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ORIGINAL RESEARCH

Burnout among Saudi board residents: comparison between Family Medicine and Internal Medicine

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ABSTRACT

Background: Many previous studies reported high burnout rates among medical professionals in different fields, from students and nurses to surgeons, specialists and consultants. The current study was performed to compare the prevalence of burnout in family medicine and internal medicine residents and to reveal the risk predictors of high burnout.

Methodology: It is a cross sectional, analytical study. 130 family and internal medicine residents were given Maslach Burnout Inventory to assess the mean score and prevalence of three domains of burnout i.e. emotional exhaustion, depersonalization and personal achievement. Chi Square and t-test were used to analyze the prevalence and mean scores respectively.

Results: Mean scores of emotional exhaustion, depersonalization and personal achievement were 16.55 and 17.15, 15.42 and 9.15, 24.83 and 29.80 respectively. Depersonalization and personal achievement scores were high among family residents. 75% of family medicine participants and only 20% of internal medicine participants had a high level of depersonalization burnout (p = 0.001).

Conclusions: Emotional exhaustion, depersonalization and personal achievement burnout were found at an alarmingly high rate among family medicine and internal medicine residents. Mean scores and prevalence of depersonalization and personal achievement burnout were significantly higher among family medicine residents than internal medicine residents.

Keywords: Emotional exhaustion, depersonalization, personal achievement, burnout, residents, family medicine, internal medicine

Introduction

The term "burnout" is defined as a combination of feelings of emotional exhaustion, depersonalization and a perceived lack of personal accomplishment [1], brought on by job-related stress and leading to a loss of emotional, mental, and physical energy [2]. It has been identified as an occupational hazard for various professionals, especially those in the public sector [3]. For doctors, this seems to be particularly true [4], with many reports documenting high burnout rates among medical professionals in different fields, from students and nurses to surgeons, specialists and consultants [5-14].

A study conducted to measure the prevalence of burnout amongst physicians in family medicine in Riyadh Military hospital found that 53.5% of respondents scored high for EE burnout, 38.9% for DP and 28.5% for PA, with 2.78% scoring high burnout in all three dimensions [15]. Another study done in Asir showed 29.5% of the respondents had a high level of emotional exhaustion, 15.7% had a high level of depersonalization and 19.7% had a low level of personal accomplishment [16]. Another study done in Qatar showed that only 12.6% of the GPs included in the sample were burned out [17]. A study conducted in Greece found that nearly half of surveyed individuals (49.5%) met burnout criteria and 31.8% of those had considerable levels in the three subscale scores, according to MBI (Maslach's Burnout Inventory) [18]. This was further corroborated by a

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survey in Taiwan finding that between 30% and 70% of hospital staff suffered from burnout [2]. Of the burnout domains covered in the MBI, emotional exhaustion tends to be the one that reaches the highest values [19] and it is believed to be due to an accumulation of perceived medical errors which place an individual in emotional stress or turmoil [20].

But medicine seems to cause burnout even outside the stressful environment of public care, with over 30% of teachers scoring significant values on the MBI emotional exhaustion scale [21], along with 21% of the first year students, 41% of the second year, 43% of the third year, and 31% of the fourth year [22]. There is little evidence in the literature regarding the precise etiology of burnout. Potential causes at a personal level include difficulties in work-life balance [20,23,24], poor sleep (5-6 h/per night), low levels of exercise, increasing amounts of staff [25], personality and a regret of specialty choice [22]. At a work-related level, specialty or work environment [24,26,27], clinical demands, business and insurance concerns, and keeping up with rapidly advancing technology have also been shown to cause burnout [28].

In fact, a direct correlation has been shown to exist between MBI and the number of years an individual has been practicing medicine, with new interns showing a more optimistic and unstressed demeanor which declines as time goes by [10,16]. It is also important to note that burnout affects not only the suffering physicians, but also their patients. Loss of job satisfaction, high rates of turnover in addition to depressive disorders, poor job performance and high rates of absenteeism are among the numerous impacts of burnout on patients [29]. It is therefore important to try and pinpoint where burnout is more likely, along with its severity, not only to safeguard the practitioners but also the patients who may unknowingly be poorly treated or managed.

Methodology

The study was carried out in the Departments of Family and Internal Medicine at Prince Sultan Medical Military City and National Guard Hospital in Riyadh, Saudi Arabia in the period from April to June 2014. It is an analytic, cross sectional study in which a convenient sampling technique was used. One hundred and thirty residents were included (65 from each specialty). The sample size was calculated with assumption of burnout rate of 50% in Family medicine and 75% in Internal medicine with a study power of 80 and confidence interval of 95%.

Internal medicine Saudi program consists of four years with different duties including on-calls from four to seven times per month, two clinics per week, in-patient duties and one half day activity per week. At the end of each year, there is a promotion exam in addition to two board exams; part one is in the second year and part two is at the end of fourth year.

Family medicine board also consists of four year. At the first three years, there are three or four months of pure family medicine duties including general clinics and some academic activities and tutorials. The remaining eight or nine months include hospital rotations with less on-calls duties compared to internal medicine and more out-patient clinics. At the end of each month, resident must discuss his port folio with his trainer. Like internal medicine there is a half academic activity weekly. The fourth year consists of only family medicine training without any outside rotation or on-calls.

Maslach Burnout Inventory Questionnaire was used. The MBI includes 22 items that measure the three burnout dimensions. MBI is considered the golden standard for identifying burnout in medical research literature. It is valid and has good reliability with an average Cronbach's Alpha of .88, .71, and .78, respectively for each dimension of burnout [9]. The questionnaire was distributed to the residents in their scientific meetings i.e. morning reports, half day activities and Journal clubs. A covering lettter was given to each resident to assure confidentiality of information. It took almost half an hour to fill in the questionnaire. The responses were received immediately.

Data were analyzed via SPSS using a Chi Square test for frequencies and percentages and an independent samples t-test for means and S.D's. A Pearson and Spearman Correlation co-efficient was also conducted for all variables. Statistical significance was set at the standard $p < 0.005$.

Results

A total of 130 residents were surveyed; 65 belonged to Family Medicine and the other half were residents in Internal Medicine. Volunteers were given liberty to fill in the areas they felt comfortable with and to leave the other parts blank. In this way, more than half (75,57.96%) wrote their gender as male, 42 (32.23%) wrote themselves as females and 13 (10%) left the gender column blank. Similarly, age and year of residency were left blank by most of the residents. Regarding marital status, 67 (51.5%) residents were married, 61 (47%) were single and 2 (1.5%) were divorced or separated. Only 36 (27.7%) residents had children, of which 15 (11.5%) had one child and 21 (16.2%) had 2; the remaining 94 (72.3%) had none.

Mean scores of the three types of burnout i.e. emotional exhaustion, depersonalization and personal achievement are shown in Table 1. It is clear from the table that response rate is fair, with 52 (80%) family medicine residents answering sections 1 and 2 but 100% answering section 3. It is also evident that depersonalization and personal achievement burnout mean scores are significantly higher among family medicine residents as compared to internal medicine residents; no statistical significance was found for mean scores of emotional exhaustion among the residents of the two specialties.

The frequency of emotional exhaustion according to the scoring of section A of the MBI among the residents of family medicine and internal medicine is shown in Table 2. The response rate among residents of family medicine was 80% compared to 100% in residents of

Table 1. *Mean burnout scores among residents of Family Medicine and Internal Medicine in the Saudi board, the joint program in PSMMC and National Guard Hospital.*

Burnout Dimensions	Family Medicine N (52)	Internal Medicine N (65)	P-Value
	Mean	Mean	
1) Emotional exhaustion	16.55 SD (5.236)	17.15 SD (4.473)	0.220
2) Depersonalization	15.42 SD (4.575)	9.15 SD (3.563)	0.001
3) Personal achievement	24.38 SD (6.883)	29.80 SD (5.853)	0.001

Table 2. *Level of burnout in the three dimensions among residents of Family Medicine and Internal Medicine in the Saudi board, the joint program in PSMMC and National Guard Hospital.*

Burnout Dimensions	Family Medicine	Internal Medicine	Total
1) Emotional exhaustion*			
Low level burnout	35 (67.3%)	36 (55.4%)	71
Moderate burnout	15 (28.7%)	28 (43.1%)	43
High level burnout	2 (3.84%)	1 (1.5%)	3
Total	52	65	117
2) Depersonalization**			
Low level burnout	2 (3.84%)	7 (10.8%)	9
Moderate burnout	11 (21.15%)	45 (69.2%)	56
High level burnout	39 (75%)	13 (20%)	52
Total	52	65	117
3) Personal achievement***			
Low level burnout	2 (3.1%)	0	2
Moderate burnout	8 (12.3%)	22 (33.9%)	30
High level burnout	55 (84.6%)	43 (66.1%)	98
Total	65	65	130

*χ^2 = 1.118, df = 2, p value = 0.696, Inference = Not signifiant
**χ^2 = 35.461, df = 2, p value = 0.001, Inference = Signifiant
***χ^2 = 10.003, df = 2, p value = 0.004, Inference = Signifiant

internal medicine. The majority of family medicine and internal medicine residents exhibited low level of burnout (67.3% and 55.4% respectively). A Chi Square test was applied showing that the difference in frequency of burnout among residents of two specialties was not statistically significant (p = 0.696).

The frequency of depersonalization according to the scoring of section B is shown in Table 2. The response rate among residents of family medicine was 80% as compared to 100% in internal medicine residents. The majority (75%) of responders in family medicine and only 20% of residents in internal medicine were shown to have high level of burnout of this kind. Chi Square test was applied showing that the difference in frequency of depersonalization among residents of two specialties was statistically significant (p = 0.001).

The frequency of personal achievement according to the scoring of section C is shown in Table 2. The response rate was 100% among residents of both specialties. The majority (84.6%) of residents in family medicine and 66.1% of residents in internal medicine were shown to have high level of burnout of this kind. Chi Square test was applied showing that the difference in frequency of personal achievement among residents of two specialties was statistically significant (p = 0.004).

The frequency of emotional exhaustion among male and female residents is shown in Table 3. The majority (54.6% and 57.1%) of males and females respectively had low level of burnout. Moderate burnout was found in 44% of males and in 38.09% of females. Chi Square test was applied elaborating that the difference in frequency of burnout among residents of two genders was no statistically significant (p = 0.888).

High level of depersonalization was significantly more frequent in male residents whereas moderate level of depersonalization was more common among female residents as shown in Table 3.

Personal achievement related to burnout was rampant (100%) between the two genders of the study sample and it was at a high level as shown in Table 3. There was no statistically significant difference among the two genders.

Table 3. *Level of burnout in the three dimensions among two genders.*

Burnout Dimensions	Male	Female	Total
1) Emotional exhaustion*			
Low level burnout	41 (54.6%)	24 (57.1%)	65
Moderate burnout	33 (44%)	16 (38.09%)	49
High level burnout	1 (1.3%)	2 (4.7%)	3
Total	75	42	117
2) Depersonalization**			
Low level burnout	4 (5.33%)	5 (11.9%)	9
Moderate burnout	34 (45.33%)	26 (61.9%)	60
High level burnout	37 (49.33%)	37 (49.33%)	48
Total	75	42	117
3) Personal achievement***			
Moderate burnout	17 (22.66%)	13 (30.95%)	30
High level burnout	58 (77.33%)	29 (69.05%)	87
Total	75	42	117

*χ^2 = 0.676, df = 2, p value = 0.888, Inference = Not Significant
**χ^2 = 7.486, df = 2, p value = 0.024, Inference = Significant
***χ^2 = 0.828, df = 1, p value = 0.476, Inference = Not Significant

Table 4. *Level of burnout in the three dimensions and marital status of residents.*

Burnout Dimensions	Married	Unmarried	Unmarried	Total
1) Emotional exhaustion*				
Low level burnout	39 (60.9%)	25 (49%)	2 (100%)	66
Moderate burnout	23 (35.9%)	26 (51%)	0	49
High level burnout	2 (3.12%)	0	0	2
Total	64	51	2	117
2) Depersonalization**				
Low level burnout	4 (6.25%)	7 (13.7%)	0	11
Moderate burnout	32 (50%)	27 (50.9%)	0	59
High level burnout	28 (43.7%)	17 (33.3%)	2 (100%)	45
Total	64	51	2	117
3) Personal achievement***				
Low level burnout	2 (3.0%)	0	0	2
Moderate burnout	17 (25.4%)	13 (21.3%)	0	30
High level burnout	48 (71.6%)	48 (78.7%)	2 (100%)	98
Total	67	61	2	130

*χ^2 = 2.492, df = 4, p value = 0.566, Inference = Not Significant
**χ^2 = 5.792, df = 4, p value = 0.238, Inference = Not Significant
***χ^2 = 2.951, df = 4, p value = 0.467, Inference = Not Significant

In the current study, none of the burnout types according to MBI was significantly associated with marital status of the residents working in Family Medicine and Internal Medicine as shown in Tables 4.

Burnout types were not significantly associated to whether one had children or not as shown in Table 5.

Discussion

Using the Maslach's Burnout Inventory (MBI), jobrelated burnout was assessed in medical residents under training in family and internal medicine. After all relevant demographic information were collected, the survey was handed out divided into three sub-categories: exhaustion (anxiety depressive syndrome), depersonalization and personal achievement.

Regarding the demographic characteristics of the study sample, a substantial amount of individuals did not indicate their gender, age or year of residency. This was put down to either absent-mindedness or laziness and not due to a desire to conceal this data as no discernable reason to do so could be found. However, this lack made some of the statistical work difficult, and the results suspect.

Looking at the emotional exhaustion scale, both family and internal medicine residents showed signs of low to moderate burnout but the differences between these groups was insignificant. The high levels of emotional exhaustion burnout were not unexpected as multiple studies have also reported this phenomenon, making it very common amongst medical practitioners [30-35].

Table 5. *Level of burnout in the three dimensions and having children.*

Burnout Dimensions	Having children	Not having children	Total
1) Emotional exhaustion*			
Low level burnout	17 (58%)	6 (50%)	23
Moderate burnout	12 (41.4%)	6 (50%)	18
Total	29	12	41
2) Depersonalization**			
Low level burnout	3 (10.4%)	1 (8.3%)	4
Moderate burnout	13 (44.8%)	7 (58.4%)	20
High level burnout	13 (44.8%)	4 (33.3%)	17
Total	29	12	41
3) Personal achievement***			
Moderate burnout	5 (13.9%)	4 (21.1%)	9
High level burnout	31 (86.1%)	15 (78%)	46
Total	36	19	55

*χ^2 = 0.256, df = 1, p value = 0.734, Inference = Not Significant
**χ^2 = 0.623, df = 2, p value = 0.781, Inference = Not Significant
***χ^2 = 0.466, df = 2, p value = 0.703, Inference = Not Significant

Addressing the depersonalization scale, family medicine residents had a substantially larger score on this scale when compared to internal medicine residents. This result was unexpected as, although many studies have shown that depersonalization is found quite regularly in medicine [31-34,36], there is no known reported case for such a large skew in results between specialties. We can only surmise as to why this happened. One possible explanation is based on the fact that women are less likely to experience depersonalization burnout [17] and, since the majority of residents in family medicine were male, the results were skewed by gender disparity.

Regarding personal achievement burnout we again see residents of family medicine pulling ahead with statistically higher amounts of this syndrome when compared to those of internal medicine. Extensive literature searching yielded no plausible explanation as to why this would be so. Most showed that personal achievement burnout is equally common in many specialties [4,18,31-34,37-41].

When looking at the 3 sub-groups simultaneously, emotional exhaustion (anxiety-depressive syndrome) (A-scores) was positively correlated with depersonalization, which in turn had significant negative correlation with personal achievement scores. This indicates that anxiety and depersonalization regularly coexist, but depersonalization seems to counter personal achievement burnout. This result is intriguing and could warrant an entire study in its own.

Conclusions

The three domains of burnout i.e. emotional exhaustion, depersonalization and personal achievement were found at an alarmingly high rate among the residents of family medicine and internal medicine. Mean scores and prevalence of depersonalization and personal achievement burnout were significantly higher among the residents of family medicine as compared to residents of internal medicine. Gender was the only demographic variable found to have significant association with burnout, specifically depersonalization.

Recommendations

Alarmingly high prevalence of job-related burnout among residents of medical specialties in general and among the residents of family medicine in particular should be addressed by larger investigations to find out the causative factors; these factors should be removed so as to improve staff morale, healthcare delivery and patient outcome.

Limitations of the study

Firstly, owing to the cross-sectional design of the study and the MBI questionnaire, some factors such as age and year of residency were missing, making the establishment of a link between them and burnout impossible. Secondly, the response rate to the first (emotional burnout) and second (depersonalization) domains of MBI was low among the residents of family medicine; however, it was 100% among the residents of internal medicine and this may have confounded the results.

Conflict of Interest
None

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None

Consent for publication
Not applicable

Ethical consideration
The study was approved by both Ethics and Scientific Research Committees at the Research Deputy of Prince Sultan Military Medical City and National Guard Hospital, Riyadh, Saudi Arabia.

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