Occupational stress in palliative medicine, medical oncology and clinical oncology specialist registrars

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ABSTRACT – A cross-sectional complete enumeration postal survey was conducted to compare stress levels between specialist registrars (SpRs) in palliative medicine, clinical oncology and medical oncology. Four hundred and one UK-registered SpRs responded (response rate 63.1%). Levels of psychological distress and depression were measured by GHQ-12 and SCL-D: 102/390 (26.2%, 95% confidence interval (CI) = 21.8–30.5%)) scored >3 on GHQ-12 indicating psychological distress, 44/391 (11.3%, 95% CI = 8.1–14.4%) scored ≥1.5 on SCL-D indicative of depression. Suicidal ideation was indicated by 15 responders. There were no significant differences between specialties. The effect of stress on personal or family life was the dominant predictor of both psychological distress and depression, although dissatisfaction with choice of specialty and feeling underutilised also contributed. One in four SpRs experience stress. These results are similar to studies of general practitioner principals and consultants from other specialties. Stress needs to be managed if doctors are to survive professional life.

KEY WORDS: burnout, depression, epidemiological survey, GHQ, job satisfaction, medical careers, occupational stress, oncology, palliative medicine, psychological stress

Introduction

Many doctors experience high levels of stress during their working lives.[1] They are prone to depression, alcoholism[2] and are at increased risk of suicide[3] compared to the general population. Stress itself can affect performance. One in three doctors report lower standards of patient care resulting from stress and that they make mistakes because of it; 10% of a 'serious nature'.[4] National UK surveys have identified high levels of psychological distress among doctors with 29–44% suffering identifiable psychiatric morbidity and 12–18% suffering from depression.[5,6] This compares unfavourably with the average British worker (17.8% have some identifiable psychological problems[7]) and the general British population (21% have some form of common mental disorder[8]).

Cancer clinicians are exposed to high risk of poor mental health[9] with 28% of consultant oncologists reporting psychological distress.[10,11,12] The prevalence of psychiatric morbidity among hospital consultants has increased over recent years, markedly so among clinical and surgical oncologists.[13] Levels of stress vary not only between specialties but also between career grades.[14–18] Specialist registrars (SpRs) who work in palliative medicine and oncology are often at the front line of care. They are regularly exposed to the clinical stresses and emotional demands associated with caring for cancer patients and their families. They may also be subject to workplace bullying,[19] some feel concern about their career futures, and others about how they are viewed by patients and colleagues.[20] There are added pressures of research, exams, assignments and appraisals. Current cohorts of SpRs also have to negotiate hurdles unknown to their predecessors,[21] such as the ramifications of the Calman report[22] which introduced formalised training, but also brought about shorter training times and more rigorous monitoring of performance. Little is known about stress in SpRs who work with cancer patients. This study investigates stress in SpRs and compares levels of stress in palliative medicine, medical oncology and clinical oncology.

Method

The Association for Palliative Medicine and the Specialist Advisory Committee for Medical Oncology supplied lists of UK-registered SpRs. A questionnaire and letter were sent to each SpR explaining the study and asking them to participate. Non-responders in palliative medicine and medical oncology were followed up with up to two further mailings. SpRs in clinical oncology were contacted through a general monthly mailing as a one-off mail shot.

The questionnaire was based closely on one used in previous studies.[5,6] It included General Health Questionnaire (GHQ-12)[23] to assess psychological distress; Symptom Checklist for Depression (SCL-D)[24] to measure depression; questions about demographic information, and questions to measure job satisfaction, levels of support from training, and

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hours worked. Respondents also rated occupational stressors for frequency and stressfulness.[5,6] The final part of the questionnaire comprised open-ended free-text questions which asked respondents to write about a recent stressful incident and then offer suggestions of ways to reduce levels of stress in their work.

GHQ-12 is a well-validated screening tool for identifying short-term changes in mental health (depression, anxiety, social dysfunction and somatic symptoms). GHQ scores can be used as an indicator of psychological morbidity (score >3 indicates possible psychiatric 'caseness', although a psychiatric assessment is needed for clinical diagnosis). SCL-D is also a well-validated screening tool, reflecting a broad range of concomitants of clinical depression (score >1.5 indicates possible depression).

Data analysis

Data were analysed using SPSS 11.5. Parametric and non-parametric analysis was conducted as appropriate. Binary logistic regression was used to assess the association between potential predictor variables and GHQ-12 and SCL-D caseness following methods recommended by Peduzzi *et al*[25] and Peters *et al.*[26] Data reported are based on numbers of valid responses to items for each group or subgroup. Thus numerators and denominators may not always total to full sample size. To avoid products of zero we added a constant of one to frequency and stressor scores when calculating the product score reported in the tables. The open-ended free-text questions were subjected to a thematic content analysis.[27] All free-text narratives were transcribed and anonymised and then coded on the basis of categories of identified themes generated from reading the text (eg conflict/issues with colleagues). The narratives were then coded by an independent reader and agreement statistics were calculated (percentage agreement and Cohen's Kappa, as appropriate). Agreement was high for the coding of free-text responses (for descriptions of stressful incidents percentage agreement = 64.7; for ways of reducing stress k=0.8) indicating substantial to near-perfect agreement.[28]

Results

At the time of the survey, according to the specialty organisations, there were 173 palliative medicine SpRs, 208 medical oncology SpRs and 302 clinical oncology SpRs (total = 683) in the UK. Overall, 449 individuals responded (449/683, 65.7%) but 48 were excluded because they were not in posts, due to maternity or sick leave, at the time of responding. The reported analysis includes 401 respondents (63.1% of valid SpRs): 116 palliative medicine, (67.0%), 130 medical oncology (62.5%) and 155 clinical oncology (51.3%).

Table 1. Demographic and work-related characteristics of respondents by specialty. Unless otherwise specified, cells contain number and percentage (in brackets) within specialty. Not every respondent answered every question, so numbers in categories may not add up to total within the specialty. *Satisfaction is scored on a seven-point scale (1 = extremely dissatisfied, 7 = extremely satisfied). DGH = district general hospital.

		Palliative medicine (n=116)		Medical oncology (n=130)		Clinical oncology (n=155)		Overall (n=401)	
Age	Mean (SD)	33.0	(4.1)	32.9	(2.9)	32.3	(3.0)	32.7	(3.3)
Gender	Male	22	(19.0)	55	(42.3)	60	(38.7)	137	(34.2)
	Female	94	(81.0)	75	(57.7)	95	(61.3)	264	(65.8)
Marital status	Single	17	(14.7)	25	(19.2)	33	(21.3)	75	(18.7)
	Married/cohabiting	97	(83.6)	103	(79.2)	121	(78.1)	321	(80.0)
	Separated/widowed/divorced	2	(1.7)	2	(1.5)	1	(0.6)	5	(1.2)
Partner a doctor	Yes	37	(33.3)	39	(30.2)	59	(38.8)	135	(34.4)
	No	62	(55.9)	75	(58.1)	73	(48.0)	210	(53.6)
	Not applicable	12	(10.8)	15	(11.6)	20	(13.2)	47	(12.0)
Current workplace	Specialist/oncology centre	35	(31.8)	103	(79.8)	133	(86.4)	271	(69.0)
	DGH/teaching hospital	18	(16.4)	8	(6.2)	16	(10.4)	42	(10.7)
	University/research centre	3	(2.7)	16	(12.4)	4	(2.6)	23	(5.9)
	Hospice	46	(41.8)	0		0		46	(11.7)
	Other including combination	8	(7.3)	2	(1.6)	1	(0.6)	11	(2.8)
Year of training	Mean (SD)	2.7	(1.3)	3.0	(1.5)	3.5	(1.7)	3.1	(1.5)
Full time or part time	Full time	84	(73.7)	110	(85.3)	132	(85.7)	326	(82.1)
	Part time	30	(26.3)	19	(14.7)	22	(14.3)	71	(17.9)
Changed from another specialty	Yes	16	(13.8)	8	(6.2)	13	(8.5)	37	(9.3)
	No	100	(86.2)	121	(93.8)	140	(91.5)	361	(90.7)
Satisfaction with choice of specialty*	Mean (SD)	6.2	(1.0)	5.9	(1.0)	6.1	(1.1)	6.0	(1.0)
Satisfaction with support in training*	Mean (SD)	5.4	(1.2)	5.0	(1.2)	5.1	(1.2)	5.2	(1.2)
Specialty what they thought it would be	Yes	107	(93.9)	120	(93.0)	142	(92.8)	369	(93.2)
	No	7	(6.1)	9	(7.0)	11	(7.2)	27	(6.8)

Characteristics of respondents

The mean ages of respondents in the three specialties were similar, but there were relatively more female SpRs in palliative medicine (94, 81.0%) compared with medical oncology (75, 57.5%) or clinical oncology (95, 61.3%) (Table 1). Those from palliative medicine were more likely to be married or co-habiting, and more likely to be working part time. The majority from medical oncology (103, 79.8%) and clinical oncology (133, 86.4%) were working in specialist or oncology centres; only 46 palliative medicine SpRs (41.8%) were hospice based, the remainder worked in specialist centres (35, 31.8%) or district general hospitals (18, 16.4%). Sixteen medical oncologists (12.4%) worked in a university or research centre compared to <3% in the other specialties. Thirty-seven respondents replied that they had changed to their current post from another

Table 2. Occupational stressors scores (product of stressfulness x frequency) by specialty.

Occupational stressor item	Palliative medicine* Mean (SD)	Medical oncology** Mean (SD)	Clinical oncology§ Mean (SD)	Total sample§§ Mean (SD)	p-value
Being over-stretched at times	6.6 (2.6)	7.9 (3.4)	7.3 (3.2)	7.3 (3.1)	0.022
Keeping up-to-date with knowledge	6.2 (2.5)	7.4 (3.2)	6.8 (3.0)	6.9 (3.0)	0.019
Fear of making mistakes	5.9 (2.8)	6.9 (3.2)	6.5 (3.3)	6.5 (3.2)	0.061
Talking with distressed relatives	6.1 (2.1)	6.7 (2.5)	6.5 (2.7)	6.4 (2.5)	0.461
Effect of hours of work on personal/ family life	5.8 (3.0)	7.6 (3.7)	5.8 (3.1)	6.4 (3.4)	<0.001
Conflict between work and personal or family commitment	5.8 (3.6)	7.2 (4.1)	5.8 (3.7)	6.2 (3.8)	0.010
Making the right decision alone	6.1 (2.3)	6.0 (2.6)	6.0 (2.7)	6.0 (2.5)	0.589
Failure of treatment	5.7 (2.1)	6.4 (2.6)	5.9 (2.6)	6.0 (2.5)	0.122
Effect of stress on personal/family life	5.7 (3.1)	6.4 (3.8)	5.5 (3.6)	5.9 (3.6)	0.100
Conflicts between clinical and non-clinical work	5.9 (2.9)	6.6 (3.4)	5.1 (3.1)	5.8 (3.2)	<0.001
Compromising standards when resources are short	4.8 (3.3)	6.3 (3.5)	6.1 (3.5)	5.8 (3.5)	0.001
Treatment withdrawal	5.5 (2.0)	5.8 (2.5)	5.6 (2.4)	5.6 (2.3)	0.703
Dealing with death	5.6 (1.7)	5.8 (2.5)	5.5 (2.5)	5.6 (2.3)	0.617
Making time for research	5.8 (3.5)	6.2 (3.5)	4.9 (3.1)	5.6 (3.4)	0.004
Lack of beds	4.2 (2.8)	6.4 (3.7)	5.7 (3.4)	5.5 (3.4)	<0.001
Over-zealous/inappropriate treatment	5.6 (2.4)	5.3 (2.6)	4.8 (2.3)	5.2 (2.4)	0.090
Difficult relations with senior colleagues	5.4 (3.1)	5.2 (2.7)	5.0 (2.7)	5.2 (2.8)	0.601
Making time for teaching	5.1 (2.5)	4.7 (2.5)	4.3 (2.1)	4.7 (2.4)	0.056
Making the right decision as a team	5.1 (2.3)	4.4 (2.1)	4.3 (2.2)	4.6 (2.2)	0.013
Lack of protocols for patient management	3.6 (2.1)	5.1 (2.9)	4.3 (2.4)	4.4 (2.6)	<0.001
Having to do menial or repetitive tasks	3.6 (2.6)	4.5 (2.9)	4.1 (2.8)	4.1 (2.8)	0.007
Too much responsibility	3.6 (2.5)	4.2 (2.8)	4.3 (2.9)	4.1 (2.8)	0.166
Lack of recognition of own contribution by others	3.9 (2.7)	4.4 (3.3)	3.8 (2.8)	4.0 (2.9)	0.564
Sleep deprivation	3.4 (2.8)	4.3 (3.1)	3.5 (2.8)	3.7 (2.9)	0.013
Difficult relations with nursing staff	4.1 (2.2)	3.4 (2.3)	3.1 (2.0)	3.5 (2.2)	0.002
Difficult relations with junior colleagues	3.5 (2.3)	3.4 (2.2)	3.2 (2.4)	3.3 (2.3)	0.335
Feeling under-utilised	3.2 (2.7)	2.6 (2.5)	2.6 (2.1)	2.8 (2.4)	0.037
Low prestige of specialty	3.6 (2.7)	1.8 (1.9)	1.9 (1.6)	2.3 (2.2)	<0.001
Threat of violence	2.3 (2.4)	1.8 (1.8)	2.0 (2.3)	2.0 (2.2)	0.231
Sexual harassment	1.4 (1.0)	1.4 (1.6)	1.3 (1.1)	1.4 (1.2)	0.219

Notes:
*Numbers of respondents to individual items varies from 109–133.
**Numbers of respondents to individual items varies from 123–128.
§Numbers of respondents to individual items varies from 149–153.
§§Numbers of respondents to individual items varies from 386–393.

specialty (Table 1). On the whole SpRs were very satisfied with their choice of speciality with only 23/398 scoring four, on a seven-point scale, despite the long hours reportedly worked. Satisfaction with support during training was lower, but still high (Table 1).

Comparison of occupational stressors

The occupational stressors with the highest mean scores overall were: 'being over-stretched at times' (7.3); 'keeping up-to-date with knowledge' (6.9); 'fear of making mistakes' (6.5); 'talking with distressed relatives' (6.4); 'effect of hours of work on personal/family life' (6.4); and 'conflict between work and personal or family commitment' (6.2) (Table 2). There were significant differences between specialties on 15 of the 30 stressor items, although not all of these had very high mean scores. Medical oncology had the highest mean on 11 of these items, for instance 'being over-stretched at times' (p=0.022), 'keeping up-to-date with knowledge' (p=0.019) and 'effect of hours of work on personal/family life' (p<0.001). Palliative medicine had the highest mean on four items: 'making the right decision as a team' (p=0.013), 'feeling under-utilised' (p=0.037), 'low prestige of specialty' (p<0.001), 'difficult relations with nursing staff' (p=0.002). Among the stressors with significant differences between specialties, palliative medicine tended to have the highest mean when the stress levels were relatively low, medical oncology tended to have the highest mean when stress levels were relatively high and clinical oncology did not show higher means at all.

Psychiatric morbidity – GHQ-12 and SCL-D caseness

Overall, 102/390 respondents (26.2%; 95% CI = 21.8–30.5%) who completed GHQ-12 scored >3, indicative of potential caseness and 44/391 (11.3%; 95% CI = 8.1–14.4%) who completed SCL-D scored >1.5, potential cases. GHQ-12 and SCL-D case prevalence was lowest for palliative medicine, but there were no significant differences between specialties (Table 3).

The SCL-D questionnaire includes an item on suicidal thoughts and 15/390 SpRs (3.8%; 95% CI = 2.2–6.3%) responded with answers suggesting suicidal ideation (response range 'a little' to 'quite a bit'). There was no difference between specialties.

Table 3. GHQ-12 and SCL-D caseness by specialty.

	Palliative medicine	Medical oncology	Clinical oncology	Overall	$\chi 2$	p-value
GHQ-12 caseness	22/113 (19.5)	37/127 (29.1)	43/150 (28.7)	102/390 (26.2)	3.69	0.165
SCL-D caseness	11.113 (9.7)	15/126 (11.9)	18/152 (11.8)	44/391 (11.3)	0.73	0.832

Table 4. Final model predictors of GHQ-12 caseness using logistic regression.

		Unadjusted OR	95% CI	p-value	Adjusted OR	95% CI	p-value
Age		1.12	1.05–1.20	0.001	1.07	0.98–1.16	0.124
Satisfaction score with support in training		0.64	0.53–0.77	<0.001	0.88	0.70–1.12	0.297
Changed from another specialty	Yes	1.83	0.90–3.72	0.093	1.59	0.65–3.87	0.312
	No	1.00			1.00		
Effect of stress on personal/family life		1.40	1.29–1.52	<0.001	1.28	1.18–1.41	<0.001
Keeping up-to-date with knowledge		1.24	1.14–1.34	<0.001	1.12	1.01–1.23	0.025
Making time for research		1.22	1.13–1.31	<0.001	1.07	0.98–1.16	0.146

CI = confidence interval; OR = odds ratio.

Table 5. Final model predictors of SCL-D caseness using logistic regression.

	Unadjusted OR	95% CI	p-value	Adjusted OR	95% CI	p-value
Satisfaction score with choice of specialty	0.55	0.43–0.72	<0.001	0.54	0.38–0.77	0.001
Satisfaction score with support in training	0.53	0.41–0.68	<0.001	0.90	0.63–1.29	0.578
Effect of stress on personal/family life	1.48	1.33–1.64	<0.001	1.46	1.29–1.65	<0.001
Feeling under-utilised	1.33	1.18–1.48	<0.001	1.28	1.11–1.48	<0.001

CI = confidence interval; OR = odds ratio.

Predictors of GHQ-12 caseness

Few demographic or work-related variables were significant univariate predictors of GHQ-12 caseness, and in the final regression model none were significant predictors (Table 4). Among the stressor variables considered 'effect of stress on personal/family life' was the dominant predictor, with only 'keeping up-to-date with knowledge' showing significant additional predictive ability.

Predictors of SCL-D caseness

Similarly, few demographic or work-related variables were significant individual predictors of SCL-D caseness. In the f inal model, (Table 5) 'effect of stress on personal/family life', 'feeling under-utilised' and 'satisfaction with choice of specialty' (a protective factor) were highly significant predictors of SCL-D caseness, but there were no effects of age or other socio-demographic or work-related variables.

Open-ended questions about recent stressful incidents and reducing stress at work

Of the 401 SpRs who responded to the questionnaire, 315 described in free text a recent stressful incident at work. Content analysis of these free-text responses reveals that 'conflict with colleagues' is the most commonly coded theme for all three groups of doctors. The percentage of palliative medicine trainees reporting such conflict is rather higher than the other two specialties (overall 75/315, 23.8%; palliative medicine 32/97, 33.0%; medical oncology 20/98, 20.4%; clinical oncology 23/120, 19.2%). The exemplar quotations in Box 1 describe such conflict and reveal how it occurred with seniors, other SpRs and nurses as well as with management.

'Communicating with patients and families/breaking bad news' was the second most commonly reported stressful event (overall 64/315, 20.3%; palliative medicine 18, 18.6%; medical oncology 21, 21.4%; clinical oncology 25, 20.8%). SpRs may have limited time to talk to patients and families about difficult issues, which may partly account for these results, but there also appears to be a need for more communication-skills training. Having to talk with new patients and families was a recurring issue for the SpRs especially if the clinical notes were not adequate to support the consultation (Box 1).

In medical oncology SpRs reported stress in 'dealing with death/dying/treatment withdrawal' more commonly than the other two groups (overall 37, 11.7%; palliative medicine 8, 8.2%; medical oncology 16, 16.3%; clinical oncology 13, 10.8%). For example:

> *I was faced with a patient expecting to start an adjuvant trial for melanoma and I had to tell her she had brain metastases…never met her before it was hard to get a rapport before delivering bad news. She reacted very badly to being given bad news by a stranger.*

Incidents which described 'lack of senior support/supervision' were most often reported by clinical oncology trainees (overall

Box 1. Examples of free-text narratives describing a recent stressful incident.

Theme 1: Conflict with colleagues

Giving advice on patient management as SpR in palliative care, and that advice being overruled by a consultant in a different speciality.

Persistent problems with bullying attitude of senior colleague to various team members.

Being criticised by the Prof of Surgery to the Prof of Medical Oncology.

Senior colleague being unnecessarily unhelpful about a clinical situation.

Conflict with another SpR who frequently ignores the needs of the team.

I seem to find 'conflict' within my relations with colleagues is the greatest stress at work…One of the clinical nurse specialists…made it very clear she was upset with me for reviewing a patient…I said I was sorry and would remember to speak to her prior to reviewing 'her' patients on my own again.

Told off by nursing/bed manager on bringing an ill patient to day unit for assessment…without checking bed situation with her.

Trying to organise a biopsy…obstructions from clerical, admin and radiologists.

Theme 2: Communicating with patients and families/breaking bad news

Assessing an angry/confrontational patient. When asked simple assessment questions the patient replied 'Well, what do YOU think? I'm dying of cancer, how do you expect me to feel?' I was upset and frustrated at being misinterpreted, whilst attempting to help the patient…I was anxious about seeing the patient again. I transferred some of the patient's care to consultant level, whilst continuing my involvement.

A difficult conversation with some relatives… I had been looking after a patient for 9 months with aggressive bladder cancer… initially he responded to treatment but had relapsed and he was dying. His brother… was verbally aggressive accusing me of not doing my job properly, not giving his brother the best treatment…A difficult conversation ensued…I was frustrated that despite my best efforts a relative would be so aggressive and not see we had been trying so hard. I didn't like my feeling of resentment…because I knew underneath he was just upset.

Dealing with a very young (31) breast cancer patient with a solitary sternal met. Breaking bad news to her and her family…Upset that they were so upset.

Telling patient and relative that treatment was not working and that there were no other treatment other than supportive care. Sadness for patient and wife.

I had reviewed the notes but the documentation was poor, so had to ask a vast amount of questions. His family were cross about the amount of questioning saying it should have all been in the notes, and became very defensive when I asked him and them how they had been managing at home. Eventually, as their aggression was really interfering with the consultation, I pointed out that I was on their side. I later took them aside and explained how sick their dad was, they cried and then apologised for their behaviour. I understand that their aggression towards me was borne out of worry and upset about their dad, but it's still horrible to be on the receiving end of aggression.

Telling a 28 year old he has metastatic colon cancer and is not curable. Very emotional consultation.

23/315, 7.3%: palliative medicine 7/97, 7.2%; medical oncology 4/98, 4.1%; clinical oncology 12/120, 10.0%). An example given was:

> *I worked for a consultant last year who did not value his staff around him. He was far more interested in his private patients than his NHS ones. He had little interest in teaching his juniors. He was terrible at communicating where he was…I complained about him…and felt very worried about how this would affect my training.*

When suggesting ways to reduce stress, palliative medicine trainees commonly responded with improving relationships with colleagues (73/104, 70.2%). This corresponds with the stressful incident reporting results, as conflict/issues with colleagues were reported more commonly by palliative medicine SpRs than the other two specialties. The most common suggestion within this theme was 'supportive seniors' (76 respondents). Palliative medicine SpRs also thought coping strategies were important (61, 58.7%), far more so than SpRs from medical oncology (26/116, 22.4%) or clinical oncology (39/136, 28.7%). For both medical and clinical oncology SpRs, improving resources (in particular more staff, reduced workload, reduction in clinic sizes and better cover) was most important (76, 65.5% and 86, 63.2% respectively), closely followed by training issues (more protected study time, less menial tasks, better balance of service and training, improving training quality and structure; 67, 57.8% and 80, 58.8% respectively).

Discussion

The central finding of this study is that about one in four SpRs in these three specialties have GHQ-12 scores above the threshold indicating possible psychiatric morbidity. The response rate is similar to comparable studies[5,6,10,11] and GHQ-12 scores are within the same range as studies of consultants from the same specialties[10,11] and other groups of doctors.[5,6,16] More than 1 in 10 SpRs showed clinically important levels of depression, as identified by the SCL-D. This is similar to levels found in intensive care unit consultants[5] but lower than that found in accident and emergency doctors.[6] There were no significant differences between specialties for GHQ-12 and SCL-D scores. Nonetheless, it is clearly cause for concern that over a quarter of trainees in these specialties are suffering some degree of psychological distress.

Age was important in predicting GHQ-12 (but not SCL-D) caseness, but gender and place of work were not predictive of GHQ-12 nor SCL-D. Most respondents were satisfied with both choice of specialty and support received during training, although there were slightly lower ratings for the latter. Satisfaction with choice of specialty was a very strong predictor of SCL-D caseness and satisfaction with support in training was a strong univariate predictor for both GHQ-12 and SCL-D caseness, with increasing satisfaction being protective against stress. This highlights the importance of structured and ongoing support during training of SpRs.

The occupational stressor with the highest mean score, and ranking as highest stressor for all three specialties, was 'being overstretched at times'. There were significant differences, however, between the three groups in mean scores, with medical oncology having the highest mean. In the free text, respondents indicated that busy outpatient clinics, lack of cover for absence and having to balance ward duties with outpatient commitments led to feeling overstretched. 'Keeping up-to-date with knowledge', 'fear of making mistakes' and 'talking with distressed relatives' also scored highly in all three groups, with the first of these three stressors, but not the other two, differing significantly between groups; medical oncologists scoring highest. As in other studies[5,6] the 'effect of hours of work on personal/family life' is an important stressor for SpRs. Indeed the items with the highest scores appear to relate to the very issues in clinical practice one might expect these trainees to be concerned about, being competent in the face of conflicting demands on time, and this was most pronounced for the medical oncologists. On the other hand, issues relating to teamworking (making decisions, working with nurses, feeling underutilised) and low prestige of the specialty were rated more highly by palliative medicine SpRs than the others. This is perhaps a surprising finding, since as a specialty palliative medicine espouses the team approach. Thus this result either challenges the notion that teamwork reduces stress levels, or implies that palliative care teams are not functioning well and actually contribute to stress. The latter interpretation is in line with previous work on teamwork in cancer, which indicated that teams are not necessarily always healthy for their workers.[29] A remedy may be found in Firth-Cozens's work, which suggests that good team leadership contributes to effective team functioning, thus reducing stress levels and improving performance.[30]

Overall, there was a noteworthy pattern, for individual stressors rated with a lower score by all three specialties, palliative medicine tended to have the highest mean score, but where stressors were scored highly by all three groups, medical oncology tended to have the highest score. Most of the individual occupational stressors were strongly associated with GHQ-12 and SCL-D scores. However, 'effect of stress on personal/family life' had the highest odds ratio for predicting both GHQ-12 (OR=1.28) and SCL-D (OR=1.46) caseness. This replicates the finding in the national survey of consultants[10] and other studies of stress in doctors[5,6] that work stress disrupting home life is the most significant contributor to psychiatric morbidity.

The regression models suggest that satisfaction with support in training is protective against stress (Tables 4 and 5). Support from colleagues may be important in protecting against the harmful effects of stress.[31] Senior doctors often underestimate the impact they have on the working lives of their juniors[30] and this is poignantly demonstrated in the free-text narratives of our respondents. Senior doctors need to appreciate their influence – both positive and negative – on stress experienced by doctors in training.[30] In suggesting ways to reduce stress, most palliative medicine SpRs indicated that improving relationships with colleagues was important and often they reflected on their own role in achieving this. Working with dying people can put one in touch with personal loss and anxieties about death.[32] Effective

teamworking can enable the burden of caring for patients to be shared.[9] Since palliative care SpRs often work in isolation from their peers, they are more dependent on relationships with nursing staff and senior colleagues within their own units.

The most common theme for medical and clinical oncology SpRs concerned 'better staffing levels and resources'. This finding accords with other work[10] which suggests that increasing resources generally in cancer care, would help to reduce burnout and stress.

Limitations of the study

The response rate for clinical oncology was only moderate compared with the other specialties surveyed as we were unable to send reminders to non-responders. We had no way of confirming the mental health status of non-responders, participation could be associated with either higher or lower levels of psychological morbidity. It could be argued that both stress at and outside of work might contribute to the psychological distress of healthcare staff, but previous research reveals that even after confounder variables are taken into account stress at work still contributes to anxiety and depressive disorders.[33]

Implications of the study

It is clear that SpRs training in cancer and palliative care are experiencing high levels of stress. A number of contributing factors have been identified and should be addressed to improve the working lives of SpRs. Interestingly, while there were some differences between specialties in terms of the mean occupational stressors scores (Table 2) the pattern was generally fairly consistent, and specialty per se did not feature in the regression models as a significant predictor of GHQ nor SCL-D caseness.

As well as addressing working hours and workload, there needs to be, or so it seems, a change in the culture to enable SpRs to identify, work through, and discuss difficulties without a fear of it adversely affecting career prospects. Helpful strategies might include mentorship from a different team or specialty; review of appraisal so that positive as well as negative aspects of work are discussed; encouraging regular peer meetings where SpRs may discuss any group issues; or team debriefs where patient- or team-related issues can be aired. Such a process has been linked to good practice and clinical governance aimed at ensuring that practice is safe and of high quality.[31]

Consultants responsible for trainees and the NHS need to be aware that 1 in 4 trainees experience clinically important levels of stress and that they have a responsibility to monitor workload and be supportive. Maintaining the psychological well-being of doctors during specialist training is crucial, particularly if these doctors are to survive the next 30 years of their professional lives. Promoting good mental health in medical practitioners is likely to promote good and safe practice, ultimately benefiting both professionals and patients, and should be viewed as an integral part of training. It would seem to be a dreadful waste of the ca £200,000[34] invested in training to SpR level to put them under such stress that they are unable to treat patients effectively, or that they experience psychological suffering perhaps requiring healthcare, increased sickness absence or even leave the profession prematurely or die.[35,36]

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References

1 Tyssen R, Vaglum P, Gronvold NT, Ekeberg O. The impact of job stress and working conditions on mental health problems among junior house officers. A nationwide Norwegian prospective cohort study. *Med Educ* 2000;34:374–84.
2 Firth-Cozens J. Interventions to improve physicians' well-being and patient care. *Soc Sci Med* 2001;52:215–22.
3 Hawton K, Malmberg A, Simkin S. Suicide in doctors: a psychological autopsy. *J Psychosom Res* 2004;57:1–4.
4 Firth-Cozens J, Greenhalgh J. Doctors' perceptions of the link between stress and lowered clinical care. *Soc Sci Med* 1997;44:1017–22.
5 Coomber S, Todd C, Park G *et al.* Stress in UK intensive care unit doctors. *Br J Anaesth* 2002;89:873–81.
6 Burbeck R, Coomber S, Robinson S, Todd C. Occupational stress in consultants in accident and emergency medicine: a national survey of levels of stress at work. *Emerg Med J* 2002;19:234–8.
7 Institute for Social and Economic Research. *British Household Panel Survey 1993–4.* Colchester: Institute for Social and Economic Research, 2001. www.irc.essex.ac.uk/bhps
8 Singleton N, Lewis G. *Better or worse: a longitudinal study of the mental health of adults living in private households in Great Britain.* London: Office of National Statistics, 2003.
9 Graham J, Ramirez A. Improving the working lives of cancer clinicians. *Eur J Cancer Care* 2002;11:188–92.
10 Ramirez A, Graham J, Richards MA *et al.* Burnout and psychiatric disorder among cancer clinicians. *Br J Cancer* 1995;71:1263–9.
11 Graham J, Ramirez AJ, Cull A *et al.* Job stress and satisfaction among palliative physicians. *Palliat Med* 1996;10:185–94.
12 Graham J, Ramirez AJ, Field S, Richards MA. Job stress and satisfaction among clinical radiologists. *Clin Radiol* 2000;55:182–5.
13 Taylor C, Graham J, Potts HWW, Richards MA, Ramirez AJ. Changes in mental health of UK hospital consultants since the mid-1990s. *Lancet* 2005;366:742–4.
14 McPherson S, Hale R, Richardson P, Obholzer A. Stress and coping in accident and emergency senior house officers. *Emerg Med J* 2003;20:230–1.
15 Firth-Cozens J. Emotional distress in junior house officers. *BMJ* 1987;295:533–5.
16 Kapur N, Borrill C, Stride C. Psychological morbidity and job satisfaction in hospital consultants and junior house officers: multicentre, cross sectional survey. *BMJ* 1998;317:511–2.
17 Newbury-Birch D, Kamali F. Psychological stress, anxiety, depression, job satisfaction, and personality characteristics in preregistration house officers. *Postgrad Med J* 2001;77:109–11.

18 British Medical Association. *Stress and the medical profession.* London: BMA, 1992.
19 Quine L. Workplace bullying in junior doctors: questionnaire survey. *BMJ* 2002;324:878–9.
20 Stanton J, Caan W. How many doctors are sick? *BMJ* 2003;s97.
21 Macdonald R. Commentary: Are contented doctors good doctors? *BMJ* 2002;325:686.
22 Calman K. *Hospital doctors: training for the future.* London: HMSO, 1993.
23 Goldberg D, Williams P. *A user's guide to the General Health Questionnaire.* Windsor: NFER-NELSON Publishing, 1998.
24 Derogatis LR, Lipman RS, Covi L. SCL-90: an outpatient psychiatric scale – preliminary report. *Psychopharmcol Bull* 1973;9:13–20.
25 Peduzzi P, Concato J, Kemper E, Holford TR, Feinstein AR. A simulation study of the number of events per variable in logistic regression analysis. *J Clin Epidemiol* 1996;49:1373–9.
26 Peters TJ, Horrocks S, Stoddart H, Somerset M. Factors associated with variations in older people's use of community-based continence services. *Health Soc Care Community* 2004;12:53–62.
27 Holsti, OR. *Content analysis for the social sciences and humanities.* Reading, MA: Addison-Wesley, 1969.
28 Landis JR, Koch GG. The measurement of observer agreement for categorical data. *Biometrics* 1977;33:159–74.
29 Haward R, Amir Z, Borrill C *et al.* Breast cancer teams: the impact of constitution, new cancer workload, and methods of operation on their effectiveness. *Br J Cancer* 2003;89:15–22.
30 Firth-Cozens J, Moss F. Hours, sleep, teamwork and stress. *BMJ* 1998; 317:1335–6.
31 MacWilliams AE. Stress in palliative care. *Prog Palliat Care* 2004;126: 293–301.
32 Speck P. Working with dying people: on being good enough. In: Obholzer A, Roberts VZ (eds). *The unconscious at work: Individual and organizational stress in human services.* London: Routledge, 1994.
33 Weinberg A, Creed F. Stress and psychiatric disorder in healthcare professionals. *Lancet* 2000;355:533–7.
34 Netton A, Knight J, Dennet J, Cooley R, Slight A. *A 'ready reckoner' for staff costs in the NHS.* Volume 1 Estimated Unit Costs. Canterbury: University of Kent at Canterbury, 1998.
35 Cox T, Griffiths A, Macafee M, Rial-Gonzalez E. *The assessment and management of work-related stress in doctors. Final report to the British Medical Association.* London: BMA, 2000.
36 Michie S, Williams S. Reducing work related psychological ill health and sickness absence: a systematic literature review. *Occup Environ Med* 2003;60:3–9.