

IN-DEPTH REVIEW

The scale of perceived occupational stress

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This article reviews previous research on the scale of occupational stress and describes in detail the Bristol Stress and Health at Work study. This study had three main aims: firstly, to determine the scale and severity of occupational stress in a random population sample; secondly, to distinguish the effects of stress at work from those of stress in general life; and finally, to determine whether objective indicators of health status and performance efficiency were related to perceived occupational stress. These aims were investigated by conducting an epidemiological survey of 17,000 randomly selected people from the Bristol electoral register, a follow-up survey 12 months later, and detailed investigation of a cohort from the original sample. The results revealed that approximately 20% of the sample reported that they had very high or extremely high levels of stress at work. This effect was reliable over time, related to potentially stressful working conditions and associated with impaired physical and mental health. The effects of occupational stress could not be attributed to life stress or negative affectivity. The cohort study also suggested that high levels of occupational stress may influence physiology and mental performance. The prevalence rate obtained in this study suggests that 5 million workers in the UK have very high levels of occupational stress.

Key words: Occupational stress; stress and health.

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INTRODUCTION

The changing nature of work, and indeed changes in society itself, means that it is important to regularly update available information on the scale of occupational stress. Indeed, at times it will appear that there is little relevant information on the current situation, as can be seen from the following quote: 'There are no reliable estimates of the incidence of occupational stress and related disorders in the British working population'.¹ However, in the last few years a number of surveys have attempted to provide information on these topics and the results of some of these have recently been briefly summarized² and are reported below.

There is now considerable evidence that occupational stress is widespread and can be a major cause of ill health at work. For example, the 1990 Labour Force Survey³ suggested 182,700 cases of stress or depression in England and Wales were caused or made worse by work in that year. Estimates based on the 1995 Survey of Self-reported Work-related Ill Health (SWI)⁴ indicated that

approximately 500,000 people in Great Britain believed they were suffering from work-related stress, depression or anxiety, or from an illness brought on by stress. Stress, depression and anxiety, with an estimated 302,000 cases in Great Britain, represented the second most commonly reported group of work-related illnesses after musculo-skeletal disorders. An estimated 261,000 people described stress at work as causing or making their complaint worse. These figures suggest a 30% increase in occupational stress from 1990 to 1995. Some of this may be due to differences in the survey designs for the studies. However, other factors may be responsible for the increase. For example, increased awareness of stress, changing attitudes to stress, and changes in social and economic conditions may all be important factors.

Other types of survey suggest that stress at work may be a major problem. For example, a survey of 630 trade union safety representatives in 1997⁵ showed that 67% of respondents reported that their management had taken no action to reduce workplace stress. A survey of trade union members in 1997⁶ showed that 81% of respondents thought that stress was either a fairly serious or very serious problem for employees in their organizations, while 72% thought that stress levels were worse than a year ago. In 1998 a survey of 500 randomly selected members of the Institute of Directors⁷ showed

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that nearly 40% regarded stress as a big problem in their organizations. Nearly 90% thought that working practices could be a factor affecting the level of stress that people said they were under. More than 60% thought that responsibility for dealing with stress at work was shared between employers and employees.

A survey of Institute of Management members, carried out by researchers from the Manchester School of Management at UMIST,⁸ revealed that 16% of managers said that they had taken time off work because of stress in the last 12 months; respondents at lower levels of management were more likely to have taken time off than senior managers. A survey of 114 subscribers to *Employment Review* and *Occupational Health Review*⁹ showed that 58% of respondents regarded stress as one of their firm's top three health at work priorities; a quarter felt that it was the most important health issue. Managing stress was predicted to be the fastest growing area of work for health-at-work teams over the next 2 years. A Delphi exercise,¹⁰ carried out to assess the priorities for research in occupational health, placed stress second only to musculo-skeletal disorders in priority, emphasizing the need for practical strategies rather than risk factor identification.

A survey of 800 small and medium-sized employers in a range of industries, carried out by MORI for HSE,¹¹ to establish a baseline to evaluate the success of phase 3 of the 'Good Health is Good Business' campaign showed that: (1) stress is felt to pose a comparatively high risk (31% of those who consider stress to be a risk in their workplace class it as a 'high' risk); and (2) stress is perceived to be the least well controlled of all workplace risks (22% of respondents felt it was 'poorly' controlled).

Such data are, for a number of reasons, imprecise and can only be used as a basis for 'educated guesses' of the extent of occupational stress. In summary, while different studies all suggest that stress is a major problem there is considerable disagreement about the extent of it. Kearns¹² has suggested that 40 million days are lost each year due to stress-related disorders and that up to 60% of all work absence is caused by them. More recent estimates suggest that some 91.5 million working days are lost each year through stress-related illness. It is clearly important, therefore, to provide more definitive figures on the prevalence of occupational stress.

Further information must be provided on the number and proportion of workers affected, the effects of stress on health and the jobs most associated with stress. The 1990 Labour Force Survey showed that teachers, professionals and welfare workers had significantly above-average rates of self-reported stress, depression and anxiety. It is, however, unclear whether these groups are at greater risk or have greater awareness of stress, or feel there is a lower stigma attached to reporting such problems.

The scale of occupational stress can initially be addressed by considering existing data. However, previous studies have methodological problems that need to be rectified by new research. For example, there has been no clear definition of occupational stress and despite the fact that the inadequacy of single, unvalidated, one-off measures of stress is well known they continue to be

used. In addition, previous research has failed to distinguish between stress at work and stress elsewhere. This is a difficult issue to examine. On the one hand it is clearly erroneous to believe that work and non-work-activities are unrelated in their psychological, physiological and health effects (the 'myth of separate worlds'). However, it is possible to classify certain types of stress as occupational or non-work related even though this will clearly leave many types that involve interactions between the two. These interactions may take several forms. For example, the primary source of stress may occur outside work but be exacerbated by work. Similarly, stress may be work-related but have an influence on home life. Only further empirical research will provide evidence on the prevalence of these various sub-types of stress. In addition, most previous research has focused on the individual without considering either the effects on the organisation or on the person's family and the community.

Stress can be defined in several ways and it is important to use an approach that covers the different aspects of the concept. First of all, occupational stress has often been regarded as an aversive characteristic of the working environment. This has often led to stress being grouped with physical hazards, such as noise, and research being directed to measurement of exposure levels and examination of the relationship between these and health/performance outcomes. Secondly, stress has been viewed as a physiological response to a threatening or damaging environment. Another approach has viewed stress in terms of an interactional framework, one of the best examples being Karasek's model,¹³ suggesting that job demands and decision latitude interact to influence health.

Another problem with many of the surveys has been that they have investigated very selected samples. An initial requirement of estimating the scale of occupational stress is to survey a random community sample. Such a study has been recently completed and is briefly summarized below.

OCCUPATIONAL STRESS IN A RANDOM COMMUNITY SAMPLE: THE BRISTOL STRESS AND HEALTH AT WORK SURVEY

The background to the Bristol Stress and Health at Work study has been described in detail in three previous articles,¹⁴⁻¹⁶ and a more detailed account of the results has also been published.¹⁷ The Bristol Stress and Health at Work study consisted of a 32-page postal questionnaire survey of a random sample, selected from the electoral register of Bristol. Full details of the study methods and characteristics of the 7069 respondents are given by Smith *et al.*¹⁵

The sample

Compared with census data, the responders (49% of eligible subjects) were found to be broadly representative in terms of demographic characteristics, although there was under-representation of young single adults living in

rented accommodation. The main analyses have been conducted on 4135 respondents who were in paid employment at the time of the survey.

Nature of employment

Details of the nature of employment of the sample are shown in Table 1.

The questionnaire

Details of the questions asked are given in our earlier articles and the measures taken are summarized in Table 2.

Perceived stress at work

Results from these pilot studies, which had similar response rates to the main survey, suggested that about 10% of the sample reported they were ‘not at all’ stressed at work, 25–30% reported ‘mild stress’, 40–45% ‘moderate stress’ and 15–20% perceived themselves to be ‘very or extremely stressed’ at work. Figure 1 shows the data from the main study. These results are very similar to those obtained in the pilot studies, with nearly 20% reporting that they felt ‘very/extremely’ stressed at work.

Perceived stress at work and work characteristics

The pilot studies showed strong associations between levels of perceived occupational stress and exposure to

Table 2. Information collected in the questionnaire.

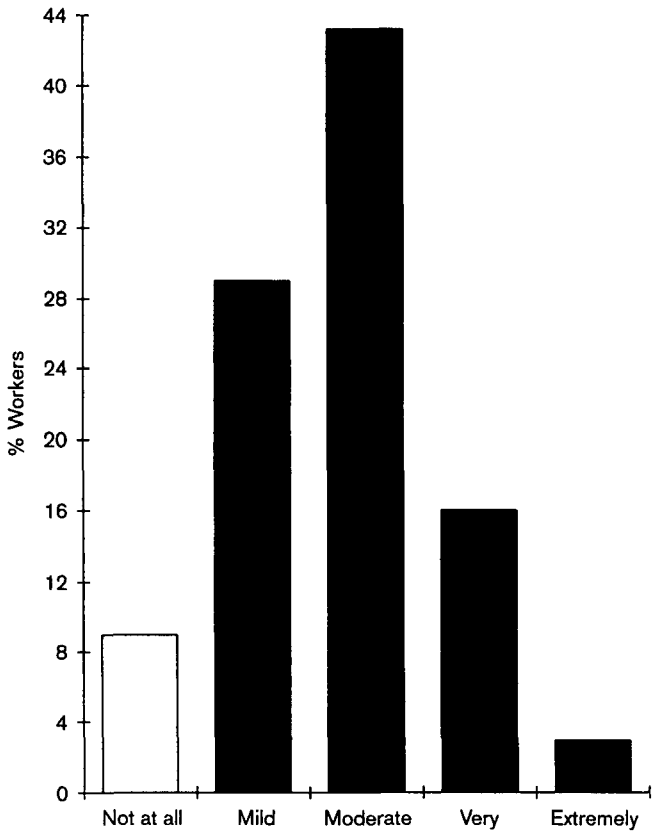
Information type	Examples
Demographics	Age, gender, social class, marital status, education
Job description	Employment status, current position, length of service, hours per week
About the workplace	Physical environment, working hours
Work characteristics	Demand, discretion, initiative, position, consistence and clarity, involvement, support, satisfaction, attitudes
Family and work	Life outside work and performance of job; job responsibilities and interference with family life
Health-related behaviours	Exercise, diet, smoking, alcohol consumption
Recent health	Symptom checklist
Chronic illness	Cardiovascular disease, cancer, diabetes, asthma
Recurring illness	Arthritis, eczema, indigestion, persistent depression
Prescribed medication	Pain killers, sleeping pills, anti-depressants, medicines for indigestion, blood pressure tablets
Global rating of health	Rating of health in general over the past 12 months (using a scale from very good to very bad)
Anxiety and depression, general psychopathology	Hospital anxiety and depression scale; general health questionnaire
Illness caused or made worse by work	Yes or no; if yes, give examples
Chronic fatigue	Fatigue lasting over 6 months and reducing activities by 50% or more

Table 1. Nature of employment, by gender.

Nature of employment	Males	Females	Total
Full-time vs part-time			
n*	2005	2140	4145
Full-time	92%	59%	75%
Part-time	8%	41%	25%
Permanent vs temporary			
n*	1993	2127	4120
Permanent	88%	86%	87%
Temporary/casual	6%	7%	6%
Fixed term	6%	7%	7%
Category of work			
n*	1973	2097	4073
Self-employed			
with employees	6%	3%	5%
no employees	9%	5%	7%
Manager			
>25 employees	12%	7%	10%
<25 employees	5%	4%	5%
Supervisor	13%	11%	11%
Employee	54%	72%	63%
Hours worked per week			
n*	1953	2081	4034
10 or less	2%	6%	4%
11–20	4%	25%	15%
21–30	3%	16%	10%
31–40	37%	40%	39%
41–50	36%	13%	24%
51–60	14%	3%	8%
61–70	4%	1%	2%
>70	2%	<1%	1%

*Number of persons sampled.

Figure 1. Ratings of stress at work (from those currently working).



potentially stressful work characteristics, such as long working hours, exposure to high levels of noise, having to work fast, high skill level required, taking the initiative, not being given enough information, having to combine different things, high workload, responsibility, frequent interruptions, overtime, and lack of support. The main study also found evidence of such associations.

Stress at work and stress outside of work

One of the aims of the current research was to distinguish between effects specifically associated with stress at work from the more general effects of a perceived stressful life. Reported levels of life stress were lower than the stress at work ratings. Furthermore, only 17% of those who reported high levels of stress at work also reported high levels of stress outside the workplace. While these results suggest an independence of stress at work and outside it, the data do suggest that one of the major effects of stress is on the work/home interface, with those with high levels of occupational stress being unable to stop thinking about work when they get home.

Workplace stress and health

Overall, the sample was in good health. Ratings of health over previous 12 months were: 26% very good; 48% good; 22% fair; 4% bad; 0% very bad. However, stress at work was associated with both more frequent minor physical symptoms, such as digestive problems, headache, upper respiratory tract illness, and backache and pain, together with problems of mental health, such as anxiety, depression, and sleeping problems. Indeed, 23% of the sample reported that they had experienced an illness caused by, or made worse by, work in the last 12 months. High levels of occupational stress were also associated with negative health-related behaviours, such as smoking more, drinking more alcohol than usual, and skipping breakfast.

Reliability and further validation

A sub-sample repeated the questionnaire 12 months later and very comparable results were obtained. This sample also provided information on sickness absence and accidents and these data showed higher levels in the stressed group. In addition, a small cohort completed additional questionnaires and had a clinical examination, provided saliva and blood samples for biochemical, haematological, neuroendocrine and immunological assays, and carried out objective tests measuring mental performance. The results showed that the stressed sample were significantly different from the controls on validated questionnaires such as the Occupational Stress Indicator.¹⁸ Furthermore, these differences could not be attributed to factors such as negative affectivity. Fewer differences were seen in objective measures but this may reflect the limited sample size or temporal factors; for example, subjective stress may develop relatively quickly whereas objective changes may be of a smaller magnitude or take a longer time to become apparent.

CONCLUSIONS

Results from this current survey confirm findings indicated in the pilot studies. Nearly 20% of the sample reported very high levels of stress at work. Those who reported high levels of occupational stress also reported more frequent exposure to potentially stressful (demanding) working conditions. Similarly, they reported a greater frequency of minor symptoms and increased psychopathology. The sample in general were in quite good health and demonstrated no strong biases towards presenting themselves in a negative light; for example, levels of stress outside the workplace were reported as much lower than stress at work. Further analyses are now being conducted which consider the extent to which perceived stress is related to demographic factors, socio-economic position, and the nature of the job. In addition, stress is being defined in other ways; for example, the exposure to stressful working conditions; high demand/low discretion, and examining whether similar prevalence figures and associations are observed. The health outcomes associated with stress also require further investigation and this is being carried out using both subjective reports and objective indicators. Indeed, moving towards a functional definition of stress at work, for example, determining when it becomes an important issue with regard to health and performance, will help to resolve the issue of where to put the cut-off point that defines a person as stressed. If a very strict criterion of the extremely stressed is taken, then it will be seen that a figure of about 2% of stressed workers agrees with that reported by the Labour Force Survey. If the criterion is moved to include even moderate levels of stress then higher figures are obtained which agree with other estimates of the prevalence of stress. Most would agree that 'very stressed' workers are likely to represent a major potential occupational health problem and estimates in this study of the prevalence of stress at work is based on this categorization. A 20% prevalence rate clearly warrants major consideration of prevention and management, and possible strategies to achieve this are currently under review.

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