 50 percent of respondents as being a moderate, large or major source of stress (i.e., a score of three, four or five on a five-point scale). There was a clear gap between the top six organisation-specific stressors and the next most common source of stress.

The results of the regression analyses indicated that support from work sources and job control were the only independent variables that were predictive of all three outcome measures. Whilst the organisation-specific stressor, pay not as good as other employees doing similar work, was predictive of job satisfaction and organisational commitment, it was not closely associated with psychological health. When comparing the generic and organisation-specific work conditions, the core DCS model accounted for the majority of the explained variance for both job satisfaction and organisational commitment and accounted for the largest share of explained variance for psychological health. The overall equation for the regression analyses significantly explains the variance in psychological health, $R^2_{adj} = 0.350$, $F(10, 153) = 9.784, p < 0.001$. The overall equation was also significant for the outcome measures of job satisfaction, $R^2_{adj} = 0.485$, $F(10, 149) = 15.984; p < 0.001$, and organisational commitment, $R^2_{adj} = 0.209$, $F(10, 157) = 5.406, p < 0.001$.

Conclusion

With the widespread and continuing adoption of managerialism in the public sector, managers need to be both aware of the impact that these changes can have on employee well-being and be prepared to take steps to minimize the adverse outcomes. Job satisfaction, organisational commitment and psychological well-being are central to the effectiveness of any organisational change strategy and if these outcomes are significantly undermined as a result...
of the change process, then the consequences may counter any of the efficiency or quality gains the agency originally set out to achieve. The results of the present study suggest that the impact of the changes associated with managerialism can be ameliorated by incorporating key elements of the DCS into the change program. In the case of social support, mechanisms need to be developed to monitor the needs of employees and to ensure that they have adequate levels of feedback, guidance and assistance from supervisors and colleagues. Likewise, steps need to be taken to make sure that employees' level of job control is commensurate with the pace, volume and complexity of demands they face.

The success of the augmented DCS model in predicting the three key employee outcomes examined in this study highlights the value of adapting a parsimonious generic model, such as the DCS model, to the public sector context. Whilst the generic components of the model accounted for significant portions of the explained variance in all three outcome measures, the more situation specific stressors captured a large percentage of the variation in psychological well-being. Failing to consider the role of the situation-specific variables would have therefore meant that these problematic conditions or circumstances would have gone undetected. Moreover, opportunities for developing strategies that could maximise the sustainability of the strategies associated with managerialism would have been unrealised if these more organisation-specific stressors were ignored.

References


CLINICAL DEFINITIONS DETERMINING THE SIZE OF BULLIED WORKERS VERSUS A DATA DRIVEN ESTIMATION WITH LATENT CLUSTER ANALYSIS

G. NOTELAERS¹, S. EINARSEN³, J. K. VERMUNT² & H. DE WITTE¹

¹ Catholic University Leuven, Belgium
² University Tilburg, Netherlands
³ Bergen University, Norway

Introduction

Occupational health psychologists who are acquainted with bullying research know that after Leymann (1996) introduced his operational definition of bullying at work (objective method), many followed his example and thus agreed with his cut-off to differentiate between victims and non-victims of bullying (Einarsen et al., 1997; 1996; Zapf et al., 1996; Vartia, 1996). When using a questionnaire to measure bullying at work, Leymann saw victims as those respondents who have been at least weekly subjected to 1 negative act during the last six months. Recently, Mikkelsen and Einarsen (2001; 2002) who were investigating the relationship of bullying at work with PTSD and GAD, suggested using two negative acts as a cut-off. Nonetheless this effort to operationalise bullying in terms of the number of negative acts a respondent has to be subjected to diverges from the definition of bullying that considers bullying as a process and not as a state.

This contribution tries to find more convergence between the operationalisation of bullying and the definition of bullying. In this article we show that by means of latent class cluster analysis (Magidson & Vermunt, 2004; Vermunt & Magidson, 2002) it is possible to create clusters of respondents sharing a probability to be exposed to bullying at work. Using this methodology it will be possible to estimate the sizes of the bullying clusters in percentages which is easier for the OHP to translate to the OH domain.

There are three ways to measure the performance of the latent class cluster solution. Firstly, the cluster model can be compared with the operational definitions of Leymann (1996) and Mikkelsen & Einarsen (2001; 2002). Secondly, it is interesting to look at the discriminatory power of the latent cluster solution, compared to operational definitions. A third way to look at the performance is to relate the clinical criteria and the latent class cluster model (short: LCM) to the respondents self judgement (subjective method).
Sample and questionnaire

Sample

6175 observations stem from two kinds of research: research to examine well-being and stress at work (14 studies) and research that focuses on mobbing (4 studies). 57% of the respondents completed a Dutch and 43% a French questionnaire. The mean age of the respondents is 41 years (std = 10.7). 48% of the sample stem from the private sector: 27% of the sample came from public health institutions and 25% came from governmental institutions. The distribution of occupational status is as follows: 9% blue collar, 31% white collar, 4% social worker, 13% nurses, 21% civil servant, 10% lower managerial and 11% managerial position. Gender is quite equally distributed in this sample: 48% female respondents. 78 percent of the respondents had a fixed term contract, 15% had a temporary contract and 7% had other types of contracts (interim/independent).

Measurement instruments

For the research of bullying at work, the Negative Acts Questionnaire (Einarsen et al., 1994; 1997) was translated in French and Dutch, to be used in Belgium. The answering categories of the questions in the NAQ are ‘never’, ‘now and then’, ‘once a month’ and ‘once a week or more’.

Three kinds of self-judgments are used. The first was a single question asking whether the respondent has been bullied at work. The answer categories were ‘never’, ‘sometimes’, ‘often’ and ‘always’. A second question asked whether the respondent has been bullied at work during the last six months, using the same answer categories. The third question started with the definition of the Belgian Law and asked whether the respondent regarded himself as subjected to bullying, considering this definition.

To measure outcomes of well-being and work stress the Questionnaire on Evaluation and Experience of Work was used (van Veldhoven et al., 1994).

Six clusters of employees according to their exposure to bullying

Modeling a six cluster model

Modeling a LCM in Latent GOLD is an iterative procedure that determines the need for a certain number of clusters starting from the 1 cluster model. To determine how many clusters are needed in order to explain the associations in the multiway table, the Bayesian Criterion Information (BIC) is used. Alongside many others, Magidson & Vermunt (2000) suggest taking the model with the lowest BIC. Next to BIC and equally important is whether the model is significant. For very sparse tables it is probable that $L^2$ does not follow a $\chi^2$ distribution. Therefore Langheine (et al., 1996) suggest using a bootstrap procedure. Magidson & Vermunt (2003) have...
implemented such a bootstrapping procedure based on 500 samples in Latent GOLD. This procedure is used here because bullying items are highly skewed and many combinations of acts are not common, which results in very sparse tables.

The iterative process can be inspected by the drop in $L^2$. $L^2$ is a badness of fit index, a translation of how much association is left to be explained. An $L^2$ of 1 is considered as a perfect fit. Going from the one cluster model to the second cluster model reveals a drop in $L^2$ if there is an improvement of fit. The proportion reduction in $L^2$ expresses how much $L^2$ has been reduced compared to the one cluster model. The iterative procedure is stopped when a model yields the lowest BIC.

However, there is one addition to make in order to assess the fit of a model. The bivariate residuals (BVR) given in Latent Gold (but not shown here), should be lower than or equal to 1, or the reduction in BVR should not be smaller than f.i. 85%. This relaxation of the BVR prevents Latent GOLD from adding one additional cluster for each pair or few pairs of BVR’s that are higher than 1. Thus if there is a considerable BVR left, it is a good option to let indicators correlate without adding an additional latent trait (Hagenaars, 1998). This approach is particularly useful when an external factor unrelated to the bullying construct creates an irrelevant association between two variables, like similar item wording (Magidson & Vermunt, 2004).

The next table shows the fit statistics for the NAQ. Although a 7 cluster model (and also the 8 cluster not shown here) reveals a lower BIC than a 6 cluster base model, the 6 clusters with 3 direct associations between indicators (or local dependencies) is chosen because it yields the lowest BIC. The first bivariate relationship that was allowed is the association between ‘work under level’ and ‘taken competences’. The second bivariate association was found between ‘jokes’ and ‘spreading gossip’. The last bivariate association modeled is between the indicators ‘work not valued or appreciated’ and ‘my opinions do not count’. Given that the data stem from 2 language groups, equivalence was also assessed (see in the proceedings: Notelaers et al., 2004). Therefore the 6 cluster model with 3 local dependencies was chosen.

<table>
<thead>
<tr>
<th>Number of clusters</th>
<th>BIC (LL)</th>
<th>Npar</th>
<th>$L^2$</th>
<th>Proportion reduction in $L^2$</th>
<th>$p$ (bootstrap ($L^2$))</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>basemodel</td>
<td>133540,1</td>
<td>48</td>
<td>60928</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>no direct language effects</td>
<td>119756</td>
<td>98</td>
<td>46712</td>
<td>0,233</td>
</tr>
<tr>
<td>5</td>
<td>Idem</td>
<td>1114126,7</td>
<td>248</td>
<td>39786</td>
<td>0,347</td>
</tr>
<tr>
<td>6</td>
<td>Idem</td>
<td>113798,3</td>
<td>298</td>
<td>39025</td>
<td>0,359</td>
</tr>
<tr>
<td>7</td>
<td>Idem</td>
<td>113688,3</td>
<td>348</td>
<td>38483</td>
<td>0,368</td>
</tr>
<tr>
<td>6</td>
<td>direct lang, effects and 3 local dependencies</td>
<td>112477</td>
<td>349</td>
<td>37263</td>
<td>0,388</td>
</tr>
</tbody>
</table>
dependencies and 7 direct effects between indicators and language group was chosen. This model is weak, equivalent with the previous model, when we do not take the previously mentioned 7 direct relationships into account.

This model has the lowest BIC. The proportion reduction in $L^2$ is about 40%. And the model is given (cf. bootstrapping procedure) significance. Not shown, but noteworthy, is the pseudo $r^2$ of 68%.

*What do the clusters mean?*

The meaning of the clusters normally is derived from the profile and the probmeans output in Latent GOLD (Magidson & Vermunt, 2003). In this contribution there is no space to publish this 2 to 4 pages output. However, the following table summarizes the profile output. The first row represents the size of the clusters. The second row proclaims the order of the cluster along the bullying at work trait. The other cells in the table represent the mean of the conditional probabilities (short: CP = probability of an answer being in a certain cluster) across all negative acts to respond ‘never’, ‘now and then’, ‘once a month’ or ‘once a week or more’.

<table>
<thead>
<tr>
<th>Table 2: Overview of cluster : mean conditional probabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Proportion</td>
</tr>
<tr>
<td>Order of latent clusters</td>
</tr>
<tr>
<td>Never</td>
</tr>
<tr>
<td>Now and then</td>
</tr>
<tr>
<td>Once a month</td>
</tr>
<tr>
<td>Once a week or more</td>
</tr>
</tbody>
</table>

Respondents from the first cluster are characterized by a mean CP of 93% to be ‘never’ subjected to the negative acts during the last six months. Some negative acts have a lower CP: ‘with holding information’ (70%), getting work under level of competences (75%) and spreading gossip (86%). Given this high mean CP employees answering ‘never’ in this cluster are labeled as **not bullied at all**. The size of this cluster is 35%.

Employees from the second cluster are also identifiable by this mean CP, but the mean CP answering ‘never’ is 72%. The negative acts that show a lower CP and are more characterized by the CP answering ‘now and then’ are: ‘with holding information’ (54% ‘now and then’), ‘getting work under level of competences’ (54% ‘now and then’) and ‘work is not valued or appreciated’ (56% ‘now and then’). These respondents can also be regarded as **not bullied**.
This cluster is the second biggest cluster and accounts for about 28% of the respondents.

Employees from the third cluster are characterized by two CP’s. The mean CP regarding that they have ‘never’ been subjected during the last six months to the list of negative acts from the Belgian NAQ, is .64. The mean CP that they haven been ‘now and then’ subjected to the acts during the last six months is .34. We suggest labeling these employees as **nor not bullied/nor bullied**. Some of the acts have a higher CP for the response category ‘now and then’: ‘withholding information’ (43%), ‘insults’ (51%), ‘spreading gossip’ (71%), ‘remarks concerning private life’ (41%), ‘work that is not appreciated or valued’ (53%) and ‘opinion does count or is not taken into account’ (65%). Some acts do almost ‘never’ occur: ‘taking job or competences’ (85% ‘never’), ‘being excluded’ (80% ‘never’), ‘remarks that you should quit’ (93% ‘never’) and ‘funny surprises’ (95% ‘never’).

The following cluster is characterized by the mean CP that one is ‘now and then’ subjected to negative acts in the reference period of six months. This mean CP is almost .60. Note that for some acts the CP to answer ‘now and then’ is substantially higher: ‘insults’ (68%), ‘spreading gossip’ (76%), ‘silent or hostile reactions’ (71%), ‘work is not valued’ (76% and 14% ‘once a month). These CP’s give the impression that employees in these clusters are really bullied. However, the mean CP to answer ‘never’ is still 30%. And for some acts this mean CP is even higher: ‘insults’ (41%), ‘funny surprises’ (48%), ‘remarks that you should quit’ (62%) and ‘misuse of your work’ (74%). Given these CP’s this cluster is the **latent bullying** cluster. 9% of the sample belongs to this cluster.

A first look at the mean CP’s of the following cluster tempts to the conclusion that this cluster is characterized by the mean CP of 55% to answer ‘never’. However the CP’s that are really informative in understanding this cluster is the mean CP to answer ‘once a month’. On average, this CP is only 0.12 but for job related acts the CP increases: ‘withholding information’ (22% and 27% ‘once a week or more’), ‘work under level of competences’ (32%), ‘work not valued’ (22% and 21% ‘once a week or more’) and opinion does not count (29% and 22% ‘once a week or more’). For person related negative acts the mean CP of being ‘never’ subjected to them is still high: ‘being excluded’ (74%), ‘insults’ (87%), ‘remarks about private life’ (78%), ‘funny surprises’ (81%). The high CP answering ‘once a month’ and even ‘once a week or more’ for job related negative acts and the high CP answering ‘never’ to many of the person related negative acts suggest that this cluster is a **work related bullying cluster**. Eight percent of the employees were classified in this cluster.

The last cluster is characterized by the highest mean CP that the employees have been subjected once a week or even more during the last six months to the negative acts listed in the questionnaire on bullying at work. This mean CP is .32. Also very informative is the CP over being ‘never’ subjected to the negative acts during the last six months. It is only .15. This is the **victims**’ cluster. About 3% of the sample belongs to this cluster.
Performance of the six cluster model measuring bullying at work

To inspect the discriminatory power the LCM and the operational criteria of the clusters and the cut-offs groups are linked to outcomes that measure well-being and stress at work. Well-being is operationalised as ‘pleasure at work’ and ‘involvement with the organization’. Stress or tension is operationalised as ‘recovery need’, ‘worrying’ and ‘sleep quality’. These five scales stem from the QEEW, as noted before.

In table 2a the clusters and the groups from the operational criteria are combined with the QEEW scales. The numbers in the table represent z-values. The range of the LCM regarding the outcomes on the QEEW scales is higher than that of the operational cut-offs. This means that the z-values of the QEEW scales for victim cluster from the LCM are more pronounced than those from the victim groups created after following the Einarsen or the Leymann criteria. For the non-victims groups the meaning is similar: non-victims in the LCM have a better well-being and less tension than non-victims derived from the operational criteria. Other evidence comes from a table of spearman brown correlation coefficients (not printed): the association of the LCM with the QEEW scales is considerably higher than the association between the QEEW scales and the operational cut-offs.

The cluster model reveals that the well-being and tension outcomes of the ‘not bullied at all’ employees are not problematic at all. Moreover the outcomes are significantly positive, following the information from the Bonferonni pair-wise comparisons tests that was chosen in the analysis of variance procedure of SPSS. The ‘not bullied’ employees showed no problems either. The ‘nor bullied / nor not bullied’ employees in the third cluster follow a very similar pattern (see: number in superscript indicating pair of non significant differences according to the Bonferonni pair wise comparison test) except for sleep quality, which is slightly negative. The position of the ‘latent bullying’ cluster is less clear. Their outcomes for tension are as negative as those for the ‘work related bullying’ cluster (see superscript numbers) and are located between the outcomes of the 1act and 2 act criteria. However, their well-being, though it is negative, is not as problematic as that of the higher clusters and of the victims groups from the operational criteria. The health outcomes for the ‘work related bullying’ cluster are close to the z-values for the former cluster. The values for well-being are quite strongly negative. Employees in this cluster have far less pleasure at work than the employees from the former clusters and their lack of involvement with the organization is as negative as for employees that are considered victims by the LCM. Clearly these people no longer enjoy going to work but the bullying process is not related to a high strain levels. High strain levels occur only in the ‘victim’ cluster. Employees in this cluster do not sleep well, they worry a lot and they do not recover well/Enough. Given their victim status it is not surprising that they do not experience pleasure at work.
Quite interesting is to note that the values in the victim cluster are exactly -1 or approach -1, while the values of the victims groups following the operational criteria do not reach -1 at all. Zapf, who asked victims to complete the Leymann Inventory Psycho Terror, formulated z-values of -1 as thresholds indicating that victims are being bullied. This more or less external criterion is met by the LCM but not by the operational cut-offs.

Table 2a: Discriminatory power in z-values

<table>
<thead>
<tr>
<th>z-values</th>
<th>not bullied at all</th>
<th>not bullied</th>
<th>nor / no</th>
<th>latent victim</th>
<th>work related bullying</th>
<th>severe victim</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pleasure at work</td>
<td>0.32</td>
<td>0.02</td>
<td>0.07</td>
<td>-0.37</td>
<td>-0.82</td>
<td>-1.03</td>
</tr>
<tr>
<td>Involve-ment</td>
<td>0.28</td>
<td>-0.06</td>
<td>0.04</td>
<td>-0.24</td>
<td>-0.56</td>
<td>-0.59</td>
</tr>
<tr>
<td>Recovery need</td>
<td>0.31</td>
<td>-0.04</td>
<td>0.04</td>
<td>-0.44</td>
<td>-0.45</td>
<td>-0.88</td>
</tr>
<tr>
<td>worrying</td>
<td>0.23</td>
<td>-0.04</td>
<td>0.04</td>
<td>-0.35</td>
<td>-0.38</td>
<td>-0.72</td>
</tr>
<tr>
<td>Quality of sleep</td>
<td>0.29</td>
<td>0.06</td>
<td>-0.11</td>
<td>-0.45</td>
<td>-0.37</td>
<td>-1.01</td>
</tr>
</tbody>
</table>

Table 2b Cluster model – operational definitions in %

If table 2b is analysed the misfit between the cluster model and the operational criteria of Leymann and Einarsen can be calculated. If the LCM is accepted, the Leymann cut-off of one act considers 8% of the respondents as victims who are not related to any of the bullying clusters. If the Einarsen cut-off is applied this percentage drops considerably to less than 1%. Furthermore it can be seen that the Leymann cut-off misses 20% of the employees in the ‘work
related bullying cluster’. This type of error rises considerably with the latent bullying cluster (60%). In total, 6% of the respondents are concerned.

The total error of classification of the Leymann criterion is 14%.

The Einarsen cut-off misses almost 80% of the respondents in the latent bullying and almost 50% of the ‘work related bullying’ cluster. The percentage of victims from the cluster model that are not considered as victims according to this criterion is 14%. The total classification error of the Einarsen criterion compared to the LCM is 11%. This is far less than the classification error that was calculated by application of the Leymann criterion, but the number of victims that are considered as non-victims by the Einarsen cut-off of two acts is 50% higher than that derived from the Leymann cut-off of one act.

To look at the degree of agreement between the self judgment operationalisations (subjective methods) and the operational criteria / cluster model (objective methods) spearman brown correlations were calculated.

Table 3: Degree of agreement between subjective and objective methods

<table>
<thead>
<tr>
<th>Spearman correlation</th>
<th>subjective methods</th>
<th>legal definition of bullying</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>are you being bullied at work?</td>
<td>have you been bullied at work during the last 6 M.</td>
</tr>
<tr>
<td>Objective methods</td>
<td>Leymann</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>Einarsen</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>Clustermodel</td>
<td>.38</td>
</tr>
</tbody>
</table>

The correlation table shows the highest agreement between the subjective methods and the cluster model. The Leymann method to classify respondents into non-victims or victims groups yields the lowest degree of agreement. The Einarsen method, that classifies respondents into the victims group if two acts occur on at least a weekly basis during the last two months, does not really correlate more with the perception of the respondent than the Leymann method.

Nonetheless the cluster model shows the highest agreement with the subjective methods. The distance between the latter and the LCM remains high. Previous research (Einarsen et. al., 1997; Niedl, 1996) found arguments explaining the lack of agreement but the arguments are inconclusive and often contradictory. Many hypotheses concerning this lack of agreement remain to be explored much more rigorously than before.

Discussion and conclusion

LCA is a methodology for the analysis of categorical observed variables. These variables are measured on a nominal or ordinal scale. These kinds of
response categories often occur in OH-questionnaires. The example of bullying at work shows that reducing 4\(^a\) patterns to 6 different classes is useful.

The clusters show some heterogeneity in the population. Six different more or less homogeneous groups were created related to their exposure to negative acts. The description of the clusters showed that a statistical and substantial distinction can be made between no bullying at all, no bullying, nor/nor, latent bullying, work-related bullying and victims of bullying. This distinction or latent class cluster solution has a higher discriminatory power than the operational criteria suggested by Leymann (1996) or Mikkelsen & Einarsen (2001; 2002). Moreover, the victims cluster is the only group where negative z-values of -1 were found for outcomes of well-being and stress at work. Also important is the considerable higher agreement of the cluster solution with the self judgment of the respondent. If these arguments lead to the conclusion that the latent cluster solution is more adequate to analyse the Negative Acts Questionnaire, the misfit between the operational criteria and the cluster model can be studied. This analysis shows that the Leymann criterion considers too many non-victims as victims in comparison with the cluster model. The Einarsen criterion considers too many victims as non-victims compared to the cluster model.

In contrary to the operational definitions that are more a ‘state’, the cluster model reveals more than a ‘state’. Maybe the cluster solution translates a ‘static’ process. Bullying starts almost unnoticed with minor attacks on the role of the employee. The first acts that appear slightly more often than ‘never’ are ‘withholding information’, ‘take competences from’, ‘work under level’, ‘not valuing work or efforts’ and ‘not taking into account the opinion’. In the next phase (‘nor/nor’) these kinds of ‘attacks’ do not really intensify but new acts occur on the same level: ‘insults’, ‘spreading gossip’, ‘remarks about your private life’ and ‘remarks that you work to hard’. In the next phase (latent bullying) these negative acts intensify to the level of ‘now and then’ and some negative acts are emerging like ‘repeated reminder about your mistakes’, ‘being excluded’, ‘silent or hostile reactions’, ‘remarks to quit your job’ and ‘”funny” surprises’. In the next phase the bullying engine is kept warm but accelerates for work related negative acts. On average these occur monthly. Within the last cluster almost every single negative act is experienced more regularly and often on a weekly basis.

This ‘static’ process overlaps with the approach of bullying conceptualized as a gradually intensifying process. Like Dick & Rayner (2004) bullying can start with attacks on the task. Together with Bjorkvist we agree that the beginning of the process of bullying is unobtrusive and indirect, making it difficult to detect. We argue that if bullying at work starts unobtrusive and indirect it is with small attacks on the task of the individual. Directly attacking persons would be too direct and obtrusive. After the individual gets stigmatized, support from significant others is needed to further stigmatize, isolate and publicly humiliate, and thus victimize the employee.
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VAN VELDHOVEN, M.; MEIJMAN, T. F. (1994) Vragenlijst Beleving en Beoordeling van de Arbeid NIA.


MEASURING PSYCHOSOCIAL WORK HAZARDS IN A MULTILINGUAL ENVIRONMENT. BULLYING AT WORK: A CROSS-CULTURAL PERSPECTIVE FROM BELGIUM

G. NOTELAERS, J. VERMUNT, H. DE WITTE, S. EINARSEN & M. VAN VELDHOVEN
1 Catholic University Leuven, Belgium
2 University Tilburg, Netherlands
3 Bergen University, Norway

Introduction

In OHP, many OH-measurement models are based on the assumption that respondent’s responses to questions are measured on an interval or ratio scale. The measurement models or factor models’ estimates are based on the assumption that the responses to these questions are normally distributed. In many cases in OHP, these assumptions cannot be met. Moreover, in some cases it is less appropriate to perform a traditional factor analysis because the resulting factor is a continuum. It is not always wise to assume that all items can be ordered on a continuum in a way that it is obligatory for all individuals (Eid et al., 2003). Consider, for instance, the example ‘recovery need’ that is measured by dichotomous items like ‘I find it difficult to relax at the end of a working day’, ‘Because of my job, at the end of the working day I feel absolutely exhausted’ or ‘When I get home from work, I need to be left in peace’. Here, it might not be possible to retain the same ordering on a continuum that holds for all individuals. It could be reasonable latent ordered continuum like van Veldhoven et al. (1994) developed. It could also be reasonable to assume that there are different profiles or groups of recovery need, sharing on average the same probability to be exposed to recovery need yielding a comparable probability to agree with the questions. Notelaers et al. (2003b) showed with latent cluster class analysis (Magidson & Vermunt, 2001; Vermunt & Magidson, 2002) that 4 homogeneous groups (no exposure, low exposure, moderate exposure and high exposure) perform better than parametric and non parametric factor analytic approaches constructing a recovery need factor.

Comparisons of OH-scores of EU member states need the same ordering of items and individuals on a continuum across countries. When the same ordering is not achieved, any between countries or groups comparisons would be like comparing apples with oranges. In the psychometric literature this issue is operationalised as factorial invariance (Meredith, 1993) or equivalence (van de Vijver & Leung, 1997).

This article shows how equivalence can be investigated or addressed in the framework of latent class cluster analysis. This will be illustrated with the
questions from the Belgian Negative Acts Questionnaire (Einarsen et al., 1994). This questionnaire is widely used to measure bullying at work, which is a well known occupational health hazard.

Sample and questionnaire

For the research of bullying at work, the Negative Acts Questionnaire (Einarsen et al., 1994) was translated in French and Dutch so it could be used in Belgium. The answering categories of the questions in the NAQ are ‘never’, ‘now and then’, ‘once a month’ and ‘once a week or more’. 6175 observations stem from two kinds of research: research to inventory well-being (14 studies) and research which focused on mobbing (4 studies). 57% of the respondents completed a Dutch and 43% a French questionnaire. The mean age of the respondents is 41 years (std = 10.7). For other sample characteristics, we refer to Notelaers et al. (2004c) in these proceedings.

Classifying employees according to their exposure to psychosocial OH-hazards

Latent class analysis is a very flexible methodology because it uses categorical response variables. Hence, an item must only have distinct categories. Examples are dichotomous items with categories ‘yes’ versus ‘no’ or ‘true’ versus ‘false’, or variables with ordered categories such as attitude scales (strongly disagree, disagree, neither/nor, agree, strongly agree), intensity scales (never, sometimes, once a month, once a week or more) and scales with a limited number of categories that are denoted by number (Eid, et al. 2003).

The starting point for a latent class analysis is the frequency of all observed response patterns. In this application with 16 questions about negative acts linked to a four-category response scale we have $4^{16}$ or million possible response patterns in each language group. One possible answering pattern i.e. $(3,0,0,0,0,0,0,0,0,0,0,0,0,0,0)$, characterizes a person who answered that the information for him/herself was withheld once a week or even more during the last six months. The frequencies of these response patterns indicate the prevalence of a specific observable pattern among the French speaking or Dutch speaking respondents. The basic idea of latent class analysis is to explain the frequencies of these response patterns by a reduced number of latent classes, i.e., six groups according to their exposure to bullying at work. The probabilistic nature of the model takes measurement error into account. Furthermore, it is assumed that a population is not homogeneous with respect to the response probabilities. A population consists of different subpopulations or groups. Such groups are called latent classes because they are not directly observable.
These classes do not overlap and the sizes of the classes add up to the size of the total population. The class structure holds for all items analysed. All individuals who belong to the same class have the same response probabilities. Individuals belonging to different classes have different response probabilities. If there is more than one latent class, there is latent heterogeneity in a population. Latent class analysis detects this heterogeneity by separating individuals into maximally different subpopulations. The membership of an individual to a class or group is not known a priori. It is possible, however, to estimate the membership probability (Eid et al., 2003). In LCA, respondents are assigned to the cluster with the highest membership probability. This is known as the modal assignment rule (Magidson & Vermunt, 2000).

Methods for assessing the level of equivalence in the framework of latent class analysis

Qualitative or nominal and ordinal variables do not have a unit of measurement and an origin, and consequently, the concepts of unit and scalar equivalence, that are common in structural equation modeling approaches, cannot be applied. However, the procedure to assess equivalence is similar to these factor-analytical approaches. Earlier Clogg and Goodman (1985; 1986) used a multiple group analysis to inspect whether the measurement instrument differs across groups. Hagenaars (1994) and recently Eid et al. (2001; 2003) and Magison & Vermunt (2004) followed the Clogg and Goodman method, known as backward elimination of differences. McCutcheon (1987) described the modeling strategy. First the number of classes in each group (member state, language group) has to be determined. If the number of classes is equal for each group, restrictions on conditional probabilities are added in order to investigate whether the measurement structure across groups is similar. If that is the case, it must be checked whether the distribution among the classes across groups is the same. To evaluate these models, the difference in $\chi^2$ (restricted / unrestricted) with the difference of degrees of freedom (restricted / unrestricted) has to be calculated. The difference in $\chi^2$ follows a $\chi^2$ distribution. If it is significant, the restrictions are not valid because the fit worsened. Using this methodology 4 different models can be distinguished: a) absolute heterogeneity occurs when a different number of classes are found in different groups; b) heterogeneous unrestricted $T$-Class when the same number of classes in different groups are found, but the meaning of the latent variable is not the same; c) a partially homogeneous model arises when conditional probabilities are set to be equal across groups yielding a similar structure between indicators and the latent variable and d) the homogeneity model restricting conditional and latent class probabilities, yielding a equivalent measurement model across countries.

However, this conservative modeling strategy (Eid & Diener, 2001) has not yet led to any known applications where equivalence could be found. It appears not to be fruitful because comparisons between countries or cultures cannot be made.
Recently, Notelaers, Vermunt and van Veldhoven (2004b) used another strategy to assess equivalence in the framework of LCA, i.e. the *forward inclusion of differences*. This strategy is more parsimonious and appears to be more fruitful. They were able to compare the support axis of the Job Demand Control Support Model among Belgian French and Dutch speaking respondents.

With the forward inclusion of differences, the modeling strategy starts with the complete homogeneous model where the group variable is assumed to have no impact on the measurement model. For bullying at work this means that the measurement of bullying at work is supposed to be the same across groups. Next, the group variable is introduced into the modeling equation with the assumption that there are no direct relationships between the group variable and indicators of the measurement model. This means that the latent trait (bullying at work) fully mediates the relationship between language group and questions (indicators) that are meant to measure bullying (homogeneity). The following step is to inspect whether there are significant relationships between the language variable and the indicators. If that is the case, the relationships are allowed and a new model estimates the classification results. This means that the relationship between the latent variable and the indicators can differ across groups (partial homogeneity). When no significant relationships between indicator and grouping variable remain to be modeled, the cluster analysis is performed on the separate groups (heterogeneous unrestricted T-Class). To choose a model, the model with the lowest Bayesian Criterion Information is chosen. In contrary to the difference in $\Delta$, this fit index penalizes for the number of parameters used. As a consequence BIC prefers falsifiable models over less parsimonious models.

If BIC indicates that the heterogeneous model is the ‘best’ model, it is concluded that there is no equivalence. When the full homogeneity model has the lowest BIC, which is highly unlikely, the grouping variable is not needed, yielding that the structure between questions and latent trait is identical. If the homogeneity model has the lowest BIC strong equivalence is achieved, because not only the conditional probabilities are the same across groups, but also the latent class probabilities are the same. If the partial homogeneous model yields the lowest BIC and all conditional probabilities (CP’s) are restricted to be equal across groups there, is moderate equivalence. When not all CP’s are the same across groups, a few additional calculations (Cohen’s Kappa) are to be made before deciding whether the measurement model is weak equivalent across groups. Weak equivalence is achieved when the classification results of the partial homogeneous model are similar to the homogeneous model. Notelaers, Vermunt & De Witte (2003a) suggested that a Cohen’s Kappa of .90 expresses a threshold for similarity.
An example for the occupational health practitioner: bullying at work

Bullying at work captured in six latent classes (Notelaers, Einarsen, Vermunt & De Witte, 2004a)

Notelaers et al. (2004a) proposed a six cluster model to explain the associations between the 16 negative acts of the questionnaire and the latent variable bullying at work. Three local dependencies or associations between indicators were allowed. The first was the association between ‘work under level’ and ‘taken competences’. The second bivariate association was found between ‘jokes’ and ‘spreading gossip’. The last bivariate association allowed was between the indicators ‘work not valued or appreciated’ and ‘my opinions do not count’.

The meaning of the cluster is derived from the profile and the probmeans output in Latent GOLD (Magidson & Vermunt, 2003). In this contribution there is no space to publish this 2 to 4 pages output. However, the following table summarizes the profile output. The first row represents the size of the clusters. The second row proclaims the order of the cluster along the bullying at work trait. The other cells in the table represent the mean of the conditional probabilities (short: CP = probability of an answer being in a certain cluster) across all negative acts to respond ‘never’, ‘now and then’, ‘once a month’ or ‘once a week or more’.

<table>
<thead>
<tr>
<th>Proportion</th>
<th>Not bullied at all</th>
<th>Not bullied</th>
<th>Nor/nor</th>
<th>Latent victim</th>
<th>Work related bullying</th>
<th>Victim</th>
</tr>
</thead>
<tbody>
<tr>
<td>0,353</td>
<td>0,277</td>
<td>0,165</td>
<td>0,09</td>
<td>0,083</td>
<td>0,032</td>
<td></td>
</tr>
<tr>
<td>Order of latent clusters</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Never</td>
<td>0,927</td>
<td>0,718</td>
<td>0,638</td>
<td>0,31</td>
<td>0,551</td>
<td>0,152</td>
</tr>
<tr>
<td>Now and then</td>
<td>0,067</td>
<td>0,246</td>
<td>0,336</td>
<td>0,58</td>
<td>0,225</td>
<td>0,31</td>
</tr>
<tr>
<td>Once a month</td>
<td>0,004</td>
<td>0,024</td>
<td>0,017</td>
<td>0,08</td>
<td>0,117</td>
<td>0,217</td>
</tr>
<tr>
<td>Once a week or more</td>
<td>0,002</td>
<td>0,013</td>
<td>0,009</td>
<td>0,03</td>
<td>0,107</td>
<td>0,32</td>
</tr>
</tbody>
</table>

The respondents from the first cluster are characterized by a mean CP of 94% to be ‘never’ subjected to the various negative acts during the last six months. Given this high mean CP the employees in this cluster are labeled as not bullied at all.

Employees from the second cluster are also identifiable by this mean CP but the mean CP answering ‘never’ is 72%. These respondents can also be regarded as not bullied.

Employees from the third cluster are characterized by two CP’s. The mean CP that they have ‘never’ been subjected during the last six months to the list of negative acts from the Belgian NAQ is .64. The mean CP that they have been ‘now and then’ subjected to these acts during the last six months is .34. Notelaers et al. (2004c) suggest labeling these employees as nor not bullied/nor bullied.
The following cluster is characterized by the mean CP to answer that one is ‘now and then’ subjected to negative acts in the reference period of six months. This mean CP is almost .60. Since these respondents have almost zero CP’s to answer ‘once a month’ or ‘once a week or more’, it is suggested to call this cluster latent bullying.

A first look at the mean CP’s of the following cluster tempts to the conclusion that the cluster is characterized by the mean CP of 55% to answer ‘never’. However the CP’s that are really informative to understand this cluster is the mean CP to answer ‘once a month’. On average this CP is only 0.12, but for job related acts the CP amounts to .30 for negative acts like ‘getting work under level’ and ‘opinion does not count’. For many person oriented acts the mean CP of being ‘never’ subjected is often above .80. This cluster is clearly the work related bullying cluster.

The last cluster is characterized by the highest mean CP that the employees have been subjected once a week or even more during the last six months to the negative acts listed in the questionnaire on bullying at work. This mean CP is .32. Also very informative is the CP regarding ‘never’ being subjected to the negative acts during the last six months. It is only .15. This is the victims’ cluster.

**Level of equivalence**

To investigate the level of equivalence or to test whether the interpretation of the clusters, mentioned above, is similar or the same for the two language groups, BIC of four models has to be compared. Based on the fit-statistics in the following table it is obvious that the partial homogeneity model provides the best fit in terms of BIC. The partial homogeneity model considered here counts 7 direct relationships between the indicators and the grouping variable.

<table>
<thead>
<tr>
<th>Model</th>
<th>BIC</th>
<th>$L^2$</th>
<th>df</th>
<th>Npar</th>
<th>Bivariate associations</th>
<th>Clas. error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full homogeneous</td>
<td>113107</td>
<td>33530</td>
<td>4294966975</td>
<td>320</td>
<td>(3,4); (5,7); (12,13)</td>
<td>.17</td>
</tr>
<tr>
<td>Homogeneity</td>
<td>112992</td>
<td>37985</td>
<td>8589934265</td>
<td>325</td>
<td>(3,4); (5,7); (12,13)</td>
<td>.17</td>
</tr>
<tr>
<td>Partial homogeneity</td>
<td>112477</td>
<td>37263</td>
<td>8589934241</td>
<td>349</td>
<td>(3,4); (5,7) (12,13); (1,1); (1,2); (1,8); (1,11); (1,12); (1,13); (1,14)</td>
<td>17</td>
</tr>
<tr>
<td>Heterogeneity</td>
<td>114409</td>
<td>36704</td>
<td>8590000000</td>
<td>640</td>
<td>(3,4); (5,7); (12,13)</td>
<td>-</td>
</tr>
</tbody>
</table>

This means that the relationship between the latent variable ‘bullying at work’ and these indicators is not the same, yielding that there is not an invariant measurement of bullying at work across French and Dutch speaking respondents.

This model of partial homogeneity is graphically displayed in the next figure. The black arrows from the bullying at work cluster model indicate the measurement model. The gray arrows from the grouping variable indicate the bivariate associations between language (l) and indicators.
However, before concluding that the measurement is not equivalent, the correspondence between the classification results of the homogeneity model and the partial homogeneity model is calculated by Cohen’s Kappa. Kappa is 0.95 indicating that the classification of individuals according to the model assignment rule into classes or cluster is alike. Thus, the classification result of the partial homogeneity model corresponds with the classification result of the homogeneity model. This means that the measurement of bullying across the two language group is weak equivalent. The graphical interpretation is straightforward. The classification of employees according to the model above is similar to the model without gray arrows (homogeneity model). Consequently, it is allowed to compare French speaking and Dutch speaking respondents.

Comparing bullying at work among Dutch speaking and French speaking respondents

The comparison of the respondents according to their language is straightforward. The probmeans output of Latent GOLD has been displayed in the next figure. Before screening this figure, it must be noted that the relationship between grouping variable and the cluster model for bullying at work is significant \((p < .000)\), yielding that classification of French and Dutch speaking respondents across clusters is different.

Figure 2 compares the proportions within the language group across groups by means of the odds ratio. The line represents the proportion of the French speaking
respondents exposure to bullying during the last six months compared to the Dutch speaking proportion (reference group) to be bullied during the last six months. Even though French speaking respondents are overrepresented in the 'not bullied at all' cluster, they are also overrepresented in the work related bullying and the victims cluster. The probability that a French speaking respondent is a victim of bullying is 60% higher than that of a Dutch speaking respondent. There are twice as many French employees in the 'work related bullying' cluster than Dutch speaking respondents. Thus in our Belgian dataset, French speaking employees are far more pestered at the workplace than Dutch speaking employees. This does not mean that Dutch speaking employees are not bullied at the workplace. 2.5% of the Dutch speaking respondents are a victim of bullying, 5% are subjected to work related negative acts and 9% are located in the 'latent bullying' cluster. From the figure it is clear that the French speaking employees are 20% less in 'the latent bullying' cluster than the Dutch speaking are. This cluster indicates roughly that the employees are now and then subjected to negative acts.

Figure 2: Bullying at work among French and Dutch speaking employees: odds ratio's (Notelaers et al., 2004a)

Conclusion

LCA is a methodology for categorical observed variables. These are measured on a nominal or an ordinal scale. Because many questions in OH-questionnaires are linked to a categorical response format, LCA is appropriate. As in factor analysis, the many types of observed response patterns can be explained by a small number of latent classes (Eid, 2003). The example of bullying at work, measured with the Belgian version of the NAQ, showed that 4^16 patterns can be reduced to 6 different classes yielding heterogeneity in the population: no bullying at all, no bullying, nor/nor, latent bullying, work-related bullying and victims of bullying.

LCA is suitable for comparing item responses across EU-members. Moreover, differences between member states or between languages groups can be explored. Our analysis of bullying at work in Belgium showed that there are interesting differences between the French speaking and the Dutch speaking
respondents within Belgian organisations and companies. However, knowing that there is equivalence across French and Dutch speaking employees does not answer the question why French speaking employees are considerably more bullied than Dutch speaking employees.

References

EINARSEN; RAKNES, MATTHESEN; HELLES0Y, (1994). The negative acts questionnaire.
CANCER AND WORK: DEVELOPING A FRAMEWORK FOR RESEARCH AND PRACTICE

J. PRYCE 1, F. MUNIR 2, C. HASLAM 3, K. COX 3 & F. BOND 1

1 Goldsmiths College, United Kingdom
2 Institute of Work, Health & Organisations, University of Nottingham, United Kingdom
3 School of Nursing, University of Nottingham, United Kingdom

It is estimated that 223,000 new cases of cancer are diagnosed each year in the UK alone (HMOS, 2004). While this figure seems high, recent developments in drug treatment now mean that cancer is shedding its status as a terminal illness and is increasingly perceived as a chronic disease requiring treatment, lifestyle change and monitoring (Bradley & Bednarek, 2002). The majority of cancer patients go on to make a full recovery and, as a result, this means that more people continue to resume their everyday life during or following treatment. This includes remaining in or returning to employment.

Recent figures suggest that approximately 67% of cancer patients in the US return to work following treatment (Spelten, Sprangers & Verbeek, 2002), with similar patterns found across European countries. Despite this, little is known about the specific work-related needs of cancer patients and those working along aside them (e.g., employers, line managers, co-workers and Occupational Health professionals). It is not surprising that for many cancer patients remaining in work throughout treatment or returning to work symbolizes a maintenance of, or return to, normality and routine. To date, much of the psychosocial research in cancer survivorship as focused on quality of everyday life. With the increase in the number of people continuing and returning to work there is need to address the quality of working life of cancer survivors.

Studies within the wider sphere of rehabilitation, e.g., chronic illness (Munir, Leka, & Griffiths, in press), stress (Thomson, Neathey & Rick, 2003) and pregnancy (Houston & Marks, 2003) among others, suggest that many employees find it difficult to manage both their health and work effectively. These findings offer a valuable platform for better understanding the challenges faced by cancer patients. Problems experienced by employees with chronic health conditions have typically resulted in employees exiting the workforce (Baanders et al., 2001). Not only do employees with chronic health conditions report problems associated with managing their physical symptoms at work such as working whilst in pain or taking medication at work, but more subtle issues are faced such as difficulties in disclosing to others, and the communication barriers and negative attitudes experienced from colleagues and employers. This combination of physical and psychosocial experiences can represent significant barriers to both effective management of illness at work and the continuance of employment. More recently, research within the area of rehabilitation and chronic illness has identified that where patients are
provided with support they are better positioned to continue to work and manage their illness at work. Effective support may be seen in the form of emotional support and tangible adjustments to the way in which their work is designed, organized and managed. However, little is known about how these experiences compare those with cancer. There is a strong need to gain a full understanding of the extent to which cancer patients experience difficulties at work and to develop a framework of research and practice to support his end.

Work limitations and work adjustments

Few studies have identified the ways in which cancer affects an individuals’ ability to work. Two significant contributions indicate that many symptoms associated with cancer and its treatment can represent barriers to continued employment. First, the strongest predictor of work disability has been found to be the physical factors related to the disease (Cella & Tross, 1986). Second, memory loss, fatigue, difficulties concentrating for long periods of time, analyse data, learn new things, keep pace with others and need for transportation have been identified as work limitations associated with cancer and its treatment (Greenwald et al., 1998). Recent research suggests that the ways in which cancer affects an individuals’ ability to work or the ‘work limitations’ experienced by cancer patients can be accommodated by a range of mortifications or adjustments to the design and management of their work. Specifically these adjustments have been found to fall into three broad categories: modified physical load, skill discretion, and time discretion. Interestingly, case study data suggest that work adjustments typically occur through individual initiative (Baanders et al., 2001). These studies represent a substantial contribution to our understanding of the impact of cancer on work. However these studies rely on small-scale case study research or large-scale studies confined to specific US states.

Studies of chronic illness at work indicate that a complex range of individual and organisational factors influence whether an individual is able to access work adjustments: individual factors typically include illness-specific influences (translated to cancer type, treatment, illness intrusiveness and stage), demographic influences (age, gender, occupation and job role) and attitudinal/behavioural individual differences (self-efficacy, locus of control, disclosure). Organisational factors typically include demographic influences (company sector, size, nature of work, presence of Occupational Health unit), organisational dynamics (policy adherence, organisational culture) and line manager/co-worker attitudes and behaviour (discrimination, support) (Munir et al., in press; Thomson et al., 2003). These findings can usefully inform future research into the management of cancer at work.

Disclosure of cancer at work

The role of disclosure in obtaining support during the acceptance of cancer and its treatment is well documented (Thewes et al., 2003) however, little is
known about the role of disclosure of cancer at work. Drawing from research into the disclosure of stigmatized conditions at work it is possible to identify an interesting double-bind. On the one hand, support is contingent on disclosure: the extent to which an employee is provided with access to work adjustments has been found to be dependent upon their disclosure of the illness (Griffiths & Hebl, 2002) and subsequently the effective management of illness at work. On the other, disclosure is contingent on perceived organisational support: the extent to which the work environment is believed to be supportive has been found to predict the incidence of disclosure (IRS, 2001). Research into the disclosure of chronic health conditions has indicated that disclosure is more likely to take place where the illness impacts upon work (e.g., need for treatment) and where employees feel it important to receive support at work. Furthermore, disclosure has been found to be encouraged where colleagues already know about the illness and the implications of the illness. Interestingly, research has found that people are likely to disclose where clear benefits can be gained irrespective of stigmatization and work culture. Clearly, the disclosure of illness is an important but complex factor in gaining access to work adjustments. In the present research the role of disclosure of cancer at work is explored as an important mechanism underpinning the access to work adjustments and subsequently the effective management of cancer at work.

Benefits of work adjustments

The benefits accrued to both the patient and the organisation of work adjustments are well documented within the wider rehabilitation literature (IRS, 2001), however less is known how these findings translate into the arena of cancer research. Framed within the broader rehabilitation the benefits of effective management of cancer at work through work adjustments are potentially far reaching. Whilst a full examination of the costs and benefits to both the patient and organisation of work adjustments for cancer are required, this is beyond the scope of the current study. The present study focuses on the quality of working life of cancer survivors for three reasons: first, this study is exploratory in nature and therefore the scope is contained and realistic; second, the need to understand the patient perspective must be at the forefront of research to ensure recommendations to organisations are appropriate; and third, the benefits to the organisation require a detailed financial analyses that can only be understood once a more complete understanding has been secured. Within the proposed research three specific psychosocial benefits accrued to the cancer patient will be explored: the management of illness at work, general well-being and job-related well-being. It is hoped that through identifying these benefits, a platform for future research into the broader benefits accrued to the patient, and ultimately the organisation, may be provided.
Method

Participants

400 paper questionnaires were distributed by CancerBACUP, a UK-based charity, following obtained consent. The questionnaires were distributed to a random sample of users (patients and relatives) on the CancerBACUP telephone-support line. The survey was also made available online on the CancerBACUP website. The study is ongoing and to date, 213 paper responses and 44 online responses have been received by the research team. The respondents were predominantly female (74%), represented diverse industry sectors and the average age within the group was 52 years (21-68 years).

Measures

The survey incorporated items of cancer-specific, occupation-specific and demographic items, illness self-efficacy, disclosure to line manager and colleagues, a work adjustment scale and questions relating to policies and practices at work. The aim of this survey was to scope the adequacy of information provision to cancer patients regarding work-related issues and to inform the development of targeted information.

Analysis

Results were analysed using frequency based analysis and considered in light of a comprehensive literature review drawing from cancer, chronic health and rehabilitation domains.

Results

Due to the wide range of cancer types and occupational types within the response group a full analysis was not possible at this stage but is planned. Rather, this section reports the trends emerging from the data and key frequencies to provide a scoping of this issues.

Cancer type and treatment

45 different forms of cancer were reported within the group. 33% of the group reported that they had breast cancer, 8% a form of colonic, 4% a form of testicular, 4% a form of prostate and 6% bowel cancer. A further 6% reported multiple forms of cancer. 59% of the group were currently receiving treatment for their cancer, 32% of the group had completed their treatment, whilst the remaining 9% were awaiting treatment. Over half of the group had received chemotherapy (52%) or radiotherapy (56%), whilst 63% had undergone surgery.
Disclosure

Illness disclosure within the respondent sample was high. 85% of respondents had told their manager and colleagues about their cancer at either the time of diagnosis (73%) or when the emotional strain became too difficult to hide (27%). Surprisingly, the role of physical change, gaining support or affect of illness on work were reported as reasons for the disclosure by only 30% of the group, a smaller percentage than would be expected from previous studies of chronic illnesses (Thomson et al., 2003).

Work patterns

The working profiles of the respondent group indicates that the number of full-time and part-time employees decreases substantially following cancer and its treatment (e.g., 55% to 17% to 23%, before, during and following treatment full-time). Specific perhaps to the older sample drawn here, the majority of respondents had opted for early retirement following cancer (67%).

Work adjustments & Organisational practices

A minority of the respondent sample reported poor organisational practices. 2% of the respondents indicated that they had experienced direct discrimination at work as a result of their cancer, 6% reported that they had been overlooked for promotion, 7% had received changes to their job without their agreement whilst a further 2% had felt pressure to resign. Only 19% had received formal work adjustments, of which the most frequent adjustment was to working hours.

Work relationships

Whilst 72% of respondents perceived their relationship with colleagues to remain unchanged during their cancer, 45% reported that their relationship with their line manager had deteriorated. Furthermore, 35% reported that their overall job satisfaction had deteriorated, 55% that their overall working life had deteriorated and 52% felt less able to do their job following cancer.

Advice and guidance

54% of respondents reported that they were informed by their doctor that the cancer and its treatment would effect their work, but no advice or guidance of how to manage this issues was provided. And finally, and perhaps most importantly, whilst 56% of the respondents indicated that staying in work was important to them to retain an area of normality in their life, only 14% were offered any guidance from their organisation (HR or OH) to either inform them of their employment rights or options or help them manage their relationships at work.

As noted, due to the wide range of cancer types and occupational types within the response group a full analysis was not possible at this stage but is planned.
Rather, this paper aimed to present a framework to guide future research and practice in the management of cancer at work drawing from these preliminary findings and research within the chronic illness domain. This framework is outlined in figure 1.

**Figure 1. Framework for research and practice: Managing Cancer and work**

**Illness-specific**
- Cancer type
- Treatment regime
- Illness intrusiveness
- Stage

**Individual demographic factors**
- Age
- Gender
- Occupation
- Job role

**Individual behaviour/attitudinal factors**
- Illness self-efficacy
- Locus of control
- Coping
- Disclosure

**Organisational factors**
- Sector
- Size
- Nature of work
- OH presence
- Policy adherence

**Local team factors**
- Discrimination
- Support
- Awareness & understanding

**Outcomes**
- Individual level benefits
  - Psychological Self-esteem, identity
  - Physical illness management
  - Practical access to work adjustments & successful rehabilitation
- Organisational level
  - Job satisfaction
  - Intention to leave (Long term disability)
  - Absence

**Conclusions**

Whilst further data is required to better understand the true scope of patients’ experiences of managing their cancer and work, the preliminary findings suggest that there is an urgent need to better understand the work-related needs of cancer patients. X% indicated that they experienced difficulties managing their cancer and work, whilst a further x% did not believe that their organisations were well equipped to meet the requirements of the forthcoming integration of Cancer into the Disability legislative framework.

Understandably, research efforts in the area of cancer have largely focused on issues of survival, and more recently, quality of life. Current understanding of the
relationship between cancer and work draws from three sources of information: i) statistical information regarding survival rates and predicted employment patterns; ii) small sample case studies documenting experiences of cancer at work; iii) anecdotal summaries of association between limitations of cancer and difficulties experienced at work. To better understand the difficulties experienced by cancer patients and identify ways in which work can be adjusted to accommodate the needs of cancer patients there is need for four things: first, research that draws from different cancer groups and wider samples; second, an examination of the relationship between the work limitations experienced and work adjustments granted; and third, an understanding of the process of accessing work adjustments. Finally, there is need to develop an understanding of the costs and benefits of adjusting work to accommodate the limitations experienced by cancer patients.

References


USING PROCESS EVALUATION TO STRENGTHEN STRESS MANAGEMENT INTERVENTIONS

R. RANDALL¹, T. COX², & A. GRIFFITHS²

¹ The City University, London, United Kingdom
² Institute of Work, Health and Organisations, University of Nottingham, United Kingdom

Introduction

It is encouraging that robust intervention evaluation studies are becoming more common in the organisational-level stress management literature (Semmer, 2003). This development is likely to guide and support the use of more research-based intervention in organisations. However, this literature has also served to highlight the somewhat inconsistent impact of common interventions. It is becoming increasingly well-recognised that process evaluation needs to sit alongside outcome evaluation when examining the efficacy of organisational-level stress management interventions (e.g., Saksvik et al., 2002; Nytro et al., 2000). Without information about the process of intervention design, implementation and maintenance, even complex quasi-experimental designs can yield misleading results (Cook & Shadish, 1994; Randall, Griffiths & Cox, (in press)). Moreover, it has been argued that without proper process evaluation, the ‘portability’ of interventions from one setting to another cannot be assessed (Griffiths, 1999).

Research focusing on the process evaluation of stress management interventions is a new literature. More research is needed to develop theories and measurement tools in this area. However, a number of well-designed studies have yielded information about the mechanisms that underpin the effectiveness of interventions (Saksvik et al., 2002; Nytro et al., 2000). These studies make it clear that process evaluation can: i) isolate the mechanisms of change; ii) enhance the explanatory yield of intervention research. This is an important step forward in helping organisations to accurately measure the impact of change.

However, process evaluation has another important application. Extant research suggests that it is not sufficient to implement an intervention without any regard for the processes of change. Apart from some general guidance, relatively little has been done to examine how data from a formative process evaluation could be used to enhance the efficacy of interventions before the results of a summative outcome evaluation are known (Hartley, 2002). It seems sensible to explore how process evaluation might be used to change the intervention itself, or its context, in order to enhance its effectiveness.

This paper will draw on data from process evaluation work carried out in intervention case studies from hospital settings in order to make
recommendations about: ii) how process evaluation may be carried out; ii) how its results can then be used to increase the potency of interventions (see Cox, Randall and Griffiths, 2002). The research is based on the content analysis of interviews carried and questionnaire data collected from participants involved in five intervention studies.

**Method**

This research was carried out in five settings in UK hospitals. The participant groups are described in Table 1. In each of the studies, participants had experienced a number of organisational-level stress management interventions (see Table 1). These interventions had been designed and implemented after a risk assessment had been carried out to identify the likely sources of work stress and the well-being of staff.

Information about intervention processes (a process evaluation inventory) was gathered in two ways. First, semi-structured interviews were carried out with a representative sample of participants. These interviews were based around five questions designed to probe established process evaluation issues (see Griffiths, 1999):

- What impact has the intervention had on working conditions?
- How was this intervention designed and why did it happen?
- Has the intervention been implemented as effectively as it could be?
- Did anything stop the intervention being as effective as it could be? What was it?
- Did anything happen to make this intervention more effective? What was it?

Second, in the questionnaire portion of the research participants were asked to indicate their awareness of each intervention and to make a quantitative evaluation of its impact, and to give their views about the overall effectiveness of the intervention. Few studies have gathered information directly about the adequacy of the processes of interventions. The qualitative data gathered from both the interviews and the questionnaire was amalgamated and subjected to content analysis using template analysis (King, 1998).

This technique was chosen since it allowed for a grounded approach to theory development, but also capitalised on any existing knowledge about a new topic. In template analysis an initial template (containing a coding structure developed from the existing literature) is modified and added to as the data is analysed (e.g., if the data is best coded in a category not included in the template, the category is modified or a new category is added to the template). Three global categories of process dimensions were included in the initial coding template: microlevel (cognitive) change process (Tetrick, 1999); design and implementation
processes, or macroprocesses (Griffiths, 1999); and the organisational context of the intervention (Kompier et al., 2000; Tetrick, 1999). These three dimensions reflect current understanding of the importance of process issues in determining the effectiveness of interventions.

This study took a phenomenological approach to the analysis and interpretation of data. Its purpose was to begin to catalogue some of the ways in which organisations may enhance the potency of interventions when data from a process evaluation has been viewed. It was designed to provide a basis for the testing of the causal mechanisms linking process modifications with intervention outcomes through future research.

Table 1: Participants and interventions Examined

<table>
<thead>
<tr>
<th>Study</th>
<th>Participants</th>
<th>IV (n)</th>
<th>QE (n)</th>
<th>Interventions examined</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study 1</td>
<td>Nursing, administration and healthcare professionals in an out-patient department</td>
<td>12</td>
<td>40</td>
<td>Problem-solving meetings between different teams in the department; the appointment of new clerical staff, reducing clinic sizes, changes in mechanisms for communicating with patients during clinics</td>
</tr>
<tr>
<td>Study 2</td>
<td>Nursing staff in Paediatric wards</td>
<td>11</td>
<td>44</td>
<td>The appointment of house-keeping and administrative staff to reduce the load on nursing staff; reduction in the use of temporary staff to cover absence and sickness, managing recruitment at a local level</td>
</tr>
<tr>
<td>Study 3</td>
<td>Senior Paediatric nurses in a large teaching hospital</td>
<td>17</td>
<td>60</td>
<td>The introduction of designated ‘office hours’ (to deal with administrative and managerial tasks), more formal communication mechanisms; introduction of problem-solving workshops</td>
</tr>
<tr>
<td>Study 4</td>
<td>Nursing staff in an accident and emergency department</td>
<td>10</td>
<td>23</td>
<td>Appointment of an administrative co-ordinator to oversee the movement of medical records through the department; introduction of regular team meetings; introduction of new written communications systems; recruitment of extra staff; increased advanced notice about shift working patterns</td>
</tr>
<tr>
<td>Study 5</td>
<td>Support staff in a Catering Department</td>
<td>10</td>
<td>19</td>
<td>Purchase of new equipment; increases in staffing levels at busy times, introduction of formal, scheduled team-leader meetings</td>
</tr>
</tbody>
</table>

Key: IV = Interview; QE = Questionnaire
Results & discussion

Rich ‘personal stories’ of the intervention process emerged during data collection. In total 520 segments of text were coded during the analysis. A template containing three levels was needed to adequately code the qualitative data collected (see Table 1). The first level contained the dimensions included in the original template with one modification. Intervention context was divided into the pre-intervention context and the activated intervention context. At the second level were the components of the intervention processes which were described as having a significant impact on intervention outcomes. This provides the measurement framework for process evaluation and is described Table 1. At the third level in the template are specific examples from the interventions included in this study that show how data from the process evaluation could be used to improve the effectiveness of the intervention. For the sake of brevity, in this paper only a small number of examples of ‘process enhancements’ have been included in Figure 1. The content of each of the three ‘first order’ categories will now be described.

Table 2: Results of template analysis

<table>
<thead>
<tr>
<th>Process Evaluation Measurement Framework</th>
<th>Potential Enhancements to the Intervention Process</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-intervention (risk assessment) context</strong></td>
<td></td>
</tr>
<tr>
<td>Assess pre-intervention exposure to some components of the intervention</td>
<td>Spread pre-existing intervention components to where they are needed, integrate new intervention components with existing intervention components</td>
</tr>
<tr>
<td>Gauge interindividual differences in the size of the problem to be tackled</td>
<td>Produce different versions of the intervention with different potencies – and match the potency to the severity of the problem</td>
</tr>
<tr>
<td>Assess the relevance of the intervention to each individual’s circumstances</td>
<td>Present examples of how the intervention may help people working in a variety of circumstances within the participant group</td>
</tr>
<tr>
<td>Personal coping strategies already focused on the problem</td>
<td>‘Protect’ personal strategies from the impact of the intervention; allow the intervention to enhance, or make redundant, those personal strategies</td>
</tr>
<tr>
<td><strong>Activated intervention (risk management) context</strong></td>
<td></td>
</tr>
<tr>
<td>Assess differences in personal work circumstances in the target group</td>
<td>Produce different versions of the intervention that fulfil the needs of a range of ‘user groups’</td>
</tr>
</tbody>
</table>
| Assess the factors that might damage or enhance the intervention in.  
  1) The local work context  
  (e.g., the team) | Modify the local context to minimise any local problems that may damage the intervention or lessen its impact |
Table 2: Results of Template analysis

<table>
<thead>
<tr>
<th>Process Evaluation Measurement Framework</th>
<th>Potential Enhancements to the Intervention Process</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>i</em> The organisational context</td>
<td>Integrate interventions within existing change</td>
</tr>
<tr>
<td></td>
<td>programmes</td>
</tr>
<tr>
<td><em>ii</em> The national context</td>
<td>Implement interventions that are ‘protected’ from</td>
</tr>
<tr>
<td></td>
<td>the national context</td>
</tr>
<tr>
<td>Microprocesses (participant cognitions)</td>
<td>Directly assess the valence (±) of the intervention</td>
</tr>
<tr>
<td></td>
<td>Remove intervention from those reporting negative</td>
</tr>
<tr>
<td></td>
<td>impact at least until the reasons for this are</td>
</tr>
<tr>
<td></td>
<td>understood</td>
</tr>
<tr>
<td></td>
<td>Directly assess the magnitude of impact</td>
</tr>
<tr>
<td></td>
<td>Modify potency of the intervention, or revisit</td>
</tr>
<tr>
<td></td>
<td>intervention design</td>
</tr>
<tr>
<td></td>
<td>Determine which stressors are being adequately</td>
</tr>
<tr>
<td></td>
<td>targeted by the intervention</td>
</tr>
<tr>
<td></td>
<td>Gather perceptions about the impact of the</td>
</tr>
<tr>
<td></td>
<td>intervention. Modify the marketing of the</td>
</tr>
<tr>
<td></td>
<td>intervention, or revisit intervention design</td>
</tr>
<tr>
<td>Macroprocesses (design and implementation)</td>
<td>Design processes</td>
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<td></td>
<td>Facilitate end-user involvement</td>
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<td></td>
<td>Involve end-users in the design process and</td>
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<tr>
<td></td>
<td>implement reviews of the intervention involving</td>
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<td></td>
<td>end-users</td>
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<tr>
<td></td>
<td>Review validity of risk assessment data</td>
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<tr>
<td></td>
<td>Critically evaluate the and review the validity</td>
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<tr>
<td></td>
<td>of the original risk assessment data during the</td>
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<td></td>
<td>intervention process</td>
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<tr>
<td>Initial delivery of the intervention</td>
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<tr>
<td>Check fidelity of implementation</td>
<td>If necessary, intervene to ensure that the</td>
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<td></td>
<td>intervention is delivered as intended (e.g., by</td>
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<tr>
<td></td>
<td>communicating with, or even training, key</td>
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<td></td>
<td>stakeholders)</td>
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<tr>
<td>Check exposure to the intervention</td>
<td>Publicise intervention / review resources</td>
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<td></td>
<td>available to, and the competence and commitment</td>
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<tr>
<td></td>
<td>of those charged with intervention delivery</td>
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<td></td>
<td>However, problems can arise if intervention</td>
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<td>resources are over-stretched to ensure high</td>
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<td></td>
<td>levels of exposure</td>
</tr>
<tr>
<td>Maintenance of the intervention</td>
<td>Examine and deal with management concerns about</td>
</tr>
<tr>
<td></td>
<td>the intervention</td>
</tr>
<tr>
<td>Support and commitment from management</td>
<td>Communicate to participants the support for the</td>
</tr>
<tr>
<td></td>
<td>intervention from key stakeholders</td>
</tr>
<tr>
<td>Self-management of the intervention</td>
<td>Make provisions for information about the</td>
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<td></td>
<td>intervention to be available throughout its</td>
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<td>implementation – introduce mechanisms for acting</td>
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<td>on feedback from participants</td>
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<tr>
<td>Communication and flow of information</td>
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Key: IV = Interview; QE = Questionnaire

355
A number of participants highlighted the importance of the effective measurement and management of the pre-intervention context in determining the impact of an intervention. Risk assessment needs to identify such subtleties so that they can be used in intervention design. The enhancements identified included: devising and implementing different versions of the same intervention to recognise the particular needs of different user-groups, and variations in the severity of the problem faced. For example, different parts of an out-patient department experienced different problems when working with administration staff – for some parts of the department, fundamental changes were needed to improve communication and team working, for other parts, minimal change was necessary. This section of the template also highlighted the need to integrate the intervention into its existing context. Of particular note in this section of the template was the need to recognise that individuals may have developed personal coping strategies to modify their own working conditions in the face of a problem, and that care was needed to ensure that the intervention did not interfere with, or damage, personal coping. Furthermore, in many situations some components of complex multi-faceted interventions (see Table 1) were already in place prior to the intervention and care was needed to ensure that these were recognised and not damaged by the new intervention (e.g., some wards already used flexible work hours before a self-managed shift work system intervention was implemented across all participants). This part of the template illustrated the dangers of adopting a ‘one size fits all’ approach to intervention.

Once the intervention was activated, there were numerous examples of actions that were taken to modify the intervention context. In a number of instances organisations often modified the local context before implementing interventions in order to set favourable conditions for change (e.g., by dealing with staffing problems before implementing more frequent meetings, so that there was adequate cover for staff to attend meetings). Many organisations used risk management interventions within programmes of organisational change (e.g., more control over ward budgets being handed to nursing staff as a local intervention within an organisational initiative to devolve decision-making). Within the UK the staff in the NHS are affected by a number of national issues (e.g., the shortage of qualified nursing staff) – and many organisations took steps at a local level to ensure these factors did not damage their interventions (e.g., by ensuring a good supply of newly qualified nursing staff by improving the local training and support provided to student nurses).

Examples of the management of participant cognitions were somewhat scarce within the data. However, some examples highlighted the importance of this process. What was clear was that in some interventions there were ‘winners and losers’ – while some participants benefited, others did not. Some organisations acted to remove the intervention from those who were finding it unhelpful, while retaining it for those who were benefiting. For example, some staff in the accident and emergency department were satisfied with communication and found the extra formal meetings were making it more difficult for them to meet the demands of their
work (because meetings took them away from their work). Several organisations reviewed the potency and marketing of interventions to improve their effectiveness. While more research is needed into the perceptual and cognitive processes that underpin the effectiveness of interventions, this has the potential to be an important point of leverage in enhancing the effectiveness of interventions.

Several of the components of the design and implementation portion of the template have been identified in previous literature (e.g., Griffiths, 1999). This portion of the template identified examples of the importance of end-user involvement in the design and review of the intervention. Asking users to review the intervention supported important modifications to the intervention in a number of the studies. Another important finding in this part of the template was the beneficial impact of reviewing the adequacy of the risk assessment data during the intervention, and using the review to modify interventions. Ensuring and communicating adequate management support was seen as particularly crucial in all of the intervention studies – particularly for ensuring that staff had the confidence to implement the intervention for themselves.

The results given in Table 2 clearly show that managing the implementation of interventions goes way beyond ensuring good levels of exposure to the intervention as originally devised. It also demonstrates that feedback is needed during the course of the intervention in order to ensure that an intervention is implemented as effectively as possible. This means that some mechanism of formal and informal process evaluation is crucial if Type III error is to be avoided in evaluation research.

Many intervention researchers have discussed the difficulties of evaluation research when examining the limitation of their studies. Many of studies point to problems resident in the context of change (e.g., redundancies, a climate of organisational change or restructuring, etc.). However, the information gathered in this study indicates that interventions need not always be ‘hostages to fortune’. There were several examples when interventions were protected against the impact of context (either through the modification of the intervention context, the modification of the intervention, or by recognising the problems that the context might pose during intervention design).

This study had some limitations. The list of process factors and remedial interventions is not intended to be exhaustive. Its validity and comprehensiveness will need to be examined in other research settings. To this end, the development of good process evaluation measures is an encouraging development.

**Conclusion**

In line with other recent research into the process of stress management interventions, the template analysis shows that organisational-level interventions cannot be conceptualized simple unitary entities – the simple unidimensional, rational perspective is insufficient when evaluating interventions in functioning
organisations (Colarelli, 1998). It would appear that the management of the process and the intervention itself are inseparable. Alert and responsive intervention management is needed for even the simplest of interventions. Measures of the intervention process should not only be used to help understand outcome evaluation, but also to promote more effective intervention. Such a formative evaluation strategy may be challenging, but it has the potential to reap significant benefits.

References


GOOD AND BAD TYPES OF SUPPORT FOR POLICE PERSONNEL CONFRONTED WITH VIOLENCE AT WORK

A. SANTOS, P. LEATHER & A. ZAROLA

Institute of Work, Health & Organisations, University of Nottingham, United Kingdom

Introduction

Work-related violence and aggression

Aggression and violence associated with the undertaking of work duties is now recognised as one of the most pressing occupational health hazards for many organisations, particularly those whose principal operational function entails dealing with the public in either a service or regulatory capacity. Indeed many jobs in the so-called human service industries entail both service delivery and regulatory activities as, for example, when the teacher has to shift from instruction to discipline or the police officer moves from community liaison to criminal detection. Hence, teachers, nurses, transport staff and shop workers, police and prison officers, traffic wardens and revenue control inspectors all figure amongst those occupational groups particularly at risk of exposure to aggression and violence (Leather, Beale, Lawrence, Brady & Cox, 1999). For many human service employees, evidence shows that it is precisely at the point at which they move from being a service provider to becoming a service denier that they are particularly at risk of aggression and violence (Bulatao & VandenBos, 1996).

But this is only a part of the story, or 'violence equation', for aggression and violence can also be encountered from those within the organisation itself, i.e., work colleagues whether peers, subordinates or superiors. A full assessment of the damage done by exposure to aggression and violence while at work must therefore take account of the aggression and violence that is perpetrated both by sources outside the organisation and sources within. Recently, there has been something of a convergence, with a number of authors openly recognising the need to acknowledge the dual origin of the violence and aggression that many people at work now face, i.e., that originating outside and inside the organisation (Di Martino, Hoel & Cooper, 2003). In keeping with this convergent perspective, it is the view of the authors of this paper that a full assessment of the negative impact of aggression and violence must, by necessity, include what might be termed both inside and outside violence. It is predicted that different sources of work-related violence would elicit variable effects on well-being (Hypothesis 1). Intentionally, then, the phrase ‘work-related’ is preferred to ‘workplace violence’ and used to denote the fact that the aggression and violence one might experience as a part of one’s work environment can originate from both inside and outside the organisation.
Social support

Within the work-related violence literature, the role of social support remains unclear, with a vast number of studies focusing on social support in relation to exposure to combat stress or other traumatic events, or on a wide range of job-related stressors (Kaufmann & Beehr, 1989). Because work-related violence constitutes the entire range of situations, or potential situations, where persons may be abused, threatened or assaulted, involving an explicit or implicit challenge to their safety, well-being or health, there remains a need to examine the role of social support in relation to the continuum of violence at work. Within the tradition of contemporary stress research where exposure to a psychosocial hazard, in this case, that of work-related violence, can lead to psychological or physical harm, the perception of social support can be seen as crucial in influencing the individual’s appraisals of psychosocial stressors. Because it is the perceived availability of support that influences appraisal of the psychosocial stressor and the coping strategy to be employed, it is argued that more benign appraisals of the stressor would be made by individuals who believe that their social network has the resources to shore up their coping efforts (Graf, 1989).

This study examines the more functional aspects of perceived social support, i.e., emotional and practical support from a variety of sources, available to police officers. There seems to be a general consensus, from both the work stress and trauma literature, that social support affects health and other job-related strains in two ways. Some studies suggest that social support directly predicts the incidence of physiological and psychological strain, eliciting what are known to be ‘main effects’ upon outcome measures such as indicators of physical health, health behaviours and well-being (Wills, 1983). The second way in which social support may affect physical and psychological outcomes is through what is termed as ‘buffering’ or ‘moderating’ effect. A buffering effect is said to be present when the positive relationship between job stressors and employee strains is weaker in the presence of strong social support (Kaufmann & Beehr, 1989). Beehr (1985), however, has noted that some interactions produce ‘reverse buffering’ effects, social support interacting with psychosocial stressors to make strain more severe. The buffering hypothesis of social support has remained a dominant theme in studies on work-related stress, yet the debate is far from being settled with studies producing mixed results (Beehr and McGrath, 1992). The second aim of this study therefore is to explore both direct and indirect effects of social support within the police. As is consistent with the literature, it is predicted that social support, operationalised by means of a global functional measure, will elicit both main and buffering effects on employee well-being (Hypothesis 2).

The matching hypothesis

Researchers such as Cutrona (1990) and Beehr et al. (1990) suggest that a buffering effect is predicted when the support functions measured are those that
are most relevant for the stressors faced (Cohen & Wills, 1985). Hence, given that
the context of the work environment, work-related stressors are most effectively
dealt with by work-related sources of support, particularly that from supervisors
and co-workers (Fenlason & Beehr, 1994). There is some evidence to suggest, for
example, that intra-organisational support buffers the effects of physical forms of
violence and stress among pub licensees (Leather et al., 1998), but no such
effects were found for support from external sources such as friends and family,
which exhibited higher overall means than intra-organisational support. Another
study by Schat & Kelloway (2003) found that organisational support moderated
the effects of physical violence, vicariously experienced violence and
psychological aggression on emotional well-being, somatic health and job related
affect but not fear of future violence and job neglect, amongst healthcare
employees. Similarly, empirical evidence of reverse buffering effects for
instrumental support between job stressors and individual strain among American
police officers offer considerable justification for the need to examine the
buffering hypothesis further (Kaufmann & Beehr, 1989). The third aim of this
study therefore is to determine whether intra-organisational sources of support
yield different effects from other sources of support. Specifically it is predicted
that intra-organisational types of support will yield beneficial effects on the
various work-stress symptomatology, job satisfaction, organisational commitment
and intention to quit (Hypothesis 3), and that other types of support will have no
bearing on these outcomes.

Method

Severity of exposure of work-related aggression and violence

The data presented in this paper was derived from survey examining workrelated stress in a UK Police Force. It was decided at the outset that the stress audit
would proceed in two interlinked stages, i.e., an initial qualitative stage which would
inform and direct a subsequent quantitative stage. The qualitative stage consisted of
a series of focus groups with representative members of the Force. Distribution and
collection of the questionnaires were conducted internally in the autumn of 2001. A
total of 876 out of 2177 questionnaires were returned, yielding a response rate of
40.2%. Focus groups conducted were used to develop measures of exposure to a
range of psychosocial hazards including violence and aggression specific to one's
job within the police. Specifically, participants were asked to rate the degree to
which each of 19 manifestations of violence and aggression for police officers was
a problem to them on their job, using a five-point likert scale ranging from 0 (not at
all) to 4 (a major problem). These items encompassed the full range of violent
behaviours, whether from fellow police officers and other civilian support staff, or
from members of the general public. The behaviours covered included verbal abuse,
bullying, intimidation / badgering, sexual harassment, threatening behaviour, and acute, potentially traumatic incidents of the job itself where the propensity for violence is likely.

Operationalising a functional measure of support

Support in this study was operationalised following House’s (1981) distinction of emotional versus instrumental types of support tailored for use in the police from a similar range of sources: 1) line manager/supervisor; 2) work colleagues; 3) family and friends outside the force; 4) welfare/occupational health; and 5) Police Federation/staff associations. Instrumental support was measured by asking the respondent how much practical help, guidance and advice was available to him/her from the abovementioned sources ranging from 0 (none at all) to 4 (a great deal). Emotional support was measured by asking the respondent how much emotional support, sympathy and understanding was available to him/her from these same sources, ranging from 0 (none at all) to 4 (a great deal).

Outcome measures: well-being and work attitudes

Well-being was measured using the General Well-being Questionnaire by Cox et al., 1983. Work attitudes were assessed using established measures of job satisfaction (Camman et al., 1979), organisational commitment (Cook and Wall, 1980) and intention to quit (Camman et al., 1979).

Results

Incidents of violence and aggression for police officers

All statistical analyses reported in this paper were performed using SPSS 10. Factor analysis of the violence items was conducted on the data set using principal components analysis with varimax (orthogonal) rotation. All items entered into analysis were subject to the same criteria as recommended by Tabachnick & Fidell (1996). Three factors with eigenvalues greater than 1 emerged, accounting for 58.54% of the total variance. Factor 1, which accounted for 37.49% of the variance was termed ‘serious incidents in operational policing’ consisted of items to do with handling incidents involving the use of force, firearms or weapons, road traffic accidents, death/suicide, child abuse and drug trafficking. Factor 2, which accounted for 13.36% of the variance, was termed ‘antisocial behaviour from the public’ and consisted of items to do with dealing from hostile and abusive behaviour from the public and complaints/grievances filed against them. Factor 3 which accounted for 7.69% of the variance was termed ‘antisocial behaviour from colleagues’ and comprised items relating to bullying and harassment, sexual harassment and interpersonal hostilities among police officers and support staff.
Types and sources of support

Support items were factor analysed using principal components analysis and varimax rotation to obtain a clear picture of the various types and sources of support available to police officers. Factor analysis of the support items resulted in a three-factor solution with eigenvalues greater than 1, accounting for 75.30% of the total variance. Factor 1, which accounted for 41.11% of the variance, was termed 'emotional and practical support from professional bodies' and consisted of 4 items to do with both practical help, guidance and advice and emotional support, sympathy and understanding from trade unions and occupational health services. Factor 2, which accounted for 19.13% was termed 'emotional and practical support from within the organisation', and consisted of 3 items to do with practical help, guidance and advice and emotional support, sympathy and understanding from supervisors, line managers and/or work colleagues. Factor 3, which accounted for 15.06%, was termed 'emotional and practical support from friends and family' and consisted of 2 items to do with practical help, guidance and advice and emotional support, sympathy and understanding from friends and family.

Table 1: Direct and indirect effects of exposure to violence and support on outcomes

<table>
<thead>
<tr>
<th>Up-tight</th>
<th>β</th>
<th>t</th>
<th>Sig.</th>
<th>R²</th>
<th>ΔR²</th>
<th>ΔF</th>
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<td>Serious incidents in operational policing</td>
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<td>2.090</td>
<td>.037</td>
<td>.253</td>
<td>44.093</td>
<td>.001</td>
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<td>5.196</td>
<td>.001</td>
<td>.209</td>
<td>5.196</td>
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<td>.001</td>
<td>.270</td>
<td>7.711</td>
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<td>5.600</td>
<td>.575</td>
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<td>.001</td>
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<td>.677</td>
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<td>Intention to quit</td>
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Job satisfaction

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Direct and indirect effects of work-related and support outcomes

Multiple hierarchical regression analyses were conducted to assess the direct effects of exposure and both the direct and indirect effects of support on measures of well-being. Multiple hierarchical regression was deemed the appropriate method of analysis because of its ability account for potential intercorrelations between items and permit the simultaneous investigation of cumulative direct and indirect effects. Results of these analyses can be found in Table 1.

Multiple regression analyses (main effects) of outcomes upon exposure factors demonstrate that for police officers 'serious incidents in operational policing' did not predict any of outcome measures apart from symptoms of feeling 'up-tight'. In comparison, 'antisocial behaviour from the public' consistently exhibited a pronounced impact on all outcome variables. Similarly 'antisocial behaviour from colleagues' also yielded significant effects upon on all outcome measures with the
exception of organisational commitment. In summary, for police officers, both ‘antisocial behaviour from colleagues’ and ‘antisocial behaviour from the public’ were responsible for relatively similar proportions of the variance of work stress symptomatology. In terms of work attitudes however ‘antisocial behaviour from the public’ exhibited a considerably stronger impact than ‘antisocial behaviour from colleagues’.

**Direct and indirect effects of support**

The direct and indirect effects of support were assessed using two-step multiple hierarchical regression. In the first step of the hierarchical regression equation the three exposure factors along with the three support factors were entered, while, in the second step, the computed interaction terms for each exposure factor multiplied by each support factor were entered. From Table 1 it can be seen that all direct effects were beneficial in nature. ‘Emotional and practical support from within’ the organisation yielded direct effects on all of the outcome measures, directly predicting job satisfaction ($\beta = .219, t = 6.199, p < .001$) and organisational commitment ($\beta = .180, t = 6.199, p < .001$), and negatively predicting intention to quit ($\beta = -.199, t = -5.463, p < .001$), up-tight ($\beta = -.153, t = -4.454, p < .001$) and worn-out ($\beta = -.124, t = -3.560, p < .001$) symptoms. ‘Emotional and practical support from professional bodies’ was also a direct predictor of organisational commitment ($\beta = .165, t = 4.738, p < .001$) and job satisfaction ($\beta = .136, t = 4.000, p < .001$).

In terms of indirect effects, only 3 significant moderating relationships were found. ‘Emotional and practical support from within the organisation’ yielded a significant buffering effect upon ‘antisocial behaviour from colleagues’ and up-tight symptoms ($\beta = -.166, t = -2.084, p < .038$). ‘Emotional and practical support from friends and family’ also yielded a buffering effect on serious incidents and worn-out symptoms ($\beta = -.266, t = -2.190, p < .029$). Similarly, ‘emotional and practical support from professional bodies’ yielded a marginal reverse buffering effect upon ‘antisocial behaviour from the public’ and worn-out symptoms ($\beta = .178, t = 1.809, p < .071$).

**Discussion**

In this present study, an attempt was made to account for the importance of the appraisal of violence as having personal significance. For police officers, factor analysis of the exposure items revealed a three-factor solution differentiating operational violence from inside versus outside sources of violence. Factor 1 was termed ‘serious incidents in operational policing’, factor 2 was termed ‘antisocial behaviour from the public’ and factor 3 was termed ‘antisocial behaviour from colleagues’. The primary aim of this study was to investigate the effects of the emerging typologies upon a range of individual and organisational outcomes. It was hypothesised that the different typologies that were to emerge from the factor analyzes of exposure items would elicit variable effects on the impact of violence.
upon health, i.e., symptoms of sub-optimal health and work attitudes such as job satisfaction, organisational commitment and intention to quit. This hypothesis was confirmed in part. Operational violence, labelled ‘serious incidents in operational policing’, only predicted wornout symptoms for police officers. This finding, though somewhat surprising, supports the hypothesis that operational violence is not predictive of work stress (Storch & Panzarella, 1996). This may be attributed to the argument that work stress differs from traumatic stress reactions in that the latter is derived from sudden events that may be of a relatively short duration (Dick, 2000; Brown et al., 1999). ‘Antisocial behaviour from colleagues’ however had the most pronounced impact on all outcome measures. ‘Antisocial behaviour from the public’ also yielded deleterious effects on outcomes with the exception of organisational commitment, which was not affected by exposure. These findings remain consistent with the literature suggesting that high frequency incidents of a more routine nature are also associated with levels of psychological disturbance (Brown et al., 1999), and that exposure to work-related violence of different types can lead to decreased psychological well-being and reduced organisational functioning such as decreased job satisfaction, greater intention to leave and decreased organisational commitment (Pearson et al., 2000; Leather et al., 1998; Ashforth, 1997; Barling, 1996).

The second aim of the study was to explore the direct and indirect effects of various sources and types of perceived social support. Exploratory factor analysis of the support items revealed that there are differences in the type of support called upon by police officers: ‘emotional and practical support from professional bodies’, ‘emotional and practical support from within the organisation’, and ‘emotional and practical support from friends and family’.

Hypothesis 2 which predicted the presence of both main and buffering effects was also partially confirmed by the data. For police officers, ‘emotional and practical support from within the organisation’ exhibited negative relationships with stress symptomatology and intention to quit and positive relationships with job satisfaction and organisational commitment. In addition, ‘emotional and practical support from professional bodies’ yielded positive relationships with job satisfaction and organisational commitment. In terms of buffering effects, ‘emotional and practical support from within the organisation’ buffered the effects of antisocial behaviour from colleagues on up-tight symptoms. This finding is consistent with those reported by Leather et al. (1998) wherein increased intra-organisational support was found to buffer the effects of increased exposure to violence on job satisfaction, organisational commitment and stress symptomatology amongst UK public house licensees. ‘Emotional and practical support from friends and family’ also buffered the impact of serious incidents on wornout symptoms, while ‘emotional and practical support from professional bodies’ had a reverse buffering effect on antisocial behaviour from the public on wornout symptoms. The atypicality of these two findings may be attributed to the importance of the temporal element of social support. Because the data is cross-sectional it is difficult to determine whether such help was called upon following a crisis point, in which case
support from friends and family following a trauma would be beneficial and support from professional bodies would only be called upon following a critical incident.

Hypothesis 3 which predicted the beneficial effects of intra-organisational support both directly and indirectly was also partially confirmed by the data presented. Emotional and practical support from within the organisation was found to have a beneficial effect upon up-tight and wornout symptoms, job satisfaction, organisational commitment and intention to quit, thereby reinforcing the importance of matching the source and type of stressor with the appropriate source and type of support (Beehr, 1995). Because only 2 or 3 significant moderating relationships were found out of a possible 45, conclusions regarding the generalisability of the moderating effect of social support cannot be drawn. One possibility for the lack of significant findings for the buffering effect of intra-organisational support is that intra-organisational sources of support may not necessarily be compatible with antisocial behaviour stemming from members of the general public.

The limitations of this study rest on its cross-sectional design and inability to prove the direction of causality. Similarly, a caveat for all findings reported here is that the experimentwise Type I error could be problematic given the number of significance tests performed especially for buffering effects. Caution should be exercised in the interpretation of such results since experimentwise Type I error is a potential threat to inference. Furthermore, McCleland and Judd (1993) have pointed out that tests for interaction effects in field studies have very low efficiency, and even when moderating effects are found, the increase in explained variance is often disconcertingly low. Nevertheless, given the multifactorial determination of health, even weak or barely significant effects may well provide an indication that such effects are important.

The implications of such findings for implementing intra-organisational support structures that foster healthy relationships among colleagues and line managers are numerous. Although the need for professional counselling and occupational health services is essential for some, it is possible that majority generally do not benefit from such interventions because such support is typically accessed only after a critical incident has occurred. Instead, financial and human resources allocated to such departments are perhaps more wisely spent on interventions fostering healthy relationships between supervisors/managers, subordinates and colleagues at work. Clearly this study provides further scope for future investigations on social support. Its strengths lie on its attempt to reconcile and identify sources along the continuum of exposure to work-related violence that are harmful to well-being, and determine those sources of support which may be of benefit to individuals.

References

DEVELOPING A STRATEGIC APPROACH BY LINKING THEORY AND PRACTICE IN OCCUPATIONAL HEALTH PSYCHOLOGY: THE EXAMPLE OF STRESS MANAGEMENT IN ORGANISATIONS

A. L. SCHWARTZ
Staffordshire University & Arcadia Alive Human Factors Consultancy

Introduction

The use of a variety of psychological models, theories and frameworks underpins the work of the Occupational Health Psychologist in applied settings. In this paper use is made of the concept of Stages of Change (Prochaska & DiClemente, 1982) as a foundation upon which to explore how an organisation can engage in dealing with stress at work. This emphasises movement of an organisation from the stage of pre-contemplation, to contemplation, preparation, action and through to maintenance.

Whereas stress management interventions in organisations can fall at primary, secondary or tertiary levels (DeFrank & Cooper, 1987; Murphy, 1998), the majority operate at secondary and tertiary levels, aiming to reduce the experience of stress rather than tackling the sources of stress (Kompier & Cooper, 1999). Prevention requires the involvement of the organisation in acknowledging, identifying and using strategies to modify workplace pressure. Nevertheless stress management courses yield transient benefits as one-off interventions, and by implication more sustainable results would be produced if regular workshops were run. However, long-term interventions could be construed by an organisation as too costly, demand too much time from their staff, and infringe too much on their operations, despite the positive outcomes in terms of reduced stress and more effective working. How then does the Occupational Health Psychologist facilitate acknowledgement of the existence of harmful pressure or stress in an organisation and following this ‘diagnosis’, proceed to planning, creating and finally implementing a suitable intervention or ‘treatment’?

Background

Behaviour and behavioural change is the direct field of interest and input for applied psychologists. A central tenet concerning human behaviour is that of Lewin (1951) whose Field Theory suggests that behaviour is a function of the person and the environment \( B = f (P, E) \). This equation links the two in mutual
interdependency. To change behaviour, we need to consider carefully both the individual and the environment, and explore the parallels between change at the individual level and change at the organisational level. Theoretical models of health related behaviour that help individuals' management of one health condition can often be generalised to managing other health conditions or ailments. Similarly, using the idea of a 'transfer of concepts', frameworks applied in one field can be applied to other areas. It appears that there is a growing awareness that health and safety interventions in the workplace could usefully extrapolated from theoretical models of health related behaviour (Haslam & Haslam, 2000).

In order to improve the management of stress at work, one, needs to change attitudes within the organisation whilst simultaneously focusing on the individual issues and difficulties. It is proposed that we can learn from ways of helping individuals to change in order to effect organisational change. Hence, the need to consider the transfer of concepts from the personal context to the environmental context.

The model of change

Basic psychological principles suggest the notion of step-by-step approaches and staged interventions. Applied psychologists tend to follow a process, beginning with assessment and collection of data, followed by formulation, planning, intervention, evaluation and, finally communication, almost as a matter of course. In the area of health promotion too, a staged approach to interventions has been customary, based for example on communication theory and social learning theory. Stage-based models propose that interventions take into account the current stage of the individual, group or organisation, and in so doing will be more effective than "one size fits all" interventions.

When we consider the Trans-Theoretical Model of Change, the suggestion is made that people aiming to change health related behaviour move through predictable well-defined stages. These are pre-contemplation (lack of awareness of the need to change), contemplation (recognising and thinking about change), preparation (laying the foundations for change), action (making changes to behaviour) and finally maintenance (continuing growth and consolidating gains) or relapse (when some of the gains are lost). This may be presented graphically as follows:

Figure 1: The Stages of Change

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It is suggested that the stage at which an individual or organisation is at determines the sort of information they will be able to take on board. If the person or organisation is at a pre-contemplative stage, there is a greater likelihood of being influenced by graphic information about risks. When the person or organisation has already made the decision to change, then practical skills training or advice is likely to be more suitable.

In examining the area of stress interventions within the organisational context, it would be interesting to contrast the degree to which input at primary, secondary and tertiary levels exists across different sectors (e.g., business, health, local government, industry). Further, it would then be important for the Occupational Health Psychologist consultant to consider how to move those at different levels on, through targeted information-based or skills-based methods. For example, the author’s experience as an Occupational Health Psychologist in business settings would intimate that overall there is greater reluctance to acknowledge stress as an issue to be addressed. On the other hand, within health care settings both the acknowledgement of and need to ameliorate stress is overt as can be seen in reports and literature on the subject (Chambers, Schwartz & Boath, 2003). In both contexts, though, the links between stress and performance help define and sharpen the issues. Input is often desired if the issues are considered serious enough to the ‘bottom-line’ be that profits, patient care targets or effective team-working.

**Application in practice**

The application of the Trans-Theoretical Model of Change is highlighted below, by examining the manner in which stress management workshops were run within one organisation, a City Council in the United Kingdom. Considering the Model of Change approach, it is possible to place the work undertaken into the sequential stages.

**Stage 1: Pre-Contemplation**

Central and local Government initiatives over the past few years began to emphasise the Duty of Care issues following a few highly publicised court cases. This ‘cue to action’ began to provide information about the possible effects of certain working conditions and working practices. For organisations in this stage, it is suggested that one might develop and evaluate materials to raise awareness of stress. These may be in the form of graphic and illustrative examples of risks, harmful effects of organisational pressure, impact of poor working environments – both in terms of interpersonal and technical factors. It would be hoped that such materials might move organisations and key decision-makers to the contemplative stage. In such a way consultants in the field can increase relevant
knowledge and influence attitudes. In the current example, the City Council, based on models of good practice elsewhere in addition to the fear of litigation, undertook an audit of stress, which led to contemplation...

Stage 2: Contemplation

It is anticipated that organisations in this stage would be open to advice and learn from lessons and experience within other similar settings. At this point, a range of options might be offered, to meet the needs of different people who are likely to be at varying levels of motivation and encourage their ‘buying-in’ to the interventions. Within this Council, with the results of the stress audit as well as anecdotal evidence of increased numbers of staff taking time off with stress-related conditions, the Human Resources and Occupational Health Managers began to look into the issues. Thus began an examination of the organisational ‘hotspots’ as well as types of likely input required (e.g., employee assistance programmes, stress management training, and preventative measures). With the acknowledgement of stress issues, it was in this particular context, possible to begin to look for partner organisations who might provide a range of input.

Stage 3: Preparation

Based on the view that the preparation stage follows the contemplation stage, it can be asserted that the Council was now committed to doing something about the stress issues that had been identified. The literature would suggest that once people are convinced about the risks associated with stress, they are ready for skills training interventions. As a result the strategic management group decided to seek an organisational programme for one of the identified ‘hotspots’. The aim was to focus on training managers and others who had experienced stress either personally or within their department. At this stage it is important to know the capacity and resources available within the organisation, as well as of external consultants or partner organisations. Once the scope of the input was decided, this was put out for tender.

Stage 4: Action

Following meetings with the key stakeholders a tailored programme was developed and begun, consisting of a two-day programme with a half-day follow-up session. This was aimed at the secondary level of intervention, for those who were experiencing stress at work. The programme focused on skills training in managing stress, problem-solving and self-management approaches. It was agreed that those people requiring tertiary level interventions would be advised and referred on. Recognising reinforcement principles can be useful at this point, so as to embed and anchor success experiences through positive affirmation, peer support and celebrating individual experiences (e.g., self-efficacy).
Stage 5: Maintenance

At both individual level and at an organisational level, there was a focus on helping to maintain the skills learnt. In this case, since the programme is ongoing, individuals have been able to avail themselves of follow-up sessions over time. To date the programme has been repeated twice a year for three years. Attending follow-up sessions have served as a ‘booster’ for skills and practical support. As far as maintenance at the organisational level is concerned, there have been regular high-level feedback sessions, and meetings with key stakeholders. As such a strategic implementation approach has been encouraged. It is hoped that this has helped minimise relapse at the individual level and has directed senior managers to become proactively able to deal with emerging difficulties.

In the light of the Trans-Theoretical Model of Change it is clear that, without ongoing organisational commitment to continue with the process, the maintenance stage is under threat of relapse.

Discussion

In order to assess the stage at which the organisation is, Haslam and Haslam (2000) suggest that only a few questions need be asked: Firstly, one may ask managers: “Are you concerned about stress among your employees?” and secondly: “Are you planning to adopt practices aimed at reducing stress in the workforce?”. If the answers are ‘no’ to both questions, one could place the organisation in the pre-contemplation stage. If the answers are ‘yes’ to the first and ‘no’ to the second, it would be in the contemplation stage, and if the answers are ‘yes’ to both, then one would assess the organisation as in the preparation or planning stage. Occupational health psychology input which should balance both the individual and organisational focus can then be considered. Dependent upon the stage, one might target information on risks and impact on employee and organisational performance. There may then be practical advice in order to move the organisation on, or suggestions for specifically focused intervention options.

In conclusion to this first part of this paper, the above shows a simple example of how the Trans-Theoretical Model of Change has been adapted to examine the process of investigation, initiation and implementation of a stress management intervention.

As professional practitioners involved in life-long ongoing learning, conferences and general reading allow the cross-pollination of ideas arising from others’ viewpoints and models, in order to refine practice. As cited earlier, change taking place at an individual level can be related to interpersonal factors and system characteristics. Research on the application of best practice in healthcare has looked at outcome in the target group of patients as well as the roles of the physicians and the environment in which they operate (Grol & Wensing, 2004).
These authors consider aspects of managing change which are not dissimilar to those challenges we face as Occupational Health Psychologists.

What we can learn from studies in other fields is that specific social, organisational and structural settings in which we work involve factors influencing change – some may support and others may impede the change. Grol and Wensing (2004) highlight the ‘precede – proceed’ model, which makes a distinction between “predisposing factors” (e.g., knowledge and attitudes in the target group), “enabling factors” (e.g., capacity, resources, availability of services) and “reinforcing factors” (e.g., opinions and behaviour of others). It is suggested that strategies which take into account factors at all three levels (predisposing, enabling and reinforcing) are likely to be the most successful. If we build this into the work which needs to be done at the different points in the Stages of Change Model, perhaps this amalgam can help mobilise and maintain stage at the individual and organisational levels.

Summary

Although the application of the Trans-Theoretical Model outlined here can be seen as somewhat presumptive, it is helpful to reflect on the frameworks we use in our professional practice. This model places clear distinctions between the stages, which suggests that rather than being a continuous movement, there are transition points between stages. However it does assist our thinking about how people and organisations make decisions and how they can be helped to act on intentions. This also emphasises the role of the Occupational Health Psychologist in highlighting motivational aspects and offering information upon which to make decisions to promote individual and organisational health.

It is suggested that the model above fits with ‘positive psychology’; that ongoing development is not only necessary but also possible. We can, as psychologists with a broad range of tools of the trade’ impact in organisations, to promote beneficial change in order to manage pressure and stress. Using this model it is hoped that we can maintain growth and deal helpfully when relapse occurs. For this task we need the interdependence within our own profession, the views of our customers and the enthusiasm of those with whom we consult.

Symposium discussion

The second part of the paper in this symposium involves an active experiential approach to draw out models of practice and frameworks used by practitioners of Occupational Health Psychology. This is founded on the questions ‘What models and approaches do us base your practice upon?’,” “How does theory inform practice” and “How do you move strategically from theory to
practice in applied psychology?”. It is hoped that the responses to this section will be reported on subsequent to the conference in the Occupational Health Psychologist. Opportunities to share and learn from fellow professionals such as these are needed to reinforce, confirm and consolidate developments in this field.

References

WORKERS COMMITMENT TO SAFETY AND WORK ACCIDENTS: THE CONTRIBUTION OF SAFETY AS A VALUE IN-USE

S. SILVA & M. L. LIMA
Instituto Superior de Ciências do Trabalho e da Empresa (ISCTE), Portugal

Introduction

During the last twenty years an increased interest has occurred in research focusing on the improvement of workers safety and the prevention of work accidents (Lima, 1999). Within this framework, the concept of safety culture acquired a central role as a key determinant of organizational safety. Currently, this literature is characterized by a theoretical and methodological debate about how to define and measure safety culture (Guldenmund, 2000; Silva & Lima, in press). Even though there are many definitions of safety culture, at this point there is some consensus that it comprises values, norms, attitudes and perceptions about safety, shared by organizational members. However, there are still disagreements on how to study it and namely which is the best methodological approach. Until now, with few exceptions (e.g., Collinson, 1999; Gherardi & Nicolini, 2002), this field has been dominated by quantitative approaches (specifically questionnaires) focusing only on safety attitudes. These studies have been approaching safety culture through an individual and group level of analysis, forgetting the organizational level. Concomitantly, only some studies (e.g., Cox, Tomás, Cheyne & Olivier, 1998) focused on the relation of safety culture to individual features, like worker’s commitment to safety. Anyway, at the organizational level there is no evidence of how the safety culture can be related to this kind of individual variable. This scientific scenario suggests that some work is still to be done in order to better understand the content and importance of safety culture. The main aim of this paper is to fulfill part of these gaps.

In this paper, safety culture was approached from an organizational level of analysis, using the contributions from the organizational literature, particularly from the perspective of organizational values. Some authors suggested the importance of differentiating between “espoused values” and “values in use” in the study of organizational culture and their relevance to workers behaviors or feelings of commitment (e.g., Schein, 1992; Siehl & Martin, 1988; Schabracq, 2003). Espoused values reflect the values that are easily stated by organizational members and in particular by top management, and the values in use reflect the real values that are guiding decisions, rules and behaviors. In this study, safety as an organizational value was analysed in terms of these two types of values. It was expected that when safety appears as an organizational value in use it would be...
associated with less work accidents and higher workers' commitment with safety. Safety culture evaluation was approached here through a combination of quantitative and qualitative techniques, as some authors consider that only the use of several techniques allows the characterization of an organization's values in use and central values (e.g., Guldenmund, 2000; Martin, 2002).

In summary, in this paper a study is presented, conducted with two main goals: to analyse how safety exists as an organizational value and explore its implications for organizational accidents and workers commitment to safety.

**Methodology**

In order to accomplish these goals four case studies were conducted, with chemical companies operating in Portugal. All of these companies were big companies, had joined the Responsible Care international voluntary program and had stable and well defined safety structure and policy. Following the suggestions of Yin (1994), in each company data was collected through quantitative and qualitative methods comprising: document analysis, individual interviews, group interviews and a questionnaire.

Document analyses, individual and group interviews covered several facets of safety culture, past and present values, norms, practices, rituals, etc.

The questionnaire, Organizational and Safety Climate Inventory (OSCI, Silva, Lima & Baptista, 2004), includes two questionnaires assessing the organizational and safety climate1. Safety Climate Questionnaire includes 46 items covering 4 scales (safety as an organizational value; safety climate content; organizational safety practices; personal involvement with safety). All the answers are given in a 7 point Likert-type scale (e.g., 1– totally disagree to 7– totally agree).

A total of 16 individual interviews and 7 focus groups (42 participants) were conducted and 323 answers to the questionnaire were obtained (representing 50% of the workers in each company). The qualitative data analysis was done through grounded theory (Strauss & Corbin, 1998) using the program Atlas.ti version 4.1 (Muhr, 1997). The qualitative analyses focused on references about safety as a “value in-use” and as an “exposed value”. Accident data were collected from each company according to Responsible Care (1998) criteria.

**Results**

Results revealed that companies showed similar profiles for safety as an espoused value, but they had different profiles in terms of values in-use (Table 1). Moreover, it was observed that in one company (Alpha) there was consistency between safety as a value “espoused” and as a value “in use” and in the other three companies there was inconsistency.

1 In this paper we will consider only the data from OSCI Safety Climate questionnaire.
For instance, in Alpha (Figure 1), safety as an organizational value was associated with being the central value, holding the highest importance in the company. Management revealed a very strong commitment with safety, safety represented an internal and external concern, there was high demand on safety, and positive feelings shared by all about safety.

Table 1: Safety as an espoused Value and as value in use in four companies

<table>
<thead>
<tr>
<th>Companies</th>
<th>Espoused value</th>
<th>Value in use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpha</td>
<td>&quot;We value an ethical conduct, we should be responsible internally and externally, namely for safety&quot;</td>
<td>- Safety is a central value  - Safety is more important than production  - Everyone share the responsibility for safety</td>
</tr>
<tr>
<td>Beta</td>
<td>&quot;Safety first&quot;</td>
<td>- Safety is a main concern/priority  - Production is a central value and more important than safety  - Some persons are more responsible for safety than others (e.g., safety committee)</td>
</tr>
<tr>
<td>Chi</td>
<td>&quot;Our activity can only be done with safety in the first place&quot;</td>
<td>- Safety is a main concern/priority  - Safety is not a shared responsibility, safety department is seen as detaining this responsibility</td>
</tr>
<tr>
<td>Delta</td>
<td>&quot;Safety is our duty&quot;</td>
<td>- Safety is a main concern/priority  - Production is a central value and more important than safety  - Workers wealth is not valued</td>
</tr>
</tbody>
</table>

Figure 1: Safety as an organizational value in Alpha

Legend. == association [ ] is part of * is propriety of
Safety as a priority in Delta (Figure 2) means that safety is dependent on other values, namely production. Even though there is a big concern about safety (e.g., investment on safety equipment, material), productivity is the main concern and is associated to a high pressure to work, bad work conditions and low concern with workers health.

Figure 2 – Safety as a priority in Delta

Qualitative analysis also revealed that inconsistency around safety as a value was associated with lower motivation, less positive feelings about the company and with workers taking more risks.

Quantitative data obtained through OSCI also revealed that there were differences between these companies regarding the personal involvement with safety ($F_{(3,311)} = 14.6, p<.001$). In Alpha there was a stronger involvement with safety, representing higher internalization of the safety norms $F_{(3,319)} = 12.2, p<.001$), higher pride in safety $F_{(3,315)} = 13.7, p<.001$) and higher commitment of all workers to safety $F_{(3,316)} = 10.6, p<.001$).

Table 2: Personal involvement with safety in four companies

<table>
<thead>
<tr>
<th>Companies</th>
<th>Personal Involvement with Safety</th>
<th>Safety Internalization</th>
<th>Safety Pride</th>
<th>Personal Commitment to Safety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpha</td>
<td>6.10 a</td>
<td>6.10 a</td>
<td>6.06 a</td>
<td>6.16 a</td>
</tr>
<tr>
<td>Beta</td>
<td>5.19 b</td>
<td>5.18 b</td>
<td>5.04 b</td>
<td>5.31 a</td>
</tr>
<tr>
<td>Chi</td>
<td>5.27 b</td>
<td>5.18 b</td>
<td>5.11 b</td>
<td>5.51 ab</td>
</tr>
<tr>
<td>Delta</td>
<td>5.10 b</td>
<td>5.08 b</td>
<td>4.97 b</td>
<td>5.24 b</td>
</tr>
</tbody>
</table>

Companies with different subscripts present significantly different means, for $p<.05$. 

381
Simultaneously, Alpha (company where there was consistency) presented lower accident frequency and severity. For instance, during the last twelve years there were no accidents with human consequences in Alpha and in Delta there was one mortal accident two years ago.

Conclusion

This study allowed a different and innovative analysis about safety culture by: (i) combining qualitative and quantitative techniques; (ii) focusing on the organizational level of safety culture through the analyses of organizational and safety values; (iii) differentiating espoused values from values in use and analysing some associated consequences. The role that this approach to safety as an organizational value “in use” can play, in order to improve workers commitment to safety and prevent work accidents, was emphasized. Interventions aiming to change safety culture should take into account these results in order to achieve success.

In future research it is important to extend this work to other organizational sectors, to further explore individual, group and organizational consequences of safety values, and contribute to intervention strategies.

Acknowledgments

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References


ARTISTS AND SCIENTISTS: DISSEMINATION AND AUDIENCE CAPTIVATION

C. SPRIGG 1, P. TOTTERDELL 1, A. KELLY 2 & R. WALTON 2

1 Institute of Work Psychology (IWP), University of Sheffield, Sheffield, United Kingdom
2 Third Angel, Sheffield, United Kingdom

Introduction

The UK Wellcome Trust ‘Sciart’ programme has provided funding to support arts projects informed by biomedical science. The ethos behind this funding is a synergistic one; with the visual and performing arts providing exciting ways to engage with audiences and science providing a source of inspiration. In this paper we describe a recent Sciart collaboration between two work psychologists and two members of a performance company. More generally, we explore the relationship between science and art and examine the potential for this type of collaboration.

Art and science are activities that are seen to be culturally different. In a recent paper, Eisner and Powell (2002) describe the historical details of the separation between art and science. One of the consequences of the separation of art from science is a neglect of the place of artistry in teaching and learning science, and the neglect of their common features (Eisner & Powell, 2002).

Eisner and Powell (2002) explore the personal side of ‘doing science’, explaining that the public side of science is exemplified by the published journal paper and the delivery of a conference paper. Their research examines the more intimate aspects of being a scientist; that is, what motivates scientific inquiry and what satisfactions are derived from the processes and the products.

Art and science are possibly more closely related than most people believe; with one of the primary sources of satisfaction in science being pride in craftsmanship – the skilful use of tools, concepts, writing, etc. (Eisner & Powell, 2002). From their interviews with 30 social scientists, Eisner and Powell (2002) conclude that there is an intimate relationship between art and science:

‘As we see it, the art in science inspires, motivates and enriches the pursuit of enquiry; indeed, for good work to be done, artistry appears inevitable’ (p. 157).

Generally, scientists are seen as objective and rational, artists as subjective and intuitive (Davies, 2003). Davies (2003) concludes:

‘The stereotypical view of the objective analytical scientist and the subjective intuitive artist is false, and the work of both artist and scientist requires a mixture of objectivity and subjectivity, analytical and intuitive abilities working together as one’ (p. 133).
Science is seen as a serious business; its discoveries are considered critical for our future. Art, by contrast, is not so sombre (Eisner & Powell, 2002). Indeed, our artistic collaborators frequently use humour in their productions, even when they are exploring serious subjects (for example, disassociative fugue, or the media’s treatment of murder victims).

Davies (2003) muses over whether art can now help heal the division that exists between science and society. For example, stories of genetically modified crops, cloning of animals, and designer babies have all served to alienate the public from the purpose and value of scientific exploration. Therefore, there is a need to examine whether art can be used as a vehicle for dissemination of scientific findings. Potentially this may improve some of the current public perceptions of both science and scientists.

The collaborators

Based in Sheffield, the performance company, Third Angel, are a company of some national and international acclaim. The company use a variety of methods to present themes artistically and engage with audiences, for example, they use performance, live art, visual art, installations, video, photography or the Internet.

The artists were awarded a Wellcome Sciart Research and Development Award to explore the topic of work time, under the title Karoshi. These particular awards are aimed at supporting the further development of ideas in their formative stages. On the strength of this award, Third Angel were also commissioned by Arnolfini and Wonderful: Visions of the Near Future to develop a performance lecture on this theme, entitled Hurrysickness.

The theme of our collaboration has been ‘Karoshi’ (the Japanese word for ‘Death by overwork’) and one particular strand of this theme has been the concept of ‘Hurrysickness’ (also known as Type A). The latter, is concerned with the perceived ever-increasing pace of life, the pervasive need to multitask, the time pressures we all experience and the physiological and psychological effects of these.

In the UK, there has been much discussion of the ‘long work hours culture’; with reported rises in the number of people working excessive hours (Totterdell, in press). Specifically, it seems that there is an increase in number of hours worked per household. Taking a more global perspective, there have been recent reports of an increasing number of suicides in Indian call centres as a result of excessive work pressures (The Scotsman, 2004).

These themes connected well with our research interests at the Institute of Work Psychology (IWP). As part of ongoing research at IWP we are concerned with how work schedules and the design of jobs affect employee well-being and performance (see Holman et al., 2004). More specifically, in the past we have investigated the impact of the body clock on shift workers (e.g., Totterdell, et al.,
1995) and the impact of work demands in job roles (e.g., Parker & Sprigg, 1999). During the course of the collaboration we became scientific advisors to both the Karoshi and Hurrysickness projects.

**Method (or process)**

To progress the collaboration initially we invited the artists to meet us at the University. Subsequently, much discussion took place over e-mail; although a number of face-to-face meetings were held at IWP and also at the artists’ studio. During the meetings the artists made notes and clarified their understanding of research papers and scientific jargon. One of the artists commented on their enjoyment of learning new scientific language and jargon. For example, they highlighted such terms as ‘cognitive fatigue’, ‘persistent anxiety’; terms, we, as psychologists, are familiar with, but are novel to the layperson. Indeed, our phrase ‘the data aren’t behaving’ so amused the artists, that this was eventually used in the performance lecture. In return, the artists showed us videos of their previous performances and installations so that we could get a feel for the type of work they typically produced.

Our principle role was one of providing expert knowledge about relevant research on the topics they wanted to explore in their performance. Part of the time we were reacting to their ideas; that is we were informing them of specific research on the things they were asking about.

The artists themselves found scientific papers to read. We provided further papers and discussed the findings with them. These discussions led to further ideas by the artists, and gave them new avenues to explore. They used methods analogous to our own; that is, they discussed trying to ‘pin down’ their research questions, and were working on trying to define ‘Hurrysickness’ as a way of focusing their work.

The artists brainstormed ways to illustrate the science and experimented on themselves with the tasks they intended to give to their audience, for example how accurately a person can judge a minute. The artists proposed these tasks and visuals to us and we then commented on whether we thought these were engaging and valid.

We found distinct similarities between the way we progress our work as scientists (for example, reviewing literature) and also in how we perform our work as academics (for example the act of giving a lecture). Yet, there were stark differences too. At times the artists seem to be working within extremely short time parameters; practising a performance one day and delivering it the next.

Of particular note was the way the artists set aside creative time to brainstorm ideas. As a UK academic, setting time aside simply “to think” seems to be increasingly both a “forbidden fruit” and a form of guilty pleasure.
Results (or products)

Two initial artworks were produced from the collaboration between Third Angel, ourselves, and another academic, Dr David Sheffield, from Staffordshire University. One product was a video piece called ‘Realtime’ which is about a man sitting in a waiting room. Here, the theme of the video is the experience of time spent waiting in a fictitious waiting room. The short film is designed to implicate the audience by putting them in the same situation as the man. The other product was a performance lecture ‘Hurrysickness’. These featured in the ‘Wonderful: Visions of the Near Future’, exhibition in Bristol, UK, in February 2004, and at the Magna Centre, Rotherham, UK, in September 2004. The exhibition will also appear at Cornerhouse, Manchester, UK in December 2004 and January 2005. A further product was a seminar in which one of the artists discussed the collaboration with a larger group of IWP researchers.

The performance lecture, ‘Hurrysickness’, was performed by one of the artists. The key elements of the performance were concerned with measuring and experiencing time; the history of the calendar; Type A personality and health; time urgency/ time poverty and multitasking; circadian rhythms; and work.

The audience were asked to participate at various points during the performance. For example, the audience was asked to estimate the length of a minute; the spread of estimates was from 35 secs to 1 minute 25 secs. The audience was also asked to reveal the extent of their multitasking, for example whether they were double, triple or quad taskers. Differences between the lunar and solar day were explained, with the artist captivating the audience by using a honeydew melon (the sun), a gala melon (the earth) and a lemon (the moon) to illustrate the topic.

The lecture covered a significant amount of scientific ground in an entertaining way. However, the performance lecture raises several questions. Did the audience learn anything and did the audience truly engage with the scientific topics discussed? It was clear to see that the majority of audience were enjoying themselves, but what value has this to either science or art? Without actually trying to measure the audience experience, in some quantifiable way, these questions, as yet, remain unanswered.

Discussion

We have found our brief collaboration with Third Angel a very enjoyable and stimulating experience. From our perspective, as work psychologists and academics the collaboration has had a number of benefits. First, the collaboration has enabled the dissemination of some of our research
knowledge (although not necessarily our own research material) to a wider audience. Second, this collaboration has provided a space for reflection. During this time, we looked at our own research in a different way. Indeed, a number of new research questions emerged, as the artists would ask about things that are not yet addressed by research. Third, we started to think about the overlap between science and art. For example, performance could be used as a medium for experiments. Finally, we believe that the collaboration holds promise for finding alternative and innovative ways of disseminating our findings, for example, workspace/workplace installations or a video piece that can be distributed more widely.

We have already had discussions about possible future ventures with the artists, one of which concerns work stress. Work-related stress continues to be a much-debated topic in the UK; indeed this autumn sees the UK Health & Safety Executive (HSE) introduce a set of management standards designed to help workplaces tackle stress. Much of the stress standards are based on work design theory and Karasek’s model. We have therefore discussed the notion of using the Karasek’s Demands/Control (Karasek, 1979) model as a unifying feature for a larger multi-room performance/installation concerning work-related stress.

We believe that there is an under-developed and under-exploited synergistic relationship between art and science. Just as science can provide an unending stream of ideas and tools for art; art can provide research questions, data collection opportunities and innumerable innovative ways to convey scientific ideas to society at large.

In this paper, we have presented just one model of working with artists. In our collaboration, the artists took the lead because they approached us and had quite specific ideas about the interests and themes they wished to explore. However, other models are feasible. For example, after a piece of research is completed, artists could be employed to work on options for dissemination and publicising research. Research might be, for example, translated into short films which employers and employees could use for learning.

There may however be risks to either the artists themselves, or to scientists if we try to collaborate in this way. One question arising is whether artistic interpretation could mean the scientific substance of the message is lost. Moreover, there may be a real danger that scientist or artist can risk loss of professional reputation when both audiences and professional bodies alike fail to comprehend the real purpose of such collaborative activities. Witness the recent fervent criticism of the British Psychological Society (BPS) over the proposed psychological garden at the 2005 Chelsea Flower Show with the BPS being described as a profession that has somehow ‘lost the plot’ (Farrar, 2004).

Nevertheless, we need to ensure that research findings are communicated to policy makers, organisations, professional bodies and the public, and certainly to a far wider audience than the readers of academic science journals.
Attempts to engage with these varied audiences in different ways may enhance communication and help to change the image of some elements of science. Many of the topics addressed by both academic and practitioner occupational health psychologists are of relevance to a far larger proportion of the population than will ever engage with academic journals or be present at academic conferences. Through innovative use of art we think that people will become more engaged with occupational health (psychology) issues.

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Third Angel website can be accessed at: http://www.thirdangel.co.uk/


Wellcome sciart website can be accessed at: http://www.wellcome.ac.uk/en/1/pinpubscisocart.html

Wonderful: Visions of the Near Future website can be accessed at: http://www.wonderfulwebsite.net

Address for correspondence: Christine A. Sprigg, Institute of Work Psychology, Department of Psychology, University of Sheffield, Sheffield, S10 2TN, UK. E-mail: c a sprigg@sheffield.ac.uk
DETERMINANTS OF SICKNESS ABSENTEEISM
AMONG EMPLOYEES WITH A CHRONIC DISORDER OR WORK HANDICAP

R. STEENBEEK, K. KALSHOVEN & T. VAN VUUREN
TNO Work and Employment, Netherlands

Introduction

An estimated one third of the working population has one or more chronic disorders. The exact number is unknown because of the large range of definitions of a chronic disorder. One third of the population is a rather large group, considering that a chronic disorder is related to increased sickness absenteeism. Employees with one or more chronic disorders were found to have higher levels of sickness absenteeism than their colleagues (De Klerk, 2000). Furthermore, Andries et al. (2004) found that these employees suffer twice as much from work related exhaustion. They also found that more than one third to half of the employees with a chronic disorder suffered from work related exhaustion. Both the nature of the chronic disorder and the number of disorders (co-morbidity) influence sickness absenteeism. Employees with more than one chronic disorder reported being ill more often than others (De Klerk, 2000). Employees with a chronic disorder more often experience locomotory, mental and/or sensory limitations, which enhance the chance of developing a work handicap. In turn, experiencing more limitations was related to higher sickness absenteeism (De Klerk, 2000). Some of the employees with a chronic disorder experience problems at work. These problems are not only related to the nature or severity of the disease(s), but also to insufficient work adjustments and supervision and/or coaching.

The above leads to the hypothesis that employees with a chronic disorder and/or work handicap have a less sufficient balance between workload and capacities than employees without. Therefore, the aim of this paper is to identify the determinants of sickness absenteeism among employees with a chronic disorder and/or a work handicap. The group of employees with a chronic disorder and/or work handicap will only grow larger because of the ageing of the working population. Therefore, we should find ways to reduce sickness absenteeism in this group. In this study, we identify and characterise groups with high levels of sickness absenteeism, focusing on characteristics that can be influenced in order to reduce sickness absenteeism.

Many factors are known to influence sickness absenteeism (Smulders, 1980, 1984; Smulders et al., 1985; Grosfeld en Schalk, 1990; Klein Hesselink...
et al., 1993; Smulders et al., 1997; Van Vuuren et al., 2000; Vrijhof, 2000; Van Vuuren et al., 2001). Our research design is deduced from the ICF model (WHO, 2001) and illustrated in Figure 1. Next to chronic disorders and work handicaps, in this paper we will concentrate on personal factors (gender, age, education level), work characteristics (emotional exhaustion, work pressure, task autonomy, job satisfaction, organizational commitment and physical working conditions) and work adjustments.

Methods

This study was carried out in 2003 in a large academic hospital in the Netherlands. An employee questionnaire was sent to 6290 employees. Employees with sickness absenteeism related to pregnancy and giving birth were omitted from the dataset. The response was 44% and we could use 2542 questionnaires for the analysis. The employee questionnaire included questions about having a chronic disorder (self-reported) and work handicap. Other questions measured emotional exhaustion (Schaufeli and Dierendonck, 2000), work pressure, task autonomy, job satisfaction, organizational commitment (Likert scales, see Table 1), physical working conditions (dust and noise) and work adjustments (working hours, furniture, tools, working tasks). The hospital provided data about gender, age, education, appointed working hours per week and registered sickness absenteeism. Sickness absenteeism was calculated for every employee for the period October 2002 – September 2003, and defined as the number of calendar days absent, corrected for partial disability, divided by the available calendar days (not every employee was appointed for the whole year).

A work handicap was defined as an activity with which the employee 'had difficulties in daily life', which 'was regularly performed during work' and with which the employee 'had difficulties at work'. We distinguished three types of work handicaps, namely locomotory (e.g., walking, standing, lifting), cognitive (e.g., concentrating, remembering, organizing) and sensory (e.g., seeing, hearing). Because sensory work handicaps turned out not to influence sickness absenteeism in this population, we only included physical and cognitive work handicaps in the analyses.

We explained the % of sickness absenteeism using multivariate regression analyses including the following variables: number of chronic disorders (0, 1, >=2), work handicap (0-1, >=2), gender, appointed working hours per week, education level, working schedule (regular or not), age, work pressure, job satisfaction, organizational commitment, emotional exhaustion and task autonomy. We repeated this regression for employees with and without a chronic disorder.
Results

Determinants of sickness absenteeism

Of all employees 34% reported having a chronic disorder and 21% a work handicap.

Multivariate regressions revealed that the regression model explains 14.4% of sickness absenteeism. Most variance was explained by the variables 'chronic disorder', 'emotional exhaustion' and 'work handicap' (Table 2). For employees without a chronic disorder the model only explained 3% of sickness absenteeism. In this model most variance was explained with the variables 'work handicap' and 'education level'. Finally, for employees with a chronic disorder 10.7% was explained, for most part, by the variables 'emotional exhaustion', 'work pressure', 'work handicap' and 'appointed working hours per week'.

Distinguishing features of groups with low, intermediate and high sickness absenteeism

The results of the regression analyses were used as a basis to divide employees into groups characterised by: 1) a low; 2) an intermediate; 3) a high level of sickness absenteeism (Figure 2). All employees were first divided into two groups; those with and without a chronic disorder. Next, employees without a chronic disorder were divided into employees with 0-1 and 2 or more work handicaps. Employees with a chronic disorder were split into two groups: 50% with a relatively low score on emotional exhaustion and 50% with a relatively high score on emotional exhaustion. Next, we found that work pressure did not distinguish between groups, work handicap and the appointed working hours per week did. Variables were only included in Figure 2 if groups differed significantly in the level of sickness absenteeism (ANOVA with post hoc Tukey).

Of 2542 employees 63% showed a low level of sickness absenteeism (1.8%, group 1). These employees had no chronic disorder and less than two physical or cognitive work handicaps. Employees with intermediate sickness absenteeism levels (6.1%, n = 524, group 2) consisted of two subgroups: employees without a chronic disorder, but with two or more physical and/or cognitive work handicaps, and employees with a chronic disorder who did not belong to the third group (depending on the appointed working hours per week, see Figure 2). The third group showed a high level of sickness absenteeism (14.6%) and also consisted of two subgroups (table 3).

1. 44 employees with a chronic disorder, a low level of emotional exhaustion, two or more physical and/or cognitive work handicaps, and less than 34.4 appointed working hours per week.
2. 351 employees, with a chronic disorder and a high level of emotional exhaustion.

In order to reduce the level of sickness absenteeism, one can expect the best results by focusing on the group with a high level of absenteeism (the third group). Therefore, in this paper we will concentrate on this (third) group.

Is a high level of sickness absenteeism avoidable?

The results show that employees with a chronic disorder had an insufficient balance between task load and capacities. However, employees with a chronic disorder varied in several aspects that can influence this balance. Therefore, we will further characterise the group with a high level of sickness absenteeism. We will compare this group with the other groups, in order to explore if sickness absenteeism is (partly) avoidable.

The first subgroup of employees with a high level of sickness absenteeism consisted of a small group of 44 employees. These employees most often reported that the chronic disorder hampered the performance of working tasks and most employees of this group reported that they suffered from severe chronic disorders. However, they reported that they had enough freedom to plan their work, and that both colleagues and superiors made sufficient allowance for their handicap. In this group, the level of sickness absenteeism seems to be primarily related to the severity of the disorder/handicap, which makes it difficult to plan measures aimed at reducing sickness absenteeism. They do wish further work adjustments (devices, tools). Thus, individual work adjustments might be successful in lowering sickness absence.

The 351 employees of the second subgroup most often reported that they felt tired and wished to take it easier at work. The analyses showed that employees with a relatively high level of emotional exhaustion more often reported that their chronic disorder worsened because of the job and that both colleagues and their boss did not make sufficient allowance for their handicap. Furthermore, employees with a relatively high level of emotional exhaustion were more often exposed to noise and dust. In turn, the employees who were more often exposed to noise and dust showed a higher level of sickness absenteeism. Finally, employees in this subgroup expressed their wishes for further adjustments of the number of appointed working hours per week, tasks to be performed and planning of work.

We conclude that there are possibilities to improve the balance between workload and the capacities of employees with chronic disorders and high sickness absence and that this might reduce the level of sickness absenteeism. Further research is needed to determine the effect of the specific measures aimed at work adjustments for this group of employees.
A substantial reduction in sickness absenteeism by measures aimed at specific groups

What is the benefit for an employer when he succeeds in reducing sickness absenteeism in the group with a high level of sickness absenteeism, for example by developing specific measures aimed at this group? A 20% reduction of absenteeism in this group will cause a 0.5% reduction in the total sickness absenteeism of this hospital. A reduction of 50% of the absenteeism in this group even causes a reduction in the total absenteeism of more than 1%.

This underlines the importance of paying more attention to employees with a chronic disorder, especially those who are emotionally exhausted and want to adjust their work to their capacities. Both the employer and employee may benefit. The employer by reducing the costs related to sickness absenteeism and the employee by staying employed, which generally enhances their well-being.

References


**Tables**

**Table 1: Likert scales**

<table>
<thead>
<tr>
<th>Likert scale</th>
<th>Number of items</th>
<th>Cronbach’s alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task autonomy</td>
<td>5</td>
<td>0.860</td>
</tr>
<tr>
<td>Work pressure</td>
<td>4</td>
<td>0.819</td>
</tr>
<tr>
<td>Job satisfaction</td>
<td>4</td>
<td>0.886</td>
</tr>
<tr>
<td>Organizational commitment</td>
<td>2</td>
<td>0.788</td>
</tr>
<tr>
<td>Emotional exhaustion</td>
<td>5</td>
<td>0.877</td>
</tr>
</tbody>
</table>
Table 2: Regression % of sickness absenteeism for all employees, employees with and without a chronic disorder

<table>
<thead>
<tr>
<th></th>
<th>All employees</th>
<th>Employees with a chronic disorder</th>
<th>Employees without a chronic disorder</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Standardized</td>
<td>t</td>
<td>Sig.</td>
</tr>
<tr>
<td></td>
<td>Coefficients</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Beta</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td></td>
<td></td>
<td>1.065</td>
</tr>
<tr>
<td>Number of chronic disorders (0, 1, &gt;=2)</td>
<td>0.220</td>
<td>10.824</td>
<td>0.000</td>
</tr>
<tr>
<td>Work handicap (0-1, &gt;=2)</td>
<td>0.099</td>
<td>5.030</td>
<td>0.000</td>
</tr>
<tr>
<td>Gender</td>
<td>0.018</td>
<td>0.849</td>
<td>0.396</td>
</tr>
<tr>
<td>Appointed working hours per week</td>
<td>-0.064</td>
<td>-2.962</td>
<td>0.003</td>
</tr>
<tr>
<td>Education level</td>
<td>-0.056</td>
<td>-2.825</td>
<td>0.005</td>
</tr>
<tr>
<td>Working schedule (regular or not)</td>
<td>0.020</td>
<td>0.970</td>
<td>0.332</td>
</tr>
<tr>
<td>Age</td>
<td>0.025</td>
<td>1.208</td>
<td>0.227</td>
</tr>
<tr>
<td>Work pressure</td>
<td>-0.074</td>
<td>-3.593</td>
<td>0.000</td>
</tr>
<tr>
<td>Job satisfaction</td>
<td>0.040</td>
<td>1.911</td>
<td>0.056</td>
</tr>
<tr>
<td>Organizational commitment</td>
<td>0.000</td>
<td>-0.023</td>
<td>0.981</td>
</tr>
<tr>
<td>Emotional exhaustion</td>
<td>0.192</td>
<td>8.759</td>
<td>0.000</td>
</tr>
<tr>
<td>Task autonomy</td>
<td>-0.039</td>
<td>-1.897</td>
<td>0.058</td>
</tr>
<tr>
<td></td>
<td>Adjusted R Square = 14.8%</td>
<td>Adjusted R Square = 10.7%</td>
<td>Adjusted R Square = 3.1%</td>
</tr>
<tr>
<td>Model: F = 35.24; p&lt;0.001</td>
<td>Model: F = 9.33; p&lt;0.001</td>
<td>Model: F = 5.73; p&lt;0.001</td>
<td></td>
</tr>
</tbody>
</table>

Note: In this model gender is not a confounder for the effect of 'appointed working hours per week' for employees with a chronic disorder. This was tested using the method of van Baron en Kenny (1986).
Figure 1: Research model based on the ICF model (WHO, 2001)

Chronic disorder

Work handicap
Job satisfaction
Organisational commitment

Sickness absenteeism

Work characteristics
Work adjustments

Personal factors

Figure 2: Distinguishing features of groups with low, intermediate and high levels of sickness absenteeism (%)

No chronic disorder

0-1 work handicap
1.8%
N=1609

>= 2 work handicaps
4.8%
N=61

All employees

Low emotional exhaustion

0-1 work handicap
6.3%
N=463

> 34.4 hours per week

>=2 work handicaps
< 34.4 hours per week
15.0%
N=44

Chronic disorder

High emotional exhaustion

14.5%
N=35
WEB-BASED DATA COLLECTION IN OCCUPATIONAL HEALTH PSYCHOLOGY

T. TARIS, P. SCHREURS & K. J. SEPMEIJER

1 University of Nijmegen, The Netherlands
2 Institute Work and Stress, Bilthoven, The Netherlands

Introduction

Web-based data collection offers researchers many advantages. Chief among these is the speed at which data may be obtained. Web-based data collection may not entail more than sending potential participants a message in which they are asked to complete the questionnaire to be found at the internet address given in the message, thus omitting the need for printing, mailing and returning questionnaires, to send out interviewers, or to enter the data. Data analysis may commence once the first participants have completed their questionnaires. Omitting the field work and data entry phases also affects the costs of the study. The start-up costs of a web-based survey are relatively high, as specialists are needed to program and test the questionnaire. These costs are usually earned back soon, especially if the study is conducted among a large population or if participants need to take the survey repeatedly. Finally, web-based data collection holds distinct methodological advantages to other approaches. Interviewers in face-to-face and telephone-based studies tend to interpret questions as well as participants' answers to these in their own, sometimes very idiosyncratic way or tend to "help" participants in answering the questions. These as well as other factors may adversely affect data quality. As web-based data collection does not need interviewing, interviewer bias is eliminated. Further, the absence of interviewers eliminates social desirability as a source of error as well. Thus, web-based data collection seems to offer important advantages compared to traditional data collection techniques. However, this does not imply that this approach should be preferred under all circumstances. A sensible choice for any mode of data collection requires that researchers have understanding of the problems that may apply. Two types of problems stand out as especially important in web-based data collection; the degree to which the sample represents the target population well, and the quality of the data obtained.

What about the participants in a web-based survey?

Ideally, all participants in a survey study have the same chance to be incorporated in the sample; the members of the sample are randomly selected
from the population and represent this population well; and every member of the sample participates in the study (Dillman, 1991). Unfortunately, in practice these assumptions are not often met. The response to internet surveys is often too low to warrant generalizability to any population at all, whereas problems such as nonrandom sampling, spam (do potential participants consider the invitation to participate in a web-based survey as junk mail?) and limited data storage possibilities (participants' mailboxes may be full, making it impossible to receive invitations to participate, even if the target population has access to the internet, cf. Sills & Song, 2002). Coverage error occurs when not all members of the target population can potentially be included in the sample. E.g., the number of people who have access to the internet is growing fast, meaning that those who have only recently obtained access may often not be contacted for a study. Further, internet addresses tend to become outdated rapidly. In some cases, not less than 30% of the invitations to participate in a web-based survey bounces back because the addresses are invalid or outdated (Swoboda, Mühlberger, Weitkunat & Schneeweiss, 1997). Sampling error occurs when the sample consists of a subset of a particular population. E.g., it is not uncommon to ask customers who place their order on-line for their opinion concerning that product. Due to the non-random and non-representative nature of such a sample, the results of such a study cannot be generalized to the general population of potential customers for that product. Nonresponse error concerns the difference between the intended and the actual sample. When the response rate is lower than 100%, the possibility occurs that response has been selective; responders may differ systematically from nonresponders. Interestingly, the response rates of different data collection modes tend to vary. E.g., in a quasi-experimental study Dillman et al. (2001) found response rates of 13% for those who were required to complete their questionnaire through the web, vs. 44% and 75% for those who responded through the telephone or via conventional mail (cf. Sills & Song, 2002, for similar results). In practice, these sources of error may imply that people who respond through the internet are not representative of the intended study sample. Internet responders tend to be younger, to be better educated and to be more often male than participants who prefer other modes of data collection (Bandilla, Bosnjak & Altdorfer, 2003). Such demographic differences open up the possibility that internet responders differ from other responders in other respects as well, suggesting that results obtained through the web cannot be generalized to the target population.

What about the quality of the data obtained in a web-based survey?

Perhaps the most important question that researchers should ask themselves when they consider to conduct their study through the internet is are the data thus obtained (and the results based on these) the same, were we to use a different
mode of data collection? The answer to this question is: presumably not. Earlier on we have already shown that internet responders tend to differ demographically from other responders, and it would seem well possible that these differences extend to the answers they provide. But assume that these demographic differences are controlled for statistically – would there still be differences between the answers of both groups? Relevant to this issue, Don Dillman (2002) asks himself: "I have observed cognitive interview respondents read only part of each question before going to response categories [...] I wonder if there is a game mentality guiding responses to web surveys for figuring out how to answer quickly [...] Does this produce as a side effect an increase in the proportion of meaningless or inaccurate responses?" (p. 489, italics ours).

Another problem with web-based data collection concerns possible problems with the confidentiality of the answers thus provided. Thompson et al. (2003) report that 10% of their participants worries about this aspect of web-based data collection, and such participants may be motivated to provide neutral or socially desirable answers to questions – big brother may be watching them! Conversely, the absence of interviewers in web-based data collection may lead to a lower incidence of socially desirable answers than would otherwise be the case. As yet research into this issue is largely absent. However, one may draw a parallel with research on the comparability of answers to traditional paper-and-pencil tests and their micro-computer-based versions. Psychometric research (using experimental designs and advanced statistical methods such as confirmatory factor analysis and Rasch models) revealed few differences among both ways of taking tests. E.g., factor structures tended to be very similar (Donovan, Drasgow & Probst, 2000). Again, similar research on the equivalence of paper-and-pencil surveys and web-based surveys is virtually absent. One multi-item study revealed that in 27% to 73% of the items there were significant differences in the means of the answers provided by internet responders via other responders were found (Bandilla et al., 2003; cf. Dillman et al., 2001), but how this result should be interpreted is unclear.

**Paper-and-pencil vs the internet: A case-study in the Dutch home care sector**

It appears that there is some reason to suspect that the mode of data collection affects the study results. Internet responders tend to differ demographically from other responders; web-based response rates tend to be low; and there is some reason to doubt the quality of the data obtained through the web. However, there is as yet little evidence regarding the degree to which these findings (which were often obtained in semi-commercial and sociological research) apply to occupational health psychology as well; to which degree can previous results be generalized to research in work organizations? Further, as yet little research
addresses the possible differences between data obtained through the web and data collected otherwise. The present research was designed to enhance our understanding of the problems associated with web-based data collection. To this aim, a study was conducted in which the participants could choose for themselves how they completed a particular questionnaire; through the web or via a conventional mail survey. In the present research we report on (i) demographic differences between participants who use the internet vs. those who preferred paper-and-pencil; and (ii) differences regarding the answers of these groups, both in terms of their mean scores on a number of relevant concepts (e.g., job demands and control, exhaustion) and the factor structures of these concepts.

**Differences between internet responders and others**

In the context of a nationwide study on the quality of employment in the Dutch home care sector, all employees of all organizations in this sector received a structured questionnaire at their home addresses, tapping work characteristics (job demands, job control and the like) and work outcomes (burnout, mental health complaints, commitment). The accompanying letter explicitly mentioned the possibility to complete the questionnaire through the web, and provided the internet address where the web-based version of the questionnaire could be found. Thus, the participants decided for themselves how they completed the questionnaire. The response rate was 43.2% (N = 45,106) 3.6% male; 1.3% had responded through the internet; $M_{age}$ was 42.5 years. $SD = 10.2$; 27.8% held a college or university degree, 8.5% had completed higher vocational training, and 64.5% had completed lower vocational training at most.

To examine demographic differences between internet responders and others, logistic regression analysis was used to test whether these groups differed in terms of gender, age (5 categories), level of education (6 levels, varying from primary education only to an university degree), ethnicity (Dutch vs. other), and job type (9 categories). Our analysis revealed that these background factors accounted for 7% of the variance in response mode. Consistent with earlier findings, males were 3 times more likely to respond through the internet than females were; the oldest age group (51-65 years) was 5 times less likely to respond through the web than the youngest category (< 21 years); those who only had completed a primary education responded about half as often through the internet than those who were better educated; whereas especially participants with secretarial and administrative jobs (who will often have access to the internet at their office) preferred to answer through the web. Ethnicity was unimportant.

Thus, as in other research on this issue, internet responders differed demographically from those who preferred another mode of data collection. Note that in the present study participants could decide for themselves how they responded; those who did not want to respond through the internet could also
complete a paper-and-pencil version of the same questionnaire. This is not always possible in other web-based studies, suggesting that in such one-mode studies women, older workers and workers with little education may be underrepresented. One final thought concerns the low proportion of participants who actually participated through the web (1.3%). Given the characteristics of the target population (low-educated females holding low-level jobs in which computers are not ordinarily used), one may wonder whether the lack of enthusiasm for responding through the net might have been predicted in advance. In any case, this finding supports our position that researchers should consider beforehand whether web-based data collection is appropriate for the target sample.

Do the answers of internet responders differ from others?

Demographic differences between internet responders and others are especially important if there are also differences in the answers of both groups. As indicated, there is reason to expect that these answers differ; internet responders may provide less precise answers, presumably increasing the variance of the concepts under study and leading to low factor loadings of the items belonging to these concepts. Further, internet responders may be more aware of possible problems with the confidentiality of their answers than others, leading to a relatively high percentage of "neutral" answers compared to the group of participants using another mode of data collection.

To investigate this reasoning empirically, the data obtained from the internet responders were compared to those using paper-and-pencil. The first set of analysis reported here had revealed that age, gender, job type and level of education were related to response mode. To exclude effects of these possible confounding variables, we restricted the present analysis to female employees in the two lowest (largest and most homogeneous) job brackets (i.e., nurses performing the client-oriented tasks that are typical for the home care sector). Then two groups were created, the first including those who responded through the internet ($N = 245$) vs. those who did not. Each participant in the first group was matched to a participant of the second group in terms of age, job type and level of education. The final sample thus consisted of 245 internet responders and 245 participants who used paper-and-pencil. Both subgroups were identical in terms of age, gender, level of education and job type.

The groups were compared on five concepts. Job demands (4 items, alpha = .85) and job control (2 items, $r = .51$) were both measured using Dutch translations of Karasek's (1985) items. The degree to which the participants were confronted with sexual harassment was measured with 3 self-constructed items, including "how often are you at your job confronted with sexually oriented jokes or remarks that you consider undesirable?" (alpha = .85). Emotional exhaustion was measured with Schaufeli and Van Dierendonck's (2000) adaptation of the Maslach Burnout
Questionnaire – General Survey (5 items, alpha = .86). Finally, dedication to the job was measured using a 5-item scale developed by Schaufeli and Bakker (2003), including "my job inspires me" (alpha = .90). Together, these five concepts cover the specter of concepts typically used in occupational health research reasonably well.

Confirmatory factor analysis was used to examine whether the factor structures of the five concepts mentioned above differed for internet responders vs. those who preferred paper-and-pencil. Four models for the relations among the items of these five concepts were tested and compared. Model M₁ was a five-factor model in which each factor corresponded with one of the five concepts mentioned above, and the items of these concepts loaded on the respective factors. This model was fitted for both groups simultaneously; the parameters of this model (factor loadings, factor variances, factor covariances) could vary freely across groups.

Model M₂ was identical to M₁, save that the factor loadings of the concepts were constrained across groups. Rejection of this model would imply that the structure of these concepts differs strongly for internet responders vs. others, meaning that the mean scores of these groups may not be compared. Model M₃ was identical to M₂, save that the factor variances and covariances were constrained across groups. Finally, M₄ was identical to M₃, save that the error variances were constrained across groups. If M₄ would be acceptable, there would be no differences between both groups in terms of the factor loadings and variances of the concepts under study. This does not imply, however, that the means of the scores of both groups are identical as well. Therefore, MANOVAs were conducted to examine differences in the mean scores of the groups on all concepts.

Table 1 shows that M₁ (a basic 5-factor structure without across-group constraints) fitted the data reasonably well. Constraining the factor loadings to be equal (M₂) resulted in a statistically significant decrease of the fit (delta chi-square = 47.3, df = 14, p < .001). The other fit indices, however, remained virtually unchanged. Practically, this suggests that the differences in the factor loadings for both groups can be neglected, implying that their answers can be compared quite well.

Table 1: Results of a series of confirmatory factor analysis in which the structure of a 5-factor model is compared for 245 internet responders vs. a comparable group of non-internet responders (total N = 490)

<table>
<thead>
<tr>
<th>Model</th>
<th>df</th>
<th>Chi-square</th>
<th>RMSEA</th>
<th>NNFI</th>
<th>CFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>M₁ 5-factor model, correlated factors</td>
<td>284</td>
<td>583.1</td>
<td>.062</td>
<td>.92</td>
<td>.94</td>
</tr>
<tr>
<td>M₂ M₁, factor loadings constrained</td>
<td>298</td>
<td>630.4</td>
<td>.064</td>
<td>.92</td>
<td>.93</td>
</tr>
<tr>
<td>M₃ M₂, factor variances/covariances constrained</td>
<td>313</td>
<td>689.0</td>
<td>.066</td>
<td>91</td>
<td>.92</td>
</tr>
<tr>
<td>M₄ M₃, item error variances constrained</td>
<td>332</td>
<td>1238.3</td>
<td>.092</td>
<td>.80</td>
<td>.81</td>
</tr>
</tbody>
</table>

NB: Difference M₁ vs. M₂: chi-square is 47.3 (df = 14); difference M₂ vs M₃: chi-square is 58.6 (df = 15); difference M₃ vs M₄: chi-square is 549.3 (df = 19); all p's < .001

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Constraining the factor variances and covariances (M3) did not lead to a practically important deterioration of model fit. However, constraining the item error variances to be equal across groups (M4) resulted in a major decline in model fit. In 10 out of 19 cases we found that the variance was larger for the internet responders than for the others. Further inspection revealed that such differences occurred mainly for the items of the emotional exhaustion and dedication scales. This is also evident from Table 2, presenting the results of a multivariate analysis of variance. The variances of the job demands, job control and sexual harassment scales do not differ strongly across groups. These differences are clearly larger for the emotional exhaustion and especially the dedication scales. Inspection of the means of the study concepts reveals that the group of internet responders obtains less favorable scores on all concepts, compared to the comparison group.

### Table 2: Comparison of the mean scores of a group of internet responders (N = 245) to those of a comparable group of non-internet responders (N = 245) on selected work-related concepts

<table>
<thead>
<tr>
<th>Variables</th>
<th>Response mode</th>
<th></th>
<th></th>
<th>Univariate F (1, 488)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Internet</td>
<td>Paper-and-pencil</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Job demands</td>
<td>2.20</td>
<td>.56</td>
<td>1.95</td>
<td>.57</td>
</tr>
<tr>
<td>Job control</td>
<td>2.71</td>
<td>.48</td>
<td>2.93</td>
<td>.52</td>
</tr>
<tr>
<td>Sexual harassment</td>
<td>1.26</td>
<td>.39</td>
<td>1.12</td>
<td>.33</td>
</tr>
<tr>
<td>Emotional exhaustion</td>
<td>1.84</td>
<td>.81</td>
<td>1.32</td>
<td>.69</td>
</tr>
<tr>
<td>Dedication</td>
<td>4.66</td>
<td>1.34</td>
<td>4.94</td>
<td>1.18</td>
</tr>
</tbody>
</table>

NB: Multivariate F (5, 484) = 16.0, p < 0.001, * = p < .05, ** = p < .001.

All in all, these analyses show that the factor structure of the five concepts under study do not differ strongly as a function of response mode. It is noteworthy, however, that the variances for two of the five study concepts are larger for internet responders than for others. This implies that the answers of the first group of participants tend to diverge more strongly for these two concepts than those of the second group, supporting the idea that they indeed provide less accurate and precise answers than others (Dillman, 2002). However, the factor loadings of these concepts were quite comparable for both groups, while it is difficult to see why internet responders would provide inaccurate responses for only two of the five concepts. Thus, lack of accuracy is presumably not the explanation for the larger variances for the internet responders. Further, the relatively large variances for the internet responders suggests that concerns over the confidentiality and anonymity of their answers are largely absent; if present, such tendencies should result in low variances due to the large proportion of neutral answers. All in all, there is little reason to assume that the quality of the data gathered through the internet is lower than that of data collected otherwise.
Interestingly, internet responders tend to obtain less positive scores on the study concepts than other respondents. This finding is difficult to interpret. On the one hand, it is possible that these differences are due to differences in the mode of data collection. However, previous research on this issue has never revealed that the judgments of internet responders were consistently less positive (or negative) than those of participants using a different mode of data analysis (cf. Bandilla et al., 2003; Dillman et al., 2001). On the other hand, it would seem possible that these differences are due to objective differences in the work characteristics of both groups of participants. However, in that case it is unclear why the participants experiencing adverse work circumstances prefer to use the internet to provide their answers.

Discussion

The aim of this study was to enhance our understanding of the advantages (speed, cost effectiveness and exclusion of interviewer and data entry errors) and disadvantages (response problems and possible data quality problems) of web-based data collection. Our exemplary study among 45,000+ Dutch home care employees revealed that males, higher educated and younger employees were more likely to respond through the internet than others. Confirmatory factor analysis revealed that the factor structures of selected work-related concepts (engagement, burnout, job demands, job control, sexual harassment) were similar for respondents who used the internet vs. other respondents; thus, we saw no indications that response mode affected data quality.

Interestingly, the mean scores of both groups differed strongly, with internet responders reporting relatively adverse scores. It is difficult to interpret the latter finding, as research on the quality of data obtained through the internet is largely absent. There are no experimental studies that provide firm evidence regarding the effects of data collection mode; but the available evidence does suggest some general findings and rules of thumb. One of these is that web-based data collection is especially appropriate when the target population can be expected to have good access to the web. E.g., outdated address files may be problematic. This point is likely to be relatively unimportant in organizational research, as organizations will usually know precisely which of their employees have access to the internet at the office. They will usually have an up-to-date list of the email addresses of their employees as well.

Further, web-based data collection will not usually lead to shifts in the factor structures (hence, the meaning) of the study concepts. This implies that the answers of respondents that used different response modes may be meaningfully compared. Simultaneously, it is clear that the answers of internet responders may differ from the answers of other groups of respondents, and that it is often difficult to interpret such differences. This fact leads to the recommendation to
preferably use one single mode of data collection in order to rule out method artifacts as explanations for between-group differences. Further, it seems wise to collect the data in repeated-measurement studies using the same mode of data analysis for each wave, in order to warrant across-time comparability.

In short, web-based data collection holds considerable promise for researchers in occupational health psychology. In some cases it would seem best to stick to tried-and-tested methods (e.g., when it is unclear whether the target population can be contacted through the net). In many other situations, however, researchers will be able to resolve the problems associated with web-based data collection techniques. Given the advantages of web-based data collection, it is to be expected that data collection through the internet will become increasingly popular in occupational health psychology as well.

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Address for correspondence: Dr. T W. Taris, University of Nijmegen, Dept. of Work and Organizational Psychology, P.O. Box 9104, NL-6500 Nijmegen. The Netherlands. Phone +31-24-361 2639, email t.taris@psych.kun.nl.
INTRODUCTION

Stressful working conditions are considered to be one of the underlying causes of the dramatic increase in long-term sickness absence in Sweden in recent years (Lidwall & Skogman-Thoursie, 2001). Stress at work is increasingly recognised as a serious health hazard, and the costs of occupational stress are substantial.

Studies also show that women experience a greater amount of work-related stress than men and that jobs dominated by women have lower status and are less well-paid. Women are confronted with additional stressors such as conflicts between work and family responsibilities (Burke & Greenglass, 1999). Women also experience more psychological and physical symptoms (Alexandersson & Östlin, 2001).

A majority of the studies that have been conducted in the area of stress have been performed with traditional surveys and scales (Narayanan, Menon & Spector, 1999). These methods have advantages as they are efficiently administrated and their reliability and validity are often expressed. The disadvantages, mentioned by Narayanan, et al. are that they do not capture experiences that are unique to the specific situation. Several authors such as Cooper, Dewe and O’Driscoll (2001), Dewe (2000) and Narayanan, et al. (1999), point out the need for alternative approaches such as using qualitative methods or a combination of quantitative and qualitative methods to study stress at work.

Research about stress at work, in the past, has mainly had an individual perspective focusing on how the individuals appraise stress (Länsisalmi, Peiró & Kivimäki, 1999). In the same line, Newton (1995) argues that in many studies stress is seen as individual experience isolated from its context and how people make sense of their stress. Several authors e.g. Handy (1995) and Peiró (2001) discuss the need for other approaches to capture stress. Handy argues that there is a need to move beyond simplistic models which isolate the individual worker from the rest of the workplace towards a more complex analysis of collective aspects of stress where the meaning construction is seen as conducted together with other people in the social context. In this way the meaning of stress can be seen as socially constructed in the discourse. According to Burr (1995), a discourse refers to a set of meanings, images, stories and so on that are constructed in a social context.
An alternative to the individualistic perspective is presented in the ongoing project "Collective stress and coping at work from a gender perspective". Here stress is considered as a socially constructed and collective phenomenon, and coping as a means of planning and interacting with others in order to resolve problems that arise. The aim of the first part of the project was to gain knowledge about the collective aspects, or discourses, of stress and coping for women and men at work. The aim of the second part (starting in September 2004) is to contribute further knowledge about how the collective aspects of stress and coping are related to health and gender. In the second part of the project a questionnaire will be sent to a larger random sample of the employees. The project follows earlier studies from a project about stress, coping, gender and health (Muhonen & Torkelson 2003; 2004; Torkelson & Muhonen, 2003).

Method

The project is divided into two parts: group interviews and a questionnaire. Initially 31 women and 31 men participated in the study. The male employees were working at a male-dominated department and the female employees at a female-dominated department in a large telecom company. They were working with customers calling to obtain help with different kinds of problems concerning the telecom system. The mean age of the participants was 50 years for women and 49 years for men. Both women and men had been employed for a long time in the organization (mean 28 years).

Thirty qualitative group interviews were carried out with 2-3 employees in each group to acquire knowledge about the discourses of stress for both women and men in the organization. The interviews were based on the "critical incident technique" (CIT), originally developed by Flanagan (1954).

The participants were asked to describe a situation at work with the following instruction: "Could you please describe a situation or an event at work during the past month that made you feel distressed, frustrated or annoyed?". After describing an incident, the interviewees were asked about how they coped with the situation.

The interviews were transcribed verbatim. The text was then analysed by means of QRSNud\Sigma ist, a program for qualitative data analysis, and coded into different discourses of stress for women and men separately. The results were compared concerning differences and similarities across the discourses of women and men.

Results

The results of the part of the project focusing on the stress discourses of men and women are described here. Analysis of the interview data revealed several categories in the discourses of stress that could be grouped into three main
dimensions: demands related to organizational change, demands related to the work itself, lack of control and being steered and in addition a few single themes were mentioned.

Organizational downsizing – continuous organizational changes

The most central themes in the discourses of both sexes were those connected to the organizational change and downsizing process that had taken place over the past few years. It is evident that these categories were of major importance for both women and men. As the changes have been conducted repeatedly during the past few years the situation was experienced as especially problematic. The personnel had been under the pressure of losing their jobs for a long period of time, and the insecurity about their employment situation was a central theme in many interviews.

Cecilia: There is always an underlying threat of unemployment that worries me all the time. There have been these reductions for many years now so somewhere in the back of my head it's always present. I really hope that it's not going to be me who has to leave.

In the constantly changing organization the personal networks for information or help had been split up by the new organizational structure. Both the formal and informal networks were disrupted since some of the staff had been relocated to other departments in the organization, some were performing other tasks and yet others had lost their jobs. To build up new networks that replace the previous ones takes time.

Jane: You have to check around with a lot of people, make many phone calls. No one knows the answers that I am looking for. Well, they say, that's not my area.

Mike: It takes time to build up a new network. Earlier you knew which salesperson to call in the organization. Nowadays you don't even know what town they're situated in.

Different demands related to the work itself

A number of themes that also occurred frequently in the discourses were those related to the work itself, such as problems with the computer systems or intranet, problems with customers.

Some themes illustrated what can be seen as typical characteristics of a "downsized organization". A theme that was expressed in the discourses was the amount of work that had to be done, the workload and tight deadlines. As the organization had cut down the number of people performing the tasks and the task were still the same, the workload for each person had increased.
John: The workload nowadays is very heavy because of the downsizing. Many of us are performing tasks that used to be carried out by two persons. The amount of work is rising, we can't ignore that. After the last downsizing they said: “Can you take over this task, can you take over that task and so on?”. It's really pretty tough sometimes.

Lack of control and being steered

The work of the female employees was described as more steered. Their performance was continuously measured, and their salary was to a large extent related to the performance. This was not the case in the male-dominated department. The stress of being measured and controlled can be seen in the discourses of the women. The performance, such as how many phone calls you have answered, was measured and analysed statistically and payment was related to results. To achieve the goals was an important factor from the economic viewpoint. The salary would decrease for those who didn't work hard enough. Being steered and lack of influence over the work situation is illustrated by Sabina.

Sabina: Our independence becomes more and more restricted. It seems as if you are not allowed to leave your chair any more. A thing that has become much worse lately is that there have to be so and so many people online to answer. And then if you need to go to the bathroom or go and drink water or something, you have to shout out loud, “Is there anybody that can replace me? I have to leave for a while.”.

Summary

In the discourses of stress the categories that most frequently recurred among the respondents were those related to the organizational change and downsizing process. These categories were widely expressed by both women and men.

A striking difference was found between the female and male discourses. The performance of women was steered, continuously measured, and their salary was to a large extent related to the performance. This was a central theme in the discourses of the women. Discourses about measurement of performance and lack of control were not found in the male-dominated department.

Acknowledgements

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References


FLEXITIME A POSSIBLE PITFALL?  
RELATIONSHIPS AMONG PERCEIVED  
FLEXITIME, FLEXITIME-QUALITY AND HOME  
DEMANDS FOR HETEROSEXUAL  
DUAL-EARNER COUPLES  

K. VAN RIJSWIJK  
Tilburg University, The Netherlands  

Introduction  

Within the Western world there is a rise in the number of dual-earner couples. These couples are characterized by both partners spending a significant amount of time in paid-labour and in the home domain (i.e., household chores, raising children). Flexitime is an instrument that may help employees to cope with demands from the home domain, by increasing one’s control regarding the work schedule. Flexitime often means that the workday is divided into a ‘core time’, where all employees need to be present, and flexible periods at the beginning and end of the workday. It is important to make a distinction between official and perceived flexitime as some organisations do not officially provide flexitime but employees may nonetheless have informal flexitime at their disposal (Holt & Thaulow, 1996). On the contrary, although organisations might have an official policy regarding flexitime, this may not always be perceived as such on the work floor. The literature on the effects of flexitime on work-family balance is inconclusive. Some studies find support for the facilitating effect while others find no effect at all (for an overview see: van Rijswijk, Rutte & Bekker, submitted). A study by Kluwer, Boers, Heesink and Van der Vliert (1997) even found flexitime to be associated with higher levels of role conflict for women. This paradoxical finding might be subscribed to women, as well as men, taking up more household responsibilities because flexitime enables them to do so. Bohen and Viveros-Long (1981) indeed showed that flexitime was associated with spending more time on household tasks for both men and women.

We wanted to investigate whether perceived flexitime indeed encourages men and women to take up more household responsibilities, which may be reflected in higher levels of, especially quantitative, home demands experienced by men and women in dual-earner couples. A distinction is made between three forms of home demands; quantitative, emotional and mental home demands. Quantitative home demands are demands posed on individuals in terms of amount and time. Emotional home demands are characterised by the emotional pressure associated with the demands posed on individuals. Finally, mental home demands are mainly characterized by aspects of concentration. Furthermore, we hypothesized
that subjective aspects of flexitime (both positive and negative) may be a stronger predictor of home demands than flexitime itself. Therefore, the present study incorporates the quality of flexitime by including the rewards and concerns associated with flexitime when investigating its relationship with reported levels of home demands among heterosexual dual-earner couples.

**Method and results**

From a sample that was part of a larger research project (van Rijswijk, Bekker, Rutte & Croon, 2004) among employees working at two insurance companies in the Netherlands, 99 heterosexual dual-earner couples were selected. By means of questionnaires we measured demographic variables (age, gender, having children and number of work hours) as well as the research variables (home demands, perceived flexitime and flexitime rewards and concerns) and neuroticism. Means, standard deviations, zero-order correlations, and cronbach-alpha coefficients can be obtained from the author.

The home demands scale, developed by Montgomery, Peeters, Schaufeli and den Ouden (2003), was administered for measuring the level of perceived home demands. The perceived level of flexitime was measured by the following three items: (1) “To what extent can you determine the time you begin your workday?”; (2) “To what extent can you determine the time you end your workday?”; (3) “To what extent can you determine when to take a break?”.

In order to measure the positive and negative aspects of flexitime, we developed the Flexitime Quality Scale (FQS). The FQS consists of the Flexitime-Rewards subscale measuring the positive aspects of flexitime (e.g., due to flexitime you are better able to balance work time and non-work time), and the Flexitime-Concerns subscale that measures the negative aspects of it (e.g., Due to flexitime you take on more household tasks). The FQS was found to be valid and reliable. Finally, neuroticism was measured by the Emotional stability subscale of the Big Five Bipolar Rating Scale (B5BBS-25; Mervielde, 1992).

Multiple regression analysis was used for predicting levels of home demands (quantitative, emotional and mental). Variables were introduced into the equations in three blocks. The first block contained two control variables (having children and negative affectivity, either men’s or women’s). The second block introduced the number of work hours and perceived flexitime for both men and women. Finally, the third block consisted of the rewards and concerns associated with flexitime (either men’s or women’s). Variables were introduced into the regression-equations following the enter-method.

We found that for both men and women the level of perceived flexitime did not significantly predict their levels of quantitative, emotional or mental home demands. However, for both men and women the concerns associated with flexitime predicted levels of quantitative home demands (women: β = .23,
Furthermore, for men concerns associated with flexitime are also associated with the levels of mental home demands ($\beta = .29, p < .01$). Finally, we found that among women rewards associated with flexitime were related to emotional home demands ($\beta = -.21, p < .05$).

Discussion

Our results provided support for the notion that perceived quality of flexitime is more important than flexitime itself. This study might indicate that some negative aspects of flexitime indeed encourage men and women to take up more responsibilities in the home domain as the concerns associated with flexitime are related to the level of quantitative home demands. For men the concerns associated with flexitime were also related to the reported level of mental home demands. It might be that, due to some negative aspects of flexitime, the boundary between the work and home domain becomes more permeable for men resulting in a larger call upon their cognitive processes from the home domain. Finally, we found rewards associated with flexitime to be related to lower levels of emotional home demands for women, indicating that when flexitime is perceived as rewarding, women may feel the demands posed on them from the home domain as less emotional.

Notice that the present study is cross-sectional in nature leading to an inability to determine a causal order among the variables. Future research should apply a longitudinal design in order to provide more insight into this question. Furthermore, this study focuses solely on home demands. Although several studies have shown home demands to be a strong predictor of the work-family balance (Montgomery, Peeters, Schaufeli & den Ouden, 2003; van Rijswijk, Bekker, Rutte & Croon, 2004), future studies should deepen this relationship in relation to flexitime.

In summary, our results imply that perceived quality of flexitime is very important in predicting levels of quantitative, emotional and mental home demands among heterosexual dual-earner couples. Therefore, organizations are urged to offer many “family-friendly” instruments to their employees simultaneously so employees can build a tailor-made set of instruments that best suit their own needs and wishes.

References


Address for correspondence. Karen van Rijswijk, Tilburg University, Department of Psychology and Health, Room P610, P.O. Box 90153, 5000 LE Tilburg, The Netherlands. E-mail: K.vanRijswijk@uvt.nl, Fax-number: +31 (0) 13 466 2067, Tel-number: +31 (0)13 466 2496
AN APPLICATION OF A TWO-FACTOR APPROACH TO WORK STRESSOR ASSESSMENT WITH HEALTH SERVICE EMPLOYEES

G. A. WILLIAMS 1 & I. P. ALBERY 2

1 University of Nottingham School of Nursing, Derby Centre, Derby, United Kingdom
2 London South Bank University, London, United Kingdom

Introduction

The Job Stress Survey (JSS; Spielberger & Vagg, 1999) is an instrument designed to assess psychosocial workplace hazards and has been developed out of a list of job-related situations that were common to the Police Stress Survey (PSS; Spielberger, Westberry, Grier & Greenfield, 1981) and the Teacher Stress Survey (TSS; Grier, 1982). The questionnaire has been generated as a product of Spielberger’s state-trait process model (Spielberger, Vagg & Wasala, 2003), which incorporates elements of Person-Environment Fit theory (French, Jr., Caplan & Harrison, 1982) and the transactional process approach (Lazarus, 1995) to work stress. With the JSS, there is an emphasis on how the individual perceives an array of work-related events/situations (i.e., the severity scale) and how often the same events/situations occur (i.e., the frequency scale). This approach provides insights into the acute or chronic nature of each work stressor by being able to analyse differences between acute events that are high in severity but low in frequency versus chronic situations that may evoke moderately severe stress and occur almost every day (Vagg & Spielberger, 1999).

Factor analysis and oblique rotation of data obtained with a heterogeneous sample of 2,389 working adults in military, corporate and university sectors (Spielberger & Reheiser, 1994) formed the basis for the construction of the two subscales within the JSS – Job Pressure and Lack of Organizational Support. Factor analysis and orthogonal rotation of a Norwegian adaptation of the JSS uncovered a similar two-factor structure with a sample of 626 workers, which included, among others, 127 police officers, 50 fire-fighters, 105 nurses, 73 teachers and 30 medical, legal and mental health professionals (Haseth, in press). A systematic review into measures of psychosocial work hazards (Rick et al., 2001) has noted that results into the construct validity of the JSS are “marginal to good” (p. 40) but the review authors also recommended replicating these findings “across a range of different settings and occupational groups” (p. 41). The JSS has been relatively untested in the health care sector as the Norwegian study (Haseth, in press) has only involved a small sample of health care workers, which was subsumed within the larger sample for analysis purposes. Research into the factor structure of the JSS with 461 hospital workers in Scotland and Germany
(Rotheiler & Richter, 2001) was unable to fully replicate the two-factor structure of Job Pressure and Lack of Organizational Support. This study of hospital staff yielded the same two factors with factor analysis and orthogonal rotation of index scores (i.e., severity multiplied by frequency) for each of the job situations in the JSS. Oblique rotation of factors for the same index scores revealed four factors of: (1) lack of supervisory support and recognition; (2) lack of support from co-workers; (3) work conditions and time pressure; (4) career prospects and pay. It is likely that evidence for Spielberger and Vagg’s (1999) two-factor model of work stressors is relatively equivocal as confirmatory factor analysis of JSS frequency scores (Wasala, 2001) indicated the presence of five higher-order factors, which could nevertheless be incorporated into the two-factor model. Wasala (2001) extracted factors consisting of: (1) lack of organizational support; (2) lack of supervisor support; (3) lack of co-worker support; (4) conditions and requirements of the job; (5) duties and responsibilities in the job.

Owing to the lack of clarity about the true factor structure of the JSS and its psychometric properties, a further study of JSS data with a larger sample of health service workers may help clarify matters. Workers from the National Health Service (NHS) in the United Kingdom were the target group in this study as the NHS is a high profile, public-sector organisation employing over a million people. Large-scale studies (Borrill et al., 1996; 1998) of over ten thousand NHS staff in each cohort have shown high percentages of clinical (e.g., nursing and medical) and non-clinical (e.g., managerial) staff reporting mental strain levels substantially higher than general population norms. With this in mind, we investigated the potential for using a generic measure of work stressors aimed at uncovering common denominators in stressor experiences among a range of staff groups working in the NHS. This study may provide some insight with a sample of health service workers as to whether the JSS taps into two higher-order stressor factors, as espoused by Spielberger and Vagg (1999), or whether its factor structure is more complex.

Method

Participants

A sample of 1,050 NHS employees in Southern or Eastern England was surveyed. This sample was drawn from seven NHS Trusts and from seven occupational groups. With two of the Trusts, all staff members were posted questionnaires whereas the other five Trusts entailed quota sampling of staff so that less numerous occupations (e.g., managerial staff) were still represented. Response rates varied according to Trust from 23% to 75%. 824 females (79%) and 148 males (14%) took part. Data on sex of respondents were not available for 78 (7%) staff. Figures 1 and 2 show the profile of the respondents in relation to occupation and age group.
Design & Analysis

A cross-sectional design was used and deemed appropriate for measuring the underlying components with a large sample of respondents. For the exploratory factor analysis, a three-staged approach (Ferguson & Cox, 1993) of pre-analysis checks, factor extraction and factor rotation was used. As conceptual separateness was sought in this study, orthogonal rotation was used in order to reduce the data to the smallest number of factors, which were intended not to overlap with each other.

Instruments

A battery of psychological tests was used in the current study that included the Job Stress Survey and measures of job satisfaction, physical symptom reporting and mental ill health. As the primary focus for this paper is on the construct validity of the JSS, only methods of coding JSS will be outlined here. The JSS has 60 items. With Part 1 of the JSS, the respondents compared the intensity of stress that would be brought on for each of 29 job-related situations when compared with a situation of moderate intensity, namely “assignment of disagreeable duties”. This test item was found in previous research (Grier, 1982; Spielberger et al., 1981) to exert a moderate amount of stress on workers. Severity of stressors was rated and coded from 1 (minimal stress) to 9 (high stress). Part 2 of the JSS needed respondents to rate how often the same 30 job-related situations had occurred over the past six months. Frequency of job stressor occurrence was rated from 0 days (i.e., never occurred) to ‘9+’ (i.e., for 9 or more days) and was coded from 0 (lowest frequency) to 9 (highest frequency). Ten of the JSS items represented the Job Pressure subscale and another ten items consisted of Lack of Organizational Support subscale job-related situations. As per instructions in the test manual (Spielberger & Vagg, 1999), Index scores were calculated by multiplying the severity of a specific stressor with its frequency as a way of showing the overall impact of a stressor.
Procedure

In all but one of the seven NHS Trusts, questionnaires were administered by post along with an information sheet and a stamped self-addressed envelope for questionnaires to be returned to the research team. The sampling of employees depended on the total number that could be negotiated with each individual NHS Trust. In two of the NHS Trusts, permission was obtained to approach the entire workforce of the Trust, whereas other NHS Trust managers agreed to a smaller sample of workers being approached. For the Trust where postal administration was not possible, face-to-face administration of questionnaires took place during several examination-type testing sessions arranged over four days within a two-week period. In this case, verbal and written introductory information was given to participants before the start of the testing session. Participants were given 45 minutes to complete the questionnaire booklet as fully as possible. With all NHS Trusts, if participants wished to receive feedback on their test scores, they were asked to insert their names on their completed questionnaire. Feedback was given to respondents either in an oral or written format. If participants also wished to have further support for work-related stress at any time, the Trust’s Occupational Health services were made available to them.

Results and discussion

Pre-analysis checks of the data showed that there was potential for a stable factor structure by satisfying requirements (cf. Ferguson & Cox, 1993) for a minimum sample size by having at least 200 participants and a participants-to-variables ratio of at least 10:1. The participants-to-variables ratio was actually 35:1 for factor analysis of index, severity or frequency data. Another pre-analysis check was the appropriateness of the correlation matrix. Table 1 shows that the correlation matrices for index, severity and frequency data had Kaiser-Meyer-Olkin (KMO) scores of 0.90 or more, which exceeded a minimum value of 0.5 for sampling adequacy. Bartlett’s Test of Sphericity (BS) scores for all three types of data reached statistical significance, thus indicating “discoverable relationships within the data” (Ferguson & Cox, 1993, p. 88).

<table>
<thead>
<tr>
<th>Test</th>
<th>Index (Severity x Frequency)</th>
<th>Severity</th>
<th>Frequency</th>
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<tr>
<td>KMO</td>
<td>0.90</td>
<td>0.94</td>
<td>0.92</td>
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<tr>
<td>BS</td>
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<td>$X^2 = 12943.58$</td>
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<td>df</td>
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<td>406</td>
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Table 1: Pre-Analysis Checks on JSS Data
Table 2 depicts the use of Kaiser's criterion for deciding on the number of factors to retain after the principal components analysis. This criterion emphasises looking for factors with eigenvalues equal to or greater than, 1 and indicates the likely presence of seven factors for job stress index (severity x frequency) data, five factors for severity and six factors for frequency data. However, results of scree tests for each of the datasets suggest the presence of two higher-order factors and remaining factors as lower-order factors. With Varimax factor rotation of the extracted factors, only two components were selected for analysis for job stress index, severity and frequency data.

Table 2: Use of Kaiser's criterion for JSS Index, severity and frequency data

<table>
<thead>
<tr>
<th>JSS Index Data (Severity x Frequency)</th>
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<th>Initial eigenvalues</th>
<th>% of variance</th>
<th>Cumulative %</th>
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<tr>
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<th>Cumulative %</th>
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<td>1.13</td>
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<td>53.17</td>
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Table 3 shows the factor loadings for index (i.e., severity multiplied by frequency ratings), severity and frequency data for the 30 job situations in the JSS. With index scores, each of the ten items designated as being part of the Job Pressure (JP) subscale (Spielberger & Vagg, 1999) had loadings of .40 or more on the first factor. Conversely, two of the items defined in the JSS manual as being part of the Lack of Organizational Support (LOS) subscale
also loaded onto the first factor with loadings of .46 and .50 for stressors of “poorly motivated co-workers” and “fellow workers not doing their job”, respectively. It is likely that the combined impact of the severity and frequency of the two stressors could have some bearing on how well respondents felt that they could cope with the demands of their jobs. However the loadings of these stressor index scores supposedly linked to LOS, rather than JP, is cause for concern. The second factor extracted with the index scores appeared to overlap with the LOS subscale as seven out of ten LOS items had loadings of .40 and higher. The two remaining items for the second factor appeared to be related to how much employees see their worth as being valued by the organisation with stressors of “inadequate salary” and “competition for advancement”.

The factor loadings for severity and frequency data were more clear-cut and appeared to adhere to the items specified by the test manual as being part of the JP and LOS subscales. For the severity data, all ten LOS items had loadings of .40 or more onto the first factor, and all ten of the JP items loaded onto the second factor with .40 or higher. Factor 1 items not defined in the manual as being LOS stressors also seemed focused on dealing with other people (except for “periods of inactivity”). The remaining two items that were not defined as being linked to JP, but had loaded onto Factor 2, appeared to overlap with pressures on performing the job such as “working overtime” and having “insufficient personnel”.

Loadings for frequency data showed all ten JP items loading onto Factor 1 and nine out of ten LOS items loading onto Factor 2. For Factor 1, the four items not assigned to JP in the test manual also appeared to have some bearing on job pressures with stressors including “being assigned disagreeable duties” and “covering work for another employee”. Frequency items not designated as LOS stressors, but loading strongly onto Factor 2, seemed to be related to organisational issues like “conflict between departments” and interpersonal conflict like “competition for advancement”.

Overall, it is apparent that the factor structure to the JSS data was more in synchrony with the test manual with severity and frequency data rather than index data (i.e., severity x frequency). This pattern could be attributed to the way in which index scores are calculated by multiplying stressor severity ratings with frequencies as low as zero (i.e., 0 days of occurrence). If a stressor of extreme severity (i.e., a score of ‘9’) is multiplied by a frequency of 0, its potential impact may be nullified in comparison to a stressor of minimal severity (i.e., a score of ‘1’) if it too had a frequency of 0. Further methods of exploring the cumulative impact of stressors may need to be examined with this measure.

In conclusion, this study’s findings have demonstrated that the JSS has satisfactory construct validity for data on perceptions of severity and frequency of job stressors by health service workers in the United Kingdom.
We have also found that there are some issues with the multiplication of severity and frequency scores to produce job stress index levels for each stressor and would recommend that this method should be used with some caution. Complementary analyses of data (Williams & Albery, under review) from this study have provided further evidence to support the construct validity of this method of work stressor assessment. We have found that the subscales of JP and LOS have inter-correlations as low as .26 and as high as .61 although the majority of the relationships between the two constructs are only weakly correlated. The JP subscale has been used to differentiate between various staff groups with occupational stressors, rather than in assessing demands placed on the employee by being part of an organisation. By contrast, analyses of LOS subscale data for seven separate NHS Trusts have revealed that this subscale appears to primarily evaluate organisational stressors (Williams, 2003).

This study has shown that work-stress is reducible to two main dimensions – Job Pressure and Lack of Organizational Support. The two-factor perspective on work stress can provide an agenda for assessing and managing work-stress that is focused on the root causes of employees’ levels of distress at work. Stress prevention and management initiatives may most benefit employees and the organisation by being able to address where work stressors are salient in the workplace – with the job itself or with the organisation.

References


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<table>
<thead>
<tr>
<th>Item (and JSS Subscale)</th>
<th>JSS Index Component</th>
<th>JSS Severity Component</th>
<th>JSS Frequency Component</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>1 Assigned disagreeable duties</td>
<td>0.44</td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>2 Working overtime</td>
<td>0.60</td>
<td></td>
<td>0.63</td>
</tr>
<tr>
<td>3 Lack opportunity for advancement (LOS)</td>
<td>0.47</td>
<td></td>
<td>0.47</td>
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<tr>
<td>4 New/unfamiliar duties (JP)</td>
<td></td>
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<td>0.73</td>
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<tr>
<td>5 Fellow workers not doing job (LOS)</td>
<td>0.50</td>
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<td>0.54</td>
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<tr>
<td>6 Inadequate supervisor support (LOS)</td>
<td></td>
<td>0.66</td>
<td>0.56</td>
</tr>
<tr>
<td>7 Crisis situations (JP)</td>
<td>0.72</td>
<td></td>
<td></td>
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<tr>
<td>8 Lack recognition for good work (LOS)</td>
<td></td>
<td>0.69</td>
<td>0.58</td>
</tr>
<tr>
<td>9 Doing tasks not in job description (JP)</td>
<td>0.50</td>
<td></td>
<td>0.55</td>
</tr>
<tr>
<td>10 Inadequate/poor equipment (LOS)</td>
<td></td>
<td></td>
<td>0.45</td>
</tr>
<tr>
<td>11 Increased responsibility (JP)</td>
<td>0.52</td>
<td></td>
<td>0.67</td>
</tr>
<tr>
<td>12 Periods of inactivity</td>
<td></td>
<td></td>
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<tr>
<td>13 Difficulty with supervisor (LOS)</td>
<td>0.66</td>
<td></td>
<td>0.75</td>
</tr>
<tr>
<td>14 Negative attitudes toward organization (LOS)</td>
<td>0.48</td>
<td></td>
<td>0.61</td>
</tr>
<tr>
<td>15 Insufficient personnel</td>
<td>0.63</td>
<td></td>
<td>0.48</td>
</tr>
<tr>
<td>16 Critical on-the-spot decisions (JP)</td>
<td>0.70</td>
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<td>0.56</td>
</tr>
<tr>
<td>17 Personal insult</td>
<td></td>
<td></td>
<td>0.46</td>
</tr>
<tr>
<td>18 Lack participation in policy-making (LOS)</td>
<td>0.58</td>
<td></td>
<td>0.54</td>
</tr>
<tr>
<td>19 Inadequate salary</td>
<td></td>
<td></td>
<td>0.51</td>
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<tr>
<td>20 Competition for advancement</td>
<td>0.61</td>
<td></td>
<td>0.53</td>
</tr>
<tr>
<td>21 Poor/inadequate supervision (LOS)</td>
<td>0.63</td>
<td></td>
<td>0.75</td>
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<tr>
<td>22 Noisy work area</td>
<td>0.42</td>
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<td>0.43</td>
</tr>
<tr>
<td>23 Frequent interruptions (JP)</td>
<td>0.69</td>
<td></td>
<td>0.60</td>
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<tr>
<td>Item (and JSS Subscale)</td>
<td>JSS Index Component</td>
<td>JSS Severity Component</td>
<td>JSS Frequency Component</td>
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<tr>
<td>24 Changes from boring to demanding activities (JP)</td>
<td>0.44</td>
<td>0.55</td>
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<tr>
<td>25 Excessive paperwork (JP)</td>
<td>0.68</td>
<td>0.71</td>
<td>0.69</td>
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<tr>
<td>26 Meeting deadlines (JP)</td>
<td>0.73</td>
<td>0.74</td>
<td>0.72</td>
</tr>
<tr>
<td>27 Insufficient personal time for breaks (JP)</td>
<td>0.61</td>
<td>0.72</td>
<td>0.63</td>
</tr>
<tr>
<td>28 Covering work for another employee</td>
<td>0.58</td>
<td>0.68</td>
<td>0.57</td>
</tr>
<tr>
<td>29 Poorly motivated co-workers (LOS)</td>
<td>0.46</td>
<td>0.61</td>
<td>0.49</td>
</tr>
<tr>
<td>30 Conflict between departments</td>
<td>0.58</td>
<td></td>
<td>0.41</td>
</tr>
</tbody>
</table>

Key: JP = Job Pressure, LOS = Lack of Organizational Support; N/A = Not appropriate as the first item on the severity scale is used as a comparison situation. Loadings of 0.40 or less have been suppressed.
PREVENTING AND OVERCOMING WORK –
RELATED STRESS IN HOSPITALS:
OCCUPATIONAL HEALTH INTERVENTION
GROUPS FOR NURSES AND WARD TEAMS

A. WITTICH & W. E. DIETERLE
Freiburg University Hospital, Germany

Freiburg University Hospital is a big hospital in Germany. All fields of medicine are represented with special clinics or institutes. More than 50,000 in-patients and nearly 380,000 out-patients are treated each year. The hospital employs a total of 8,000 people, among them 900 physicians. With 2,000 nurses, they are the largest professional group.

Nurses are confronted with work related physical hazards as well as psychosocial stress. Stressful characteristics of nursing can be high work load with poor staffing, stress caused by patients’ problems, conflicts within the nursing team, poor work organisation and problems of communication and collaboration with doctors.

Stress and resources

Nurses can encounter a high level of work related psychosocial stress, when being confronted with patients who suffer from their medical treatment, with patients who do not cease to express unrealistic hopes of being cured or with patients who die on the ward. Also nurses sometimes do not feel the prolongation of life by means of high tech medicine is adequate or even human. All of this can be stressful when working on the ward.

Another factor of stress can be the work related interpersonal relationships (Burnard, 1999; Friesacher 1993). According to literature (Weyermann, 1990; Widmer et al., 1990) and confirmed by a study in Freiburg University Hospital (Wittich, 2002), 40% to 70 % of nurses state that conflicts within the nursing team and/or problems in the collaboration with doctors do occur frequently on their ward and make work even more difficult. The social climate on the ward is a crucial factor for nurses’ assessment of their working conditions, more relevant even than the specific content of work. Therefore a poor social climate at work is the most frequent cause for changing the job.

Stress is experienced when work related demands exceed a persons’ ability to cope with them. The higher the physical, mental and social resources of individuals and working teams, the better their coping abilities (DAK-BGW, 2000).
Matrunola (1996) stated that organisations should set up strategies for staff support in order to prevent staff dissatisfaction. It is widely acknowledged that resources of individuals as well as teams' resources can be maintained and enhanced by stress management interventions at the organisational level. These interventions can focus on the work place, the work task, the team or the individual employees (Couchan, 1999; Cox et al., 2000).

**Setting up a service for occupational health intervention groups for nurses and ward teams**

Maintaining and promoting the health of the employees is a basic component of the hospital's organisational policy. It aims at supporting their social, physical and mental well-being by reducing stress, enhancing coping abilities and optimising organisational factors and the work environment. There are different activities and services implemented at the hospital, which focus on eliminating the sources of problems in the work environment, on training vocational skills or on assisting individual employees by counselling (see Figure 1). Those activities are coordinated by a steering committee made up of experts. They define explicit goals to enhance the health of the employees and determine by which means they are to be achieved. The steering committee also supervises the realisation of the planned projects.

**Figure 1: Occupational Health Promotion Activities at Freiburg University Hospital**

- Occupational Health Intervention Groups for Nurses and Ward Teams
- Employee Assistance Programmes – Counselling:
  - Alcoholism and Drug Abuse in the Workplace
  - Psychosocial Crises of Individuals
- Occupational Medicine and Safety
- Vocational Training and Skills Development Near the Job
- Gender Equality and Gender Mainstreaming

*Occupational health intervention groups for nurses and ward teams*

The occupational health intervention groups for nurses and ward teams are one of several measures designed to improve working conditions and increase job satisfaction. The service is one component of the hospital’s systematic health promotion and a novel part of its risk prevention program. Freiburg University Hospital was the first health care institution in Germany to implement this specific means of intervention and still is the only hospital where such a service is integrated. The hospital provides a full time organisational and occupational health psychologist for this service.


**Goals of the intervention groups**

- Reduce work-related stress and improve the working conditions
- Help nursing staff cope with stress and conflicts
- Improve work organisation
- Increase job satisfaction
- Contribute to a maximum standard of nursing care

The occupational health intervention groups for nurses and ward teams aim at preventing psychosocial work hazards or at compensating for those inevitable in daily work. The hospital wide service operates on the level of work teams. As an approach on the individual-organisational interface, it supplements those employee assistance programmes which solely focus on the level of the individual.

**Accessibility and general set-up**

The staff can attend the group sessions free of charge. Attending is seen as part of work, therefore the groups take place during working hours. Often teams decide to use this service at a point where they have not been successful in dealing with a problem on their own. Then either a team member or the head nurse makes a request by phone.

With this new understanding of nurses work, where stress reduction and conflict solving are seen as constituents of the work itself, there is no need to file a formal application. Within a few days after the first phone contact the occupational psychologist visits the team on its' ward for an introductory session: she informs the team about the general outline and setting of the groups and inquires about the teams’ expectations and needs.

Further procedures are agreed upon: three distinct forms of intervention are possible: standard and crisis intervention groups as well as individual sessions (see Figure 2). During the group sessions the ward is usually covered either by a nurse who helps out from a neighbouring ward or by a member of the team who volunteers.

**Figure 2: Planning the groups**

- Team member or head nurse requests sessions
- Introductory meeting on the ward
- Agreement
  - **Standard outcome**: 5 sessions of 90 minutes each, with frequency as agreed; further sessions if required; participation is voluntary
  - **Crisis intervention**: up to 3 sessions of 90 minutes each; participation mandatory
  - **Supplementary: individual sessions** – for nurses in superior positions and management, number and frequency as agreed

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**Standard groups:** every single nursing team of the hospital can request an intervention group. The nurses participate on a voluntary basis. The reasons for requests differ: they range from stress caused by patients’ problems or work organisation to problems within the nursing team or communication difficulties between nurses and doctors. Initially up to 5 sessions are offered with the possibility of continuation if needed. The mean number of sessions in a standard group is 6, ranging from 1 to 29 (on the paediatric oncology ward).

**Crisis intervention groups:** hereby participation is mandatory for all team members, which is decided upon by the head nurse. Crisis intervention is provided at short notice to deal with escalation of conflicts on the ward. The number of sessions ranges from 1 to 3.

**Individual sessions:** are supplied for nurses in superior work positions or management. They often deal with the context of work (role in organisation, career development, responsibility of subordinates).

By means of these interventions the needs of the nursing staff can be met in a flexible, focussed, economic and timely way. Frequency and number of sessions is agreed upon accordingly (WITTICH et al., 1998).

**Proceeding in the group sessions**

In each session the proceeding is purposeful and always aims at finding a practical solution. After an extensive description of the stress causing problem by every team member, the goal to be achieved is defined with great care. It has to be realistic, unambiguous, transparent and able to be put into practice in the hospital. Goal attainment is planned by precisely defining the steps of action to be taken. Finally criteria for evaluation and presentation of the results are laid down (Figure 3).

**Figure 3: Proceeding of the groups**

<table>
<thead>
<tr>
<th>1. Orientation, diagnosis of problems</th>
<th>What are we dealing with?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>What is the problem?</td>
</tr>
<tr>
<td>2. Defining goals</td>
<td>What do we want?</td>
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<td></td>
<td>What do we not want?</td>
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<tr>
<td></td>
<td>What and how much should be achieved?</td>
</tr>
<tr>
<td></td>
<td>In what period of time?</td>
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<tr>
<td>3. Plans for action</td>
<td>What has to be undertaken?</td>
</tr>
<tr>
<td></td>
<td>Who is going to do what?</td>
</tr>
<tr>
<td></td>
<td>How will it be documented?</td>
</tr>
<tr>
<td>4. Evaluation</td>
<td>Who is going to report to whom? When?</td>
</tr>
</tbody>
</table>

The group process usually evolves through phases of orientation, diagnosis of problems and hazards, plans for action, evaluation and termination.
Utilisation and participants

The service for occupational health intervention groups is available to every department of Freiburg University Hospital. Most groups take place in the departments of internal medicine, surgery, obstetrics and gynaecology and paediatrics, as those are the largest departments of the hospital. The service is designed for nursing staff, therefore the participants are mostly nurses.

Topics for groups' discussion

The following are the main topics for groups' discussion which are documented by the organisational and occupational health psychologist after each session:

- conflicts within the nursing team
- stress caused by work organisation and workload
- stress caused by patients' problems
- difficulties in collaborating with doctors

Results

The occupational health intervention groups for nurses and ward teams are evaluated on a regular basis within the quality management program. The scientific evaluation gives evidence that the occupational health intervention groups do meet their objectives: as to the participants' assessment they do contribute to the prevention and reduction of psychosocial stress in nursing, help staff cope with work related stress and conflicts, improve work organisation and hence the working conditions.

Conclusion

The costs for providing the occupational health intervention groups for nurses and ward teams as one component of the hospital's health promotion program on one hand consist of financing a full time occupational health psychologist. On the other hand the groups take place during working hours, therefore the participants' time needs to be paid for by the hospital as well. How many sessions a group spends with the intervention depends on how many and what kind of problems are to be solved. Most groups take about 4 sessions at 90 minutes each and consist of 6 participants. The hospital's management believes that the occupational health intervention groups are advantageous, because of its positive impact on staff feelings and attitudes. In 2001 the management therefore decided to maintain this service on a permanent basis as an integrated part of the hospital's health promotion activities.
The fact that the service was established and is now permanently installed is based upon an altered and modern understanding of nursing. Nowadays the reflection of the work on the ward and group based problem solving are viewed as constitutional components. This contributes to job development and organisational change.

References


Address for correspondence: Andrea Wittich, Ph.D., Occupational Health Psychologist, Supervisionsdienst am Klinikum, Universitätssinnik Freiburg, Hauptstr. 8, D-79104 Freiburg. +49-761-270-6836, wittich@psysom.ukl.uni-freiburg.de
DEVELOPING AN OCCUPATIONAL HEALTH PSYCHOLOGY SERVICE IN AN NHS TRUST: TRYING TO GET THE BALANCE RIGHT

B. WREN
Royal Free Hampstead NHS Trust; Royal Free & University College London, United Kingdom

Introduction

Occupational health psychology is a young specialty within the science and practice of psychology. Its focus is to develop, maintain and promote the health of employees directly and the health of their families (Quick and Tetrick, 2003). Occupational health psychology services have much to offer organisations, both in terms of enhancing performance and preventing and addressing problems at a variety of levels.

The problem of ill health in all groups of NHS staff has been recognised for a number of years. A range of recent reports have demonstrated that NHS staff have higher sickness absence rates and levels of psychological ill health than comparable staff groups working in other sectors (Confederation of British Industry, 1997; Wall et al., 1997). Both the nature of the work and the ongoing pace of organisational change have been proposed to account for the worrying levels of staff illness and turnover in the NHS (Williams, Michie and Pattani, 1999). There is a considerable body of literature on interventions aimed at improving staff experiences at work and reducing the health risks to which staff are exposed (Williams, Michie and Pattani, 1999). Interventions can focus on individual or organisational change or in some cases such as training programmes, both. Interventions that have been found to be most effective in improving general health are organisational programmes, which include both staff and management training (Wren and Michie, 2003). However, there is a need for further research to refine our understanding of the relationship between aspects of work and health outcomes, and to establish evidence for the effectiveness of different interventions.

NHS settings then are clearly fruitful areas for occupational health psychologists to be working in, in order to develop and evaluate psychological interventions. How do occupational health psychologists develop their work from the current evidence base and how can they contribute to it? What is the best way to establish an occupational health psychology service? What roles can an occupational health psychologist develop in an NHS setting? How can occupational health psychologists establish a clear link between theory and practice in the development of their services? What are the best frameworks to use to ensure that occupational health psychologists are communicating with key NHS stakeholders in an accessible way while also doing evidence-based work.
that is relevant and acceptable to academic psychology? This paper describes how a developing occupational health psychology service in a large London Trust tackled some of these issues. It describes the four main components of the service and how two frameworks have been used to try and get the balance right in terms of service delivery. Firstly, the service recognises the pivotal role of managers on organisational and individual health and targets its work accordingly. Secondly, a systems framework has been used to develop and deliver brief, focussed counselling, consultancy and team interventions to all Trust staff.

The occupational health psychology service

The Royal Free Hampstead NHS Trust established an Occupational Health Psychology post in September 1999. The post was the first of its kind in the country. While clinical psychology posts had been developing in occupational health settings this post was the first to be established with an emphasis on proactive, preventive organisational work. That is, it was planned from the outset that the individual work would develop to complement an organisational focus, rather than have service developments stemming from clinical work. The postholder is a chartered health psychologist and an occupational and organisational psychologist. The aim of the post is to develop and evaluate organisational and individual interventions to reduce stress and sickness absence in NHS staff. The psychologist is a full-time member of a 15 person on-site Occupational Health and Safety multidisciplinary team.

Service components

The service has developed into the following four components:

1. Staff Consultancy Service

The aim of the service is to provide staff who have a management or service development role, with a confidential opportunity to work with a professional who is outside of their service, to define and clarify work-related problems and receive help towards their resolution. The service provides systemic, problem-solving psychological interventions tailored to individual staff needs.

Staff are offered structured sessions to review and develop their management and communication skills, methods for supporting staff and intervening where there are difficulties. They are offered a one off session or a number of meetings depending on their need. The approach encourages them to regard problems as a “symptom” of what is happening in the wider system. Specific techniques are taught (e.g. organisational mapping, creative thinking, getting “unstuck”, dealing with difficulty) to develop their skills in addressing complex problems.
2. Training

Training is provided for individual departments and teams in response to demand. This includes topics such as communication skills, stress management, effective team working. It is linked to strategic developments. For example, after September 11th a workshop was offered to all managers on “supporting Staff following a Major incident” as part of a London major incident planning exercise. In addition a two day workshop which is key to the service is offered on a rolling programme basis. Users of both the consultancy and the counselling service are regularly referred on to this training. The rationale and approach of this course is described below under interventions for managers. The workshop extends the work done in the consultancy service and focuses on the further development of skills and techniques.

3. Stress counselling for staff

An open access service is offered to all Trust staff. It provides brief psychological interventions to promote well-being and coping at work using cognitive behavioural and systemic approaches. Staff are normally seen for between one and six sessions with fast track routes for referral on when necessary through links with local services.

4. Organisational interventions

Organisational interventions are developed following a process of consultancy and needs assessment with relevant managers and staff using the principles of the Karasek model of work stress (Karasek 1990). Two large organisational interventions have been the development and evaluation of an intervention to reduce sickness absence in cleaning staff, and the development and implementation of the Trust’s well-being policy.

Service development

In order to develop the service in an effective and productive way a number of factors needed to be taken into account. The first of these was a simple matter of resources. There is one psychologist for 5000 staff! The second was the views of key stakeholders, the type of problems which were originally seen in the service and the availability of other sources of support within the Trust. The service needed to target its intervention at a group, and in such a way that it would be likely to have the most impact. This was the rationale for targeting managers in the development of the service and for using a systemic framework.

Why managers?

The NHS is the largest employing organisation in Europe. As it evolves local, national and international pressures in healthcare continue to contribute to the stress
experienced by NHS staff. The major sources of stress include increasing workload in the context of limited resources, constant change, the emotional impact of the work and an increasing litigious culture. The complexity of the NHS as an organisation highlights the key role of NHS managers. The literature reflects two key areas of interest in these managers. Firstly, there is a focus on their experience of their role and increasing concern about the relative stress levels reported by NHS managers in a number of studies. Secondly, there is a growing awareness of the impact of their management style and skills on their employees.

Stress among managers in healthcare is high. NHS managers are twice as likely to be above the threshold for psychological distress as other British managers. A number of studies in the UK have demonstrated that the stress they experience is much higher than managers in other employment sectors both public and private (Borrill et al., 1998). The major factors contributing to the stress of managers are levels of demand, levels of influence, role conflict, lack of feedback, lack of autonomy, support and control. Targeting interventions at managers is likely to have widespread benefits because:

a) it may help mitigate some of the effect of the stress to which managers are exposed;
b) managers have a pivotal role in the health and productivity of NHS organisations and teams.

The role of a manager

Recent literature has highlighted changing views of the role of managers as organisations become increasingly complex. A key role for managers is managing that complexity and for successful managers a self-reliant capacity to learn may be the most critical skill of all. To be successful and to promote effective and productive team-working managers need to be able to assume the following roles (Whittington, Paulus and Campbell Quick, 2003):

- Manage complexity
- Self manage their own ongoing development particularly the continuing capacity to learn
- Be effective problem-solvers
- Hold boundaries effectively in order to contain teams and to ensure the ongoing two-way flow of information between the team and the organisation
- Be a triage agent for employee difficulties
- Develop teams to enable them to produce creative solutions to problems

To be effective managers need to create a new form of organising at work, which ensures that there are clear answers (at all levels) to the following questions:
– How will individuals know what to do?
– How will they be trained and developed?
– What will motivate them to do it?

In addition there is a wide body of literature on managers’ role as “healing agents” within organisations which is particularly relevant to a consideration of the role of an NHS manager. Managers who function as healing agents help organisations to withstand, and adapt to, stress by directly confronting feelings and emotions in the workplace and thus continue to build trust and keep communications channels open (Lundin and Lundin, 1994). Healing agents contribute to the ongoing development of learning organisations which are characterised by generative or double loop learning (Argyris, 1993).

The occupational health psychology service has developed to prioritise managers both in recognition of their pivotal role and its potential impact on staff health, and also the risks inherent for them in the roles they may be assuming (both consciously and unconsciously) and that the organisation may be forcing them to assume.

**Interventions for managers**

The interventions provided for managers include:

- A skills workshop “Problem Solving Under Pressure” focussing on systemic thinking, creative thinking and problem-solving.

This consists of two half-day workshops a week apart. It is structured around three case studies describing difficult management dilemmas. The course takes participants through the key stages in problem solving. It encourages them to think in the context of the systems, teams and departments that impact on a problem. It also supports them in thinking about how these factors have an impact on their ability to tackle problems on a day to day basis. On the second day there is an opportunity for participants to bring a work problem of their own for consultation with the group.

- Consultancy service (described above)
- Action learning sets
- The development of a well-being policy which highlights ways in which managers can tackle and prevent problems and protect their own and their employees well-being

**Systemic framework**

The service uses a systems model to help service users to develop a new understanding of their professional role, their work relationships and their work-
life balance. Systems thinking is a way of describing the patterns of behaviour that are encountered in the lives of organisations. To give a brief overview, assessment and interventions are designed around exploring answers to the following questions:

- What is generating the “problem” behaviour or situation?
- Are the attempted solutions perpetuating the problems?
- At which point is an intervention likely to have the maximum effect?
- What is most likely to lead to a shift in thinking or perspective for the consultee and/or their department or team?

This approach helps to:
- provide a framework for an individual or a team to understand problems and the way in which they may reflect team, departmental or organisational issues;
- help staff to review the impact of problems on them both professionally and personally, and on their colleagues;
- understand the influence of the team/department/organisational context on their approaches and ability to problem-solve;
- provide staff with a framework for problem-solving.

Discussion

With this twin focus and with four key components the service has grown and developed at the Royal Free and there is high demand for input at individual, team and organisational level. Getting the balance right is an ongoing process. This paper will conclude with an overview of staff perceptions of the service. It will highlight ongoing issues for the developing role of the occupational health psychologist and outline plans for future service development. Finally, this is the introductory paper in a symposium on NHS occupational health psychology services in practice, and it will establish the themes, dilemmas and the debates of a growing network of UK based practitioner occupational health psychologists involved in developing new and innovative NHS services.

References


A PREDICTION MODEL FOR THE RETURN TO WORK OF INJURED WORKERS IN HONG KONG

Y. W. XU & C. C. H. CHAN
The Hong Kong Polytechnic University, Kowloon, Hong Kong.

Introduction

Previous studies have revealed that chronic and recurring pain has become a significant health problem amongst the working population. In the United States, 17% of patients were found to have persistent pain. It was estimated that 2.9 million americans (1.1% of the population) were treated annually by health care professionals specializing in chronic pain (Gureje, 1995). The annual cost of providing interventions for their symptoms was estimated to be $20 to $50 billion (Wilson, 1996). In Hong Kong, despite the number of occupational injury cases declining from 59,465 in 1996 to 49,649 in 2002, and the number of work days lost having reduced from 1.36 million to 1.28 million, the amount of compensation increased from 760.6 million to 804 million. The high compensation payable to injured workers has put substantial financial pressure on the insurance industry (Hong Kong Federation of Insurer, 2002-2003). Among those who are injured at work, the highest prevalence was found to be in the wholesale, retail, restaurants and hotel industries (Labor Department Annual Report, 1996-2003). The employees in these industrial sectors are often involved in manual and strenuous jobs. The chances of them developing back-related symptoms were relatively high. Back pain was found to be one of the most common causes of disability.

Previous studies attempt to identify the characteristics that could predict return-to-work and long-term disability of injured workers who suffered from chronic pain symptoms (Fishbain et al., 1996; Oleske et al., 2000). Van der Giezen et al. (2000) developed a five-factor model consisting of better general health status, having better job satisfaction, being a bread winner, having a lower age, and reporting less pain. This model was found useful for predicting back pain injured workers returning to work. Terry et al. (2003) reported that the injured workers who returned to work were more likely to have a higher level of education, be under 50 years old, referred for vocational rehabilitation services within six months after the injury, and not be represented by an attorney. Another study revealed that, besides the clinical factors, cigarette smoking, personal stress and self-rated health were the significant predictors of recovery and loss of work days (Oleske et al., 2000). These factors can generally be grouped under the worker (physical,
psychosocial and occupational), the disorder (clinical related), the job (e.g., work nature and conditions) and the environment (e.g., unemployment). The purpose of this study was to develop a prediction model for return to work of a group of Chinese injured workers who suffered from chronic pain symptoms and attended a six-week return to work program. The results of this study shed light on the factors which influence the return to work outcomes of injured workers. The findings help to associate different components of the return to work program with the changes experienced by the workers.

Method

The study adopted a prospective design by capturing an array of variables related to workers’ return to work. The target sample was Chinese workers who were injured at work, resulting in chronic pain symptoms. All of them failed to resume working for at least three months after their injuries. All workers were the participants of a standardized return to work program delivered jointly by The Hong Kong Polytechnic University and Hong Kong Workers’ Health Center (HKWHC).

The participants were 98 injured workers who suffered from chronic pain due to injuries to the musculoskeletal system. Among them, 68 (Mean age = 44.17) participated in a six week return to work program which included training and placement, whilst 30 (Mean age = 47.09) were on a waiting list to the program, serving as the control group. All participants were screened by the case managers of the return to work program for the admission criteria. The case managers conducted an intake interview so as to obtain information on participants’ demographic, chronic pain symptoms and occupational history. The return to work program was delivered by a multidisciplinary team. In the first three weeks, interventions covered vocational counseling, job skills training, pain and psychosocial adjustment training. In the last three weeks, the participants engaged in an intensive job placement and support program which was geared towards securing a job in open employment market. Assessments were repeatedly conducted with the participants before they commenced the program (beginning of 1st week), at the end of the program (end of 3rd week) and at the end of the follow up period (end of 15th week). The outcomes of return to work were gathered in the last assessment. Only the first two assessments were conducted with participants in the control group. They commenced the return to work program after completing the assessments. A total of eight tests were administered which covered physical, psychological, psychosocial and vocational variables. The demographic characteristics and work history of the participants were also obtained.
Instruments

Besides the self-reported demographic information, each participant completed one functional capacity assessment and seven clinical instruments. Different instruments captured information on specific work-related areas, such as worker's function, attitudes, aptitudes and behavior. The functional capacity evaluation assessed lifting strengths and endurance, pain intensity, general sensorimotor functions, percentage of impairments (American Medical Association), Lam's assessment on stages of employment readiness (LASER), spinal function sort, emotional behavioral checklist, The Chinese state-trait anxiety inventory, Loma Linda University Medical Center (LLUMC) activity sort, and Short-Form 36 General Health Status. Information on the job nature / condition, work environment and return to work outcomes were gathered either during subsequent work site visits or telephone follow-ups.

Data analysis

Repeated measures analysis of variance (MANOVA and ANOVA) was conducted for identifying the potential variables which were significantly different between the participants who managed to return to work and those who failed. The critical values were set at p < 0.10. Logistic regression analysis was performed to test the significance of these variables captured at different times on predicting workers' return to work status three months after completing the program.

Results and discussion

The return to work rate of the participants was 0% by the end of the intervention program and 66.7% three-months after the program. Participants who were successful in returning to work had significantly higher scores on the emotional behavioural checklist ($F(1,54) = 7.101, p = 0.010$) and the confidence in return to work ($F(1,44) = 7.971, p = 0.007$) than those who failed. Among the successful group, participants showed significant increases in scores on LLUMC self-perceived function ($F(2,53) = 11.575, p < 0.001$), SF36 vitality subscale ($F(2,54) = 3.581, p = 0.035$) and LASER action subscale stage ($F(2,53) = 3.142, p = 0.051$) throughout the program and follow-up. Participants' return to work outcomes were found to be significantly predicted by their physical endurance of crouching (OR = 3.501, 95%CI = 1.198-10.226), SF36 role emotional subscale (OR = 0.427, 95%CI = 1.254-4.698) and previous income (OR = 0.331, 95%CI = 0.147-0.734) measured at the baseline (Table 441).
1). As the participants progressed into the program, their return to work was significantly predicted by their confidence in returning to work (OR = 1.601, 95%CI = 1.701-2.394). By the third assessment, the outcomes were predicted by confidence in return to work (OR = 1.413, 95%CI = 1.009-1.949) and LLUMC (OR = 0.983, 95%CI = 0.970-0.997). The accuracy of the predictions ranged from 72.3% (from 12th week post-program) to 76.5% (from end of the training program). The return to work rate of participants in the control group was 6.7% whereas the changes in their physical and mental functions were not significant at three weeks.

The accuracy of the prediction models obtained in this study is comparatively higher than those reported in other return to work studies, 70.2%, 76.5% and 72.3% correctly predicted return to work status in three assessment times respectively. The combination of physical, work history and emotional factors appear to best predict medium-term return to work outcomes, i.e. longer than three months. In contrast, self-efficacy seems to be a strong variable to predict short-term outcomes. The findings further indicate that variables important for predicting return to work are likely to be confounded by the stages at which injured workers are assessed. The interventions which the workers are participating in may also influence the results. As a result, these prediction models should be interpreted with caution. The results shed light on the development of return to work intervention programs and clinical pathways for injured workers. Further studies should focus on testing in detail the interacting effects between workers, interventions and environment.

| Table 1: Logistic regression analyses in three times assessment predicting return to work |
|---------------------------------|-----------------|----------------|
| Variables                       | Odds ratio      | 95%CI          |
| 1st assessment                  |                 |                |
| Previous incomes                | 0.331           | 0.147 - 0.734  |
| Physical endurance of crouching | 3.501           | 1.198 - 10.226 |
| SF36 role emotional subscale    | 0.427           | 1.254 - 4.698  |
| 2nd assessment                  |                 |                |
| Confidence of return to work    | 1.601           | 1.701 - 2.394  |
| 3rd assessment                  |                 |                |
| Confidence of return to work    | 1.413           | 1.009 - 1.949  |
| LLUMC                           | 0.983           | 0.970 - 0.997  |

References


The Hong Kong Federation Insurers statement of chairman from 10 May 2002 to 13 May 2003


THE ROLE OF EMOTIONAL DISSONANCE IN
THE WORKPLACE: ASSOCIATIONS WITH
BURNOUT AND JOB SATISFACTION AMONG
CHINESE HUMAN SERVICE PROFESSIONALS

F. YUE-LOK CHEUNG & C. SO-KUM TANG
The Chinese University of Hong Kong

Recently, the important role of emotions in the workplace is gaining increasing
attention (Briner, 1999). One popular research agenda is to investigate how
emotional dissonance influences the psychological well-being of service providers.
According to Rafaeli and Sutton (1987), emotional dissonance occurs when there is
incongruence between employees' felt emotion and organizational display rules.
Past studies generally show that emotional dissonance relates significantly with
negative health and job outcomes, including burnout, psychological distress and job
dissatisfaction. However, available studies were conducted in Western cultures,
particularly with American and Western European populations. There is a paucity of
relevant study conducted with Chinese work samples. Recent studies (e.g., Markus
& Kitayama, 1991) suggested that there may be cross-cultural differences in
emotional expression, with Chinese being more restrained in expressing their
emotions while Westerners are more likely to overtly display their emotions
(Oyserman, Coon & Kemmelmeier, 2002). Thus, it remains unclear how findings of
emotional dissonance can be extended to Chinese workers. In order to fill this gap,
we conducted this study to investigate how emotional dissonance influenced job
burnout and satisfaction among Chinese human service professionals in Hong Kong.

Method

Participants

392 participants were recruited in this study. Among them, 61 were males while
331 were females. Participants' occupations included nurses (n = 223), teachers
(n = 54), social workers (n = 70) and occupational therapists (n = 45). 80% of
participants were aged between 20 and 44 and over 77% of them obtained a
university degree or above.

Measures

Emotional labor-related variables, including intensity and variety of
emotions, were measured by subscales of Emotional Labor Scale (Brotheridge
Psychological distress was assessed by the short version Chinese General Health Questionnaire (Chan, 1985). Level of burnout was measured by Maslach Burnout Inventory (MBI, Maslach & Jackson, 1986). Job satisfaction was measured by Minnesota Satisfaction Questionnaire (Weiss, Dawis, England & Lofquist, 1967). All available scales were first translated into Chinese and they had shown satisfactory internal consistency, with alpha values ranged from .72 to .92.

Frequency and explicitness of display rule were measured by self-constructed scales. Each scale consists of two items and both scales demonstrated satisfactory internal consistency (α = .74, .77, respectively). Emotional dissonance was also assessed by a self-constructed scale. The new scale consists of five items and it measures the emotional discrepancy of participants. Sample items included “Most of the time, my genuine feeling differs from my expressed emotion” and “In order to fulfill the organizational demand, I will deliberately show some emotions”. The emotional dissonance scale demonstrated satisfactory internal consistency in this study (α = .72).

Results

We first examined whether demographic information correlated with burnout, psychological distress, job satisfaction and emotional dissonance. Results suggested that working experience correlated significantly negatively with lack of personal accomplishment (r = -.21) and psychological distress (r = -.16). However, gender and education level did not correlate significantly with major variables in this study. Similar to Western findings, emotional dissonance was found to relate significantly to burnout and psychological distress. Results of bivariate correlations analyses showed that emotional dissonance was significantly correlated with emotional exhaustion (r = .37), depersonalization (r = .46), lack of personal accomplishment (r = .32) and psychological distress (r = .30). Furthermore, emotional dissonance was also found to relate negatively with job satisfaction (r = -.31). We also conducted hierarchical regression analyses to investigate the role of emotional dissonance when emotional labor-related variables and level of distress were controlled. Emotional labor-related variables, including the explicitness of display rules, frequency and intensity of interaction with customers and variety of emotional expression were entered into the first model. Participants’ level of psychological distress was entered into the second model. Emotional dissonance was entered into the final model. Regression results suggested that emotional dissonance provided unique contribution in explaining variance of all burnout measures and job satisfaction even when emotional labor-related factors and psychological distress were considered. Table 1 presents details of the regression analyses results.
Discussion

This study provided support to the detrimental role of emotional dissonance in a Chinese work sample. Specifically, emotional dissonance related negatively with employees’ psychological health and job satisfaction. These results were generally in line with other Western studies (Abraham, 1998; Brotheridge & Lee, 1998). The problem of emotional dissonance deserves more attention from researchers and practitioners because high levels of job dissatisfaction and burnout may eventually affect employees’ job performance (e.g., Cropanzano, Rupp & Byrne, 2003; Judge, Thoresen, Bono, & Patton, 2001) and turnover (e.g., Mobley, 1977). Thus, it is vital for organizations to reduce the emotional dissonance encountered by their employees. It is suggested that organizations should facilitate training for employees in the use of deep acting to mitigate the negative influence of emotional dissonance (Grandey, 2000; Holman, Chissick & Totterdell, 2002). Deep acting refers to the modification of employees’ feeling to match the required display rules. Another possible solution is granting employees higher job autonomy, to allow greater flexibility in emotional interaction with service recipients (Abraham, 1998). Employers/supervisors should also be trained to increase their sensitivity in detecting employees’ emotional strain in displaying the required emotional expression at work and distressed employees for relevant services. The establishment and strengthening of social support networks both at work and outside the work setting will also facilitate the ventilation of pent up emotions that are incongruent to the organization norms. In terms of limitations, this study was a cross-sectional design in which participants across different occupations were recruited in a single time point. Future studies may adopt a longitudinal study design in order to establish the causal-effect inferences for emotional dissonance and its relations with health and job variables.

References


