Ir J Med Sci (2018) 187:301–307
https://doi.org/10.1007/s11845-017-1688-7

ORIGINAL ARTICLE

Burnout and stress amongst interns in Irish hospitals: contributing factors and potential solutions

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Received: 24 June 2017 / Accepted: 3 October 2017 / Published online: 9 October 2017

Abstract
Background The transition from medical school to internship can be daunting for newly qualified doctors. High rates of stress and burnout have been reported, with negative impacts on patient care and physician wellbeing.
Aims We surveyed interns in our hospital group to evaluate rates of stress and burnout, as well as identify the causative factors and propose potential solutions to these.
Methods A hundred and one interns working in four different hospitals over a 2-year period were invited to participate in an anonymous survey. The survey collected basic demographic details and surveyed aspects of mental health using the burnout scale, Maslach Burnout Inventory (MBI) and the stress scale and 12-item General Health Questionnaire (GHQ-12). Interns were also asked to rate a variety of workplace factors on a Likert scale based on the degree of stress caused. Finally, they were surveyed on their awareness of support services available to them.
Results Our results showed that 37% of interns met the criteria for psychological distress, high levels of emotional exhaustion, high depersonalisation and a low sense of personal accomplishment were reported in 55.4, 51.5 and 41.6%, respectively. Inadequate preparation for practice, financial worries, poor role definition and sleep deprivation were reported as significant stressors. Most were unaware of available support services and expressed interest in leaving Ireland after internship.
Conclusions Burnout and stress are significant problems amongst doctors in Irish hospitals. Ensuring better preparation for clinical practice and awareness of support services is vital to tackle this issue.

Keywords Burnout · Internship · Junior doctors · NCHD · Non-consultant hospital doctors · Stress

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Introduction

The intern year is a vital step in every doctor's career, with successful completion being essential to achieve full medical registration and to proceed with further specialist training. The transition from medical school to the increased responsibility of an intern is a challenging one. The sudden change from a relatively protected environment to being expected to function competently on a team that relies heavy on efficiency can result in significant distress amongst new medical graduates. Despite the use of subinternships in medical schools and mandatory intern induction sessions in all hospital networks, many feel unprepared for clinical practice when suddenly confronted with the wide range of duties, with one survey showing up to 91% of new interns feeling unprepared for intern year [1]. With this in mind, it is unsurprising that the levels of stress and burnout are high amongst interns. As many as 82% report symptoms of burnout, with higher rates towards the end of intern year [2]. A recent Delphi study by Hayes et al. showed that 95% of doctors consider stress a very significant or highly significant problem [3].

The term 'burnout' was first described by the American psychologist Herbert Freudenberger in 1974 and used to describe the consequences of severe stress in what are traditionally seen as 'helping professions', such as medicine or nursing, where there is intense involvement with people [4]. He defined burnout as a

state of mental and physical exhaustion related to caregiving activities and went on to describe three key symptoms: emotional exhaustion, depersonalisation (or feeling distanced and detached from work) and a sense of low personal accomplishment leading to decreased effectiveness at work [4].

Freudenberger first described burnout in the context of healthcare professionals, and over 40 years after it was first described, burnout continues to be high amongst physicians [3]. The impact of burnout on physician mental health has been well described, with increased rates of depression, anxiety, substance abuse and suicidal ideation being demonstrated [5, 6]. This also affects physical wellbeing, with the 'burntout' doctor being at increased risk of hypertension, myocardial infarction and road traffic accidents [5, 6]. Unsurprisingly, doctors who experience burnout do not provide quality patient care, with a greater likelihood of medical error [7]. This results in poorer patient outcomes, reduced patient satisfaction and a longer inpatient length of stay [8]. A report published by the Royal College of Physicians in Ireland in April 2017 reports that one in three doctors suffer from burnout. However, this study only looks at physicians either at a consultant level, or currently undertaking basic or higher specialist training, and does not report on burnout levels amongst interns in Irish hospitals [9].

Defining workplace stress is challenging, as it is a subjective experience that is difficult to measure or quantify. The Canadian Mental Health Association describe workplace stress as 'harmful physical and emotional responses that can happen due to conflict between job demands on the employee and the amount of control an employee has over meeting these demands' [10]. It is important to appreciate stress and burnout as two separate entities, while also understanding that they are closely related, with high levels of workplace stress being a precursor to burnout [11]. There are many reasons why an intern may experience workplace stress, such as long hours, increased workload, multiple responsibilities, role ambiguity, a steep learning curve and a lack of support. These factors are practically universal across all intern posts [1].

While the existence of stress and burnout amongst interns is well known, as are the consequences of this, much remains unknown about its contributing factors [12]. Potential solutions to overcome this problem are also limited [13]. Previous studies in Ireland have tended to focus only on the postinternship population [3, 9]. By identifying contributing factors, it may be possible to propose potential means of preventing stress and burnout amongst interns, leading to a healthier cohort of doctors, improved patient safety and a more efficient workplace.

Aims

We set out to conduct an anonymous survey of the interns in our hospital network to quantify the rates of workplace stress and burnout experienced by them, as well as identify contributing factors. From this, we hoped to propose solutions to overcome workplace stress and burnout amongst interns.

Methods

Study design

We performed a cross-sectional survey of doctors undergoing their internship year over a 2-year period across the four university teaching hospitals that comprise the Dublin North-East hospital network. Data collection took place between 2012 and 2014 in these four hospitals (Beaumont Hospital, Connolly Hospital Blanchardstown, Our Lady of Lourdes Hospital Drogheda and University Hospital Waterford). These interns were invited to participate voluntarily in an anonymous survey. The survey was distributed in December of each year, the approximate halfway point through internship. Only doctors who were currently interns at the time were invited to participate. The survey was conducted electronically using the online survey tool SurveyMonkey® (www.surveymonkey.com). A reminder e-mail was sent to interns 2 weeks after initial distribution, with the survey remaining open for 4 weeks. Consent was implied if interns responded. Ethical approval was granted by the local research ethics committees in the affiliated hospitals.

Survey content

The survey consisted of a mixture of validated and non-validated questions. The questionnaire began by collecting basic demographic information from the participating interns, such as age, gender, ethnicity, and whether they were part of a graduate entry programme versus direct entry programme in medical school. No identifying information was requested or recorded.

The survey then focussed on challenges faced in transition from medical school to internship, challenges faced daily in the workplace, the awareness of support services available to them in the hospital, the level of support received from senior colleagues and the intention to leave the Irish healthcare system after intern year due to negative experiences. This was structured so that participants indicated to what degree they agreed with a statement on a five-point Likert scale, ranging from 'strongly agree' to 'strongly disagree', or if more relevant, rating various factors from 'most stressful' to 'least stressful'. This questionnaire was developed with face and construct validity assured through a review by a committee of junior doctors who had completed internship in Irish hospitals.

Participants also completed the Maslach Burnout Inventory (MBI) and the 12-item General Health Questionnaire (GHQ-12). The MBI is a widely used and well-established list of 22 questions that has been validated for measuring burnout

experienced by healthcare professionals, including physicians [14, 15]. The MBI is designed to measure the three components of burnout: emotional exhaustion (nine questions), depersonalisation (five questions) and a sense of low personal accomplishment (eight questions).

The GHQ-12 is a screening device used to identify the severity of psychological distress currently experienced by the participant and if that differs from their usual state. The questionnaire focuses on two main areas, the inability to carry out normal function and the appearance of new or distressing phenomena. Each item on the questionnaire has four responses on a Likert scale, ranging from 'better than usual' to 'much less than usual'. Scoring of the questionnaire was conducted using the 0-0-1-1 method recommended by the questionnaire author. Some examples of items of the GHQ-12 are 'Been able to concentrate on what you're doing?', 'Felt constantly under strain?' and 'Lost much sleep over worry?'. The GHQ-12 has been extensively evaluated as a reliable and valid means of measuring severity of psychological morbidity [16, 17] and has been demonstrated to be a useful tool to measure workplace stress and psychiatric morbidity amongst healthcare professionals [18]. A threshold score of 3 allows for balance of both sensitivity and specificity, with the GHQ-12 variance-weighted mean sensitivity and specificity being 89 and 80%, respectively [19]. Scores above the threshold are classified as indicating psychological morbidity and can be further broken down into two subcategories, with a score of 3–7 representing mild-to-moderate psychological distress and 8–12 representing severe psychological distress [19].

Statistical analysis

Statistical analysis was performed using the Statistical Package for the Social Sciences (SPSS) version 24.0. A p value ≤ 0.05 was deemed statistically significant.

Results

Response rates

Two hundred and eighty-four surveys were sent out over the 2-year period and 101 completed surveys were returned, yielding a response rate of 35.5%.

Intern demographics (Table 1)

Fifty-six of the interns were female, and the mean age was 28 years, with an age range of 23 to 43 years. In terms of ethnicity, 76.2% of participants were Irish citizens. Fifty-six participants were from an undergraduate medical school programme, and the remainder had entered medical school as graduates.

Table 1 Intern demographics

Total number of interns	101	
Gender	Male	45 (44.4%)
	Female	56 (55.6%)
Medical school	Royal College of Surgeons in Ireland	60 (59.4%)
	University College Dublin	21 (20.7%)
	Trinity College Dublin	6 (6%)
	University of Limerick	6 (6%)
	University College Cork	2 (1.9%)
	National University of Ireland Galway	0 (0%)
	Other European Union medical school	6 (6%)
	Non-EU medical school	0 (0%)
Hospital	Beaumont Hospital	53 (52.5%)
	Connolly Hospital Blanchardstown	5 (4.9%)
	Our Lady of Lourdes Hospital Drogheda	6 (5.9%)
	University Hospital Waterford	37 (36.7%)
Ethnicity	Irish citizen	77 (76.2%)
	European Union citizen	16 (15.9%)
	Non-EU citizen	8 (7.9%)
Age range	20–30 years	56 (55.6%)
	30–40 years	33 (32.6%)
	40+ years	12 (11.8%)
Medical school programme	Undergraduate	56 (55.6%)
	Postgraduate	45% (44.4%)

Maslach Burnout Inventory

In total, 55.4, 51.5 and 41.6% of interns reported high emotional exhaustion, high depersonalisation and a reduced sense of personal accomplishment, respectively. The mean score for emotional exhaustion was 29, representing a high level of emotional exhaustion. The mean score for depersonalisation was 13, representing a high level of depersonalisation, while the mean score for a reduced sense of personal accomplishment was 29, representing a moderate level of reduced personal accomplishment. Of the participating interns, 41.6% were experiencing at least two of the three symptoms of burnout, with 21.8% experiencing all three. Burnout characteristics of participating interns are summarised in Fig. 1.

12-item General Health Questionnaire

The mean GHQ-12 score in this study was 3.3 (range 0–12). The prevalence of psychological distress was recorded at 43.5%, with 27.7% falling in the mild-to-moderate category (GHQ-12 score 3–7) and 15.8% falling in the severe category

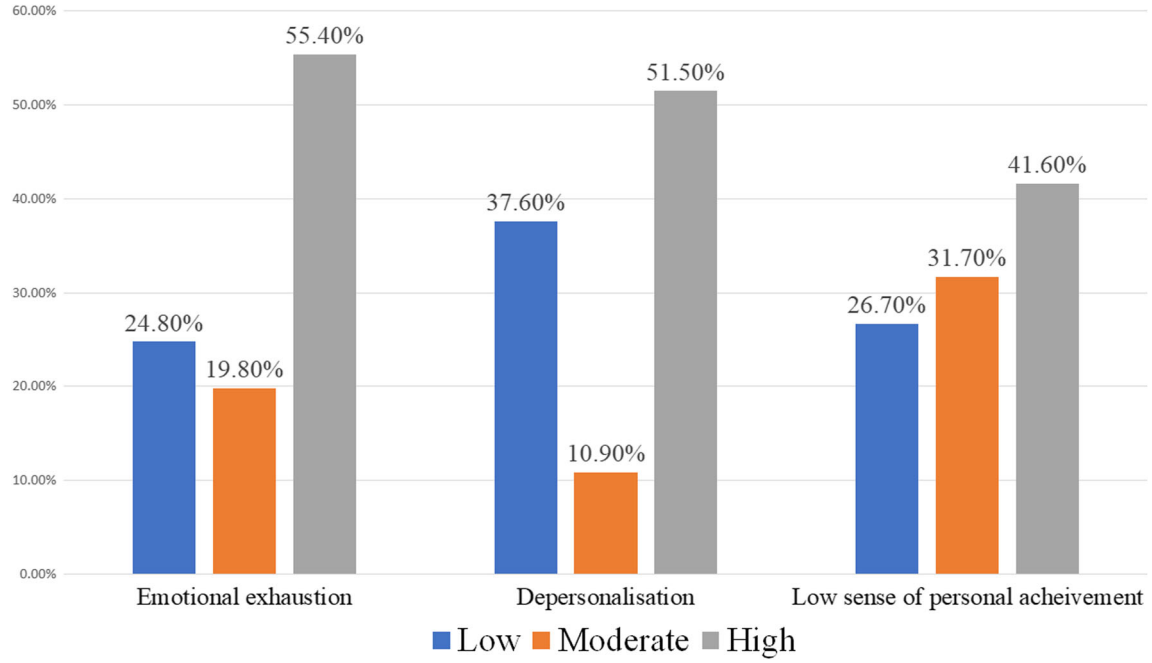

Fig. 1 Maslach Burnout Inventory (MBI) results

(GHQ-12 score 8 and above). The GHQ-12 results are summarised in Fig. 2.

Challenges faced in transition from medical school to internship (Table 2)

Most interns (71%) felt that their role lacked adequate definition. More than half (53%) felt that they were inadequately prepared by medical school to work in a hospital, with a similar proportion feeling that they lacked sufficient clinical skills (54%). In terms of clinical knowledge and practical skills, 47 and 28% felt inadequate, respectively. A majority of participants (53%) felt unable to successfully balance work commitments with their personal lives. Interactions with both senior staff members and other allied healthcare professionals were deemed to be challenging by 24%, and 14% felt that they had not integrated well with their team.

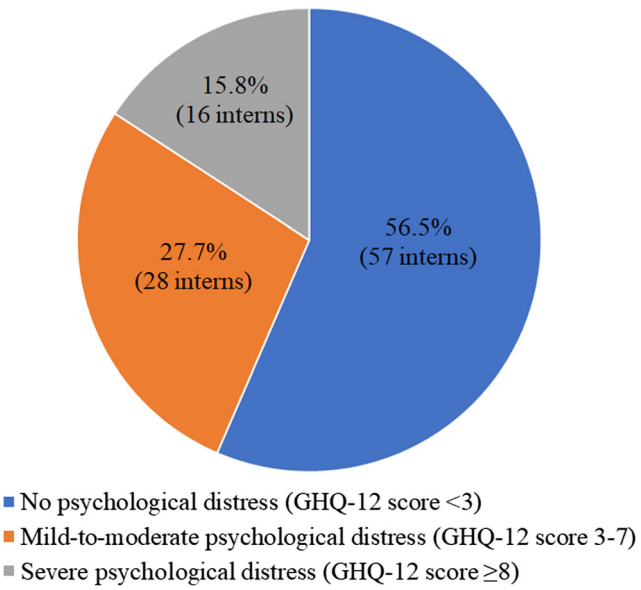

Fig. 2 12-item General Health Questionnaire (GHQ-12) results

Table 2 Challenges faced in transition from medical school to internship

Challenge faced	% which disagree or strongly disagree
'I feel adequately prepared to work as a doctor in the hospital environment'	53%
'I successfully manage to balance work with my personal life'	53%
'I feel my role as an intern is adequately defined'	71%
'I do not find interactions with other allied healthcare professionals challenging'	24%
'I do not find interactions with senior staff members challenging'	24%
'I feel my practical skills are adequate to work in a hospital environment'	28%
'I feel my clinical knowledge is adequate to work in a hospital environment'	47%
'I feel my clinical skills are adequate to work in a hospital environment'	54%
'I feel I have integrated well with my team'	14%

Workplace challenges (Table 3)

In terms of challenges faced frequently by an intern, financial worries and overtime pay disputes ranked highest, with 72% reporting high or very high stress resulting from this. Work overload, lack of support and fear of medicolegal consequences similarly scored highly, with 67, 59 and 60% reporting high or very high levels of stress due to each of these factors, respectively. A majority of interns felt chronically fatigued and sleep deprived (56%), and 47% reported bullying, intimidation and manipulation in the workplace. Future and career uncertainty was a significant stressor in 43% of participants.

Awareness of support services

Most (84%) reported to be unaware or unsure of any support services available for them in the hospital. Only 2% of all interns reported having availed of support services that were in place.

Intention to leave Ireland after completion of intern year

More than half (51.5%) of all interns surveyed indicated that they intended to leave Ireland upon completing internship purely as a result of their negative experience as an intern in an Irish hospital, with 19.8% considering leaving Ireland, leaving only 28.7% of all participants with plans to remain in Ireland.

Discussion

It is evident that workplace stress and burnout are very real and very serious problems in the hospital setting that can have devastating effects on physician wellbeing and patient care [5–7]. A problem is clear when only 4.3% of interns begin their year with symptoms of burnout, compared to 55.3% when they conclude their internship [20]. While most literature on this relates to other healthcare systems, this problem appears to be universal, with our study demonstrating that more than half of interns in our hospital network scored high in at least one aspect of burnout, and a high proportion experiencing psychological distress. Alarmingly, most interns reported to be considering leaving Ireland to work in another healthcare system because of their experiences working in an Irish hospital. It has been reported that migration intentions of Irish graduates pose an immediate and severe threat to the sustainability of the Irish healthcare service [21]. Our data implies that stress and burnout endured during the intern year may be a significant contributing factor.

Table 3 Daily workplace challenges encountered as an intern

Challenge faced	% who ranked as 4–5 out of 5 on Likert scale
Lack of support	59%
Work overload	67%
Poorly defined role as an intern	69%
Financial worries and overtime pay dispute	72%
Bullying, intimidation and manipulation at work	47%
Future and career uncertainty	43%
Conflict with allied health professionals	45%
Gaining competencies in practical clinical skills	35%
Fear of error leading to patient suffering	19%
Fear of medicolegal consequences	60%
Fatigue and sleep deprivation	56%

Potential solutions?

While measuring stress and burnout amongst Irish interns is straightforward, finding potential solutions to the problem, unfortunately, is somewhat more challenging. This is not a new problem, with Freudenberger first reporting burnout in physicians in 1974, and our data highlights that we still have far to go in terms of finding ways to overcome this [4]. A simple first step is to increase awareness of physicians at all levels of the symptoms and consequences of stress and burnout, emphasising the effect on both their own wellbeing and patient care [22]. It has been demonstrated that encouraging open dialogue between healthcare professionals reduces workplace stress [22]. Physicians often believe that admitting that they are distressed will be perceived as weakness and may negatively impact their career [21]. Encouraging an open dialogue on the impacts of stress and burnout may help remove this stigma and allow for potential stressors to be identified that would otherwise go unnoticed. Services such as Wellness Committees and Employee Assistance Programmes, which arrange stress awareness days, have been beneficial in the context of the American healthcare system [23] and may be similarly helpful elsewhere. An important factor in our study was a widespread lack of awareness of available support services, so it is important that the existence of these is clearly communicated to physicians upon induction at the hospital. Mentoring programmes can have a similarly positive impact on the wellbeing of junior doctors, where an intern is paired with a more senior member of staff with whom they meet regularly and can voice any concerns or issues they may have [24]. Physical exercise has also been shown to alleviate depression and anxiety, making it a simple intervention for burnout, with many hospitals offering exercise programmes and sporting activities [25].

Our survey demonstrates that new medical graduates feel vastly unprepared for the challenges that face them when they begin their internship. The implementation of subinternship programmes in North American medical schools has been shown

to greatly improve the confidence of students when they begin as interns, and this may be a significant factor in reducing stress levels [26]. Irish medical schools have introduced a subinternship programme within their curriculum. However, this needs to be more robust and standardised across curricula. Introduction of a more structured subinternship programme may ensure that newly qualified doctors feel sufficiently equipped to competently from their first day in work [26].

Alarmingly, only 10% of all participants felt that their educational needs were adequately met during their internship. Protected teaching programmes for interns do exist in many Irish hospitals, but the burden of work makes attendance difficult. Ensuring that all appropriate members of staff, including consultants, registrars, senior house officers and nursing managers, are aware of this protected teaching time may help avoid interruptions and ensure that all interns benefit from postgraduate teaching programmes [27]. These teaching programmes should incorporate training sessions in resilience, conflict resolution and managing stress at work. Interns should be encouraged to make use of study and exam leave that is available to them to ensure their continued professional development [28].

Despite the role of the intern having been outlined in the National Intern Training Programme (NITP) curriculum document, our survey demonstrates that the intern population feels that their position lacks adequate definition [29]. Interns are often responsible for a significant amount of administrative work, along with often being solely responsible for a high volume of repetitive tasks such as cannulation and phlebotomy. The ongoing implementation of the Transfer of Tasks from Non-Consultant Hospital Doctors to Nurses/Midwives under the Nursing/Medical Interface Section of the Haddington Road Agreement is a positive move and may lighten the often-excessive workload that our interns endure [30]. Sleep deprivation and fatigue remains an issue for interns, and while night shifts are an inevitable part of medical training, the implementation of bleep policies in some centres have helped to ensure that interns are only bleeped during the night for urgent tasks that could not wait until the morning [31]. Repeated interruptions with unnecessary bleeps have a negative psychological impact, increase forgetfulness and result in increased production of errors [32]. With this in mind, the introduction of bleep policies across all centres in Ireland should be welcomed.

Long hours and a lack of work-life balance were seen to be significant stressors amongst our interns. It is important to remember that this survey was conducted both before and during the implementation of the European Working Time Directive (EWTD), and further movements towards compliance may result in reduced rates of stress and burnout in interns in Irish hospitals.

Our findings are important as they clearly highlight that stress and burnout in interns is a very real problem. Understanding this and identifying the causative factors may ensure a healthier and happier cohort of doctors, improve patient outcome and go some way towards limiting the 'brain drain' of Irish doctors to other healthcare systems.

The strengths of the study include the broad and varied cohort of interns recruited from four large hospitals, as well as the use of validated and widely used tools for measuring burnout and psychological distress. One limitation of our study is the response rate of 35.5%. However, this response rate is comparable to similar international studies [32, 33]. It is possible that only those who were unhappy with their experience of internship were motivated to respond, but it is similarly possible that some of those who were experiencing burnout and stress may have been deterred from responding due to these very factors. Notably, a high proportion of interns who went through a graduate-entry programme responded to the survey, and perhaps an opportunity was missed to explore physician burnout experienced by those who had previously worked in other professions. With 1588 doctors undergoing their intern year in the timeframe of this study, our survey represents 6.3% of the intern population in 2013 and 2014. While this may seem low, to our knowledge, this is the largest study conducted that measures both burnout and stress in interns in the Irish healthcare system. A previous study by O'Connor et al. reported on 90 interns and focused only on stress without commenting on burnout [34]. While Hayes et al. recently reported on burnout and stress in doctors in Irish hospitals, their study notably only included those undergoing basic or higher specialty training or currently in a consultant position, and thus excluded those in their intern year [9]. Another limitation of the study is that burnout and stress levels reported by the participants may be influenced by external factors beyond the boundaries of the workplace. Finally, the GHQ-12 has been previously criticised for seeking out negative responses without any counter-balancing questions that allow the respondent to report positive experiences [35]. This criticism could equally be levelled at the MBI. Despite this, they are well-recognised and validated screening tools. Our data shows that burnout and stress are common amongst interns and actions to overcome this must be taken in order to protect both physician and patient wellbeing, and may even be an important factor in enticing doctors to remain in Ireland beyond internship.

Conclusion

Workplace stress and physician burnout are common amongst interns in Irish hospitals. Causes for this are multifactorial. Stress and burnout may result in devastating effects for the mental and physical wellbeing of the physician, as well as suboptimal patient care. Many potential methods of combating this exist, and these should be implemented to ensure a healthier, happier and more efficient workforce. It is vital to ensure that interns are aware of support services available to them in the hospital.

Acknowledgements The authors would like to thank all of the doctors who participated in the survey.

Compliance with ethical standards Ethical approval was granted by the local research ethics committees in the affiliated hospitals.

Conflicts of interest The authors declare that they have no conflicts of interest.

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