ORIGINAL ARTICLE

The prevalence of burnout in Iranian residents: a cross-sectional study

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Background: Burnout is a feeling of emotional exhaustion, depersonalization and low sense of personal accomplishment that frequently occurs in people-related professionals such as healthcare personnel. The present cross-sectional study aimed to evaluate burnout in one of the tertiary hospitals of Tehran University of medical sciences across different medical specialties.
Methods: Maslach Burnout Inventory (MBI) was administered personally to 204 residents along with a demographic scale including participants' age, gender, marital status, the level of residency, the field of residency. We categorized all specialties into 3 subgroups of surgery, internal medicine and paraclinical.
Results: Mean age of participants (n = 204) was 31.1 ± 4.6, among them 127 (62.3%) participants were female. The results showed that totally, 188 residents (92.2%) were burnt-out. For emotional exhaustion, 173 (84.8%) residents had a moderate or high score, for depersonalization 197 (96.6%) residents, and for low personal accomplishment 182 (89.2%). There was no significant difference of emotional exhaustion score (t = 0.07, p = 0.60) and personal accomplishment (t=-0.59, p = 0.15) between two genders; however, depersonalization was significantly more prevalent in male residents (females: 21.9 ± 5.5, males: 20.6 ± 7.1; t = 1.47, p = 0.04). Regarding marital status, residency year and different specialties, no significant differences between male and female participants were found.
Conclusion: In this study, burnout was very frequent in residents of all groups with regard to their genders, residency years, marital status, and specialties. Given the very high level of burnout in our residents, it is essential to conduct further studies to find the possible causes of burnout and to look for ways to alleviate the situation.

Keywords: Burnout; Residents; Iran; Gender; Marital status

انتشار الإجهاد المهني بين الأطباء المقيمين : دراسة مقطعية

الخلفية والهدف: يؤدي الإرهاق المهني إلى الإنهاك العاطفي وحرمان الشخصية وانحدار التحصيل الشخصي ، وهو أمر شائع في المهن المرتبطة في التعامل مع الناس مثل العاملين في المجال الطبي. في هذه الدراسة المستعرضة ، تم إجراء تقييم للإجهاد المهني بين الأطباء المقيمين بقصد الإختصاص ذوي الاختصاصات المختلفة في مستشفى تعليمي في جامعة طهران للعلوم الطبية.

الطريقة: تم تقديم استبيان Maslach Burnout Inventory (MBI) إلى ٢٠٤ طبيب مقيم متخص. اشتمل الاستبيان الديموغرافي على العمر والجنس والحالة الزوجية والفرع الدراسي والسنة الدراسية . تم تقسيم جميع التخصصات إلى ٣ مجموعات فرعية هي الفروع الجراحية والفروع الباطنية والفروع السريرية .

النتائج: كان متوسط أعمار المشاركين ٣١,١٦ ± ٤,٦ (ن = ٢٠٤) .١٢٧ (٦٢,٣٪) من الإناث و ١٣٣ (٥٥,٤٪) كانوا متزوجين. كان ما مجموعه ١٨٨ شخصا (٩٢,٢ ٪) قد عانى من إرهاق العمل. في المجموعة الفرعية للإرهاق العاطفي كان ١٧٣ (٨٤,٨٪) من المتخصصين قد نالو علامات متوسطة إلى عليا وكانت نفس النتيجة في المجموعة الفرعية لحرمان الشخصية ١٩٧ (٩٦,٦٪) ، و ١٨٢ (٨٩,٢٪) للإنجاز الشخصي.لم يكن هناك فرق بين الجنسين من حيث درجة التعب العاطفي (t = 0.07 ،p = 0.60) والإنجاز الشخصي (t = -0.59 ،p = 0.15) ، في حين أن إلغاء الشخصية كان مختلفًا في كلا الجنسين وكان أعلى بشكل ملحوظ في الأطباء المقيمين الذكور (متوسط درجات الإناث: ٢١,٩ ± ٥,٥ ، الرجال: ٢٠,٦ ± ٧,١ ، t = 1.47 ،p = 0.04). لم يكن هناك فرق بين الذكور والإناث على أساس الحالة الزوجية والسنة الأكاديمية والتخصص.

الإستنتاج: في هذه الدراسة ، كان معدل الإرهاق المهني عاليا بين الأطباء المقيمين المتخصصين في جميع المجموعات الفرعية في الجنس والسنة الأكاديمية والحالة الزواجية والمجال التخصصي. ويوصى بإجراء المزيد من الدراسات للتحقيق في أسباب هذا الانتشار المرتفع وإيجاد طرق لعلاج هذا الوضع.

الكلمات الدليلية: الإرهاق المهني ، طبيب مقيم للتخصص ، الجنس ، إيران، الحالة الزوجية

ماہرین کے ریزیڈنٹ ڈاکٹروں میں پیشے کی بنا پر تھکن ایک عام مسئلہ

بیک گراونڈ: پیشہ ورانہ کاموں میں ملازمین کو شدید تھکن کااحساس جذباتی تھکن، شخیصت کی پامالی اور اھداف کے حاصل نہ ہونے کا باعث ہوتی ہے، اس طرح کی تھکن ڈاکٹروں اور میڈیکل عملے میں بھی دیکھی جاسکتی ہے۔اس تحقیق میں مختلف میدانوں میں ماہرڈاکٹروں کے ریزیڈنٹس میں بھی اس امرکا کافی مشاہدہ کیا گیا ہے۔ یہ تحقیق تہران کے سرکاری اسپتالوں میں انجام دی گئي ہے۔

روش: Maslach Burnout Inventory (MBI) کی روش پر سوالنامہ تیار کیا گیا۔ ڈیموگرافیک سوالنامہ میں عمر، جنس، شادی شدہ ہونا یا نہ ہونا، اور اسپیشیالٹی کی فیلڈ کے بارے میں سوالات تھے۔ مہارت ان تین میدانوں میں محدود تھی ، سرجری ، انٹرنسل میڈیسن، اور پیراکلینک ۔

نتیجے: تحقیق میں شرکت کرنے والے ایک سو ستائیس خواتین اور ایک سو تیتیس افراد شادی شدہ تھے۔کل ملا کر ایک سو اٹھاسی افراد ملازمت سے ہونے والی تھکن کا شکار تھے۔جذباتی تھکن کا شکار چوراسی فیصد افراد تھے یعنی تقریبا ایک سوتہتر ریزیڈنٹ، چھیانوے فیصد شرکت کنندگان شخصیت کی پامالی کی وجہ سے فرسودگی کاشکار تھے جبکہ ایک سو بیاسی افراد یعنی نواسی اعشاریہ دو فیصد افراد اھداف سے دوری کی بنا پر افسردگی کا شکار تھے۔

سفارش: اس تحقیق میں دیکھا گیا کہ کام کی وجہ سے ہونے والی تھکن میں سب عامل جیسے جنس، پڑھائي کا سال، شادی شدہ یا غیر شادی شدہ ہونا، دیکھا گیا ہے۔ اس بنا پر یہ سفارش کی جاتی ہے کہ اس تھکن کو دور کرنے کے لئے مزید مطالعات انجام پائیں۔

کلیدی الفاظ: کام سے تھکن، ماہرڈاکٹر کے اسسٹنٹ، جنس ، ایران ، شادی شدہ یا غیر شادی شدہ

شیوع فرسودگی شغلی در دستیاران تخصصی پزشکی: یک مطالعه مقطعی

زمینه و هدف: فرسودگی شغلی منجر به خستگی عاطفی، مسخ شخصیت و کاهش دستاورد شخصی می شود که به صورت شایع در حرفه های مرتبط با مردم مانند پرسنل درمانی دیده می شود. در این مطالعه مقطعی، به بررسی فرسودگی شغلی در میان دستیاران پزشکی با تخصص های مختلف در یکی از بیمارستان های آموزشی درمانی دانشگاه علوم پزشکی تهران پرداخته شد.

روش: پرسشنامه Maslach Burnout Inventory (MBI) به صورت حضوری در اختیار ۲۰۴ دستیار تخصصی قرار داده شد. پرسشنامه دموگرافیک شامل سن، جنسیت، وضعیت تأهل و سال دستیاری و فیلد تخصصی بود. در این مطالعه رشته های تخصصی در سه گروه رشته های جراحی، داخلی و پاراکلینیک طبقه بندی شد.

یافته ها: میانگین سنی شرکت کنندگان ۴/۶ ± ۳۱/۱ بوده است.۱۲۷ (۶۲/۳٪) نفر زن و ۱۳۳(۵۵/۴٪) نفر متاهل بوده اند. در کل ۱۸۸نفر(۹۲/۲٪) دچار فرسودگی شغلی بوده اند. در زیرگروه خستگی عاطفی، ۱۷۳(۸۴/۸٪) دستیاران نمره متوسط تا بالا، برای زیرگروه مسخ شخصیت ۱۹۷ (۹۶/۶٪) و برای دستاورد شخصی ۱۸۲ (۸۹/۲٪) نمره مشابه داشته اند. تفاوتی بین دو جنس از نظر نمره خستگی عاطفی ($t = 0.07, p = 0.60$) و دستاورد شخصی ($t = -0.59, p = 0.15$) نبود در حالیکه مسخ شخصیت در دو جنس متفاوت بود. (میانگین نمره زنان: ۵/۵±۲۱/۹، مردان: ۷/۱±۲۰/۶، و $t = 1.47, p = 0.04$). بر اساس وضعیت تأهل، سال تحصیلی و رشته تخصصی تفاوتی در زیرگروه های MBI در زنان و مردان دید نشد.

نتیجه گیری: در این مطالعه میزان فرسودگی شغلی در بین دستیاران تخصص پزشکی در تمام زیرگروه ها شامل جنسیت، سال تحصیلی، وضعیت تأهل و رشته تخصصی بالا بود. توصیه می شود جهت بررسی علل شیوع بالای این مهم مطالعات بیشتری طراحی شود تا به جستجوی راههای کاهش این مهم پرداخته شود.

واژه های کلیدی: فرسودگی شغلی، دستیار تخصصی، جنسیت، ایران، وضعیت تأهل

INTRODUCTION

Burnout is a constellation of emotional exhaustion, depersonalization and low sense of personal accomplishment that frequently occurs in people-related professionals such as healthcare personnel (1,2). Symptoms of burnout include exhaustion, frustration, anger, cynicism, a feeling of ineffectiveness and fatigue. One diagnostic symptom of this syndrome is an adverse impact on job performance (3).

Three dimensions of the syndrome are described as the emotional exhaustion (EE) which is the depletion of one's emotional resources and reflecting the basic stress dimension of burnout, depersonalization (DP) that usually develops due to the effect of EE and exhibited features of detachment, dehumanization, and decreased personal accomplishment (PA) that reflects reduced competence and productivity at work, and is linked to depression (1).

Compared with many other occupations, healthcare professions are reported to cause higher levels of burnout; however, among healthcare trainees, residents are usually faced with considerable degree of burnout due to their responsibilities in educational hospitals and their unsupported decision-makings (4).

Although there are several studies in the world evaluating burnout in residents, such studies in Iran are limited; as a consequence, in this cross-sectional study, we proposed to assess the burnout in one of the tertiary hospitals of Tehran University of medical sciences across different medical specialties and look for its association with gender, residency year and marital status.

METHODS

The participants of this study were medical residents registered in four different levels and different medical fields. The study was conducted in one of Tehran University of Medical Sciences teaching hospitals, in 2017. Maslach Burnout Inventory (MBI) (5), was handed out to all residents of the hospital who were willing to participate in the study. The demographic scale consisted of some questions about residents' age, gender, marital status, their level of residency (year of residency), and their field of residency.

All specialties were categorized into three subgroups of surgery (general surgery, neurosurgery, gynecology, emergency medicine, otolaryngology, urology), internal medicine (including internal medicine, neurology, and cardiology) and paraclinical study (radiology, pathology, and nuclear medicine).

Maslach Burnout Inventory (MBI):

Burnout was measured through MBI. It is a self-administered, 22-item questionnaire that was developed to measure burnout in human-service workers. It includes 22 questions. Nine evaluating emotional exhaustion, five quantitating depersonalization, and eight assessing personal accomplishments. The items of MBI are rated from 0 to 6 (0=never; 1=a few times per year; 2=once a month; 3=a few times per month; 4=once a week; 5=a few times per week; and 6=every day). Burnout is detected by following cut-off scores for emotional exhaustion: low < 16, moderate 17-26, high ≥ 27; for depersonalization: low 0-6, moderate7-12, high ≥ 13; and for personal accomplishment: low ≥ 37, moderate 31-36, high 0-30 (6).

Several studies using the MBI delineate burnout as high emotional exhaustion or depersonalization; however, the personal accomplishment scores are not commonly included since they are believed to associate less with psychological tension (7). As a result, in this study, we considered burnt out residents as either having emotional exhaustion score ≥ 27 or depersonalization score ≥ 13.

The validity and reliability of the Persian translation of MBI have been proved by Rostami et al (8).

We assured all participants that their responses would be confidential and their answers would not influence their educational and practical status in the hospital.

Ethics:

We confirm that the work complies with the Declaration of Helsinki, in that there was no potential harm to participants, the anonymity of participants was guaranteed, and participants were informed about the aim of study in the first paragraph of the questionnaire.

Statistical Analysis:

We used SPSS version 20 for statistical analysis. The Shapiro-Wilks test was used to test normality. To compare burnout score in subscales between two genders, and between married and unmarried participants, we used T-student test. To compare burnout subscale scores in different levels of residency and different specialties we used one-way ANOVA. Mean values are described as Mean ± Standard Deviation (SD) and descriptive values as number (percent). A p-value below 0.05 was considered significant.

RESULTS

In this study, 204 residents were enrolled. Mean age of participants was 31.1 ± 4.6, 127 (62.3%) participants were female, and 113 (55.4%) of them were married. Seventy-three (35.8%) residents were in year 1, 67 (32.8%) in year 2, 44 (21.6%) in year 3, and 20 (9.8%) in year 4 of their residency. The number of fourth year residents was low because of limited access to them.

MBI Descriptive Results

The mean score for emotional exhaustion subscale was 29.3 ± 11.8; for depersonalization: 21.4 ± 6.2; and for personal accomplishments: 27.4 ± 7.8.

For emotional exhaustion, 173 (84.8%) residents had a moderate or high score, for depersonalization 197 (96.6%) residents had a moderate or high score and for personal accomplishment 182 (89.2%) residents had a moderate or high score. In all, 188 residents (92.2%) were burnt-out (Figure1).

MBI Analytical Results

Between two genders, there was no significant difference of emotional exhaustion score ($t = 0.07$, $p = 0.60$) and

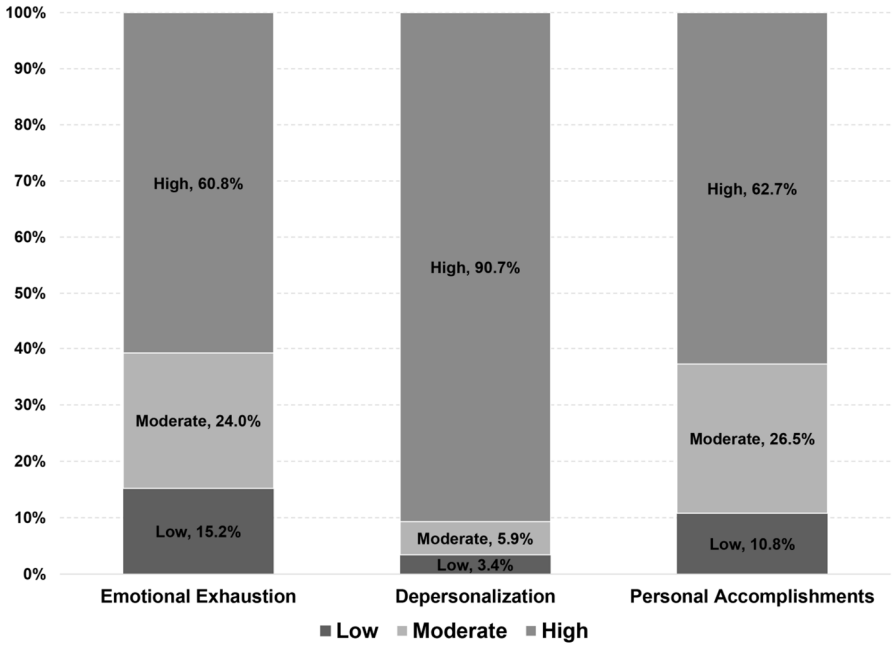

Figure 1. The severity distribution of burnout in three MBI subscales

personal accomplishment score (t = -0.59, p = 0.15); however, depersonalization score was significantly higher in males (females: 21.9 ± 5.5, males: 20.6 ± 7.1; t = 1.47, p = 0.04).

There was no significant difference between married and unmarried residents in their scores on emotional exhaustion (t = 1.18, p = 0.24), depersonalization (t = -0.86, p = 0.39), and personal accomplishment (t = -1.50, p = 0.14).

Regarding residency year, one-way ANOVA showed no significant difference in scores of emotional exhaustion (F = 2.19, p = 0.09), depersonalization (F = 2.27, p = 0.08), and personal accomplishment (F = 1.30, p = 0.28) among residents.

Among different specialties, there was no significant difference in scores of emotional exhaustion (F = 1.06, p = 0.35), depersonalization (F = 2.33, p = 0.10), and personal accomplishment (F = 0.75, p = 0.47).

In addition, there was no significant correlation between the age of participants and their scores of emotional exhaustion (r = 0.07, p = 0.37), depersonalization (r = 0.11, p = 0.13), and personal accomplishment (r = 0.10, p = 0.15).

The reliability for the MBI scale using Cronbach alpha was 0.93.

DISCUSSION

Burnout has been in the focus of many research in recent years as a frequent phenomenon in various professions, and is especially important in health workers (4).

The present study showed a very high rate of burnout in Iranian clinical residents. Roughly speaking, 90% of them have high scores in all three areas evaluated by MBI.

In 2004, Martini et al (9) compared burnout rates among various specialties using MBI. Overall, the rate of burnout was 50%. Burnout rates among different specialties were as follows: 75% in obstetrics-gynecology followed by 63% in internal medicine, 63% in neurology, 60% in ophthalmology, 50% in dermatology, 40% in general surgery, 40% in psychiatry, and 27% in family medicine. In our study, burnout was marginally higher in men in the subscale of personal accomplishment. We found no difference in other subscales. In addition, we found no significant difference in burnout considering factors such as different specialties, residency year, and marital status.

Recently, many studies have evaluated burnout in the residents (10-29). It seems that the prevalence of burnout in Iranian residents is markedly higher than other countries. In figure 2, a comparison of recently performed studies during the residency period is depicted and compared to our study. As demonstrated, the prevalence of burnout in our study is much higher than other studies.

In a Belgian study (10), among 236 residents of 29 specialties, 42% met standard criteria for burnout, and they found an inverse association between Residency Educational Climate Test scores and the risk of burnout. In a survey of 947 the federation of resident doctors of Quebec members (11), 55% reported signs of burnout and around 65% felt exhausted after work as a minimum of once a week. In a Saudi Arabian study (12), more than 70% of residents expressed severe burnout. A total of 43% demonstrated emotional exhaustion, 72% experienced depersonalization and 41% suffered from low accomplishment. In a North American study (n = 86) (13), 31% of residents met criteria for burnout. Burned-out residents also had higher mean levels of stress due to

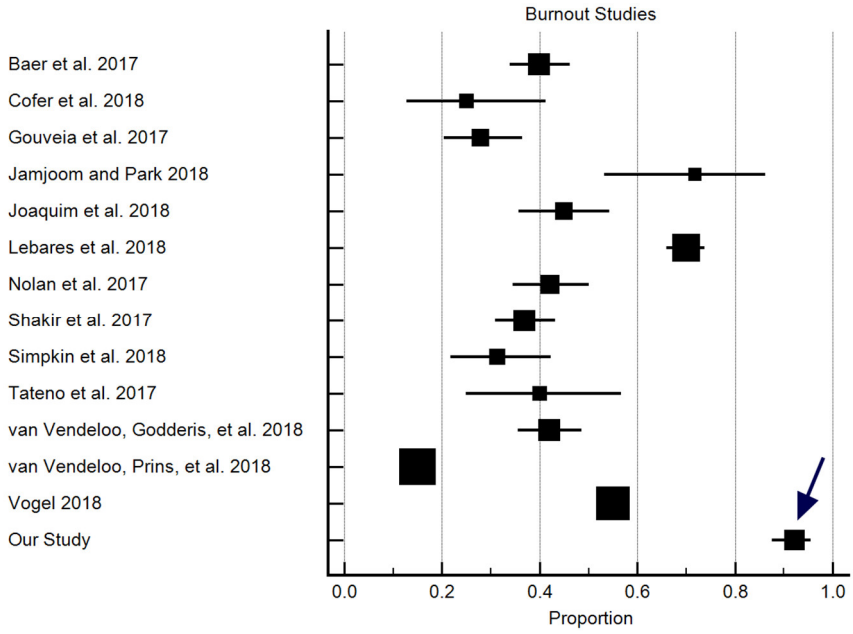

Figure 2. The proportion of burnout in our study (arrow) in comparison with other studies

uncertainty and lower mean levels of resilience compared to residents who were not burned out. In another broad study from the United States (n = 7395), female residents reported more frequently staying in the hospital >28 hours or working >80 hours in a week (≥3 times in a month) and more regularly feeling fatigued and burned out from their work.[18] In an extensive study from the Netherlands, of 1,231 residents from 33 specialties, 15% met criteria for burnout, and they found a consistent inverse association between the Scan of Postgraduate Educational Environment Domains (SPEED) scores and the risk of burnout.[17] In a Brazilian study (n = 129) (23), the prevalence of burnout was 28% with a low level of professional achievement in 95%, a high level of depersonalization in 32%, and a high level of emotional exhaustion in 60%. In a Pakistani study among gynecological residents (n =102) (24), emotional exhaustion and depersonalization were significantly higher among residents working in government institutions than those who worked in the private institutions. The residents with more than two years of post-graduate skill had substantially higher depersonalization than those with lesser amount of experience.

In a survey that was conducted in a surgery ward (n = 40), 25% of residents suffered from burnout, and they found no association of burnout with USMLE scores, American Board of Surgery In-Training Exam percentile, or surgical milestones (14). Among 566 surgical residents who participated in an online survey in the United States (20), the prevalence of burnout was just below 70%. Higher burnout score was associated with higher stress, depression, and suicidal ideation. Among the United States neurosurgery residents (n = 255) (22), the prevalence of burnout was 37% and no significant difference in median burnout scores between gender, age, or postgraduate year was observed. Notably, neurosurgery residents had a significantly lower prevalence of burnout than other residents/fellows, early career physicians and practicing physicians.

From among 166 pediatric residents from Canada (15), 42% met criteria for burnout. Burnout was associated with the year of residency, with third-year residents at maximum risk. More than 79% of residents who were at risk of depression also met criteria for burnout. In another pediatric residents study from the United States (16), just less than 40% of respondents complained of burnout.

For radiation oncology residents in the United States (19), filling the MBI (n = 205), high levels of emotional exhaustion was reported in 28%, depersonalization in 17%, and low rates of personal accomplishment in 12% of residents.

For neurology residents and fellows of the United States (21), around three-fourths of residents and higher than 50% of fellows had at least one symptom of burnout; however, the difference principally related to higher scores for depersonalization among residents. For residents, more satisfaction with work-life balance, and older age were linked to less risks of burnout.

Among psychiatric trainees in Japan (n = 40) (25), the burnout rate was 40%, and among hematology and radiotherapy residents in Portugal (n = 118) (26), the prevalence of burnout and stress was estimated as 45% and 50%, respectively.

Comparing burnout between psychiatry and anesthesiology residents in a French study (27), the investigators only found a significant difference in depersonalization subscale (10.2 ± 6.5 in anesthesiology residents, n =123 vs. 6.8 ± 5 in psychiatry residents, n = 149). In another study comparing burnout among anesthesia and surgical residents in North

India (28), the score of burnout was significantly higher in surgical residents and markedly increased progressively with the year of residency. However, in our study, we found no difference of burnout considering factors such as marital status, the field of specialty, and gender.

Among dermatology residents in Canada (n = 116) (29), over 50% of them experienced high levels of emotional exhaustion and depersonalization, even though 40% had low levels of personal accomplishment.

In a systematic review it was revealed that burnout is prevalent in medical students (28%–45%), and residents (27%–75%), depending on their specialty (7).

In summary, most studies have reported different amounts of burnout between different specialties (usually higher in surgical residents) and different levels of the residency; however, in our study, no such associative factor was detected. It is noticeable that in the present study, depersonalization score was significantly higher in female residents.

Factors causing burnout in residency training are believed to stem from lack of autonomy, volume, and scheduling of working hours, stressful job situations, insecurity about the future job, difficulties in balancing professional and private life and interpersonal relations as stressors leading to burnout in developing countries, economic issues, low income, recent negative reflections from media and society that may cause a feeling of desperateness, and lower mean levels of resilience (2,7).

Burnout deteriorates steadily over time described in three stages: Stage 1- stress arousal, Stage 2- energy conservation, Stage 3- exhaustion. These steps usually occur sequentially from Stage 1 to Stage 3, although the process can be stopped at any point (30). Depersonalization can occur in response to chronic negative and stressful situations (31). This stressful contact with patients forms cynical and negative attitudes in the patient-physician relationship. Inadequate support from the supervisor can be a factor associated with burnout, especially emotional exhaustion. As medical residents are in training, it is common for them to be limited by lack of experience and knowledge. A good supporting team can not only help to reduce stress, but also to improve quality of care. In sum, stress can be a possible cause of depersonalization and emotional exhaustion in burnout.

Personal Accomplishment is a dimension of burnout that is associated with feelings of competence, high self-efficacy, and sense of achievement (32). Role autonomy and high perception of teaching can cause much more self-confidence while continuing with a sense of personal accomplishment.

Burnout and stress may be symptomatically analogous, with burnout explicitly recognized as occupational or academic stressors (33). It is suggested that there is a cyclical relationship between stress and emotional exhaustion; in other words, elevated levels of stress and poor coping strategies may be significant providers in burnout development (34). Recognizing such stressors and reinforcing coping strategies in residents may assist in reducing burnout.

Our study has some limitations: some measurement issues are peculiar to the MBI itself. The MBI does not consider non-professional confounders of burnout, such as childcare problems, life events, and financial concerns. We faced some issues accessing final year residents because of their limited presence in the wards. Residents with a negative opinion about the educational system or immensely burned out may not have participated in this study. Also, we did not study the level of anxiety or depression of the present participants.

In this study, we exclusively demonstrated that burnout was very high in our residents without finding any contributing etiology. To better understand the leading causes, we need to conduct complementary studies, mainly qualitative surveys such as structured interviews or panel interviews, which may give more in-depth insight into the reasons for high prevalence of burnout.

In conclusion, in this study, the amount of burnout was very high in residents of all groups including different genders, residency years, marital status, and specialties. This was probably higher than previously reported studies in other parts of the world. Residency period is a time when occupation and training tie each other. Accordingly, it is essential to pay attention to the satisfaction of residents in educational environments. Since the level of burnout was very high in our residents, it is essential to conduct further studies to find the possible causes of burnout.

Ethical considerations

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

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