

Psychological stress, anxiety, depression, job satisfaction, and personality characteristics in preregistration house officers

D Newbury-Birch, F Kamali

Abstract

Work related stress and anxiety may have a profound effect on an individual's well-being. In the case of doctors this may also affect patient care. This study measured stress, anxiety, and job satisfaction and the influence of personality factors on these in a group of preregistration house officers in the north east of England. A total of 109 preregistration house officers anonymously completed a lifestyles questionnaire designed to measure self rated psychological stress, state anxiety, job satisfaction, and personality characteristics. Results showed that 37.5% of women and 24% of men preregistration house officers suffered from possible psychological stress. Altogether 38.9% of women and 5.4% of men were suffering from possible anxiety and 8.3% of women and 2.7% of men were suffering from possible depression. The mean (SD) job satisfaction scores were 83.8(17.4) (range 52–127; median 86.5) for men and 80.5(16.7) (range 41–114; median 81) for women. Altogether 30.6% of men and 41.7% of women reported to be dissatisfied with the organisational processes in their job. There were significant negative correlations between stress and job satisfaction scores ($r = -0.508$; $p < 0.0001$) and between anxiety and job satisfaction scores ($r = -0.421$; $p < 0.0001$), and significant positive associations between anxiety and stress scores ($r = 0.593$; $p < 0.0001$). Stress, anxiety, and depression scores were significantly correlated with neuroticism scores in both men and women. The personality characteristic of neuroticism was a predisposing factor for stress and anxiety in the junior doctors which may be taken into consideration when offering support and counselling.

(*Postgrad Med J* 2001;77:109–111)

Keywords: junior doctors; stress and anxiety; job satisfaction; personality

Stress is an unavoidable part of an individual's working life.¹ Although stress can have positive qualities in that the individual may feel more excited than agitated and perceive the situation positively as a form of challenge,² it is also described as posing a threat to the quality of life as well as physical and psychological wellbeing.³ Stress is a complex issue but generally it is defined as a physical, mental, or emotional reaction resulting from an individual's response

to environmental tensions, conflicts, pressures, and similar stimuli.⁴ Stress is often described as being associated with emotions such as anger, anxiety and depression,⁵ and there is evidence to suggest that it is also related to impoverished mental health.⁵

It has been reported that junior doctors suffer from high levels of stress,^{6,7} and that excessive levels of it may lead to dissatisfaction, lower morale, and poorer work performance.⁶ Work related stress and anxiety can not only affect the doctors' health but it can also have an impact on the quality of patient care provided.⁸

Individual responses to stressful situations can vary greatly and it has been shown that certain people are more likely to experience high levels of stress in their job than others.⁴ Moreover, personality factors have been shown to attribute to stress,^{1,4,9} anxiety,¹⁰ and job satisfaction¹¹ in different occupations.

The present study investigated the relationships between stress, anxiety, and job satisfaction and the influence of personality characteristics on these variables in a group of preregistration house officers in the north east of England.

Subjects and methods

A total of 145 junior doctors (95 women) in the 18 NHS trust hospitals in the north east of England were contacted at the end of their preregistration year in July 1998; 109 (72 women) aged 23–40 years (median 24) agreed to take part. They anonymously completed a self assessed questionnaire which included the 90 question version of the Eysenck personality questionnaire (EPQ)¹² for determination of trait personality characteristics, the job satisfaction component of the occupational stress indicator (OSI),¹ which has a score range of 22–132, the 30 question version of the general health questionnaire (GHQ)¹³ for measurement of psychological stress, wherein a score of >4 denotes the possible presence of psychological stress, and the hospital anxiety and depression (HAD) scale¹⁴ for measurement of subjective anxiety and depression, wherein a score of >8 for either the anxiety or the depression component denotes possible "pathological" anxiety or depression respectively. Relationships between variables were determined using Spearman's rank correlation test.

Results

Altogether 37.5% (27) of women and 24% (9) of men preregistration house officers scored >4 on the GHQ and 38.9% (27) of women and 5.4% (2) of the men had a score >8 on the

Wolfson Unit of
Clinical
Pharmacology,
University of
Newcastle, Newcastle
upon Tyne NE2 4HH,
UK
D Newbury-Birch
F Kamali

Correspondence to:
Dr Kamali
farhad.kamali@ncl.ac.uk

Submitted 5 November 1999
Accepted 22 June 2000

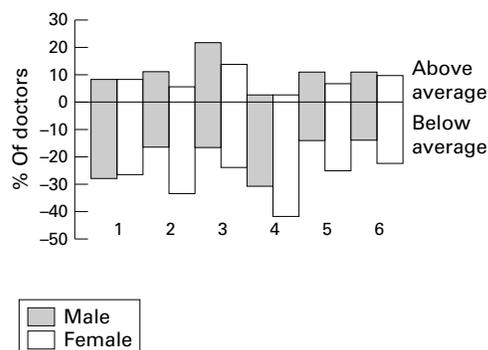


Figure 1 Percentages of men and women preregistration house officers scoring above and below normal ranges for job satisfaction subscales.

Table 1 Personality characteristics for men and women junior doctors

EPQ scores	Men (n=35)	Women (n=71)	
Extraversion	16.1 (3.4)	13.4 (4.8)	p=0.003
Neuroticism	7.2 (4.0)	12.7 (5.4)	p<0.00001
Psychoticism	4.7 (3.0)	3.1 (2.0)	p=0.001
Lie scale	5.7 (4.4)	5.5 (3.5)	p=0.71

anxiety component of the HAD scale, and 8.3% (6) of women and 2.7% (1) of men had a score of >8 on the depression component of the HAD scale. The mean (SD) job satisfaction score was 80.5(16.7) (range 41–114; median 81) for women and 83.8(17.4) (range 52–127; median 86.5) for men. The percentages of women and men preregistration house officers scoring above and below normal ranges for the five subscales of the job satisfaction scale and for broad view of job satisfaction are shown in fig 1. Apart from the “satisfaction with organisational design and structure” subscale, more men and women preregistration house officers scored below the normal ranges than those scoring above them (fig 1). Greater proportions of women scored below the normal ranges for four of the subscales compared with men (fig 1). The least and the highest proportion of both men and women scored above and below the normal range score for the “organisational processes” subscale respectively (fig 1). The latter comprised “supervision by senior staff”, “flexibility and freedom in the job”, “motivation with the job”, and “the amount of participation given in important decision making”. There were no statistically significant differ-

Table 2 Spearman's rank correlations between personality characteristics scores and stress, anxiety, depression, and job satisfaction scores

	Males		Females	
	r	p Value	r	p Value
Stress (GHQ)				
Neuroticism	0.475	0.004	0.529	<0.0001
Extraversion	-0.186	0.288	-0.353	0.002
Anxiety (HAD)				
Neuroticism	0.413	0.014	0.656	<0.0001
Extraversion	0.106	0.541	-0.269	0.0232
Depression (HAD)				
Neuroticism	0.471	0.004	0.635	<0.0001
Extraversion	-8.403	0.996	-0.304	0.01
Job satisfaction scale (OSI)				
Neuroticism	-0.221	0.208	-0.425	0.002
Extraversion	9.457	0.592	0.231	0.052

ences in mean scores between men and women for any of the subscales of the job satisfaction scale.

The mean scores for the EPQ are shown in table 1. Women had significantly lower scores for extraversion and psychoticism and significantly higher scores for neuroticism compared with men.

There were significant negative correlations between anxiety and job satisfaction scores ($r = -0.421$; $p < 0.0001$), and between stress and job satisfaction scores ($r = -0.508$; $p < 0.0001$). There was a significant positive correlation between anxiety and stress scores ($r = 0.593$; $p < 0.0001$).

Stress, anxiety, and depression scores were positively correlated with neuroticism scores of the EPQ for both men and women. Neuroticism scores were negatively correlated with job satisfaction scores in women but not in men (table 2). Stress, anxiety, and depression scores were also negatively correlated with extraversion scores of the EPQ in women, but not in men (table 2). The psychoticism component of the EPQ did not correlate with either stress, anxiety, or depression.

Discussion

This study revealed that a significant proportion of preregistration house officers surveyed suffered from possible psychological stress and anxiety. A significantly larger proportion of women preregistration house officers had anxiety scores within the clinically significant range than men, which corroborates our previous finding.¹⁵ More women were also found to be suffering from possible depression than men. The higher prevalence of anxiety and depression in women preregistration house officers compared with their male counterparts could be due to a number of reasons, including lack of women role models in the workplace and the conflict for women between their work and personal roles.¹⁶

Although the overall job satisfaction score of 81.6(16.9) in the preregistration house officers is similar to the normative value of 81.8(16.6),¹⁷ the study revealed that a significant proportion were dissatisfied with their job, particularly with the organisational processes of it. Thus while only 3% reported being satisfied with the organisational processes, over a third reported being dissatisfied with this aspect of their job. The assessment of organisational processes was based on the preregistration house officers reporting of the level of supervision provided by their superiors, flexibility and freedom in the job, level of participation given in important decision making, and the overall motivation with the job. Overall, we found that a greater proportion of women were dissatisfied with their job compared with men. Moreover, we found that job satisfaction scores were inversely correlated with the scores for stress and anxiety. However, whether job dissatisfaction is the causative factor for stress and anxiety or vice versa cannot be established at this stage.

The personality characteristic of neuroticism is associated with being “anxious”, “worrying”,

and "moody".¹² This study further established that neuroticism appears to be a predisposing factor for anxiety, depression, and stress levels in both men and women preregistration house officers. Although the self reported stress levels were not significantly different between men and women, we found that women who had higher neuroticism and lower extraversion scores had higher stress and anxiety scores compared with the rest of the group. The mean neuroticism score for women was nearly twice that for men. This is, however, in keeping with gender differences that are generally observed in this personality factor.¹⁸ Although there were no statistically significant differences for job satisfaction scores between men and women, neuroticism scores were significantly negatively related to job satisfaction scores in women, but not in men. The reasons for this are unclear, but a lack of such correlation in men might be due to the survey sample containing a considerably smaller number of men ($n = 37$) compared with women ($n = 72$).

Stress is a well recognised problem within the medical profession.^{6-11 16} In recent years efforts have been made to improve working conditions and training for junior doctors in the UK¹⁹ and stress counselling is becoming more commonplace within hospital settings.^{9 20 21} In the Newcastle area, in particular, all preregistration house officers have access to occupational health services through the House Concern scheme which provides confidential, individual counselling and psychotherapy, workshops on stress, educational seminars, and group work. The service is available 24 hours a day, seven days a week and is staffed by two part time consultant psychotherapists, a senior nurse specialist in analytical psychotherapy, and a group analyst. All trainees are informed about House Concern during their induction course. Despite ready access to occupational health services, however, it is not certain whether those doctors who are affected by stress would willingly seek help. In the Newcastle area for example, on average, only four preregistration house officers take advantage of the House Concern scheme each year.²¹ Resistance to seek help might be a result of the general perception among doctors that stress is something they have to learn to live with and it is not unusual for doctors to treat themselves or rely on informal consultations with colleagues to solve their problems.²²

Work related stress can affect doctors' health and result in low morale and motivation, poor communication and decision making as well as poor relationships with colleagues and with patients, all of which might affect patient care. It could also have financial implications for the NHS, through doctors taking sick leave, or leaving the main public sector, or even ceasing to practise medicine.

The findings of this study indicate that generally preregistration house officers were dissatisfied with their work conditions, and in

particular the organisational problems described earlier. Therefore work conditions of preregistration house officers may need further examination. Attention should be given to identifying the particular causes of stress in women doctors and to find ways in which they can be helped. This is important, considering that ever more women are now entering the medical profession. Clearly, while some stresses encountered by doctors are intrinsic to the job, others (such as hours worked) may be modified.

People respond differently to stressful situations and it appears that those doctors who suffer least from stress in their job do so by adopting appropriate coping strategies.²³ The way individuals cope with stressful situations may also be related to their personality characteristics. We found that some preregistration house officers might be more vulnerable to stress, anxiety, and depression as a result of their personality characteristics. This might be taken into consideration when offering support and counselling.

The authors wish to thank Dr David Walshaw in the Department of Statistics for his statistical advice.

D Newbury-Birch is in receipt of the British Medical Association Joan Dawkins Fellowship (young people and alcohol).

- 1 Cooper CL, Sloan SJ, Williams S. *Occupational stress indicator management guide*. London: NFER-Nelson, 1988.
- 2 Seyle H. *The stress of life*. London: Longmans, Green, 1956.
- 3 Cox T. *Stress*. Hampshire: Macmillan Education, 1978.
- 4 Fontana D, Abouerie R. Stress levels, gender and personality factors in teachers. *Br J Educ Psychol* 1993;63:261-70.
- 5 Cooper CL, ed. *Handbook of stress, medicine and health*. USA: CRC Press, 1996.
- 6 Firth Cozens J. Emotional distress in junior house officers. *BMJ* 1987;295:533-6.
- 7 Hsu K, Marshall V. Prevalence of depression and distress in a large sample of Canadian residents, interns and fellows. *Am J Psychol* 1987;144:1561-6.
- 8 Firth Cozens J. Stress, Psychological problems, and clinical performance. In: Vincent C, Ennis M, Audley RMJ, eds. *Medical accidents*. Oxford: Oxford University Press, 1993.
- 9 Firth Cozens J. Individual and organizational predictors of depression in general practitioners. *Br J Gen Pract* 1998;48:1647-51.
- 10 Sutherland VJ, Cooper CL. Identifying distress among general practitioners—predictors of psychological ill health and job dissatisfaction. *Soc Sci Med* 1993;37:575-81.
- 11 Deary IJ, Blenkin H, Agius RM, et al. Models of job-related stress and personal achievement among consultant doctors. *Br J Psychol* 1996;87:3-29.
- 12 Eysenck HJ, Eysenck SB. *Manual of the Eysenck personality questionnaire (junior and adult)*. Essex: Hodder and Stoughton, 1975.
- 13 Goldberg D, Williams P. *A user's guide to the general health questionnaire*. London: NFER-Nelson, 1988.
- 14 Zigmund AS, Snaith RP. The hospital anxiety and depression (HAD) scale. *Acta Psychiatr Scand* 1983;67:361-70.
- 15 Birch D, Ashton H, Kamali F. Alcohol drinking, illicit drug use and stress in junior house officers in north-east England. *Lancet* 1998;352:785-6.
- 16 Firth-Cozens J. Sources of stress in women junior house officers. *BMJ* 1990;301:89-91.
- 17 Cooper C, Sloan SJ, Williams S. *Occupational stress indicator data supplement*. Windsor: NFER-Nelson, 1989.
- 18 Lynn R, Martin T. Gender differences in extraversion, neuroticism, and psychoticism in 37 nations. *J Soc Psychol* 1997;137:369-73.
- 19 General Medical Council. *The new doctor*. London: GMC, 1997.
- 20 Grainger C, Harries E, Temple J, et al. Job satisfaction and health of house officers in the West Midlands. *Health Trends* 1995;27:27-30.
- 21 General Medical Council. *Report of visit to Newcastle University Faculty of Medicine*. London: GMC, 1999.
- 22 McKevitt C, Morgan M, Simpson J, et al. *Doctors' health and needs for services*. London: Nuffield Provincial Hospitals Trust, 1996.
- 23 Tattersall AJ, Bennett P, Pugh S. Stress and coping in hospital doctors. *Stress Medicine* 1999;15:109-13.