

BMJ Open What's up doc? A national cross-sectional study of psychological wellbeing of hospital doctors in Ireland

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ABSTRACT

Objectives To measure levels of psychological distress, psychological wellbeing and self-stigma in hospital doctors in Ireland.

Design National cross-sectional study of randomised sample of hospital doctors. Participants provided sociodemographic data (age, sex, marital status), work grade (consultant, higher/basic specialist trainee), speciality and work hours and completed well-being questionnaires (the Depression Anxiety Stress Scale, WHO Well-being Index, General Health Questionnaire) and single-item scales on self-rated health and self-stigma.

Setting Irish publicly funded hospitals and residential institutions.

Participants 1749 doctors (response rate of 55%). All hospital specialties were represented except radiology.

Results Half of participants were men (50.5%). Mean hours worked per week were 57 hours. Over half (52%) rated their health as very good/excellent, while 50.5% reported positive subjective well-being (WHO-5). Over a third (35%) experienced psychological distress (General Health Questionnaire 12). Severe/extremely severe symptoms of depression, anxiety and stress were evident in 7.2%, 6.1% and 9.5% of participants (Depression, Anxiety, Stress Scale 21). Symptoms of distress, depression, anxiety and stress were significantly higher and levels of well-being were significantly lower in trainees compared with consultants, and this was not accounted for by differences in sociodemographic variables. Self-stigma was present in 68.4%.

Conclusions The work hours of doctors working in Irish hospitals were in excess of European Working Time Directive's requirements. Just over half of hospital doctors in Ireland had positive well-being. Compared with international evidence, they had higher levels of psychological distress but slightly lower symptoms of depression and anxiety. Two-thirds of respondents reported self-stigma, which is likely to be a barrier to accessing care. These findings have implications for the design of support services for doctors, for discussions on quality of patient care and for future research.

INTRODUCTION

The healthcare landscape is changing rapidly and so too is the practice of medicine.¹ Traditional ways of working are being challenged, and new models of care are being introduced.² Technological and pharmacological

Strengths and limitations of this study

- This study provides new information on levels of well-being in a national cohort of hospital doctors in Ireland in the aftermath of the country's economic crises, which resulted in substantial cut backs in health expenditure and workforce depletion.
- The utilisation of widely used standard instruments allows for comparison with previous studies of the profession and the national population.
- The good response rate and the range of specialties represented validates the results as being representative.
- The population surveyed did not include doctors who may well be experiencing even greater distress including the most junior grade (interns) and those occupying service posts who are not registered with a postgraduate training body.
- The study is limited by the fact that it is cross-sectional in design and one cannot determine whether the associations observed are causally related or the potential direction of any effects.

developments contribute to ever spiralling costs, which governments seek to control while striving to improve the quality of patient care. Indeed, the utilisation of huge resources does not always translate into the delivery of high-quality care,³ which is a growing challenge for doctors to provide in an environment where one's autonomy is eroded by cost containment and increasing targets.⁴ While many of these changes are global phenomena, the situation in Ireland has been compounded by recent drastic cuts in expenditure resulting in reduced staffing levels while patient numbers and demands increase.⁵ These workplace changes set the scene for a challenging psychosocial environment at work and the risk of impaired well-being and psychological distress.

There is a growing recognition that the issue of doctors' health (in particular mental health) requires attention.⁶⁻⁹ Poor health including poor mental health can impair performance and reduce the quality of

patient care.¹⁰ Patient safety has become a major focus in healthcare, necessitating consideration of the potential interplay between safe practice and clinician well-being.¹¹ Thus, the topic of stress and mental health of doctors is of interest both for itself and because of its link with the health of others.

A number of UK studies exploring psychological distress in hospital doctors, using varying methodologies, suggest a prevalence of high distress with estimates between 22% and 32%.^{12–17} The term refers to an emotional condition felt in response to having to cope with situations that are unsettling, frustrating or perceived as harmful or threatening and is often used interchangeably with terms such as emotional distress or distress. It is not exactly the opposite end of the continuum to psychological well-being, though it may be possible to measure just one and make inferences on the other.¹⁸

Comparison of studies assessing the prevalence of depression and anxiety is also fraught with difficulty not least because of the range of measuring tools, methodologies and response rates (table 1). The only systematic review to date on depression and anxiety in doctors and medical students generally suggests a prevalence of depression ranging from 14% to 60% and of anxiety from 18% to 55%, with the conclusion that depression and anxiety are common in doctors at all stages of training but no more so than in other professions.⁹ Bringing the focus to hospital doctors, the reported point prevalence of depressive symptoms ranges from 5% to 29% in Europe,^{15 16 19–23} 23% in Canada²⁴ and from 21% to 43% in North America.²⁵ Anxiety is less commonly studied, but elevated symptoms have been reported as being present in 23%–25% of hospital doctors.^{21 23}

There is a culture within the profession that doctors must be healthy and strong or that if they become ill, they must keep on working.²⁶ This reflects the commitment to work, reluctance to let people down and the stigma of mental illness within the profession, the latter contributing to the barriers encountered by sick doctors as they struggle to cope.^{27 28} Self-stigma in relation to mental health affects 49% of the general Irish population.²⁹ Such attitudes, if replicated in doctors, would likely contribute to the challenges they face in deciding whether they need help and how they access treatment. Patterns of poor self-care and stoicism are already evident in medical school, followed by further deterioration of health-related behaviour patterns after graduation with potential impact on the promotion of positive behaviours to patients.^{30 31} There is also emerging evidence linking doctor's personal and professional well-being with quality of patient care and patient health outcomes.^{11 32}

Though a number of international studies have been published on the mental health of doctors, the possibility for comparisons and generalisation to the Irish setting is limited due to their heterogeneity in terms of instruments used, diagnostic cut-offs and sampling. This study set out to measure the self-rated health, subjective well-being, level of psychological distress, symptoms of depression,

Table 1 Prevalence of depression and anxiety in doctors

First author	Study population and location	Measuring tool	Response rate (%)	Prevalence of depression (%)	Prevalence of anxiety (%)
Firth-Cozens ²⁰	170 UK junior house officers (Sheffield)	SCL-D 90	72	28	Not measured
Caplan ²¹	81 UK hospital consultants	HADS	80	5	23
Vaglum ²²	National sample including hospital doctors (NMA members)	GHQ-28	73	11	Not measured
Coomber ¹⁶	National sample (UK intensivists)	SCL-D 90	80	12 (95% CI 9.9 to 15.0)	Not measured
Burbeck ¹⁷	National sample (UK Accident & Emergency)	SCL-D 90	78	18	Not measured
Compton ²⁴	National sample including hospital doctors (CMA; nearly half were primary care physicians).	Two questions measuring anhedonia and depressed mood	41	23	Not measured
Ruitenburg ²³	Academic centre in the Netherlands	Brief Symptom Inventory	51	29	25

CMA: Canadian Medical Association; GHQ-28: General Health Questionnaire (28 items); HADS: Hospital Anxiety and Depression Scale; NMA, Norwegian Medical Association; SCL-D 90, Symptom Checklist-Depression (90 items).

anxiety and stress, along with self-stigma in a population of hospital doctors, both consultant and trainee, working within a single healthcare system, to explore differences between grades and to compare findings with international evidence.

METHODS

Design

The study was a national cross-sectional survey of hospital doctors working in the Ireland.

Sample

A stratified random sample of 3164 doctors as determined by the Raosoft sample size calculator³³ was invited to participate in the study. The participants were registered with one of nine national postgraduate medical training bodies in Ireland and included both consultants and trainee doctors in either Basic Specialist Training (BST-equivalent to residency in North America) or Higher Specialist Training (HST-equivalent to fellowship in North America). The sample size was calculated for a 95% CI, an acceptable margin of error of $\pm 5\%$ and an expected prevalence of psychological distress of 20%. This number was then doubled to allow for an estimated response rate of 50% rather than 100%.

In order to be invited to participate in this study, the participants had to work mainly in hospitals, public clinics or residential institutions (eg, psychiatry). Additionally, they had to be fully registered and actively working as either consultants or trainees in a formal training programme in anaesthetics, medicine (including emergency medicine), obstetrics/gynaecology, ophthalmology, paediatrics, pathology, psychiatry and surgery. The Faculty of Radiology opted out of the study. Thus, those working exclusively in private practice and those who were retired or on sick leave/maternity leave at the time of the survey were excluded. The denominator was adjusted accordingly (see online supplementary files 1 and 2).

Data collection

A postal and electronic questionnaire were distributed in April 2014. Two reminders were sent over the subsequent 2 months, the first electronically, the second and final by post and email.

Participants provided data on demographics (age, sex, nationality, employment stage/grade) and workload as measured by the question 'how many hours per week did you work over 2 consecutive working weeks in the past month'. To assess the prevalence of psychological distress, depressive and anxiety symptoms, stress and well-being, a number of validated, widely used instruments was selected. The General Health Questionnaire (GHQ-12) was included in order to allow for comparison with internationally reported rates of psychological distress. The 21-item Depression, Anxiety, Stress Scale (DASS-21), though

not previously used in doctors, was attractive to us because of its facility to measure three separate states (ie, core symptoms of depression, anxiety and tension (stress)). WHO-5 likewise is little used in doctors, but we chose it because of its brevity and in order to ensure that we were not exclusively focused on negative states. Internal consistency was satisfactory on all scales (Cronbach's $\alpha=0.80-0.93$). Two single-question items on self-rated health and self-stigma were included, and both have previously been used in surveys of population health.

Self-rated health

An item widely used in population studies that gives a sense of subjective well-being is the single-item general self-rated health question '*in general would you say your health is*' with five response options from excellent to poor.^{34 35}

Subjective well-being

The WHO's Well-Being Index (WHO-5) was chosen to measure subjective well-being because it is short, simple and widely used. Five positively worded questions are rated by the respondent from 0 to 5, with higher scores indicating greater well-being.³⁶

Psychological distress

GHQ-12 measures psychological distress and has been widely used in studies of doctors. It is a 12-item tool with dichotomous scoring method (0-0-1-1), which determines the point prevalence of psychological distress or 'case-ness', with the most widely used threshold being ≥ 4 .³⁷ The scores, relating to symptoms over the previous 'few weeks', range from 0 to 12, with 0 indicating no evidence of probable mental ill health, 1-3 indicating less than optimal mental health and 4 or more indicating probable mental ill health. GHQ-12 can also be analysed as a continuous variable and has good psychometric properties.³⁷⁻³⁹

Mental health (depression, anxiety and stress)

DASS-21 was chosen because it measures three negative emotional states concomitantly, while allowing discrimination between the constructs. It is a self-reporting scale using a 4-point severity/frequency range to rate symptoms of depression, anxiety and stress over the previous week.⁴⁰ Each scale has seven items, with response options ranging from 0 to 4. Higher scores indicate higher levels of symptoms. Although not intended for use as a diagnostic tool, cut-offs for conventional severity labels (normal, mild, moderate, severe, extremely severe) are given in the DASS manual.⁴⁰

Self-stigma

A single question, used previously in population surveys,⁴¹ '*if I was experiencing mental health problems I wouldn't want people to know*', offers the respondent five options from strongly agree to strongly disagree, with lower scores indicating greater levels of self-stigma.

Table 2 Sample demographics and results of χ^2 test comparing grades across demographics

	Consultants		HSTs		BSTs		Total		χ^2
	N	%	N	%	N	%	N	%	
Total	950	54	424	24	375	22	1749	100	
Age									1700.6***
<30			82	19.5	267	71.6	349	20.3	
31–40	114	12.1	318	75.4	97	26.0	529	30.8	
41–50	440	46.7	20	4.7	9	2.4	469	27.3	
>50	389	41.3	2	1.0	–	–	391	22.7	
Sex									86.9***
Male	574	60.5	178	42.1	130	34.8	882	50.5	
Female	375	39.5	245	57.9	244	65.2	864	49.5	
Marital status									303.9***
Cohabiting	805	86.7	274	65.1	144	38.9	1223	71.1	
Single	124	13.3	147	34.9	226	61.1	497	28.9	

*** $p \leq 0.001$.

BSTs: Basic Specialist Trainees; HSTs: Higher Specialist Trainees.

Statistical analyses

All analysis was performed using statistical software (SPSS version: IBM SPSS for Windows, V.21.0). Descriptive analyses were performed initially, and categorical group differences between consultant, higher specialist trainee (HST) and basic specialist trainee (BST) groups were tested using χ^2 . Mean unadjusted differences for continuous variables were tested using ANOVA. General linear models (GLMs) were used to analyse the differences between employment groups adjusting for demographic and work variables (age, sex, marital status and mean hours worked (MHW)). Internal consistency of scales was assessed using Cronbach's α .

Ethics

The study protocol was approved by the Royal College of Physicians of Ireland's (RCPI) Research Ethics Committee in December 2013 (RCPI RECSAF 20).

RESULTS

A total of 1749 doctors participated (response rate=55%, range 33%–63% between specialties). Respondents held predominantly Irish nationality (85%), and though there was no sex preponderance overall, consultants were predominantly men (61%) and trainees predominantly women (table 2). According to a workforce intelligence report on the healthcare workforce in 2014,⁴² 69% of trainee and consultant doctors were Irish graduates. While nationality is not synonymous with country of graduation, this suggests that respondents were more likely to be Irish.

Workload

The MHW weekly for all doctors were 57.01 (SD=15.08). Consultants worked an average of 54.17 (SD=15.09), HSTs 61.08 (15.47) and BSTs 59.63 (SD=13.02) hours

with significant differences between groups ($F=38.41$, $p < 0.001$) (table 3). The differences were significant between consultants and HSTs ($p < 0.001$) and between consultants and BSTs ($p < 0.001$) but not between HSTs and BSTs ($p = 0.517$). The group differences remained significant after adjustment across all demographic variables: age ($p < 0.05$), sex ($p < 0.001$) and marital status ($p < 0.01$) (table 3).

Self-rated health

General self-rated health was reported as very good or excellent by 52% of respondents overall. One-way ANOVA identified significant differences between the groups ($F(2,1739)=15.47$, $p < 0.001$), with consultants reporting significantly higher Self-Rated Health (SRH) than both HSTs and BSTs. The difference between consultants and both HSTs and BSTs was significant ($p \leq 0.001$), but the difference between HSTs and BSTs was not ($p = 0.361$). As determined by GLM, the group differences in total scores were maintained after adjustment for age, sex, marital status and MHW (table 4). In addition, lower MHW were significantly associated with higher SRH ($B = -0.01$, $p \leq 0.001$).

Subjective well-being

The level of subjective well-being, as measured by WHO-5, classified 882 (50.5%) of the doctors as normal, 476 (27.3%) as having low mood and 388 (22.2%) as having likely depression. For consultants, the prevalence of well-being determined as normal was 59.5%, for HST 40.1% and for BSTs 39.7% ($\chi^2=66.4$, $p < 0.001$). ANOVA confirmed significant differences between the groups ($F(2,1743)=39.1$, $p < 0.001$) with consultants reporting significantly higher subjective well-being than both HSTs and BSTs. As determined by GLM, the employment group differences were maintained after adjustment for age,

Table 3 Prevalence and non-adjusted (ANOVA, χ^2 tests) and adjusted (GLM) comparisons of mean weekly hours worked and self-stigma by employment grade (as measured by a single item)

	Consultants			HSTs			BSTs			Total		
	n (mean)	% (SD)	% (SD)	n (mean)	% (SD)	% (SD)	n (mean)	% (SD)	% (SD)	n (mean)	% (SD)	% (SD)
Mean weekly hours worked	54.2	15.1	15.1	61.1	15.5	13.0	59.6	13.0	15.1	57.0	15.1	38.4***
Self-stigma												
Strongly disagree	20	2.1	2.1	11	2.6	2.7	10	2.7	2.4	41	2.4	
Disagree	134	14.1	14.1	51	12.0	11.5	43	11.5	13.1	228	13.1	
Neutral	166	17.5	17.5	61	14.4	15.0	56	15.0	16.2	283	16.2	
Agree	438	46.3	46.3	177	41.7	46.4	173	46.4	45.2	788	45.2	
Strongly agree	189	19.9	19.9	124	29.2	24.4	91	24.4	23.2	404	23.2	
Mean	2.32	1.01	1.01	2.17	1.06	1.03	2.22	1.03	1.03	2.26	1.03	3.7*
												-0.09 (NS)
												-0.04 (NS)

*p<0.05; *** p<0.001; NS: not significant.

†Adjusted for sociodemographic variables and mean hours worked. Reference category: consultant.

ANOVA: analysis of variance; BSTs: Basic Specialist Trainees; GLM: general linear model; HSTs: Higher Specialist Trainees.

sex, marital status and MHW for BSTs but not for HSTs (table 4). In addition, lower MHW were significantly associated with higher subjective well-being (B=-0.23, p<0.001).

Psychological distress (GHQ-12)

As measured by GHQ-12, 596 (34.8%) of the doctors were categorised with probable cases of mental ill health, 540 (31.5%) as having less than optimal mental health and 579 (33.8%) as having no evidence of mental ill health (table 4). χ^2 test found significant differences between grades for these categories ($\chi^2=47.2$, p<0.001) with BSTs having the highest prevalence of probable mental ill health (42.3%) and consultants the lowest (30.2%). ANOVA confirmed significant differences in mean scores between groups (F(2,1712)=16.5, p<0.001) with BSTs having the highest psychological distress and consultants having the lowest. As determined by GLM, the employment group differences were maintained when adjustment was made for age, sex, marital status and MHW (table 4). In addition, higher MHW were significantly associated with higher psychological distress (B=0.07, p<0.001).

Mental health Depression

As measured by DASS-21, 125 (7.1%) of all respondents were classified as having severe or extremely severe levels of depression, with this figure increasing to 290 (16.6%) when those with moderate depression were included. Severe/extremely severe levels of depression were evident in 4.5% consultants, 8.7% HSTs and 12.1% BSTs ($\chi^2=52$, p<0.001). The group differences in total scores determined by ANOVA remained significant after adjusting with GLM for age, sex, marital status and MHW for BSTs but not for HSTs (table 4). In addition, higher MHW were significantly associated with higher levels of depression (B=0.07, p<0.001).

Anxiety

Severe or extremely severe levels of anxiety were present in 105 (6.1%), with this figure increasing to 247 (14.4%) when those with moderate anxiety were included. Severe levels of anxiety were evident in 3% consultants, 8.7% of HSTs and 11% of BSTs ($\chi^2=100.4$, p<0.001). The group differences in total scores determined by ANOVA remained significant after adjusting with GLM for age, sex, marital status and MHW (table 4). In addition, higher MHW were significantly associated with higher levels of anxiety (B=0.05, p<0.001).

Stress

Severe or extremely severe levels of stress were observed in 164 (9.5%), and including those moderately affected this figure, which rose to 328 (19%). Severe and extremely severe levels of stress were evident in 8% of consultants, 11.4% HSTs and 11.3% BSTs ($\chi^2=37.3$, p<0.001). These group differences confirmed by ANOVA were not significant after adjusting with GLM for age or marital status

Table 4 Prevalence and non-adjusted (ANOVA, χ^2) and adjusted (GLM) comparisons of well-being scales by employment grade (GHQ-12, DASS-21, WHO-5, SRH)

	Consultants		HSTs		BSTs		Total		χ^2	ANOVA (F)†	GLM (B) BSTs	GLM (B) HSTs
	n (mean)	% (SD)	n (mean)	% (SD)	n (mean)	% (SD)	n (mean)	% (SD)				
Self-rated health (SRH)												
Poor	3	0.3	9	2.1	13	3.5	25	1.4				
Fair	102	10.8	53	12.5	59	15.8	214	12.2				
Good	302	32	160	37.7	135	36.0	597	34.1				
Very good	352	37.3	140	33.0	118	31.5	610	34.9				
Excellent	185	19.6	62	14.6	49	13.1	296	16.9				
Mean score	3.65	0.93	3.46	0.96	3.35	1.01	3.54	0.96		15.5***	0.45***	0.25**
Subjective well-being (WHO-5)												
Likely depression	169	17.8	117	27.6	102	27.2	388	22.2		66.4***		
Low mood	215	22.7	137	32.3	124	33.1	476	27.3				
Normal	563	59.5	170	40.1	149	39.7	882	50.5				
Mean score	53.4	21.3	44.7	19.8	44.4	20.5	49.3	21.2		39.1***	8.29***	1.92 (NS)
Psychological distress (GHQ-12)												
No evidence of mental ill health	379	40.8	109	26.1	91	24.7	579	33.8		47.2***		
Less than optimal mental health	269	29	149	35.7	122	33.1	540	31.5				
Probable mental ill health	281	30.2	159	38.1	156	42.3	596	34.8				
Mean score	2.6	3.3	3.4	3.4	3.7	3.6	3.0	3.4		16.5***	-2.05**	-0.96*
Depression (DASS-21)												
Normal	761	80.5	288	67.9	254	68.3	1303	74.8		52***		
Mild	74	7.8	39	9.2	35	9.4	148	8.5				
Moderate	67	7.1	60	14.2	38	10.2	165	9.5				
Severe	20	2.1	23	5.4	29	7.8	72	4.1				
Extremely severe	23	2.4	14	3.3	16	4.3	53	3.0				
Mean score	5.2	7.1	7.7	8.0	8.1	8.7	6.4	7.8		27.3***	-2.5**	-0.45 (NS)
Anxiety (DASS-21)												
Normal	828	89	310	74.5	250	67	1388	80.7		100.4***		
Mild	30	3.2	24	5.8	30	8.0	84	4.9				
Moderate	44	4.7	46	11.1	52	13.9	142	8.3				
Severe	11	1.2	17	4.1	14	3.8	42	2.4				
Extremely severe	17	1.8	19	4.6	27	7.2	63	3.7				
Mean score	2.6	4.7	5.0	6.3	6.4	6.9	4.0	5.9		67.2***	-3.13***	-1.09*
Stress (DASS-21)												
Normal	709	75.9	271	65.8	226	60.8	1206	70.2		37.3***		
Mild	76	8.1	53	12.9	55	14.8	184	10.7				
Moderate	74	7.9	41	10.0	49	13.2	164	9.5				

Continued

Table 4 Continued

	Consultants			HSTs			BSTs			Total			ANOVA (F)‡	GLM (B) BST\$	GLM (B) HST\$
	n (mean)	% (SD)	n (mean)	% (SD)	n (mean)	% (SD)	n (mean)	% (SD)	n (mean)	% (SD)	χ†				
Severe	55	5.9	31	7.5	31	8.3	117	6.8							
Extremely severe	20	2.1	16	3.9	11	3.0	47	2.7							
Mean score	10.8	8.6	12.8	9.3	13.2	9.2	11.8	8.9			13.6***	-1.49 (NS)	-0.41 (NS)		

*p<0.05; **p<0.01; ***p<0.001; NS: not significant

†Categorical group differences.

‡ANOVA (continuous variables).

\$Adjusted for sociodemographic variables and mean hours worked. Reference category: consultant.

ANOVA: analysis of variance; BSTs: Basic Specialist Trainees; DASS-21: Depression-Anxiety Stress Scale (21 items); GHQ-12: General Health Questionnaire (12 items); GLM: general linear model; HSTs: Higher Specialist Trainees; SRH: Self-Rated Health (single item); WHO-5: WHO Well-being Scale.

(table 4), though men were less likely to have high scores for stress than women (B=-1.07, p<0.05), and higher MHW were significantly associated with higher stress scores (B=1.0, p<0.001).

There was some overlap in the three constructs with further analysis confirming that 14.7% of all respondents had at least severe levels of one variable, (8.9% had one, 3.4% had two and 2.4% had at least severe levels of all three), though there was no significant difference between the employment grades.

Self-stigma

Two-thirds of hospital doctors (68%) agreed or strongly agreed that they wouldn't want people to know if they were experiencing mental health problems. Trainees were more likely to respond positively (HSTs: 70.9%, BSTs: 70.8%) than consultants (66%). ANOVA confirmed significant differences between the groups (F(2,1741)=3.7, p=0.026). None of the group differences on this measure persisted after adjustment for age, sex or marital status (table 3).

DISCUSSION

This national survey of hospital doctors working within a single healthcare system set out to measure psychological distress, mental ill health, subjective well-being, self-rated health and self-stigma. The differences between grades were explored and findings compared with those from other healthcare systems. Hours worked were found to be well in excess of European Working Time Directive (EWTD) requirements.⁴³ The working hours were higher than EWTD limits particularly in trainees. Given that trainees reported working significantly more hours than their consultant colleagues (table 4), it may be that this helps to explain the higher prevalence of psychological distress in trainees. However, simply implementing the EWTD, without consideration of how it is implemented, may not be of great benefit to doctors' well-being as we know that reducing hours in a manner that compromises continuity and quality of care is a significant stressor for hospital trainees in Ireland.⁴⁴ Furthermore, as a group, doctors tend to be conscientious and expect hard work and long hours.⁴⁵

Overall, self-rated health was very good or excellent in just over half of respondents, while 50.5% rated their personal well-being as normal. Both self-rated health and subjective well-being demonstrated the improving level of health with seniority of grade and with less hours worked.

Psychological distress was evident in over a third of respondents, and severe levels of depression, anxiety and stress occurred in 7.1%, 6.1% and 9.5%, respectively. When those affected to a moderate degree were included, the levels of depression, anxiety and stress affected 16.6%, 14.4% and 19% of respondents. Self-stigma was expressed by 68%. The response rate of 55% implies that the study's findings may be considered largely representative and

are a particular cause for concern in a population that is reluctant to disclose and to access care.

GHQ-12 allows for comparison of the findings of this study with the published literature since it has been widely used on different populations of doctors, notwithstanding the fact that concerns have been raised about its potential to yield an inflated prevalence of distress.⁴⁶ Using the higher scoring threshold (≥ 4 cut-off), the point prevalence for psychological distress amounting to probable psychiatric 'caseness' in the respondents in this study was 34.8%. This figure exceeds the prevalence figures in all other studies of hospital doctors that used GHQ-12 in the same manner (postal survey) including those from the UK's National Health Service where the prevalence of distress ranged from 22% to 32%.¹³⁻¹⁹ We observed significant differences between grades with levels of psychological distress in trainees significantly higher than in consultants (table 4). While our finding of 30% prevalence in consultants falls just short of the 32% prevalence in UK consultants in 2005,¹⁸ the point prevalence of 38% in HSTs and 42% in BSTs greatly exceeds the levels reported elsewhere. Furthermore, the incremental reduction in distress from the most junior trainee to the most senior doctor as measured by GHQ-12 is unlikely to be spurious as it is replicated across all of the well-being variables as is the link with hours worked. It is noteworthy that the prevalence of psychological distress in these hospital doctors is 2.5 times higher than measured in a survey of the general population undertaken in 2007 where 12% of respondents were currently experiencing psychological distress.⁴⁷ This survey used the same instrument, albeit that it was undertaken at a time prior to the country's economic collapse in 2008. Subsequent national surveys have elected to use alternative measures that are not directly comparable.

The prevalence of severe depression in the total sample was in the lower range of what has been reported in other studies of hospital doctors, although the inclusion of those with moderate depression would put this in the median range (table 1). The prevalence was inversely related to seniority, a pattern echoing that already described with psychological distress. While one in 14 respondents was experiencing severe or extremely severe depression, it is not appropriate to compare this with other studies cited as they covered different subsets of doctors and used different instruments and cut-off points.^{16 17 20-24}

Anxiety is less commonly reported on in studies of doctors. The prevalence of severe anxiety among the respondents overall was much lower than that observed in the limited number of studies summarised in table 1, even if those with moderate anxiety are included. The inverse relationship with seniority is again evident, with anxiety being higher in BSTs. This may reflect the highly challenging and relatively unsupported role of the BSTs in an environment where work demand exceeds the ability to cope in the context of drastic health budgetary cuts and low numbers of doctors.^{44 48} It may also be that these differences reflect well-documented changes observed in

generation Y who are thought to be less resilient than their antecedents.⁴⁹ The caveats outlined in the previous paragraph in relation to comparison of prevalence with that found in other studies also apply in relation to anxiety.

General stress is not comparable to any other studies in healthcare, but severe levels were reported in 9.3% of respondents (19% when moderate stress is included), and again, this was most evident in junior trainees. As with depression and anxiety, the inverse relationship with seniority is noted.

The observed employment grade differential has been observed previously.⁵⁰ It may reflect the highly challenging and relatively unsupported role of the trainees in an environment where work demand exceeds the ability to cope in the context of drastic health budgetary cuts and low numbers of doctors.^{44 51} It may also reflect the attrition of doctors in difficulty who fail or choose not to progress to senior grades, resulting in a cohort of consultants representing the 'survival of the fittest' in a challenging work environment. Indeed, the observed grade differential is further exemplified in a recent paper where the prevalence of psychological distress in interns (the most junior grade of doctor working in the Irish hospital system) at 48.5% was even higher than in this cohort of BSTs.⁵²

Sex was not found to be a significant determinant of either distress or poor health except for stress, which was more frequently reported on by women.

Doctors are reluctant to disclose when they have mental health problems, and this is particularly so in younger doctors, which may be explained by their perceived vulnerability in terms of career progression.⁵³ Doctors' prediction of how they might behave in relation to disclosure is influenced by whether or not they have experienced mental ill health, with those who have not being more likely to predict they would disclose.⁵³ Considerably more doctors in this study in comparison to the general population²⁹ perceived stigma in relation to mental health, and this likely contributes in no small way to reluctance to disclose.⁵⁴ In an occupation where mental ill health, substance misuse and suicide risk are high, addressing this attitude at an early stage of training may provide a mechanism for helping to reduce barriers to care at a later stage.

Strengths and limitations

This Irish study is the first national survey conducted on a cohort of hospital doctors working within the same health system. The results can be taken as largely representative as all but one hospital specialty (radiology) are included. The 55% response rate would be considered high in this population where response rates tend to be low and are declining.⁵⁵ Moreover, response rates tend to be lower when questionnaires are long and deal with sensitive topics.⁵⁶ The use of GHQ-12 allows for comparison with previous studies of the profession. The use of instruments for measuring self-rated health and self-stigmatisation allows for comparison with previous national surveys of the general population.

The study is limited by the fact that it is cross-sectional in design and one cannot determine whether the associations observed are causally related or the potential direction of any effects. Another limitation is that the percentage of respondents who were Irish nationals was higher than the number of Irish graduates working in hospitals in a contemporaneous report. The fact that DASS-21 measures emotional states rather than diagnostic categories may also be seen as a limitation.

The study did not include certain doctors working within the hospital system who may be at greatest risk of stress and work related ill health. This includes three key groups:

1. Interns occupy a transitional role for a period of 1 year, having emerged from either undergraduate or postgraduate medical school, as preregistration doctors.
2. Non-consultant hospital doctors who occupy service roles but are not allied to any undergraduate training body and whose numbers have increased substantially over the past 5 years.⁵⁷
3. Locum doctors, particularly at consultant level, whose position is insecure and in some cases protracted.

Arguably, were these groups to be included, the prevalence of all negative measures might well be higher, as they deal with the same demands as their colleagues but with even less support.

Finally, the study did not attempt to take any measure of external personal stressors, personality or the availability of close personal support, any of which may have had an effect on measures of distress.

Implications

This study paves the way for further work to be done in Ireland at the level of both inquiry and intervention. In the first instance, medical schools, postgraduate training bodies and senior clinicians need to tackle self-stigmatising attitudes to mental ill health, which were evident at all grades in this cohort, by embedding within training and professional development information and tools on how to maintain good mental health and on supports available.

For those in difficulty and those who manage them, there is a need for clear pathways and easy access to appropriate support and confidential care, such as own general practitioner, quality occupational health services and support in returning after illness to one's professional role.

Most importantly, the employer needs to prioritise the welfare of its staff by addressing deep-rooted systemic problems contributing to the challenging work environment, such as low staff numbers, long work hours, work organisation and poor people management.⁴⁴ As longer working hours were found to contribute to poor personal well-being in this study and were particularly evident in trainees, we encourage employers to continue working towards achieving compliance with EWTD while also monitoring the unintended consequences such as the

break-up of teams and poor-quality handover with its implications for patient care.⁴⁴

There is a need for further research to identify strategies to improve physician wellness with particular emphasis on organisational responsibility to create an environment and culture conducive to health, efficiency and meaning in work.⁵⁸ An exploration of doctors' own views on pathways to mental healthcare would help to elucidate what might be favoured by potential users.

CONCLUSION

Hospital doctors in Ireland have higher levels of psychological distress than their international peers and the general population. While levels of depression and anxiety fall within previously reported ranges, levels of psychological distress, depression and anxiety are particularly high in junior trainees. These findings suggest that much needs to be done to improve both working conditions for young doctors and their awareness of mental health issues. Senior doctors also need to be trained in how to recognise signs of distress in their colleagues and in how they can support them. The findings highlight the need for policy makers, employers and training bodies to focus their attention on this vulnerable cohort, on whom we will rely to lead the future provision of hospital care. Moreover, they are likely to be applicable to doctors and health professionals working elsewhere as the tension between high demand and depleted resources is an international phenomenon.

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