

# Stress amongst district nurses: a preliminary investigation

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## Summary

- This paper presents the results of a pilot study investigating stress among district nurses in the north-west of England. Nurses completed questionnaires covering job satisfaction, mental health, stress, Type A behaviour, health behaviour, coping skills and demographic details.
- A specific measure of stress was developed following in-depth interviews with primary care professionals, including district nurses. A total of 79 district nurses took part in the study. The major sources of stress isolated by the district nurses related to: time pressure, administrative responsibility, having too much to do, factors not under their control, interruptions, keeping up with National Health Service (NHS) changes, and lack of resources.
- Factor analysis of stress questionnaire responses identified five major factors: demands of the job and lack of communication, working environment, problems with patients, work/home interface and social life, and career development.
- The highest levels of satisfaction were reported for the amount of variety in their job and the lowest level of job satisfaction was reported for chance of promotion. The results revealed that the mental wellbeing of the nurses was higher than that of the other population groups.
- Furthermore, multivariate analysis revealed three major stressors that were predictive of high levels of job dissatisfaction: demands of the job and lack of communication, working environment, and career development. The implications of the findings for further research are considered.

*Keywords:* district nurses, stress.

## Introduction

Stress affecting nurses is receiving increased attention (Wheeler & Riding, 1994; Wheeler, 1997). A large number of studies on stress in nurses have been conducted in high

dependency units, especially within general nursing (Wheeler & Riding, 1994). Researchers have shown that hospital nurses were under high levels of stress from a number of sources (Tyler & Cushway, 1992). Tyler *et al.* (1991) found that conflict with doctors was an important stressor for highly trained nurses in the private sector. In a number of studies, it was revealed that work overload was the most significant predictor of poor mental health outcome (Hipwell *et al.*, 1989).

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Molassiotis *et al.* (1995) surveyed 129 nurses and 29 doctors in bone-marrow transplant units. Half of the sample were emotionally exhausted and 80% reported feelings of low personal accomplishments. The majority of these professionals had experienced difficulties in their personal lives which were directly linked to stress at work. In primary care, general practitioners experienced stress due to patients' demands, interruptions, practice administration, and job demands (Rout & Rout, 1994, 1997; Rout *et al.*, 1996). Leary *et al.* (1995) examined stress and coping strategies in community psychiatric nurses. The stressors included: professional isolation, ineffective communication channels, and inadequate support, supervision and training. Methods of coping with stress included efficient time management, planning for team meetings, improvements in communication and consultation and support networks.

While stress among nurses has been extensively studied in a variety of nursing groups – for example, midwives (Wheeler & Riding, 1994), mental health nurses (Power & Sharp, 1988), and nurses working in operating theatres (Davies, 1989), intensive care units (Hague, 1987), hospices (Foxall *et al.*, 1989) and nursing homes (Dunn *et al.*, 1994) – little is known about stress experienced by district nurses. The recent rapid and extensive changes in the NHS in the UK impacted considerably on the nursing profession, especially nursing in the community. What is required is more up-to-date research that examines the specific nature of the pressures and the consequences of these as measured by stress outcomes.

This investigation was aimed to identify sources of job stress associated with high levels of job dissatisfaction and negative mental wellbeing among district nurses.

## Method

This study was carried out in three phases. Firstly, in-depth interviews were carried out with a pilot sample of primary care professionals ( $n=81$ ), including district nurses ( $n=12$ ), in the north-west of England. Secondly, a job stress inventory was formulated, together with other measures, and then piloted on a sample of primary care professionals ( $n=35$ ). Thirdly, a finalized set of instruments was distributed in the north-west of England.

## SAMPLE

The package of questionnaires was sent to a random sample of 900 primary care professionals in the north-west of England. They were distributed by 20 practice

managers, selected to reflect a representative sample of practices in terms of urban vs. rural, social mix, and other demographic characteristics. A total of 597 questionnaires (response rate 65.22%) were returned, of which 79 were from district nurses. Absolute confidentiality was ensured by having the primary care professionals return their questionnaires to the Manchester Metropolitan University anonymously. This meant, however, that we were unable to check any differences between responders and non-responders, and were unable to assess test-retest reliability of the job stress questionnaire. Anonymity, however, was considered essential to protect the identity of these professionals, to ensure honesty in responding, and to obtain a reasonable response rate. The response rate was above average as compared with similar occupational stress studies (Kasl & Cooper, 1987).

The sample comprised 79 (100%) female district nurses; 15 (19%) were aged 25–34, 25 (31.6%) 35–44, 32 (40.5%) 45–54, and 7 (8.9%) 55–64. A total of 61 (77.3%) of the district nurses were married, 65 (82.3%) were in group practices, 66 (83.5%) were working full time, 52 (65.5%) were working in urban practices and all received their qualifications in the UK.

## DEPENDENT VARIABLES

### *Job satisfaction*

The Warr *et al.* (1979) job satisfaction scale was used. This has been used extensively among differing occupational groups in Britain. The scale provides a short, reliable, valid and easy-to-use measure of job satisfaction. The 16 items, with seven-point Likert-type rating scales for each item, assess the degree of job satisfaction, ranging from 1 (extremely dissatisfied) to 7 (extremely satisfied). Test-retest reliability and validity data for the scale have been reported (Warr *et al.*, 1979). Coefficient alpha for this scale for the present sample was 0.86.

### *Mental well-being*

Mental well-being was measured by a shortened version of the Crown-Crisp Experiential Index (Crown & Crisp, 1979). Only the three most reliable and appropriate subscales of the index were used: free-floating anxiety, depression, and somatic anxiety. Each of these subscales is composed of eight items (scored 0, 1 or 2), giving a total of 24, and providing an overall index of mental health. A low score was indicative of good mental health. Reliability and validity data have been reported (Crown & Crisp, 1979).

Coefficient alpha for this measure for the present sample was 0.83.

#### *Health behaviours*

Two items, measuring alcohol consumption and cigarette smoking, were included in the questionnaire. For each, a six-point Likert-type item assessing the degree of daily consumption was included. Zero consumption scored as 0 on both scales. Regularly taking more than 6 drinks a day scored 5, as did a daily cigarette consumption of 40 or more.

#### INDEPENDENT VARIABLES

##### *Demographic variables*

These were nine items: gender, age, marital status, length of experience, full/part-time work, location (urban, rural, semirural, etc.), practice type (single-handed vs. group), and qualified in the UK vs. overseas qualifications.

##### *Type A behaviour*

An adapted version of the Bortner type A questionnaire was used as an indicator of stress-prone personality (Bortner, 1969). Type A behaviour is characterized by extremes of competitiveness, time-urgency, aggressiveness and impatience, and has been shown to act as a modifier to the stress response. The Bortner Type A questionnaire consists of 14 bipolar adjectival scales with 11-point Likert-type rating continua. An overall Type A measure was obtained by summing the scores of individual items, high scores indicating increased Type A behaviour. Reliability and validity data have been described (Bortner, 1969). Coefficient alpha for this scale for the present sample was 0.68.

##### *Job stress questionnaire*

This inventory was developed on the basis of in-depth interviews and a pilot survey (from phase 1 and 2). The final questionnaire comprised 42 items rated on a five-point Likert scale. This self-reporting instrument for measuring stress has strong content validity. Coefficient alpha for this scale in the present study was 0.91.

##### *Ways of coping checklist*

A shortened version of the 'Ways of Coping Checklist' was used. This was previously used in other studies (Dunn

*et al.*, 1994; Rout *et al.*, 1996). Subjects were asked to recall a recent stressful situation at work and to indicate on a 12-item inventory how frequently they used particular strategies to help them cope. These were scored on a four-point scale (0–3). Coefficient alpha for this scale in the present study was 0.43.

## Results

### SOURCES OF JOB STRESS

Respondents indicated the level of stress caused by each of 42 potential sources of stress, 3 representing 'moderate stress' and 5 (the maximum) 'extreme stress'. The items that caused district nurses highest stress (mean > 3) were: time pressure, administrative responsibility, factors not under control, having too much work to do, interruptions, keeping up with the changes in the NHS, lack of resources, taking work home, and dealing with terminally ill patients and their relatives (Table 1).

Responses on all 42 sources of stress items were subjected to factor analysis to assess which items were intercorrelated and to establish their internal reliability. A principal component factor analysis (with iteration) was performed to identify groups of variables which accounted for the observed correlations in the set of data. A varimax rotation was performed to ensure that, as far as possible, each variable loaded on only one factor (Everitt, 1974). The analysis revealed that five factors, covering 35 items, accounted for 49.8% of the variance. An item was placed in a factor if it had a loading of 0.4 or greater. Table 2 lists the items grouped statistically into five factors, with the main factor loading of each item. The naming of factors is a subjective procedure, but inspection of the items loading on each factor suggests they can be named as:

**Table 1** Mean score ratings for top job stressors for district nurses. Each dimension is rated on scale of 1–5 (low stress–high stress). Standard deviations are shown in parentheses

Dimension	Mean
Time pressure	3.73 (1.06)
Administrative responsibility	3.70 (1.21)
Having too much work to do	3.57 (1.15)
Factors not under your direct control	3.36 (1.19)
Interruptions	3.30 (1.24)
Keeping up with the changes in the NHS	3.25 (1.22)
Dealing with terminally ill and their relatives	3.18 (1.73)
Taking work home	3.11 (1.61)
Lack of resources	3.08 (1.42)

**Table 2** Factor analysis of responses to sources of stress items

	Loadings
Factor 1: Lack of communication and support (variance 22.9%)	
Keeping up with the changes in the NHS	0.72
Factors not under your direct control	0.71
Lack of communication and consultation with staff	0.69
Dealing with problem patients	0.68
Lack of resources	0.65
Lack of communication and consultation with doctors	0.62
Increased demands from patients	0.57
Time pressure	0.56
Demands from doctors and staff	0.49
Aggressive patients	0.44
Factor 2: Working environment (variance 9.1%)	
No appreciation of your work by people at work	0.86
To do the work of other people	0.72
No appreciation of your work by patients	0.65
Lack of support by people at work	0.54
Taking work home	0.49
Being undervalued	0.47
Conflicts with others at work	0.46
Staff problems	0.45
Working environment	0.44
Factor 3: Problems with patients (variance 6.6%)	
Sexual harassment from patients	0.83
Racial prejudice from patients	0.76
Having to work unusual hours	0.62
Language problems with patients	0.61
Coping with new technology	0.48
Inability to delegate	0.45
Dealing with terminally ill patients and their relatives	0.41
Factor 4: Work/home interface and social life (variance 5.8%)	
Demands of the job on social life	0.73
Lack of support at home	0.67
Demands of the job on family life	0.60
Having too much work to do	0.52
Interruptions	0.40
Factor 5: Career development (variance 5.4%)	
Too much (or too little) variety in your job	0.79
Achieving your own goals	0.70
Communication with patients	0.57
Opportunity for career development	0.56

- 1 Demands of the job and lack of communication;
- 2 Working environment;
- 3 Problems with patients;
- 4 Work/home interface and social life;
- 5 Career development.

Factor scores were calculated for each individual district nurses and were later used in multiple regression analysis.

**Table 3** Mean scores, for District Nurses, on Warr, Cook & Wall's Job Satisfaction Scale, in order of importance (score range 1–7, low satisfaction–high satisfaction). Standard deviations are shown in parentheses

Dimension	Mean
Your fellow workers	5.41 (1.20)
The amount of variety in your job	5.37 (1.31)
The freedom to choose your own method of working	4.75 (1.42)
Your hours of work	4.91 (1.46)
Your job as a whole	4.90 (1.22)
The way your practice is managed	4.90 (1.27)
The attention paid to suggestions you make	4.78 (1.27)
The opportunity to use your ability	4.70 (1.61)
Your immediate boss	4.66 (1.63)
The physical working conditions	4.35 (1.54)
Your rate of pay	4.28 (1.56)
The recognition you get for your good work	4.21 (1.51)
Your job security	4.10 (1.35)
The amount of work you are given	4.08 (1.46)
Industrial relations between management and coworkers	3.77 (1.38)
Your chance of promotion	3.64 (1.65)
Total job satisfaction	73.0 (13.11)

## JOB SATISFACTION

Before carrying out multivariate analysis of the data, we assessed district nurses' job satisfaction scores. Table 3 shows the mean and standard deviations for each of the job satisfaction scales. The highest levels of satisfaction were reported for the amount of variety in the job and fellow workers. The lowest levels of satisfaction were reported for chance of promotion and relations between management and coworkers in the organization.

## MENTAL WELLBEING

Scores on the Crown–Crisp Experiential Index subscales were compared with female population norms (Crown & Crisp, 1979). District nurses scored significantly lower on the somatic anxiety scale (mean [SD] = 3.92 [2.98] vs. 5.70 [3.30],  $t = 4.78$ ,  $P < 0.001$ ). There were no significant differences in free-floating anxiety and depression between district nurses and the normative population.

## PREDICTORS OF JOB SATISFACTION AND MENTAL WELLBEING

Separate multiple stepwise regression analyses were performed to analyse the relationships between each of the dependent variables (overall job satisfaction and

**Table 4** Multiple regression analysis of sources of stress, demographics and type A behaviour on overall job satisfaction

Variable	$\beta$	SE	R <sup>2</sup>	Multiple R
Demands of the job and lack of communication	-3.2	1.37	0.81	0.55
Working environment	-3.9	1.35	0.24	0.49
Problems with patients	3.3	1.40	0.19	0.43
Career development	-4.01	1.35	0.10	0.31

$F = 7.03$ , d.f. = 4,64,  $P = 0.0001$ .

overall mental health) and the independent variables (demographic factors, job stressor factors and Type A behaviour). This method of analysis relates independent and dependent variables in a manner which takes mathematical intercorrelation into account. In addition, this statistical technique achieves the best linear prediction equation between a set of independent variables and the dependent variable. In this study, interaction between dependent variables was not considered. In attempting to isolate the independent variables that would yield the optimal prediction equation, the cut-off point was determined by two statistical criteria: first, that the overall F-ratio for the equation was significant; second, that the partial regression coefficient for the independent individual variable being added be statistically significant (Kerlinger & Pedhadzer, 1973). Below this point the coefficient is insignificant and the amount of variance contributed by each additional variable (shown by  $r^2$  change) is very small.

The outcome of the multiple regression analysis, with job satisfaction as the dependent variable and job stressor, Type A behaviour and demographic factors as the independent variables, is shown in Table 4. Three job stressor factors were negatively predictive of high level of job satisfaction and one job stressor factor was positively predictive of job satisfaction among district nurses. Together they accounted for 31% of variance. The factors predictive of job dissatisfaction included demands of the job and lack of communication, working environment and career development. The factor predictive of job satisfaction was problems with patients.

Another regression analysis was carried out with mental well-being as the dependent variable and job stressor, Type A behaviour and demographic factors as the independent variables. There were no significant predictive factors in this analysis.

#### HEALTH BEHAVIOURS

A total of 72 (91.1%) of the district nurses did not smoke cigarettes, and only 2 (2.5%) smoked over 20 cigarettes a

day. As far as self-reported alcohol consumption was concerned, 9 (11.4%) were teetotal, 41 (51.9%) had an occasional drink, 23 (29.1%) had several drinks a week, and 6 (7.6%) had one or two drinks every day. Owing to the possible bias of social desirability, these self-reports of alcohol consumption are likely to be under-estimates.

#### WAYS OF COPING CHECKLIST AND TYPE A BEHAVIOUR

The most popular coping strategy was 'talked to someone about how I was feeling' (mean [SD] = 1.78 [0.96]). The next two most popular responses were 'just concentrated on what I had to do next' (mean [SD] = 1.69 [0.79]) and 'talked to someone who could do something about the problem' (mean [SD] = 1.55 [0.93]). The least popular methods of coping were 'to avoid being with people' (mean [SD] = 0.56 [0.82]), 'went on as if nothing had happened' (mean [SD] = 0.87 [0.89]) and 'blamed myself' (mean [SD] = 1.00 [0.82]).

In the current sample of nurses, the mean score for type A behaviour was 94.63 (SD = 15.97). Thus the sample scored in the moderately high range of the Bortner (1969) measure of Type A behaviour. (This scale yields scores ranging from 14 to 154).

#### Discussion

The sources of stress reported by district nurses fell into five categories. These were: demands of the job and lack of communication, working environment, career development, problems with patients and work/home interface and social life. Analysis of individual stressor items showed that administrative responsibility, lack of resources, interruption, factors not under control and keeping up with NHS changes were among the highest rated items. Some of these stressors are similar to the findings from other studies of stress in doctors and nurses (Rout & Rout, 1994, 1997; Molassiotis *et al.*, 1995). Another important source of stress was time pressure. Chronic time pressure can lead to over-arousal, with the consequence that the cardiovascular system can be adversely affected (Friedman & Rosenman, 1959). Related to this source of pressure was the stress associated with 'having too much to do'. Because of this excessive workload the nurses had to take work home.

In general, the district nurses' job is the source of considerable satisfaction. They obtain most satisfaction from the variety in their job and from their coworkers. On the other hand, they were least satisfied with their promotion prospects and management structure. This

may be due to the fact that the structured pathways of advancement and training are not as present for district nurses as they are for many other professions. Thus nurses may also lack the support and career guidance needed to make transitions from a junior to a senior role. These nurses require training and guidance in the management of people and in career development. More opportunities should be provided for them to develop their administrative and managerial skills.

In this study, the job stressors had an important impact on job dissatisfaction, but not on the mental wellbeing outcome variable. Stress associated with demands of the job and lack of communication issues, in particular, seemed to have a negative influence on how satisfied the nurses were in their jobs. Inadequate communication systems are sometimes a symptom of rapid change. The accelerated change in the NHS impacted on the work schedule of the district nurses and they may have experienced a loss of personal control. In order to successfully implement change, there needs to be adequate backing in terms of resources to ensure smooth running of the changeover. Another factor, working environment ('to do the work of other people', 'no appreciation of nurses work by colleagues and patients', 'lack of support at work' and 'being undervalued') also led to increased job dissatisfaction. In addition, stress associated with career issues seemed to have a negative influence on job satisfaction. This may be a direct result of the lack of career structures. This is also reflected in the lack of satisfaction with promotion prospects. Furthermore, problems with patients were associated with job satisfaction (significant positive relation). It is possible that district nurses manage to cope well with stress from characteristic features of the occupation but not with organizational problems. This may be an area for further research.

The mental wellbeing of district nurses in this study was remarkable. This may reflect the fact that these nurses use effective coping strategies when under stress. These effective coping strategies appeared to reduce the anxiety, depression and somatic anxiety often resulting from stress. For example, the nurses talked about their feelings and about their problems to someone who could do something. Our results provide support for the hypothesis that females are socialized to express emotion and seek social support (Ptacek *et al.*, 1994). Although we have failed to find a relationship between work stressors and mental wellbeing scores in the sample, it may be that other non-work stressors are predictive of mental wellbeing in other contexts.

It appears that, while district nurses as a group exhibit moderately high Type A traits, this pattern has little influence on their reported job satisfaction or on their mental wellbeing. Future research needs to be conducted towards understanding the psychometric properties of the Type A measure, perhaps to improve its predictive capabilities. It is interesting to find that the present sample used less alcohol than other groups of nurses (Hingley & Cooper, 1986; Dunn *et al.*, 1994) and had a high percentage of non-smokers (91.9%) compared to other studies (Hingley & Cooper, 1986; Dunn *et al.*, 1994).

The results should be interpreted with caution, as the study is based on a small sample limited to the north-west region of England. However, it does provide a useful first insight into sources of stress and satisfaction, which have important implications for the wellbeing of district nurses. There is a need to study a larger sample of district nurses, to compare how the stresses they experience may differ from those of nurses working in hospitals. In fact, during the initial interviews the nurses were asked about their opinion of working in community and hospital environments. All the nurses interviewed preferred to work in the community. As one district nurse said:

I get a lot of satisfaction in this job. In hospital the sister sorts out your work. The buzzer goes on all the time. In community we have more freedom. We have good relations with GPs (general practitioners). We go out a lot but in hospital you have to stay in a ward. We have a variety in our job.

This contradicts the previous findings of Tyler *et al.* (1991) that conflict with doctors was one of the main stressors for nurses. Further research is required in this area.

A larger study is now being conducted by the author in order to investigate these findings further.

## References

- Bortner R.W. (1969) A short rating scale as a potential measure of pattern A behaviour. *Journal of Chronic Diseases* 22, 87–91.
- Crown S. & Crisp A.H. (1979) *Manual of the Crown-Crisp Experiential Index*. Hodder & Stoughton, London.
- Davies A.R. (1989) Stress among theatre nurses. *British Journal of Theatre Nursing* 26, 16–17.
- Dunn L., Rout U., Carson J. & Ritter S. (1994) Occupational stress amongst care staff working in nursing homes: an empirical investigation. *Journal of Clinical Nursing* 3, 101–107.
- Everitt B. (1974) *Cluster Analysis*, Heinemann, London.
- Foxall M.J., Zimmerman L., Standley R. & Bené B. (1989) A comparison of frequency and sources of nursing job stress

- perceived by intensive care, hospice and medical/surgical nurses. *Journal of Advance Nursing* 15, 577–584.
- Friedman M. & Rosenman R.H. (1959) Associations of specific overt behaviour pattern with blood and cardiovascular findings, blood and cholesterol level, blood clotting time, incidence of arcus senilis and coronary artery disease. *Journal of American Medical Association* 169, 1286–1296.
- Hague C. (1987) Caring can damage your health. *Intensive Care Nursing* 3, 28–33.
- Hingley P. & Cooper C.L. (1986) *Stress and the Nurse Manager*. Wiley, New York.
- Hipwell A., Tyler P.A. & Wilson C.M. (1989) Sources of stress and dissatisfaction among nurses in four hospital environments. *British Journal of Medical Psychology* 62, 71–79.
- Kasl S.V. & Cooper C.L. (1987) *Stress and Health Issues in Research Methodology*. Wiley, New York.
- Kerlinger G.N. & Pedhazzer E. (1973) *Multiple Regression in Behavioural Research*. Holt, Rinehart & Winston, New York.
- Leary J., Gallagher T., Carsen J., Fagin L., Bartlett H. & Brown D. (1995). *Journal of Advance Nursing* 21, 230–237.
- Molassiotis A., Van-den Akker O.B. & Boughton B.J. (1995) Psychological stress in nursing and medical staff on bone marrow transplant units. *Bone-Marrow Transplant* 15, 449–454.
- Power G. & Sharp G.R. (1988) A comparison of sources of nursing stress and job satisfaction among mental handicapped and hospice staff. *Journal of Advance Nursing* 13, 726–732.
- Ptacek J.T., Smith R.E., Espe K. & Raffety B. (1994) Limited correspondence between daily coping reports and retrospective coping recall. *Psychological Assessment* 5, 41–49.
- Rout U., Cooper C.L. & Rout J.K. (1996) Job stress among British general practitioners: predictors of job satisfaction and mental ill-health. *Stress Medicine* 12, 155–166.
- Rout U. & Rout J.K. (1994) Job satisfaction, mental health and job stress among general practitioners before and after the new contract: a comparative study. *Family Practice* 11, 300–306.
- Rout U. & Rout J.K. (1997) A comparative study on occupational stress, job satisfaction and mental health in British general practitioners and Canadian family practitioners. *Psychology, Health and Medicine* 2, 181–190.
- Tyler P.A., Carroll D.C. & Cunningham S.E. (1991) Stress and well-being in nurses: a comparison of the public and private sectors. *International Journal of Nursing Studies* 28, 125–130.
- Tyler P.A. & Cushway D. (1992) Stress, coping and mental well-being in hospital nurses. *Stress Medicine* 8, 91–98.
- Warr P., Cook J. & Wall T. (1979) Scales for the measurement of some work attitudes and aspects of psychological well-being. *Journal of Occupational Psychology* 52, 129–148.
- Wheeler H.H. (1997) A review of nurse occupational stress research. 1. *British Journal of Nursing* 6, 642–645.
- Wheeler H.H. & Riding R. (1994) Occupational stress in general nurses and midwives. *British Journal of Nursing* 3, 527–534.