ORIGINAL ARTICLE

A questionnaire survey of stress and bullying in doctors undertaking research

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Background: Research is an increasingly important aspect of higher medical training for many doctors. Studies investigating sources of stress, isolation, and workplace bullying have not previously sought information in this setting.

Methods: An internet based questionnaire survey of doctors undertaking research (n=259) was conducted to examine stressors and levels of job satisfaction in this potentially vulnerable group. In order to assess overall levels of satisfaction, we asked whether doctors would recommend their research post to a colleague.

Results: There was a statistically significant association between those who would not recommend their post to a colleague and those who had difficulties in arranging funding and in writing up (p<0.001). Further significant correlations were found between dissatisfaction with the post and lack of help, support, and advice from supervisors and colleagues, wanting to change supervisors, experience of the major categories of workplace bullying, and having an inadequate clinical commitment (p<0.001). When the significant variables were entered into a multivariate analysis, the results showed that dissatisfaction was associated with wanting to change supervisors and with a threat to professional status.

Conclusions: Stress and bullying are common in doctors undertaking research. These findings have important implications for medical training and for doctors choosing research projects. Setting up systems of support may have important benefits.

Although it is difficult to define accurately, stress appears to be an unavoidable and common aspect of a doctor's work.^{1–3} It may have positive aspects in that some individuals may feel challenged and may be able to raise productivity to meet increasing demands⁴; however, in junior doctors, work related stress and anxiety have been shown to lead to low morale and poorer work performance and to adversely affect the quality of care provided.^{1–5}

A number of studies have shown that one specific stressor, workplace bullying, is frequently experienced by junior doctors and leads to reduced job satisfaction, depression and anxiety, sickness absence, and intention to leave.^{1–2,7–9} The problem has however been difficult to study because individual responses to stressful situations vary and certain people are more likely than others to perceive high levels of stress in their jobs.^{4,10–11} In addition to this, there is no generally accepted definition of workplace bullying, although it appears to refer to situations in which someone is subjected to social isolation or exclusion, his or her work and efforts are devalued, and he or she is frustrated, often threatened, and perhaps even abused.^{12–14} Stress and bullying may lead to poor health, and this may in turn result in an increased susceptibility to becoming a victim of bullying.

Personality factors, particularly negative affectivity, have also been shown to be related to stress, anxiety, and other occupational health outcomes in different areas of medicine,^{15–18} and these factors may contribute to feelings of job dissatisfaction and stress. While many studies have addressed these issues in many different groups of healthcare workers including those at junior, middle grade, and senior staff levels,^{10–19–22} none have examined the experience of doctors who are undertaking research. As postgraduate research is becoming a commonplace activity (and requirement) among physicians of all specialties in the United Kingdom,^{23–28} we attempted, for the first time, to assess levels of stress and bullying in these physicians.

METHODS

A questionnaire was posted on the home page of an internet website. It was aimed at doctors who had stated that they were undertaking research after registering their personal information with www.doctors.net.uk, the largest website for doctors in Europe. Participation was voluntary and anonymous, and participants were prevented from completing the questionnaire twice by electronic coding. The questionnaire collected demographic and job related information and then asked participants a number of questions related to the funding of research and writing up, their relationships with supervisors and colleagues, and their perceptions of support, isolation, and overwork. Finally participants were asked about their experiences of the four major categories of bullying behaviour: threat to professional status; threat to personal standing; isolation; and enforced overwork.

Threat to professional status was defined as exposure to the following: belittling opinion, unjustified criticism and monitoring of work, public humiliation, and intimidatory use of disciplinary procedures. Threat to personal standing included teasing, insults, name-calling, sarcasm, and verbal and non-verbal threats. Isolation included withholding necessary information, freezing out, ignoring or excluding, and unreasonable refusal of applications for leave, training, or promotion. Enforced overwork was defined as undue pressure to produce work and the setting of impossible deadlines.⁸ All those who completed the questionnaire answered all questions.

Data were analysed using χ^2 test statistics; a univariate logistic regression method was used to estimate the likelihood of dissatisfaction based on whether participants would recommend their research post to a colleague. Those variables that were found to be significant in univariate models (p<0.15) were selected to build a multivariate model, and those variables that were found to be co-correlated with other variables were left in the model to adjust for residual

Figure 1 Multivariate logistic regression model showing significant independent predictors of dissatisfaction with a research post. Relative risks (x axis) are adjusted for all other variables in the model. Error bars represent 95% confidence intervals.

confounding. The multivariate model with the strongest statistical and clinical consistency is presented and shows significant independent predictors of dissatisfaction after adjusting for all other variables in the model (fig 1). All *p* values presented are two sided.

RESULTS AND DISCUSSION

Participants were predominantly male (*n* = 175; 68%) white (*n* = 181; 70%) specialist registrars (*n* = 148; 57%) undertaking an MD (*n* = 143; 55%). A smaller proportion were undertaking a PhD (*n* = 65; 25%); only 22% of the participants (*n* = 56) reported that they were undertaking the research because of a genuine interest, and only four individuals who answered this survey were black (table 1).

Research funding came from a grant in 44% of cases (*n* = 113), from a pharmaceutical company in 10% (*n* = 27), and was arranged entirely by the supervisor in 46% of cases (*n* = 119). Overall, 53% of respondents were from medical specialties (including paediatrics) and 29% from surgical specialties (including accident and emergency, ophthalmology, and otolaryngology); 7% were psychiatrists, 7% were obstetricians and gynaecologists, and 4% were anaesthetists.

One hundred and sixty participants (62%) reported that they would recommend their research post to a colleague. Univariate analysis showed significant correlations (*p* < 0.001) between the 38% (*n* = 99) who would not recommend their post and those who reported experiencing stress and bullying (table 1). Doctors who reported that they would not recommend their research post were more likely to have poor relationships with their supervisors, to want to change them and to have inadequate clinical commitment. They were also more likely to report all four categories of bullying behaviour. There was no statistically significant correlation between dissatisfaction and whether doctors were in “medical” or “surgical” specialties.

The number of physicians undertaking research who were not prepared to recommend their research post to a colleague was used as a measure of job dissatisfaction in the logistic regression analysis. The multivariate model shows that doctors who are undertaking a PhD are more likely to be dissatisfied than are those who are undertaking an MD

(*p* = 0.03) (fig 1). Dissatisfaction was further independently associated with wanting to change supervisor (*p* = 0.001) and a threat to professional status (*p* = 0.01). Doctors with an “about right” clinical commitment were significantly less likely to be dissatisfied (*p* = 0.02).

Though the need to help doctors, particularly junior ones, to manage stress is widely recognised, it is usually considered that the stress is caused by the working conditions, which entail long hours of work, disruption of sleeping patterns, and dealing with seriously ill people.^{3 4 29} A further issue highlighted is that doctors feel particularly stressed when they feel that their competence has been exceeded, although, encouragingly, stress does not appear to be related to impaired mental health.³⁰

This study, the first of its kind, suggests that even in the research environment doctors do not escape stress. Levels of job dissatisfaction, isolation, and bullying among doctors holding research posts are unacceptably high. Our survey (table 1) showed that more than a third would not recommend their post to a colleague. Of these, over half had experienced bullying in the form of threats to their professional status and personal standing, and had felt overworked and unsupported, while two thirds felt isolated. In the multivariate analysis, job dissatisfaction was found to be associated with a threat to professional status, which included intimidation and humiliation at work, after controlling and stratifying for other factors in the model. This study is however limited by several factors, including high correlations between different questions, the lack of a control group or comparable group either within medicine and analysis of those who were “satisfied”; further questionnaires should be designed to overcome this. These could consider questions of autonomy and lack of congruence between workload and responsibility, and, importantly, should include as a control group scientists who are not physicians. They may also wish to address the question of the disincentives to undertake research, for example the reported disparity in pay compared with colleagues providing only a clinical commitment.³¹

In recent years, efforts have been made to improve working conditions and training for doctors, and stress counselling is becoming commonplace. Several European countries, including England, Sweden, Norway, and Finland, have taken general preventative action against workplace bullying. This has taken the form of, for example, efforts to increase public awareness, funding for research into stress and bullying, and the establishment of protective legislation.³² A reduction in bullying is not only likely to help those being bullied and suffering stress but also brings economic and other benefits to employers.^{7 33}

Work related stress can affect doctors’ health and result in poor morale and motivation, poor communication and decision making, and poor relationships with colleagues. It also has financial implications through doctors taking sick leave or ceasing to practise medicine.^{4 9 34} Providing a more supportive work environment with appropriate attention to workloads and the provision of guidelines illustrating good practice in supervision may help to protect the health of medical staff doing research. Interestingly, teachers who take a course in human relations appear to suffer less stress,³⁵ although the relationship between a relatively new position (in this case a physician undertaking research) and stress is poorly understood.

Doctors contemplating research may wish to choose less stressful appointments on the basis of these findings, for example by undertaking an MD as opposed to a PhD and by ensuring an “about right” clinical commitment. This is consistent with evidence suggesting that a well conducted and supervised short project may be better for a doctor’s

Table 1 Univariate logistic regression model showing the likelihood of dissatisfaction with a research post as indicated by a no response to "would you recommend your research post to a colleague". Reference category is indicated by a relative risk of one

	Would you recommend your research post to a colleague?		Likelihood of dissatisfaction: relative risk (95% confidence interval)	Likelihood ratio (p value)
	Yes (n = 160): job satisfaction	No (n = 99): job dissatisfaction		
Demographic information				
Have you completed or are you doing				
A PhD	43	22	0.95 (0.51 to 1.77)	0.057
An MD	93	50	1	
Other	24	27	2.09 (1.09 to 4.00)	
Did you do this as				
A genuine interest	40	16	0.29 (0.13 to 0.64)	0.002
A means to an end	24	33	1	
A bit of both	96	50	0.38 (0.20 to 0.71)	
Gender				
Male	103	72	1	0.160
Female	57	27	0.68 (0.39 to 1.17)	
What is your grade?				
Senior house officer	39	30	1.13 (0.52 to 2.46)	0.475
Specialist registrar	96	52	0.80 (0.39 to 1.61)	
Other	25	17	1	
Ethnicity				
Black	3	1	0.55 (0.06 to 5.43)	0.840
White	113	68	1	
Indian	28	21	1.25 (0.66 to 2.37)	
Other	16	9	0.93 (0.39 to 2.23)	
Was the research funding				
From a grant	76	37	0.52 (0.22 to 1.23)	0.223
From a pharmaceutical company	14	13	1	
Arranged by your supervisor	70	49	0.75 (0.33 to 1.74)	
Stressors				
Was funding difficult to arrange?				
Yes	54	50	1	<0.001
No	89	26	0.32 (0.18 to 0.56)	
Don't know	17	23	1.46 (0.70 to 3.05)	
Do you worry about money?				
Yes	69	67	1	<0.001
Not really	47	19	0.42 (0.22 to 0.78)	
No	44	13	0.30 (0.15 to 0.62)	
Do you want to change supervisor?				
Yes	26	74	1	<0.001
No	134	25	0.07 (0.04 to 0.12)	
Does your supervisor listen to you?				
Yes	159	64	Unstable owing to small numbers	
No	1	35		
Is the information given by your supervisor consistent?				
Yes	151	44	1	<0.001
No	9	55	21.0 (9.6 to 45.8)	
Are your colleagues helpful?				
Yes	156	77	1	<0.001
No	4	22	11.1 (3.7 to 33.5)	
Is your clinical commitment				
Too little?	20	32	1.51 (0.73 to 3.13)	<0.001
Too much?	35	37	1	
About right?	105	30	0.27 (0.15 to 0.50)	
Are you worried about writing up?				
Yes	99	81	0.36 (0.20 to 0.66)	<0.001
No	61	18	1	
Bullying				
Have you experienced a threat to your professional status?				
Yes	41	71	1	<0.001
No	119	28	0.14 (0.08 to 0.24)	
Have you experienced a threat to your personal standing?				
Yes	34	74	1	<0.001
No	126	25	0.09 (0.05 to 0.16)	
Do you feel isolated?				
Yes	105	89	1	<0.001
No	55	10	0.21 (0.1 to 0.45)	
Do you feel overworked?				
Yes	76	74	1	<0.001
No	84	25	0.31 (0.18 to 0.53)	
Do you feel supported?				
Yes	159	37	Unstable owing to small numbers	
No	1	62		

career than longer periods in research.³⁶ An increased awareness of the problems faced by doctors undertaking research may also help to alleviate the problems faced. It is time to move away from a professional culture that accepts and expects that stress and bullying is inevitable, and to concentrate on improving the working conditions for all in our profession.

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