Effects of stress in an NHS trust: a study

This study of staff in an NHS trust tests two established models of occupational stress. Payne (1979) suggested that support at work can help to neutralise the strain of work demands, while Karasek (1979) suggested that staff whose jobs are characterised by high demands and low control are at greater risk of poor psychological wellbeing and ill health. Support is found for both models, and it is suggested that the two could usefully be combined.

**Date of acceptance: July 6 1998.**

Lyn Quine PhD, is Reader in Health Psychology, Centre for Research in Health Behaviour, Department of Psychology, University of Kent at Canterbury.

**KEY WORDS**

OCCUPATIONAL STRESS

JOB SATISFACTION

These key words are based upon work undertaken by the RCN Library.

**SEE TABLES**

Stress seems to be an inevitable part of working life in the health services. Almost every week, articles appear in professional journals with titles such as 'GPs turning to drink and drugs as stress grows', 'Community nurses under stress', or 'London health visitors take the strain'. These describe health professionals' attempts to cope with heavier workloads, reduced resources and constant reorganisation.

If work pressures are too heavy or last too long, so that a person perceives him- or herself to be unable to cope successfully, the physical and mental reactions commonly known as 'stress' occur. Prolonged stress can lead to both mental and physical health problems. Stress is now implicated in the development of a wide variety of illnesses and behaviours (Cooper and Payne 1988, Cox 1993, Payne and Firth-Cozens 1987). For example, it has been linked with coronary heart disease, mental illness, certain types of cancer, health-compromising behaviours, such as smoking, poor diet, lack of exercise and excessive alcohol consumption, and a range of minor illnesses from skin rashes to asthma. Stress is also connected with work-related factors such as job dissatisfaction, propensity to leave, poor performance, accidents, unsafe behaviour at work and high absenteeism (Cooper 1986). In the UK, it is estimated that at least 180 million working days each year are lost due to stress-related absence, at a cost of £4 billion (Cooper and Cartwright 1996).
Health professionals appear to be at particular risk because they face demands that those in other occupations do not. Payne and Firth-Cozens (1987) state: 'Health professionals process people, and they deal with them in situations which have the profoundest implications for any human being, those involving death and suffering.'

**BACKGROUND**

If stress is an inevitable part of working life for health professionals, it is important to organise work in ways that will protect them from its damaging effects. This is what the NHS community trust where this study was carried out set out to do two years ago, when the staff stress counselling service, with the support of the trust board, recommended a survey of the health and welfare of trust staff.

The trust commissioned the Working Life Survey from the Centre for Research in Health Behaviour at the University of Kent, Canterbury. The survey had two main aims:

- To identify demands in the working environment associated with negative outcomes such as stress, job dissatisfaction and propensity to leave.
- To examine whether support at work and job control could protect against the negative effects of work demands, as the occupational health literature suggests (Karasek 1979, Payne 1979).

**MODELS OF OCCUPATIONAL STRESS**

**Demands, Supports, Constraints Model** This model (Payne 1979) considers occupational stress to be a function of the interaction between demands, supports and constraints at work. Payne (1979) suggested that support is important because it can help to neutralise the strain of work demands. A job can be demanding without causing stress if the worker is well supported. The model has been used successfully in empirical studies of different groups:

- Social workers (Jones et al 1991).
- Teachers (Payne and Fletcher 1983).
- Direct care staff (Rose 1993).
- Psychiatric nurses (Jones et al 1987).

**Job Strain Model** Job control refers to staff satisfaction with the amount of decision authority and task discretion found in their work. Karasek, who developed this model (Fig. 1), suggested that staff whose jobs are characterised by high demands and low decision latitude (control) are at greater risk of poor psychological wellbeing and cardiovascular disease. This model has had significant empirical support (Bosma et al 1997, Kristensen 1995) and has arguably become the most influential model in the literature on occupational stress.

According to Karasek, two dimensions – job demands and decision latitude (job control) – make it possible to distinguish between four main types of job:

- High strain – high demands and low decision latitude.
- Low strain – ('relaxed') jobs: low demands and high decision latitude.
- Active – high demands and high decision latitude.
Passive – low demands and low decision latitude.

The model hypothesises that the lowest levels of psychological wellbeing and the highest levels of symptoms and diseases are to be found in the high strain group. Another hypothesis is that learning and personal development, as well as active participation in social life, have better potential in active jobs than in passive jobs. The model thus has two diagonals – the strain diagonal from relaxed to high strain jobs, and the learning diagonal from passive to active jobs.

Which job is best for the individual depends on what he or she is seeking. A person looking for personal development and learning should find an active job, while a relaxed job is preferable for people who seek psychological wellbeing and good health.

STAFF SURVEY

In July 1996, all 1,580 staff in the trust were asked to complete an anonymous questionnaire in three sections:

- Questions about their jobs, qualifications, professional group, hours worked and supervisory responsibilities.
- Standardised scales which measured job satisfaction, propensity to leave, job-induced stress, anxiety and depression, work demands and supports, and job control.
- Sociodemographic and lifestyle information – age, gender, educational level, smoking, drinking, and exercise habits.

Job-induced stress

To measure the amount of job-induced stress experienced by staff, a seven-item scale by House and Rizzo (1972) was used. This contains items such as 'My job tends to affect my health directly', 'I work under a great deal of tension', and 'Problems associated with my job have kept me awake at night'. Each item was scored from 1, 'Strongly disagree', to 5, 'Strongly agree'.

Propensity to leave

This was measured by a three-item scale produced by Cammann et al (1979). Examples are 'How likely is it that you will actively look for a new job in the next year?', scored from 1, 'Extremely unlikely', to 5, 'Extremely likely', and 'How often do you think about leaving your job?', scored from 1, 'Never', to 5, 'Nearly all the time'.

Depression and anxiety

The Hospital Anxiety and Depression Scale (Zigmond and Snaith 1983) was used to measure depression and anxiety. This is a 14-item scale which has been shown to be a reliable and valid measure of these disorders of mind. Care was taken when the scale was produced to separate out the concepts of emotional and somatic illness and the scores are not affected by the presence of bodily illness. Cut off points are provided to give the best separation between clinical cases (score 11+), doubtful cases (score 8-10), and non-cases (score 0-7) of both anxiety and depression.

RESULTS

Profile of respondents

Completed questionnaires were returned by 1,100 staff, a response rate of 70 per cent. Of these, 73 per cent of participants held professional qualifications (Table 1).

Of the participants, 84 per cent were female and 16 per cent male, which accurately reflected the composition of the trust's staff. Seventeen per cent were aged 18-30 years, 32 per cent 31-40, 30 per cent 41-50, and 21 per cent over 50. Fifty one per cent worked full time and 49 per
cent part time. One staff member in two reported an increase in their levels of stress in the previous year, and 31 per cent of smokers and 13 per cent of drinkers reported an increase in their level of intake in the previous year.

**Job satisfaction** The mean score was 12.5, well above the midpoint of the scale (10.5), indicating that most staff were fairly satisfied with their job. However, 34 per cent had scores below the cut-off point indicating considerable dissatisfaction.

**Specific satisfactions** Table 2 shows the percentage of staff who reported satisfaction with each aspect of work. It is clear that staff were satisfied with those aspects of the work that provided social interaction and opportunities for growth, and were much less satisfied with the organisational aspects – the quality of supervision, amount of support from managers, pay, resources, and opportunities for promotion.

**Occupational demands** Staff rated a list of work demands/stressors on a five-point scale from 'Causes me no stress' to 'Causes me extreme stress'. Table 3 lists the average scores on the 20 work demands that caused the most stress, followed by the percentage of staff who found them considerably or extremely stressful. The list of demands was summed to form a demands scale for use in later analysis.

Support Staff also responded to a series of statements about the support they experienced. Each was rated on a five-point scale from 'Never a source of support' to 'Always a source of support'. The greatest reported source of support was 'Support from family and friends', endorsed by 81 per cent of staff, followed by:

- 'Support from colleagues' (79 per cent).
- 'Support from other professionals' (57 per cent).
- 'Support from managers' (51 per cent).
- 'The type of training I received' (49 per cent).
- 'Feedback from managers' (40 per cent).
- 'Feedback from clients' (38 per cent).
- 'The level of morale in the workplace' (37 per cent).
- 'Access to community resources' (29 per cent).
- 'The public image of NHS trusts' (20 per cent).

The support items were summed to form a support scale.

**Job control** In the Working Life Survey, perceived job control was measured on a scale containing five items. The mean scores for these items were:

- 'Opportunities to use your own initiative' (3.9).
- 'Amount of responsibility you are given' (3.7).
- 'Freedom to choose your own method of working' (3.8).
- 'Freedom to define your own aims and objectives' (3.5).
- 'The attention paid to suggestions you make' (3.4).

**Outcome measures** Figure 2 shows the percentage of staff who scored above the recommended cut-off point for the outcome measures for job-induced stress propensity to leave, depression and anxiety. Over a third of the work force (36 per cent) scored above the cut-off point for job-induced stress, while a quarter (26 per cent) were contemplating leaving the job, nearly a fifth (17 per cent) met the clinical criteria for anxiety on the Hospital Anxiety and Depression Scale (Zigmond and
Snaith 1983), and 4 per cent met the clinical criteria for depression.

**The importance of support** Two-way analysis of variance was carried out to investigate whether perceived support could exert a protective/buffering effect, neutralising the strain of work demands, as Payne’s Demands, Supports, Constraints model (1979) suggests. Staff scores for demands and supports were split at the midpoint, giving high and low categories of perceived demands and support and creating four groups. Those with:

- High demands and high support.
- High demands and low support.
- Low demands and high support.
- Low demands and low support.

A number of occupational health outcomes were examined, including job-induced stress, propensity to leave, depression, anxiety, and sickness absence (days off work in the previous year) (Fig. 3).

High demands were significantly associated with greater levels of job-induced stress than low demands, whatever the level of support. High support was significantly associated with lower levels of job-induced stress than low support, whatever the level of demands. The highest levels of job-induced stress were experienced by staff with high demands and low support, the lowest by staff with low demands and high support. The same pattern, showing main effects for demands and support was found for all other occupational health outcomes. For depression, in addition to main effects for demands and support there was an interaction effect. High levels of support exerted a buffering effect, reducing depressive symptoms for staff with high work demands, but had relatively little impact where demands were low.

**Job control** Two-way analysis of variance was used to examine the importance of job control for occupational health and to test Karasek’s hypothesis (1979). The same occupational health outcomes were examined. The sample was split at the midpoint on the demands and control variables, giving high and low categories of demands and control and creating four groups. Those in:

- Passive jobs.
- Active jobs.
- High strain jobs.
- Low strain (relaxed) jobs.

The results confirmed Karasek’s hypothesis (1979). Staff in high strain jobs (high demands and low control) had the highest levels of job-induced stress, while staff in relaxed or low strain jobs (where demands were low and control high) were least stressed. Similar patterns were found for all occupational health outcomes. Active jobs (high demands and high control) were associated with higher stress levels than passive (low demands and low control) jobs, except in the case of propensity to leave and sickness absence, where the reverse was true.

These findings show that boredom may influence these two outcomes. For job-induced stress, depression and anxiety, in addition to main effects there were interaction effects. High job control reduced stress, anxiety, and depression when demands were high, but had relatively little impact when demands were low (Fig. 4).
DISCUSSION
The response rate for this study was high; although stress is a sensitive subject, staff were prepared to co-operate fully with the study. The average score on the Overall Job Satisfaction Scale was above the midpoint, indicating that most staff were fairly satisfied with their job. However, 34 per cent had scores below the cut-off point, indicating dissatisfaction. A higher proportion of staff were satisfied with those aspects of their work that gave opportunities for social interaction and personal growth, such as relationships with fellow staff, their own work accomplishments, and the amount of responsibility, than with the organisational aspects of the job such as the amount and quality of supervision from managers, pay, and physical resources.

The most stressful demands related to role overload, organisational demands, responsibility for people, role ambiguity and problems in the work environment. The greatest sources of support were from family and friends, followed by colleagues, other professionals and managers. Scores on the job control items were just above the midpoint, with the highest score for staff perceptions of the opportunities for initiative, and the lowest score for their perceptions of the attention paid to suggestions they made.

Over a third of the work force scored above the cut-off point for job-induced stress, a fifth met the clinical criteria for anxiety, and 4 per cent for depression, while a quarter were contemplating leaving the job.

These results should be a cause for concern since they indicate that stress is posing a real risk to staff health and wellbeing. High levels of job-induced stress, depression, anxiety, sickness absence, and propensity to leave were associated with the presence of greater occupational demands. Perceived social support at work played a positive role. High support was significantly associated with lower levels of job-induced stress, anxiety, depression, sickness absence and propensity to leave. The highest levels of job-induced stress, anxiety, depression, sickness absence, and propensity to leave were experienced by staff with high demands and low support, the lowest by those with low demands and high support.

For depression, high levels of support had a buffering effect, reducing depression levels when work demands were high, but having relatively little importance when demands were low. The results for job control suggest that high strain jobs where demands are high and decision latitude low are those that carry the greatest risks to psychological wellbeing in terms of stress, anxiety, and depression, and the highest levels of illness (measured by number of days taken in sickness absence in the previous year). They are also associated with greater propensity to leave. Staff in relaxed, low strain jobs are at least risk of job-induced stress, anxiety, depression and sickness. Active jobs also appear to carry some risk of stress, depression and anxiety, though they may offer the greatest opportunities for growth and development, while staff in passive jobs may be at risk of increased propensity to leave and sickness absence because of the lack of challenge such jobs offer.

CONCLUSION
To draw firm conclusions about cause and effect, this study should be repeated using a prospective longitudinal design. However, the job strain model has been tested many times in epidemiological studies and found to be valid (Kristensen 1996). The findings of this study have implications for the way work is organised. Longitudinal research with
Whitehall civil servants by Bosma et al (1997) found low control in the work environment to be associated with increased risk of coronary heart disease. The effects of job control assessed on two occasions three years apart had cumulative effects on newly reported disease. The results of the study indicate that giving employees more variety in tasks and more participation in decision making may decrease the risk of psychological ill health and sickness absence. Improving support structures may have the same effect. It may not be possible to decrease the demands of a job, but stress is not an inevitable consequence if greater support and job control are provided.

REFERENCES


Rose J (1993) Stress and staff in residential settings: the move from hospital to the community. Mental Handicap Research. 6, 312-332.


© RCN PUBLISHING COMPANY 2000