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Anxiety and depression in general practitioners: associations with type of practice, fundholding, gender and other personal characteristics

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Background. There is evidence both that a doctor's own well-being is closely associated with efficiency and positive attitude to patients, and that levels of stress, anxiety and depression in doctors are rising.

Objectives. This postal survey aimed to measure anxiety and depression levels in general practitioners in 1994 and identify any associations with personal and practice characteristics.

Methods. All general practitioners with patients in Staffordshire were invited to complete the Hospital Anxiety and Depression (HAD) scale.

Results. Six hundred and twenty of 896 general practitioners replied (response rate 69%). No gender differences were found in rates of anxiety and depression; overall, 19% of respondents were 'cases' of anxiety and 22% others had borderline anxiety scores; 10% were 'cases' of depression and 16% others had borderline depression scores. Anxiety 'caseness' was associated with living alone, amount of on-call duties undertaken, and being fourth/fifth wave fundholders. Depression 'caseness' was associated with having little free time from practice work, amount of on-call, being single handed, and working in a non-training practice.

Conclusions. The authors concluded that the level of mental ill-health in general practitioners is a matter of concern and is associated with workload.

Keywords. Anxiety, depression, general practitioners, personal characteristics, practice characteristics.

Introduction

It is important to understand more about the effects of stress on the mental health of the medical profession as the possible consequences range from trivial errors or omissions to potentially fatal mistakes. Rankin and colleagues[1] have demonstrated that an improvement in mood at work was associated with working efficiently and to time and suggested that good practice management, job satisfaction and general well-being were closely linked to a doctor's efficiency and positive attitudes to patients.

There is a growing body of evidence[2–5] that levels of stress, anxiety and depression in doctors are increasing. Sutherland and Cooper[2,3] studied 917 British general practitioners in 1990 and found that anxiety and depression scores for both men and women doctors had significantly increased compared to levels in a previous study[4] of 1817 general practitioners in 1987. More recently, Caplan[5] compared the anxiety and depression scores of a group of general practitioners with those of hospital consultants and managers using the Hospital Anxiety and Depression Scale (HAD).[6] This scale gives scores for each sub-scale of anxiety and depression out of a maximum of 21 points. Scores of 7 or less indicate non-cases, scores of between 8 and 10 points indicate borderline anxiety or depression and scores of 11 and above indicate that anxiety or depression states are likely to be present. In Caplan's study,[5] all three groups of subjects had similar frequencies of anxiety, with 55% of general practitioners scoring as 'borderline' or 'definite' cases of anxiety. General practitioners had significantly higher depression ratings than managers

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with 27% of general practitioners compared to 6% of managers having 'borderline' or 'definite' depression; no significant difference was found between general practitioners' and consultants' depression scores.

Cooper and others[4] found that for both sexes, the four most important factors associated with a lack of mental well being were the work-home interface, demands of the job, patients' expectations and practice administration. But for women, the work–home interface was the most significant factor associated with stress, and for men it was the least important of the four factors. Male general practitioners were affected more than women by work related aspects of the job such as practice administration and job demands.

This study assessed the levels of anxiety and depression in general practitioners by the Hospital Anxiety and Depression Scale[6] and investigated possible associations with gender, age, domestic circumstances, practice characteristics and sources of stress.

Method

In June 1994, all 896 general practitioner principals with patients in Staffordshire were sent a questionnaire which enquired about their personal and professional commitments, their causes of stress at work and incorporated the Hospital Anxiety and Depression scale (HAD).[6] Ten questions elicited personal details about the type of partnership, responsibilities for children, whether the doctor lived with a spouse or partner or lived alone, amount of free time and on-call duties. Respondents were instructed to give their immediate reaction to the HAD questions.

Completed questionnaires were returned in freepost envelopes. Detachable code numbers were appended to the questionnaires to allow chasing of non-respondents, who were reminded twice. Two hundred and seventy-two cards were sent to the remaining non-respondents and four anonymous respondents, enquiring about the reasons for non-response and setting out three questions from the HAD scale.

A Minitab package was used to process the responses. Tables of categorical data were analysed by the chi-square test. The extent to which the anxiety or depression scores were associated with age was explored using Spearman's rank correlation coefficient. The Mann-Whitney[8] test was used to compare anxiety and depression scores, and the Kruskal-Wallis test was employed when there were more than two groups of doctors to be compared. All P values calculated were two-sided.

Results

Six hundred and twenty-eight questionnaires were returned of which eight were mainly incomplete and discarded, leaving 620 for analysis (final response rate = 69%); 610 subjects completed the HAD scale. Four hundred and eighty-one of the respondents were male (78%). Significantly more women than men responded (77% women versus 67% men, $\chi^2 = 6.1$, df = 1, $P = 0.01$). The mean age of respondents was less than that of non-respondents (43.6 versus 47.6 years respectively, $t = 6.08$, $P < 0.0001$ by unpaired t test).

Hospital Anxiety and Depression scores

The mean anxiety score was 7.09 (SD 4.06), and mean depression score was 5.16 (SD 3.75). Overall, 19% of subjects scored as cases of anxiety (scores of 11 or more) and a further 22% had borderline anxiety (scores of 8–10 inclusive); 10% were cases of depression and an additional 16% had borderline depression. No significant differences were found between men and women doctors for anxiety or depression scores (mean anxiety scores were 6.95 and 7.58 for men and women respectively, $P = 0.11$, and mean depression scores were 5.23 and 4.90 for men and women respectively, $P = 0.24$, by Mann-Whitney tests).

There was a very small positive correlation between anxiety and increasing age (Spearman's correlation coefficient = 0.164) which was significant ($P < 0.0001$) because of the large numbers of respondents. No association was found between age and depression (Spearman's correlation coefficient = 0.004).

Associations between HAD scores and personal and practice characteristics

Table 1 shows the personal and practice characteristics that had significant associations with anxiety or depression scores. Anxiety scores were higher amongst those respondents who had been fundholding for a short time, and relatively lower amongst those who were first wave fundholders.

The less the degree of involvement in training general practitioner trainees, the higher was the depression score of the respondent. There was also a significant association between the anxiety score and not being involved with training.

Depression scores were significantly higher in respondents who had no half days free from practice work. Anxiety and depression scores were significantly higher in respondents with more frequent on-call duties. Those living alone had significantly higher anxiety scores than those living with partners, but there was no significant association with levels of depression.

Single-handed practitioners had significantly higher depression scores than doctors in partnerships and there was some evidence of a trend for single- handers to have higher anxiety scores.

There were no associations of anxiety or depression levels with whether or not respondents had children, the number or ages of any children, or the average practice list size.

TABLE 1 *General practitioners' mean scores for anxiety and depression measured by the HAD Scale and associations with fundholding, training status of practice, number of free half days, frequency of on-call, domestic state, and size of partnership (n = 610)*

Practice/ personal characteristic	No. of general practitioners	HAD scores Anxiety Mean (*P**)	Depression Mean (*P**)
Fundholding status:			
Non-fundholding	349	7.2	5.2
First wave	46	6.4	4.5
Second wave	19	5.4	4.0
Third wave	71	6.4	4.8
Fourth wave	76	7.7	5.2
Fifth wave	45	7.8 (0.03)	6.0 (0.38)
Not known	4		
Training status:			
Trainer	77	6.9	4.4
Training practice/ not trainer	110	6.3	4.7
Not trainer, nor training practice	411	7.4 (0.03)	5.5 (0.02)
Not known	12		
Number of free half days:			
0	99	7.4	6.1
1,2	420	7.1	5.1
3,4	46	6.7	4.2
≥5	15	6.7 (0.7)	4.6 (0.03)
No response	30		
Frequency of on-call:			
0	34	6.8	4.1
1–4	91	6.4	4.5
5–8	302	7.0	5.0
≥9	161	7.9 (0.01)	6.2 (0.001)
No response/ not applicable	22		
Domestic state:			
Live alone	56	8.6	5.7
Live with partner	552	7.0 (0.004)	5.1 (0.3)
No response	2		
Size of partnership:			
Single handed	75	8.1	6.6
Multiple partnership	534	7.0 (0.001)	5.0 (0.058)
No response	1		

**P*-value by Mann-Whitney test (when two groups are compared) or Kruskal-Wallis test (when three or more groups are compared).

Reasons for non-response

Eighty-nine of the 268 non-respondents and four anonymous respondents returned the card enquiring about their reason(s) for non-response. The most common reason given (in 70% of replies) was a lack of time, 12% replied that they never returned questionnaires on principle, and 7% thought that the questions were too intimate. The rest gave a variety of other reasons, such as lack of interest, confidentiality, hostility, or a health/lifestyle problem (1%) as their reasons for non-response.

Non-respondents rated the three HAD statements selected from the full questionnaire as "more tense", "more worrying" or "less funny" than respondents. The only statement in which the trend reached significance was "worrying thoughts go through my mind", which more non-respondents reported than respondents ($z = 2.66$, $P = 0.01$ by Mann-Whitney U test).

Discussion

It seems reasonable that the results from research reported here can be generalized to general practitioners across England and Wales for the following reasons: the age and sex distribution of the Staffordshire doctors studied here is similar to figures for all general practitioners for England and Wales,[9] the response rate was reasonably good and the survey involved general practitioners from 10 FHSA areas who had patients in Staffordshire. This ensured that the study population was drawn from a wide geographical area and worked in a cross-section of rural, urban and inner city communities of varying affluence.

Non-respondents were more likely to be older and male, and these factors should be borne in mind when interpreting the data. However, there are some indications that the missing replies from non-respondents did not threaten the validity of the final results and conclusions. The short enquiry sent to the non-respondents found that the most common reason given for non-response was time pressure and only one doctor cited a health problem as a reason for previous non-response; and non-respondents had a tendency to have worse scores for mental health than respondents. These findings support the widely held belief that there is a trend for non-respondents to a health related survey to be less healthy;[10] and this implies that any findings in these studies showing sub-standard health scores in respondents are likely to be an underestimate of the whole doctor population and the conclusions should be valid.

The findings that those in the first waves of gaining fundholding status were not as anxious as the respondents in the fourth and fifth waves might be because fundholders become more relaxed about their situation after two or three years of working with the changes. Alternatively, it may be due to the sort of doctors who are able to ride changes without becoming anxious, being the ones who were attracted to fundholding when it was launched. Time will tell which is the correct explanation.

The Hospital Anxiety and Depression scale[6] chosen for inclusion in the survey was selected as the mental health instrument because it has recently been successfully used[5] to measure general practitioners' mental health and the subjects found it quick and easy to

complete. Wilkinson and Barczak[11] have previously compared the HAD and GHQ-28 scales and found that the HAD performed better than the GHQ for identifying cases of anxiety and depression when measured against a research psychiatric interview. There are several disadvantages to using the HAD scale. One is that, in common with other rating scales of mental health, it has a limited ability to distinguish between anxiety and depression states as the mood scale contains some items which reflect both anxiety and depression. Another disadvantage of the HAD scale is that it was originally designed for the assessment of anxiety and depression in the setting of physical illness, and somatic symptoms that might be attributable to physical illness, such as sleep disturbance, headaches and appetite disorder, have been excluded. Thirdly, age may affect responses to the HAD scale for at least one of the items: "I feel as if I am slowed down." The proportions of general practitioners scoring as 'cases' of anxiety and depression were similar to, but slightly lower than, Caplan's[5] figures for general practitioners. It is possible that the higher response rate in Caplan's study influenced the percentage reporting anxiety or that general practitioners have different anxiety levels depending on whether they work in a mainly rural locality in Lincolnshire or the varied settings of Staffordshire. The total percentages of general practitioners with case/borderline anxiety and depression levels in this Staffordshire study were similar to the percentages found in the patients of a general practice population. Dowell and Biran[12] conducted a postal survey of a random sample of patients registered with a general practice using the HAD scale; they found that 55% of patients scored as 'cases' of or had 'borderline' anxiety; 23% were 'cases' of or had 'borderline' depression.

The lack of gender differences in the mental health of Staffordshire practitioners conflicts with other published work where male doctors had significantly higher anxiety than female practitioners.[3,4] This may be because these studies were carried out in the late 1980s and in 1990, and that there have been changes so that the mental health of male and female doctors has reached similar levels for both sexes of general practitioners in the mid-1990s. Women doctors were more likely to have working arrangements that were associated with lower anxiety and depression levels. More women doctors than men worked part-time and the Staffordshire doctors with more half-days free from work had significantly lower depression scores than those with no free time. Fewer women than men doctors reported being involved in on-call duties, women were more likely to work in a training practice, and fewer females than males were singlehanded practitioners. These practice characteristics might help to prevent women doctors' mental health levels worsening over future years.

The adverse effects of stress on a workforce are well recognized.[13] It is important to understand as much as possible about the causes and the circumstances associated with higher levels of stress on the medical profession, so that changes in working practices can be instituted to counteract the recent decline in the mental health of general practitioners.[2-4] The general practitioner's caseload might be re-defined, practice management might be more efficiently organized, practice complaint procedures could be established to divert the impact away from individual practitioners, and new schemes could be organized for doctors' out-of-hours workload. Improving general practitioners' mental health should positively affect doctors' performance and therefore the quality of patient care.

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References

[1] Rankin HJ, Serieys NM, Elliott-Binns CP. Determinants of mood in general practitioners. *Br Med J* 1987; **294:** 618–620.
[2] Sutherland VJ, Cooper C. Job stress, satisfaction, and mental health among general practitioners before and after introduction of new contract. *Br Med J* 1992; **304:** 1545–1548.
[3] Sutherland VJ, Cooper CL. Identifying distress among general practitioners: predictors of psychological ill-health and job dissatisfaction. *Soc Sci Med* 1993; **37:** 575–581.
[4] Cooper CL, Rout U, Faragher B. Mental health, job satisfaction, and job stress among general practitioners. *Br Med J* 1989; **298:** 366–370.
[5] Caplan RP. Stress, anxiety, and depression in hospital consultants, general practitioners, and senior health service managers. *Br Med J* 1994; **309:** 1261–1263.
[6] Zigmond AS, Snaith RP. The Hospital Anxiety and Depression Scale. *Acta Psychiatr Scand* 1983; **67:** 361–70.
[7] Myerson S. Investigating stresses in general practice using an open-ended approach in interviews. *Fam Pract* 1990; **7:** 91–95.
[8] Moses LE, Emerson JD, Hosseini H. Analysing data from ordered categories. *New Eng J Med* 1984; **311:** 442–448.
[9] Department of Health. Statistics for General Medical Practitioners in England and Wales: 1983–1993. *Stat Bull* 1994; May.
[10] Vernon SW, Roberts RE, Lees ES. Ethnic participation in longitudinal health studies. *Am J Epid* 1984; **119:** 99–113.
[11] Wilkinson MJB, Barczak P. Psychiatric screening in general practice: comparison of the general health questionnaire and the hospital anxiety depression scale. *J R Coll Gen Pract* 1988; **38:** 311–313.
[12] Dowell AC, Biran LA. Problems in using the hospital anxiety and depression scale for screening patients in general practice. *Br J Gen Pract* 1990; **40:** 27–28.
[13] Cox T. *Stress research and stress management: putting theory to work.* HSE Contract Research Report No 61/1993. London: HMSO, 1993.