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**SWP 21/92 STRESS AND WELL-BEING IN  
BRITISH UNIVERSITY STAFF**



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## ABSTRACT

This paper reports an exploratory study of stress and psychological well-being in British University staff. Unlike previous studies of stress in University staff, this study examines stress, not only in relation to lecturing staff, but also research and support staff. Two hundred and twenty one staff responded to the questionnaire, which consisted of a fifteen item stressor scale and a measure of psychological well-being. Inadequate resources, having too much work to do, a feeling that the organisation does not care about its' staff and not earning enough to live were the stressors reported most frequently by the sample. Principal components analysis of the stressor scale revealed two orthogonal dimensions, relating to work load and managerial stressors and role stressors respectively. Both were found to be correlated with a measure of psychological well-being. Differences in these stressor factors were found between the various types of university employee; academic staff were found to report more work load and managerial stressors, but reported fewer role stressors.

## INTRODUCTION

Occupational stress has been shown to be associated with job dissatisfaction, increased smoking, escapist drinking, mental and physical ill-health (Cooper and Marshall, 1976, Glowinkowski and Cooper, 1985). Occupational stress is also thought to have a 'spillover' effect, whereby stress becomes a major determinant of the overall quality of life of the individual (Cox and MacKay, 1979, Greenhaus and Parasuraman, 1987, Rain et al, 1987).

Moreover, stress has been implicated as a causal factor of poor work performance, absenteeism, occupational accidents, propensity to leave an organisation and turnover (Steers and Rhodes, 1978, Cox and MacKay, 1979, Melhuish, 1981, Parkes, 1983, 1987, Kemery et al, 1985, 1987, Motowildo et al, 1986, Murphy et al, 1986, Brooke and Price, 1989, Barling et al, 1990).

Clearly then, stress has implications for the psychological and physical well-being of the individual, as well as consequences for the performance of the organisation.

Stress is often defined in terms of a transaction between the person and the environment, such that demands exceed the ability to cope with those demands (Cox, 1978). A *stressor*, by contrast, is that demand which causes stress (Selye, 1976).



In the work place literature, a number of typologies have been advanced that list and classify occupational stressors. One of the most influential typologies has been derived from the seminal work of Kahn et al (1964, see also House and Rizzo, 1972, Katz and Kahn, 1978). In this typology, three sorts of occupational stressor are listed, *role conflict*, *role ambiguity* and *role overload*. Role conflict arises from a mismatch between what the person thinks her job is and what colleagues/superiors think her role is. Role ambiguity arises when the information needed to fulfil one's job is incomplete. Role overload, originally thought to be part of role conflict, occurs when there is too much work to do (quantitative overload), or the work is too difficult (qualitative overload, French and Caplan, 1973).

Related to the concept of role overload is role underload. Like overload, underload may also be quantitative (too little to do), or qualitative (work that is too easy). Underload was not considered to be a stressor in Kahn et al's original typology (1964), but is now considered to be a stressor (Katz and Kahn, 1978).

Cooper and his colleagues (Cooper and Marshall, 1976, Marshall and Cooper, 1979, Sutherland and Cooper, 1988) have suggested that occupational stressors can be classified into one of six groups. These are; factors intrinsic to the job (eg. teaching students); role of the individual within the organisation (eg. role conflict); relationships and interpersonal demands in the work environment (eg. being

ignored at work); career development factors (eg. under promotion); organisational structure and climate (poor industrial relations record).

Clearly the types of stressors experienced in the work place will vary from job to job and from organisation to organisation. However, very few studies have examined stressors in relation to university organisations.

Brown et al (1986) found that the major sources of stress amongst members of staff at an American University were time pressures, work overload and interpersonal relationships. Gmelch et al (1984) reported that time pressures were also a major source of stress in their large sample survey of American faculty staff. They also indicated that other prevalent stressors were related to resource constraints. These authors also reported that 60% of the total stress in their respondents' lives was work related.

In Britain, Snape (1988) and Burrage and Stewart (1990) have examined the stressors experienced amongst further education lecturers. Snape found that the stressors his sample experienced could be classified into four groups. These are; a lack of resources, problems concerning students, interpersonal relations and other annoying factors. Burrage and Stewart's small sample reported experiencing similar stressors to those reported by Snape, although their sample also reported poor staff pay and conditions and problems with management as stressors.

Of the studies reviewed above, two are concerned with American samples and the other two apply to further, not higher, education lecturers. All three studies relate to staff whose job entails close contact with students, the majority of which are lecturers. Therefore, there exists a need to examine stress from the perspective of a British university, and also to examine stress in relation to all types of university staff, not just lecturing staff. The study reported here addresses these issues.

The study is exploratory since research examining stress in university staff is sparse. The aims are; to assess the psychological well-being of university staff; to list those stressors that university staff report as being most prevalent; to examine the underlying dimensions of stressors experienced by university staff; to relate these dimensions to psychological well-being; and to examine differences between different jobs in terms of stressors and well-being.

## **METHODS**

### **Procedure and respondents.**

Six hundred questionnaires were randomly distributed by internal post to staff at a British university establishment. Twenty six questionnaires were returned uncompleted since the targeted individual had left the university. Two hundred and

twenty one completed questionnaires were returned. Thus a response rate of at least 38.5% was obtained.

Of the 221 respondents, there were 42 academic staff, 41 research staff, 27 senior administrative/library staff, 50 secretarial/clerical staff and 40 technical/engineering staff. Twenty one staff were not classified, due to missing data or minority jobs.

The sample consisted of slightly more men than women (57% male). The modal age value was 41 to 50 years and the average length of tenure was found to 8.1 years (standard deviation = 8.2 years).

#### **Questionnaire design.**

Stressors were assessed by a fifteen item stressor scale developed by the first author from a review of the literature. A description of these items is given in table I. The scale asked respondents to rate the frequency with which they had experienced the stressors over the previous few weeks. Items were rated on a five point, fully anchored Likert type scale (1=Never, 2=Rarely, 3=Sometimes, 4=Often and 5=Very often).

Psychological well-being was assessed by using the GHQ12 (Goldberg and Williams, 1988). This is a twelve item unidimensional context free measure of well-being. The respondent is asked to rate how often various symptoms of

mental illness have occurred over the previous few weeks. The items are rated on a fully anchored four point scale.

The GHQ12 can be scored by coding the responses as zero to three. This is the Likert scoring method which is more appropriate for parametric statistics (see Banks et al, 1980). The alternative GHQ method scores the first two response categories as zero and the second two as one. Using the GHQ method, scores above two are suggestive of psychological well-being moving into the clinical range (Goldberg and Williams, 1988).

## **RESULTS**

### **The psychological well-being of the sample.**

Using the Likert scoring method, the GHQ12 was found to have a mean of 11.3 (std dev=4.7, alpha=0.82). Using the GHQ scoring method, 37.7% of the sample scored above two. This result indicates that psychological well-being in university staff may be very poor.

### **The most frequently reported stressors.**

Table I shows the percentage of respondents that reported that they experience each stressor, either 'often' or 'very often'. As can be seen from table I, in university staff as a whole, inadequacy of resources, having too much work to do, a feeling that the organisation does not care for its



staff and not earning enough to live are reported as the most frequently occurring stressors. Problems keeping up with new ideas, technologies or techniques, qualitative and quantitative underload are the least frequently reported stressors.

INSERT TABLE I ABOUT HERE

### **The underlying structure of stress in university staff.**

The 15 item stressor scale was subjected to a principal components analysis with a varimax rotation. The results indicated two large principal components (pre-rotation eigenvalues of 3.46 and 2.17), accounting for 37.6% of the variance together.

An examination of the post-rotation factor loadings indicated that the strongest loadings on the first component consisted of items related to quantitative overload stressors (eg. 'Have too much work to do') or managerial functions (eg. 'Attending meetings got in the way of work'). The strongest loadings on the second component were from items related to role stressors (eg. 'Feel that you didn't know what was expected of you'). Therefore, the two factors were labelled work load and managerial stressors and role stressors. Each item's factor loadings are shown in table I.

Factor scores for each respondent were calculated by summing the products of the factor score coefficient by the item

score. This technique keeps the factors orthogonal to each other. Conventional reliability analyses are not appropriate for scores calculated in this way, since different items have variable effects upon the overall score. However, a lower bound estimate of reliability can be found from the calculating scale scores for all those items that load above 0.4 upon a factor. The lower bound reliability estimates for the two scales were found to be  $\alpha = 0.74$  for work load and managerial stressors and  $\alpha = 0.63$  for role stressors.

#### **Stress, well-being and job type.**

Correlations of the factor scores with the GHQ12 were found to be significant. For work load and managerial stressors, the correlation was found to be 0.15 ( $p < .05$ ,  $df = 212$ ). For role stressors the correlation with the GHQ12 was found to be 0.27 ( $p < .01$ ,  $df = 212$ ).

Differences in the stressor factor and GHQ12 scores between job types were assessed by analysis of variance (ANOVA). The ANOVA for GHQ12 was found to be nonsignificant ( $F = .13$ ,  $df = 4, 194$ ). However significant differences were found for both work load and managerial stressors ( $F = 7.26$ ,  $p < .001$ ,  $df = 4, 189$ ), and role stressors ( $F = 3.68$ ,  $p < .01$ ,  $df = 4, 189$ ). The group means and standard deviations for these analyses are shown in table II.

INSERT TABLE II HERE

Post hoc comparisons (least significant difference) were performed to assess where the differences lay. Academic staff were found to report significantly more work load and managerial stressors than secretarial and clerical staff ( $p < .005$ ), with the other job types falling in between these two groups. Secretarial/clerical and technical/engineering staff were found to report more role stressors than academic staff ( $p < .05$ ), with academic staff reporting the fewest role stressors overall, followed by senior administrative and research staff.

## DISCUSSION

### Discussion of results.

Over thirty seven percent of the sample were found to have scores on the GHQ12 approaching the clinical range. This result, in itself, suggests that stress and well-being in university staff are areas requiring urgent attention. The four stressors reported most often were found to be inadequate resources, having too much work to do, a feeling that the organisation does not care about its' staff and not earning enough to live.

Other results indicated that there were two underlying dimensions of the frequency of stressors scale. These factors were work load and managerial stressors and role stressors. Both were found to be significantly correlated with GHQ12 score. Therefore, the poor mental health of the sample could

be attributed, in part, to role and work load stressors in the work place.

The differences between job types of these two factors may be a result of the organisational structure of the university, which is organised as a professional bureaucracy (Mintzberg, 1979). Academics have to fulfil professional (ie. lecturing and research) and management roles. This may be why academics report a greater frequency of work load and managerial stressors, since they are performing two roles, one of which is a management role. Indeed, the fact that work load and managerial stressors emerged as a single factor supports this conclusion. This result in itself, along with the finding that inadequate resources is a frequently reported stressor and having too much work to do, suggests that the university sector may be under-funded and under-staffed.

Secretarial/clerical staff and technical/engineering staff report more role stressors. This may be because they have little contact with macro-structure of the organisation, since they have few management functions, but act more in a support role (Mintzberg, 1979). In these circumstances, role stressors will increase since the complexity of the work makes it difficult to determine exactly what one should be doing (Mintzberg, 1979).

Academics may report fewer role stressors, since they are primarily responsible for directing this highly complex work, and thus determine their own roles. Research staff and senior

administrative staff report fewer role stressors than support staff, but more than academics. This may be because research and senior administrative staff have some autonomy over their roles, and thus can define their own roles to an extent. However, research and administrative staff are ultimately responsible to academic staff. Again, the nature of the highly complex work may make it difficult for managing academics to define exactly what role they wish their staff to perform.

The differences in the magnitude of correlations with the stressor factors may also be related to the differences between job types. Work load stressors had a lower correlation with GHQ12 score than role stressors. This may be reflective of greater coping resources available to academics, in terms of higher wages or greater work control (Folkman et al, 1979, Thompson, 1981). However, since role stressors reflect uncertainty, it may be that the predictability of role stressors is less than that of work load stressors. Since predictability can facilitate coping (Averill et al, 1977), the greater correlation of role stressors with GHQ12 may be a result of this unpredictability.

#### **Suggestions for stress management interventions.**

Three of the four stressors reported most often suggest that university under-funding and under-staffing may be indirectly responsible for stress in some university workers' lives. Specifically, inadequate resources, having too much work to

do and not earning enough to live are all suggestive of under-funding and under-staffing. Therefore, the psychological well-being of some university staff may be improved by better funding and staffing arrangements. The group most likely to benefit from this would be academics, since they report more work load and managerial stressors. Improved funding would enable more academic staff to be recruited, thus spreading work load and management duties. Research staff would also benefit indirectly, through increased job opportunities.

That role stressors were reported more frequently by staff with support functions suggests two interventions. Firstly, job descriptions could be made more exact, thus eliminating some confusion over roles. Role stressors may also be generated by management sending conflicting signals, possibly indicating poor management. This latter conclusion is not surprising when it is remembered that academics are trained primarily in research and teaching, not in administration. It is possible then, that some post-experience management training for academics would not only increase their own performance and efficiency, but also lessen role stressors in the organisation as a whole, due to improved management.

It is possible that these interventions may lead university workers to perceive that the university does care about its staff, since the problems of stress in the work place are being seen to be dealt with.

## **Conclusions.**

In summary, the results presented indicate that psychological well-being and stress in university staff is a problem in need of attention. Academics were found to experience work load and managerial stressors more frequently, and staff with support functions to experience role stressors more frequently. The differences may be rooted in the organisational structure of the university. Organisational level stress management interventions could be focused upon; better funding and staffing arrangements; improved job descriptions and management practices. The former of these may help abate the problems of work load and managerial stressors; the latter could accentuate the number of role stressors experienced.

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Table I. The stressor items, the percentage of respondents reporting they experience these stressors 'often' or 'very often', and their post-rotation factor loadings.

Stressor	Percentage of 'often' or 'very often' responses	Factor loadings	
		Factor 1	Factor 2
Feel resources were inadequate	54.7%	.51	.39
Have too much work to do	51.2%	.67	-.29
Feel that the organization doesn't care about it's staff	48.6%	.38	.54
Not earning enough to live	32.1%	-.03	.28
Doing things that aren't part of your job	31.3%	.42	.52
Have to do work that is too easy	31.3%	.05	.46
Not knowing what is expected of you	28.6%	-.05	.46
Have to work long hours	26.8%	.73	-.08

Table I continued.

Stressor	Percentage of 'often' or 'very often' responses	Factor loadings	
		Factor 1	Factor 2
Deal with delicate situations	25.7%	.68	.10
Feel ignored at work	19.2%	.24	.74
Attending meetings got in the way of work	14.0%	.65	-.09
Make risky decisions	12.1%	.59	.12
Problems keeping up with new ideas	11.2%	.38	.14
Have too little to do	7.5%	-.46	.62
Work too difficult	1.4%	.29	.11

Table II. Means by job type for GHQ12, quantitative overload and managerial stressors (QOMS) and role stressors (RS).

Job type	GHQ12		QOMS		RS	
	Mean	Std dev	Mean	Std dev	Mean	Std dev
Academic	23.5	5.1	.62	.84	-.43	1.00
Research	23.5	3.7	-.06	.89	.18	.92
Senior admin.	23.1	5.1	.25	.90	.13	1.00
Secretarial/ clerical	23.4	4.8	-.41	.89	.28	1.00
Technical/ engineering	22.9	4.9	.02	1.13	-.20	.98