



Prevalence and co-variates of burnout in consultant hospital doctors: burnout in consultants in Ireland Study (BICDIS)

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Abstract

Objectives Burnout is prevalent among doctors and affects the quality of patient care. Little research on burnout in consultant-level doctors has been done. The objective of this study was to measure burnout in the hospital consultant population in Ireland.

Methods Surveys were distributed to consultants in Ireland from September to December 2016. The anonymous online survey combined demographic questions and the Maslach Burnout Inventory General Survey.

Results Four hundred seventy-seven (22%) consultants completed the survey. Of these, 42% reported high levels of burnout. We found that face-to-face contact with patients, speciality, exercise, remuneration and type of contract influenced burnout levels.

Conclusions This study demonstrated that over 40% of the consultants studied are affected by burnout. This finding raises concerns for patient safety and standard of care as well as doctors well-being. Interventions to address and minimise burnout are important to guarantee high patient outcomes and retain medical staff.

Keywords Burnout · Health promotion · Job stress · Organisational stress intervention/prevention · Work-life balance

Introduction

Burnout has been described as a “disease of overcommitment” characterised by a negative affect caused by chronic work stress [1]. It is primarily a psychological problem which arises in response to prolonged exposure to work-related difficulties, especially interpersonal stressors [2]. In the past 20 years, research has focused on defining the problem resulting in a three-dimensional model which includes emotional exhaustion, cynicism and detachment with an associated reduction in empathy, sense of ineffectiveness and lack of accomplishment [3].

Doctors are at an increased risk of developing high levels of stress and are thus more vulnerable to burnout and job dissatisfaction in comparison to other professions [4]. Shanafelt documented that one in three doctors experience burnout at any given time [5]. Riley explained that doctors

often have obsessive, conscientious and committed personality traits with high expectations of their performance [6]. It was thus concluded that stress among doctors is the product of the complex interaction between these inherent personality traits and escalating demanding work, a subjective lack of control with no obvious rewards. Without the necessary adjustments, this escalating stress may result in burnout, with the potential consequences of physical or mental impairment [7].

Burnout constitutes a significant problem among physicians and has been reported to have a negative impact on both affected doctors and the staff working with them [8, 9]. Burnout has been associated with a lower quality of life, increased anxiolytic use, and higher rates of suicidality [10]. Doctors suffering impairment of functioning associated with burnout are also at risk of harming their co-workers and patients including by medical errors [11, 12]. The association between burnout and decreased quality of care for patients and poorer patient outcomes has been established [8–10]. Given the burden of psychopathology and the risk to patient care and safety associated with burnout, understanding its determinants represents an important field of interest.

Burnout has been associated with a number of work-related stressors including lack of work-life balance, perceived underappreciation at work as well as an underestimation of burnout by higher rank staff [13]. As contributors to lack of work life

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balance, long working hours and high patient volume were identified as possible precipitants of burnout [14, 15].

Emotional exhaustion is strongly associated with physicians' hours of patient contact and the volume of patients seen. Time spent in face-to-face contact with patients has been shown to be associated with burnout [15]. With regard to protective factors, Zubairi et al. found that task-oriented roles and thus specialties with less face-to-face contact with patients are associated with lower levels of burnout [16]. Other protective factors included good relationships with colleagues, personal satisfaction with the job and altruism [17].

There is a paucity of published data regarding burnout in Irish physicians. O'Connor et al. reported that Irish interns had doubled the levels of burnout reported in their US counterparts and that their levels of emotional exhaustion increased as they progressed through their internship [18]. There is limited data on burnout in senior hospital physicians in Ireland. One qualitative study reported that consultants were concerned with the impact of healthcare management on service, and about the quality of care they provide. They reported feeling undervalued [19]. O'Dea et al. reported prevalence rates of burnout of 6.6% in general practitioners and found evidence that personal satisfaction with work may be a protective factor against burnout [20].

The primary aim of this study is to establish the prevalence of burnout among consultant hospital doctors in Ireland. The secondary aim is to identify the variables associated with burnout, including personal characteristics, work-related variables, and the association between direct clinical contact and burnout.

Methods

Design

We used a cross-sectional design to examine the point prevalence of burnout in a population of hospital consultants across Ireland. An anonymous survey was distributed to consultants via the national database held by the Irish Hospital Consultants Association (IHCA), an organisation for hospital consultants in Ireland with 2160 members. The electronic survey along with a study information sheet and consent form was sent as a hyperlink to all consultants on the database of the IHCA via email. Participation was entirely voluntary, and all responses were anonymised. Ethical approval was granted by the Hospital Ethical Committee. The data was collected from September to November 2016.

Instruments

Burnout was measured using the Maslach Burnout Inventory General Survey (MBI-GS), a validated measure of the

presence and characteristics of burnout [21]. It comprises 16 statements of work-related feelings (e.g. "I feel emotionally drained from my work." "I have become more cynical about whether my work contributes anything."), which are scored according to their frequency on a scale of 0–6 (seven-point Likert scale), where 0 is "never" and 6 is "daily". It contains three subscales measuring emotional exhaustion (EE), cynicism (CY) and professional efficacy (PE), which are categorised according to severity into low, moderate or high levels of burnout [21]. High levels of EE and CY are associated with burnout, while high PE is protective. This questionnaire has been validated in the medical population [22] across different countries and is considered to be the most reliable tool for identifying burnout [21, 23].

It is not recommended to combine the three constituent scales of MBI-GS to provide a single measure of burnout. However, previous studies have created a composite model combining high levels of EE and CY as well as low levels of PE [20].

In addition, the respondents were asked to complete questions on socio-demographic profile (age, gender, relationship status, mental health, personal habits). They were asked about relevant work-related characteristics and possible stressors including medical specialty, contract type, perceived remuneration, hours worked per week, time spent with face-to-face patient contact, and experience of disciplinary or medico-legal actions in their practice.

Statistical analysis

Data was analysed using the Statistical Package for the Social Sciences (SPSS) (Version 22.0 for Windows). We included data only where the full questionnaire was completed. We calculated means and standard deviations on burnout scores and its subscales, as well as made comparisons between groups using chi-square (or Fisher's exact tests) testing for categorical variables and independent *t* tests for continuous data. Regression analysis was performed to examine the association of demographic variables with burnout in our sample after controlling for the different characteristics of the population.

Results

Of the 2160 consultants invited to participate, 472 (response rate of 21.9%) completed surveys of which 433 questionnaires were suitable for analysis. Table 1 shows the sociodemographic characteristics of the respondents.

Of those who responded, 56.6% were male and 43.3% were female consultants. All regions of the country were represented with the majority of the respondents coming from the east (39.2%) and south (30.8%). Over three-quarters of the

Table 1 Demographics and sample characteristics of study population ($n = 477$)

Characteristics	Value
Personal characteristics	
Age (years), mean (SD)	49.14 (6.9)
Gender, n (%)	Male 253 (56.6) Female 194 (43.4)
Region, n (%)	Dublin 177 (39.2) Munster 139 (30.6) Connacht 63 (14.0) Leinster 57 (12.6) Ulster 15 (3.3)
Relationship status, n (%)	Married 374 (82.7) Serious relationship 16 (3.5) Single 33 (7.3) Divorced/separated 25 (5.5) Widowed 4 (0.9)
Habits	
Smoking, n (%)	Yes 17 (3.7) No 311 (65.9) Quit 120 (25.4)
Alcohol	Yes 389 (87.8) No 54 (12.2) Units per week: mean (SD) 10.44 (8.0)
Exercise	Yes 355 (78.9) No 95 (21.1)
Work characteristics	
Specialty, n (%)	Medicine 86 (19.9) Psychiatry 81 (18.7) Surgery 68 (15.7) Anaesthesia 47 (10.9) Radiology 46 (10.6) Paediatrics 30 (6.9) Pathology 29 (6.7) Obstetrics and Gynaecology 25 (5.8) Emergency Medicine 16 (3.7) Ophthalmology 5 (1.2)
Hours spent in “face-to-face” with patients, mean (SD)	5.5 (4.3)
Public or private practice, n (%)	Wholly in the public system 206 (46.5) Part public/private 173 (39.1) Part academic/public/private 28 (6.3) Solely private 18 (4.1) Part academic/part public 12 (2.7) Retired 4 (0.9) Locum 2 (0.5)
Type of contract, n (%)	Type A 95 (20.1) Type B 261 (55.3) Type C 21 (4.4) Post 2013 11 (2.3) Locum contract 7 (1.5)

Table 1 (continued)

Characteristics		Value
Satisfaction with remuneration, <i>n</i> (%)	Yes	209 (47.6)
	No	230 (52.4)
Hours worked/week, mean (SD)	Total	51.8 (11.5)
	Public setting	30.9 (18.2)
	Private	7.25 (11.4)
	Managerial	3.76 (6.5)
	Academic	2.1 (4.6)
Formal disciplinary action at work, <i>n</i> (%)	Other	0.83 (3.7)
	Yes	9 (2.1)
	No	430 (97.9)
Work-related lawsuit, <i>n</i> (%)	Yes	140 (31.9)
	No	299 (68.1)

respondents were married or in a civil relationship (82.7%), with a small minority of cases identifying as single (7.3%) or divorced (5.5%).

The highest proportion of respondents were medical physicians (19.4%), followed by psychiatrists (18.7%) and surgeons (15.7%). Consultants who worked wholly in the public system accounted for nearly half our study population (46.5%). Of the remaining study participants, the vast majority worked in mixed public and private practice (39.1%), with a small minority working solely in the private practice (4.1%). The average working hours per week were 51.8 h, of which 30.9 h were clinical in the public sector and 7.25 h in private sector.

Regarding personal habits, almost three-quarters of the respondents never smoked (65.9%), and only a small percentage reported smoking at time of survey (3.8%). In addition, a positive majority (78.9%) of consultants took regular exercise. Regarding alcohol intake, the majority of the respondents consumed alcohol (87.8%), with a mean intake of 10.4 U per week.

Almost a third of respondents reported being involved in a work-related lawsuit (31.9%), while 2.1% of the respondents had experienced formal disciplinary action at work.

The primary endpoint of this study was burnout as determined by a high score on either the EE or CY subscales of the Maslach Burnout Inventory. The rate of burnout in our sample population is 45.8% ($n = 216$). A significant proportion had high levels of burnout identified in at least one subscale (41.8%). Approximately more than one in five respondents had high levels of burnout across two subscales (21.9%) and one in ten respondents across the three subscales. (10.8%) When assessed using the MBI-GS, taking each subscale in turn, 90% of Irish hospital consultants experienced moderate or high levels of EE, with 75% reporting moderate or high levels of cynicism although a reassuring majority 70% reported high levels of protective personal effectiveness.

The vast majority of respondents had moderate–high levels of EE (87%) and CY (75.1%), but reassuringly, 98.8% of respondents reported moderate–high levels of protective PE.

Linear regression (stepwise) univariate analysis for burnout and its predictors (Table 2) suggested a relationship between burnout and time spent face-to-face with patients, exercise and satisfaction with remuneration.

Time spent face-to-face with patients was associated with burnout across two subscales (EE $p = 0.02$; PE $p = 0.04$). Low levels of exercise were likewise associated with burnout in the EE subscale ($p = 0.02$). Less than half of participants (47.6%) were satisfied with their remuneration, and initial linear regression analysis pointed to a relationship between remuneration and burnout across two subscales (EE $p = 0.024$; CY $p = 0.023$). No such relationship was found between working hours and burnout across any of the three sub-scales used in the Maslach Burnout Inventory.

Using a logistic regression model with positivity for the composite measure of burnout as the dependent variable, the only variable significantly associated with burnout was satisfaction with remuneration ($p = 0.005$). After controlling for age, gender, working hours and specialty, time spent face to face with patients was not associated with any of the subscales of burnout on linear regression analysis (Table 3).

Exercise and satisfaction with remuneration were significantly associated with lower levels of EE. Lack of satisfaction with remuneration was also significantly associated with increased cynicism. This model explained 69% of the variance in the EE subscale, 45% on the CY subscale and 9% in the PE subscale. This model did not find any variables with a significant association with PE.

Among the different specialties, consultants working in paediatrics, psychiatry and pathology had the highest median values for EE and CY, while those working in surgery and obstetrics & gynaecology had the lowest (Fig. 1).

Table 2 Linear regression analysis for burnout (across the three subscales of the Maslach Burnout Inventory-General Survey (MBI-GS)) and its predictors

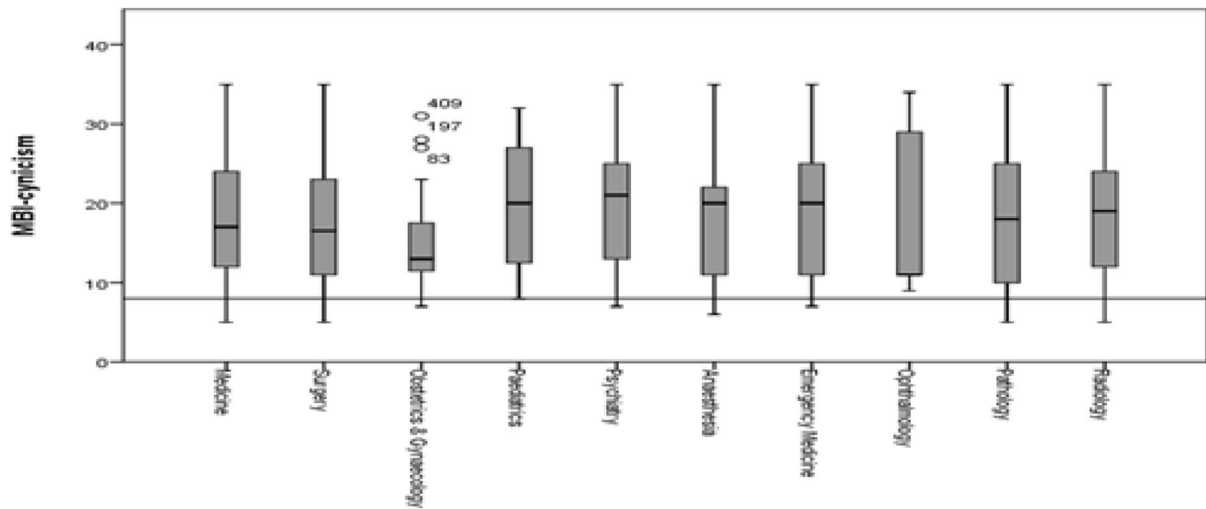
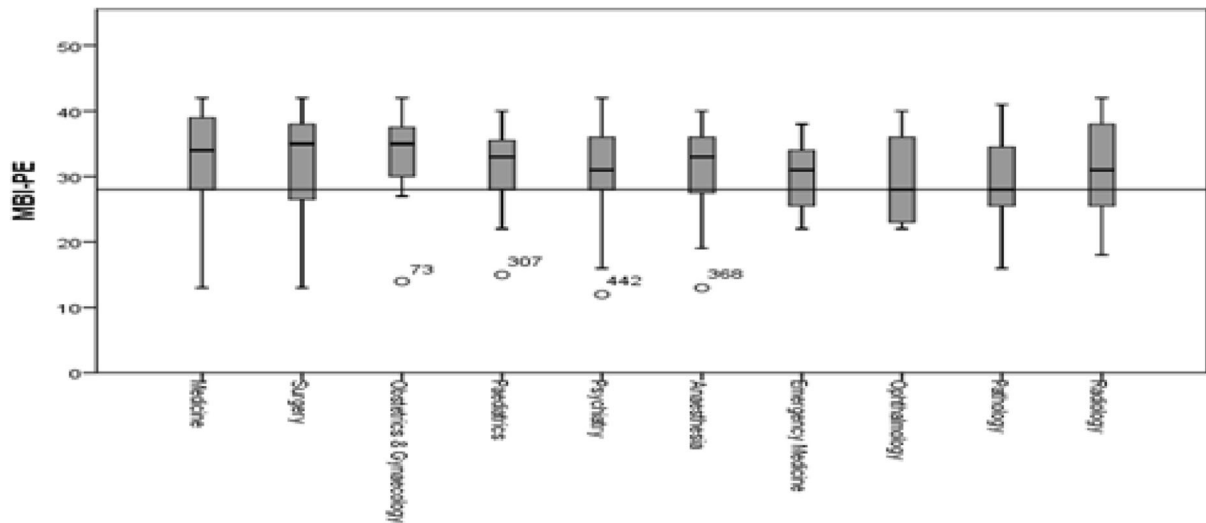
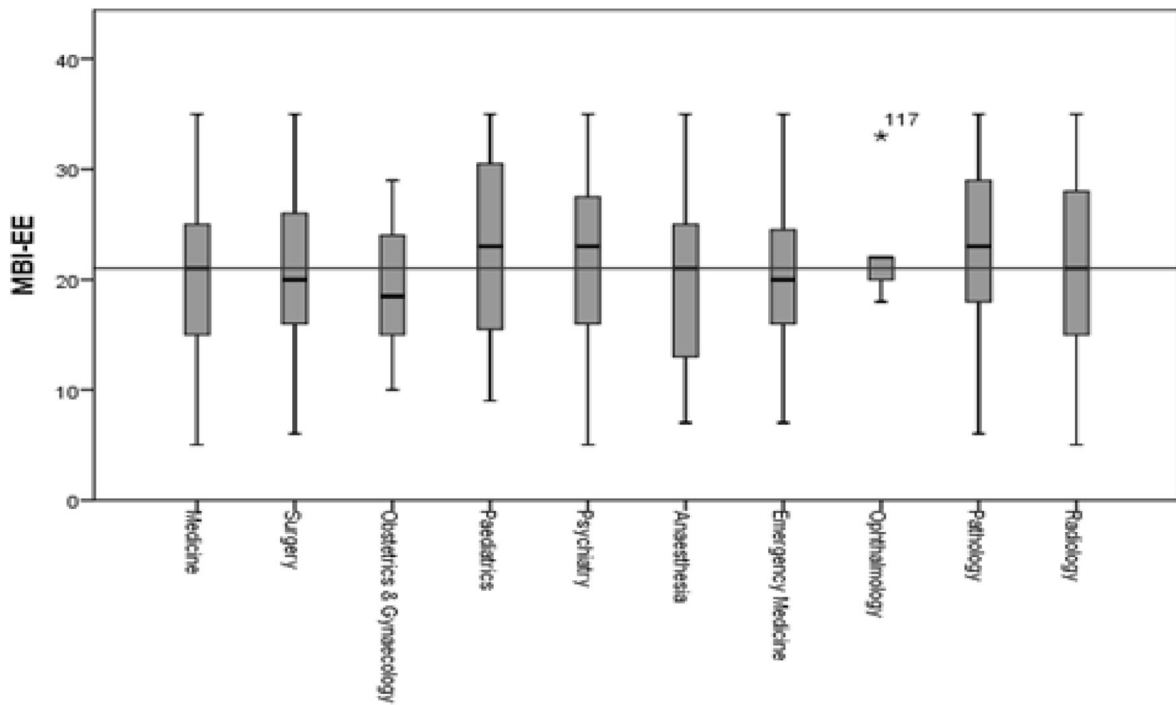
	Adjusted R^2	Beta	t test	p value	95% confidence interval	
					Lower bound	Upper bound
Face-to-face						
EE	0.010	0.112	2.32	0.02	0.01	0.12
Cy	-0.020	0.020	0.397	0.691	-0.044	0.067
PA	0.008	0.100	2.08	0.04	0.003	0.109
Remuneration						
EE	0.057	0.142	6.22	0.024	0.001	0.018
Cy	0.047	0.151	2.25	0.023	0.001	0.018
PA	0.001	0.041	2.29	0.436	-0.005	0.011
Exercise						
EE	0.020	0.150	3.11	0.002	0.928	1.159
Cy	0.001	0.058	1.174	0.241	-0.002	0.008
PA	-0.001	-0.036	-0.732	0.464	-0.008	0.004
Working hours						
EE	0.002	0.068	1.394	0.164	-0.042	52.91
Cy	0.002	0.063	-1.280	0.201	-0.293	0.051
PA	<0.001	0.044	0.898	0.369	-0.091	0.244

MBI-EE emotional exhaustion subscale of MBI-GS, *MBI-C* cynicism subscale of MBI-GS, *MBI-PA* Personal Accomplishment subscale of MBI-GS

Table 3 Multivariable linear regression analysis using the subscales of burnout as the dependent variable (across the three subscales of the Maslach Burnout Inventory-General Survey (MBI-GS)) and its predictors

	Adjusted R^2	Beta	p value	95% confidence interval
MBI-EE Adj $R^2 = 0.069$	Age	-0.016	0.746	-0.127-0.091
	Gender	0.06	0.232	-0.592-2.429
	Time face-to-face with patients	0.093	0.069	-0.014-0.39
	Exercise	0.114	0.021	0.32-3.839
	Working hours	0.052	0.305	-0.031-0.098
	Satisfaction with remuneration	0.221	<0.001	1.880-4.781
	Speciality	0.061	0.234	-0.084-0.345
MBI-C Adj $R^2 = 0.045$	Age	0.022	0.679	-0.092-0.14
	Gender	-0.041	0.425	-2.219-0.938
	Time face-to-face with patients	0.015	0.733	-0.179-0.24
	Exercise	0.055	0.272	-0.819-2.896
	Working hours	-0.107	0.040	-0.137-0.003
	Satisfaction with remuneration	0.225	<0.001	1.934-4.956
	Speciality	0.024	0.164	-0.171-0.275
MBI-PE Adj $R^2 = 0.009$	Age	-0.033	0.536	-0.134-0.07
	Gender	-0.084	0.113	-2.531-0.267
	Time face-to-face with patients	0.086	0.109	-0.034-0.341
	Exercise	-0.028	0.583	-2.105-1.186
	Working hours	0.02	0.704	-0.048-0.071
	Satisfaction with remuneration	-0.076	0.136	-2.367-0.324
	Speciality	-0.057	0.286	-0.308-0.091

MBI-EE emotional exhaustion subscale of MBI-GS, *MBI-C* cynicism subscale of MBI-GS, *MBI-PA* Personal Accomplishment subscale of MBI-GS



◀ **Fig. 1** Boxplot of the emotional exhaustion subscale (MBI-EE), cynicism scale (MBI-cynicism), and Personal Efficacy (MBI-PE) scales across specialities (horizontal line is cut-off for high levels of each subscale)

The type of contract held was associated with burnout: Type A and Post-2013 contracts were associated with statistically significant high levels of EE, above the threshold for burnout (Fig. 2). In addition, CY levels were higher in these two groups, but this did not reach statistical significance ($p = 0.061$). Of note, those working as locums not only had the lowest levels of EE and CY but also the lowest levels of PE.

Discussion

The aim of this study was to establish the prevalence of burnout among hospital consultants in Ireland and the factors associated with this. This study found a high prevalence of burnout in this population. Using the composite measure of burnout, we reported higher levels of burnout to those found in a study of Irish general practitioners (10.8% vs 6.6%) [20]. O’Dea’s study noted greater levels of EE (52.7% vs 42.7%) and lower levels of the protective PE (16.3% vs 1.2%) [20]. Compared to interns, Irish consultants appear to be significantly more protected from burnout than their junior colleagues. By contrast, 41.6% of Irish interns reported a low sense of personal effectiveness, while slightly more than half of the cohort of interns (51.5%) reported high levels of emotional exhaustion [24].

A systematic review found burnout to be a significant problem for UK doctors. Scores for emotional exhaustion ranged from 31 to 54.3%; for depersonalisation, 17.4 to 44.5% with 6–39.6% reporting low personal accomplishment. GPs, consultants and pre-registration house officers had the highest levels of burnout in these studies [25]. In comparison to their international counterparts, Irish consultants recorded higher levels of burnout symptoms. The proportion of Irish consultants with moderate levels of EE and CY was almost twice that reported in a study from New Zealand, while protective levels of PE were similar [17]. In comparison to colleagues in the United States (US), Irish consultants appear to have higher levels of emotional exhaustion (37.9% vs 42.7%), but 12.4% of hospital physicians in the US reported low levels of personal effectiveness which is significantly higher than the Irish minority documented thus (1.2%). This disparity in levels of personal effectiveness may be explained partially by the inclusion of physicians who were no longer in practice. When we controlled for age, gender and speciality on multivariable analysis, we found that exercise and satisfaction with remuneration were significantly associated with EE, and satisfaction with remuneration was significantly associated with CY.

Our multivariable analysis model explained 69% and 45% of the variance in EE and CY.

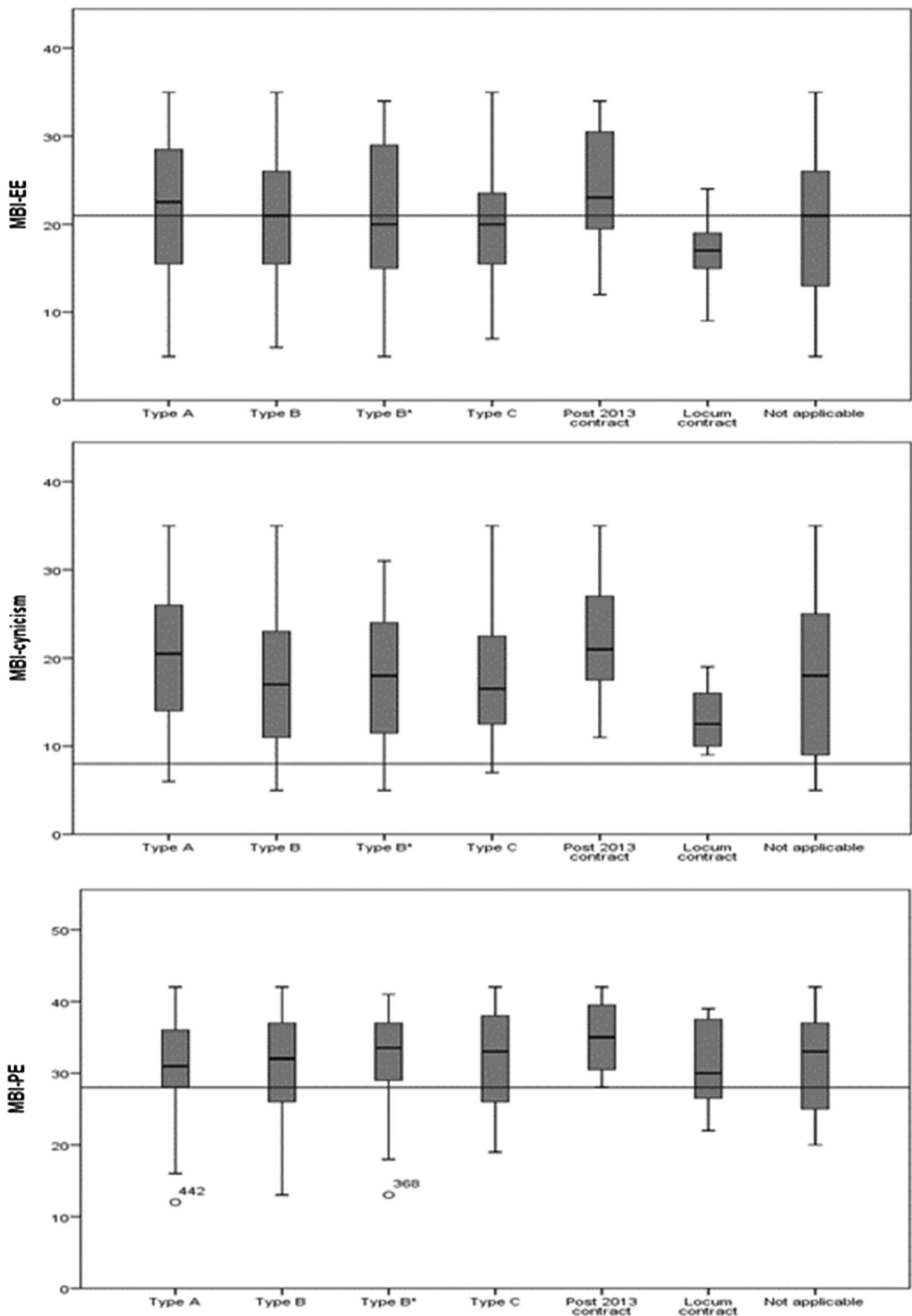
Predictors and risk factors for burnout have been targeted by policy makers for reducing the levels of burnout in the medical profession. Literature has documented that longer working hours and having more recently taken on a particular occupational role are associated with higher burnout levels [17]. In addition, low levels of job satisfaction particularly satisfaction with career and chosen speciality are linked with the development of burnout [26]. This study found that exercise, satisfaction with remuneration and type of contract all influenced burnout levels.

Research has suggested that the nature of the job may have a direct effect on burnout [27]. This study found a statistically significant but weak relationship between time spent face-to-face with patients and higher burnout levels in terms of EE and PE. Research has suggested that task-oriented professions are protective from burnout, while emotion-oriented roles are associated with higher level of EE and CY. This may explain why psychiatrists and paediatricians have higher medians of EE compared to obstetricians and surgeons, whose jobs are more task-orientated or procedure-based (Fig. 1). It does not explain the high levels of burnout seen in pathologists.

This study identified contract type as having a direct effect on levels of burnout in terms of high levels of emotional exhaustion. Doctors with type A or post-2013 contracts, which have a lower rate of remuneration than that of the earlier contracts with more favourable terms, recorded higher burnout medians (Fig. 2). Satisfaction with remuneration independently affected both EE and CY scales ($p < 0.001$). However, this increased burnout level may be related to relative inexperience and less time spent in the job, rather than a result of lack of satisfaction with remuneration.

Working hours have been considered a significant contributor to developing burnout. In recent years, Irish employers have implemented European policies (e.g. the European Working Time Directive) to curb the levels of burnout by reducing the time spent at work without a break. This study, however, showed that working hours do not have a statistically significant impact on burnout levels ($p = 0.116$). These results are consistent with previous studies who failed to prove a statistically significant relationship between hours worked and burnout [25, 28].

Litigation related to medical malpractice has also been linked to stress and burnout. According to an American study, 24.6% of surgeons ($n = 7164$) declared recent involvement in a malpractice lawsuit [27]. Another study sampling physicians from 2007 to 2008 found that 42% of all US physicians have been sued in the course of their career [27]. Burnout was significantly associated with a recent malpractice lawsuit after controlling for all other personal and professional characteristics. Our study did



◀ **Fig. 2** Boxplot of emotional exhaustion subscale (MBI-EE), cynicism scale (MBI-cynicism), and Personal Efficacy (MBI-PE) scales across types of contracts (horizontal line is cut-off for high levels)

not reflect this association between involvement in litigation and burnout, but we did find a significant proportion of physicians that had been involved in a work-related lawsuit (31.9%), while 2.1% of the respondents had experienced formal disciplinary action at work.

The current study used a well-validated scale for measuring levels of burnout in about 22% of the hospital consultant population in Ireland (and 15% of the total) [29, 30]. This is the largest study of burnout in senior doctors in Ireland. Further strengths include the use of validated instruments and a comprehensive analysis of the personal and work-related factors which may contribute to burnout in this population.

Our research has limitations: The doctors who participated in the study may not be representative of the entire consultant population. The large sample size and variance helped to mitigate this bias: The study sample includes a range of specialities, contract types and regional spread, and as such might be said to be representative of the consultant body as a whole in Ireland. The study was executed by self-reported questionnaires that may in themselves carry subjective bias: Confounding bias may be present due to the reliance in the respondent's self-report burnout levels. The period of data gathering (September to December 2016) may also have had an effect on the rates of burnout. In addition, we did not account for level of experience, as this may be a determinant of burnout, although contract type may be considered a proxy measure of this.

Conclusion

Burnout is a common problem in doctors which may have a negative impact both on patient care and in the personal lives of physicians. Although measures such as the reduction of working hours have been implemented, this factor is not associated with burnout in this population. Further interventions to mitigate the effects of burnout are required to retain doctors at all levels including consultants in the country, and to maintain their health. Measures such as good working conditions, meritocratic environments, incentives to conduct a healthy lifestyle, building resilience and financial rewards can all safeguard consultants from burnout. Future research should be encouraged to understand the relationships of burnout with other comorbidities such as depression, anxiety and stress to develop effective policies that preserve the health of health care professionals.

Compliance with ethical standards

Participation was entirely voluntary, and all responses were anonymised. Ethical approval was granted by the Hospital Ethical Committee.

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