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THE PREVALENCE OF BURNOUT AMONG PHYSICIAN RESIDENTS OF DIFFERENT SPECIALTIES AT KING ABDULAZIZ MEDICAL CITY (KAMC) IN JEDDAH, SAUDI ARABIA

Abdullah Mohammad, Al-Zahrani.

***Co-Investigators*:**
Abdulaziz Abdulelah Abu Alnasr, Yousef Hussni Qari, Bahaa Abdullah Abulaban, Ahmed Fauzy Allehyani, Ahmed Sameer Basabrain.

Abstract

Aim: This study aimed to measure the prevalence of burnout among resident physicians of different departments at King Abdulaziz National Guard Medical in Jeddah, Saudi Arabia.
Methods: A cross-sectional study was conduct at King Abdulaziz National Guard Medical in Jeddah, Saudi Arabia, in 2021-2022. The study included (201) of physician residents. The Maslach Burnout Inventory (MBI) questionnaire was used as the measurement tool for burnout.
Results: (41.8%) of medical specialty residents and (13.4%) in the surgical specialty residents had a high level of exhaustion, (50.7%) of medical specialty residents and (13.9%) in the surgical specialty residents had a high level of depersonalization, only (4%) of medical specialty residents had high levels of personal accomplishment while none of the surgical residents had it. (42.8%) of Junior residents and (12.4%) of Senior residents had a high level of exhaustion, (50.7%) of Junior residents and (13.9%) of Senior residents had a high level of depersonalization, (1.5%) of Junior residents and (2.5%) of Senior residents had a high level of personal accomplishment. There was a statistically significant difference of occupational exhaustion between medical and surgical specialties among resident doctors ($p<0.01$), in addition to, statistically significant difference of occupational exhaustion, depersonalization and personal accomplishment assessment levels between junior and senior resident doctors ($p<0.01$).
Conclusion: Residents in the medical specialty and Junior residents in the present study showed higher burnout levels.

Keywords: Resident physicians, Medical specialty, Surgical specialty, Senior residents, Junior residents.

Introduction

Burnout is a psychological syndrome that develops as a result of chronic exposure to different

stressors at work [1,2]. It has been recognized as an occupational hazard for a long time for different people-oriented professions, such as; education, human services, and health care [1]. In 1970, Herbert Freudenberger has invented the term “burnout" to describe the severe emotional stress and its consequences experienced by several professionals including health care workers [3]. Until now, there is no clear and specific definition for the term "burnout", but, Maslach Burnout Inventory (MBI), which was developed in 1976, has adopted the most appropriate way to understand what burnout means [4]. According to MBI, the term" burnout" must be assessed based on three main domains. The first domain is Emotional Exhaustion, which is the feeling of being emotionally overextended and exhausted by work [4]. The second one is Depersonalization, which is either unfeeling or negative feelings and cynical attitudes toward who receive the service or the care [4]. The last domain is Reduced Personal Accomplishment, which is a tendency to negatively evaluate one's work [4]. Over the last several years the term "burnout" has gained enormous attention, especially among health care professionals, and started to trend. Since health care workers, particularly physicians under residency training programs, are suffering from the continuous and significant amount of pressure, burnout is more prevalent among them [5].

Burnout is a syndrome that deeply goes back to medical school as it is proven by evidence [6]. The prevalence of burnout among medical students in some studies ranged from 28% up to 45% [6]. A systematic review found that in United States, all medical students in the United States, resident physicians, and practicing physicians are at significant high risk of burnout with a percentage exceeding 50% [7]. Another study in United States of America suggested that physicians are more vulnerable to be burned- out during their residency training years compared to the general population. Thus, this might interfere with their ability to establish a good patient-doctor relationship and affect their decision making regarding the treatment plan [5]. In a cross-sectional study that involved all ophthalmology physician residents in Saudi Arabia, 41% of the residents scored a positive burnout results [8]. Another study performed in Riyadh reported that the prevalence of overall burnout among resident doctors was 70% [9]. A study, that took place in King Abdulaziz National Guard Medical City in Riyadh, discovered that almost 51% of the participants expressed a high depersonalization scores, 31.5% displayed low personal achievements and 12.5% were experiencing high emotional exhaustion [10].

As far as we know, there are a limited number of studies in Jeddah, Saudi Arabia that are concerned with measuring the prevalence of burnout among physician residents of different specialties. However, a number of studies that have addressed this issue in the kingdom of Saudi Arabia are available, yet they are not inclusive of all regions of the kingdom [4,10]. Hence, this study aimed to measure the prevalence of burnout among resident physicians of different departments at King Abdulaziz National Guard Medical in Jeddah, Saudi Arabia.

Materials and methods

This study is a cross-sectional study, was designed to measure the prevalence of burnout among resident physicians of different departments at King Abdulaziz National Guard Medical in Jeddah, Saudi Arabia. The study carried out in 2021-2022.

The study included (201) of physician residents working at King Abdulaziz National Guard Medical in Jeddah, Saudi Arabia. The study sample was collected through non probability consecutive sampling method.

This study tool was Maslach Burnout Inventory (MBI) questionnaire, which is a tool that developed by Mind Garden, is an international publisher of psychological assessments, leading the industry in providing tools to facilitate positive personal and organizational transformation. It is one of the most validated and reliable means to measure burnout among residents of different disciplines with Cronbach's Alpha of .88,

.71, and .78, respectively for each dimension of burnout to measure the internal inconsistency & reliability. Through this tool, three major domains are assessed through

22 items. The domains include emotional exhaustion which has 9 items, depersonalization that has 5 items, and personal accomplishment that include 8 items.

7-point scale ranging from 0 (never) to 6 (every day) is what the involved participants have utilized to answer this questionnaire.

Remote online survey license was purchased which provided us with online survey that could be distributed for all compatible participants via a non-mind garden survey system.

The statistical analysis program (SPSS version 21) has been used in this study in data entry and analysis. Frequencies were used for qualitative variables. Mean with standard deviation or median with interquartile range were used for quantitative variables normal distribution or skewed respectively. For bivariable analysis to detect the significance between two qualitative variables chi square with was used significance level set at

0.05. For multivariable analysis, logistic regression analysis was used to detect the most significant risk factors in this study.

Results

Table 1 illustrates the distribution of 201 resident doctors from various departments at the Medical City in the National Guard Hospital, categorized according to their specialty and years of residency training. The most represented specialty is Family Medicine, comprising 27.4% of the total, followed closely by Internal Medicine at 22.9%. Paediatrics is the third largest specialty, accounting for 17.4% of the doctors. Conversely, Radiology, Anesthesia, Neurology, and Orthopedics are the least represented specialties, with each having fewer than 5 doctors, corresponding to less than 2.5% of the total. In terms of residency training, the majority are in their second year (R2), constituting 43.8% of the total. First-year (R1) and third-year (R3) residents account for 23.9% and 21.4% respectively. Fourth-year (R4) and fifth-year (R5) residents are in the minority, with R5 containing only one resident, making up a mere 0.5% of the total. This data suggests that the majority of residents are in the early to mid-stages of their training.

Table 1. Distribution of Resident Doctors by Specialty and Years of Training at the Medical City, National Guard Hospital.

Variables	Categories	N (%)
specialty	Dermatology*	7 (3.5%)
	Emergency medicine*	20 (10%)
	Family Medicine*	55 (27.4%)
	Internal Medicine*	46 (22.9%)
	Paediatrics*	35 (17.4%)
	Radiology*	1 (0.5%)
	Anesthesia**	3 (1.5%)
	General Surgery**	10 (5%)
	Neurology**	2 (1%)
	Obstetrics & gynaecology**	13 (6.5%)
	Orthopedics**	4 (2%)
	Otorhinolaryngology**	5 (2.5%)
Years of Residency Training	R1@	48 (23.9%)
	R2@	88 (43.8%)
	R3@@	43 (21.4%)
	R4@@	21 (10.4%)
	R5@@	1 (0.5%)

*Considered as medical specialities; **Considered as surgical specialities; @Considered as junior residents; @@Considered as senior residents

Table 2 presents a comparison of occupational exhaustion, depersonalization, and personal accomplishment assessment between medical and surgical specialties among resident doctors .
For occupational exhaustion, a statistically significant difference (p-value = 0.045*) is observed. Most notably, 41.8% of the residents in the medical specialty reported a high level of exhaustion (scores above 29), compared to 13.4% in the surgical specialty. Similarly, 21.4% of medical residents reported moderate levels of exhaustion (scores 18 to 29), while only 2% of surgical residents reported the same.
Depersonalization, however, did not reveal a significant difference between the two specialties (p-value = 0.301). The majority of residents in both specialties reported high levels of depersonalization (scores above 11) - 50.7% in medical and 13.9% in surgical. Finally, for the personal accomplishment assessment, no significant difference is observed between the two

specialties (p-value = 0.384). The majority in both specialties, 59.7% in medical and 14.4% in surgical reported low levels of personal accomplishment (scores 33 or less). Interestingly, none of the surgical residents reported high levels of personal accomplishment (scores above 39).

Table 2 Comparison of Occupational Exhaustion, Depersonalization, and Personal Accomplishment between Medical and Surgical Specialty Residents

Variables	Categories	Specialty		p-value
		Medical (N=164)	Surgical (N=37)	
Occupational exhaustion	Total 17 or less	37 (18.4%)	6 (3%)	0.045*
	Total 18 to 29	43 (21.4%)	4 (2%)	
	Total more than 29	84 (41.8%)	27 (13.4%)	
Depersonalization	Total 5 or less	21 (10.4%)	3 (1.5%)	0.301
	Total 6 to 11	41 (20.4%)	6 (3%)	
	Total more than 11	102 (50.7%)	28 (13.9%)	
Personal accomplishment assessment	Total 33 or less	120 (59.7%)	29 (14.4%)	0.384
	Total 34 to 39	36 (17.9%)	8 (4%)	
	Total more than 39	8 (4%)	0 (0%)	

*Denotes significant between-group differences ($p<0.05$)

Table 3 presents a comparison of occupational exhaustion, depersonalization, and personal accomplishment assessment between junior and senior resident doctors .

In terms of occupational exhaustion, there is a significant difference (p-value = 0.03**) between the two groups. Among juniors, 42.8% reported a high level of exhaustion (scores above 29), while 12.4% of seniors reported the same. Additionally, 13.9% of juniors reported moderate levels of exhaustion (scores 18 to 29) compared to 9.5% of seniors.

The difference in depersonalization levels between the two groups is also significant (p-value < 0.000**). A higher proportion of juniors reported high depersonalization (scores above 11) compared to seniors, 50.7% versus 13.9% respectively.

For the personal accomplishment assessment, a significant difference (p-value = 0.002**) is observed between the two groups. Most juniors (55.2%) reported lower levels of personal accomplishment (scores 33 or less) compared to 18.9% of seniors. It is worth noting that a slightly higher percentage of senior residents (2.5%) reported high levels of personal accomplishment (scores above 39) compared to junior residents (1.5%).

Table 3 Comparison of Occupational Exhaustion, Depersonalization, and Personal Accomplishment between Junior and Senior Residents

Variables	Categories	Year of Residency Training		p-value
		Junior (N=136)	Senior (N=65)	
Occupational exhaustion	Total 17 or less	22 (10.9%)	21 (10.4%)	0.003**
	Total 18 to 29	28 (13.9%)	19 (9.5%)	
	Total more than 29	86 (42.8%)	25 (12.4%)	
Depersonalization	Total 5 or less	13 (6.5%)	11 (5.5%)	0.000**
	Total 6 to 11	21 (10.4%)	26 (12.9%)	
	Total more than 11	102 (50.7%)	28 (13.9%)	
Personal accomplishment assessment	Total 33 or less	111 (55.2%)	38 (18.9%)	0.002**
	Total 34 to 39	22 (10.9%)	22 (10.9%)	
	Total more than 39	3 (1.5%)	5 (2.5%)	

**Denotes significant between-group differences (p<0.01)

Discussion

Burnout is a phenomenon that produced by the complex interaction between environmental stressors, coping styles, and genetic vulnerabilities[11]. For physician residents, burnout can participate in multiple psychological symptoms, physical symptoms, and substance abuse, resulting in negative effect on a resident physician's quality of life, quality of learning and teaching, ability to provide safe and sustainable patient care, and the overall morale of a residency program [11]. Therefore, this study aimed to measure the prevalence of burnout among resident physicians of different departments at King Abdulaziz National Guard Medical in Jeddah, Saudi Arabia.

According to previous studies there is marked variation in the prevalence of burnout among physician residents through countries and regions around the world. In Western countries, the prevalence of burnout ranged between 27% and 74% [12-14]. While in Saudi Arabia burnout prevalence ranged between 25.2% and 89.1% [4,9,15-18]. The reason why physician residents in Saudi Arabia might experience a higher level of burnout still unclear. There are some suggestions

that the cultural and social situation in the kingdom may influence burnout, because of the deficiency of health education in the general Saudi public, patients expect more from doctors. In addition to, Saudi patients and their relatives have a tendency to seek advice and direct their attention more to senior doctors not to junior doctors in the process. Which may resulting in feeling of low worthiness, subsequently increasing burnout [18]. Moreover, there is a lack of programs to treat the stress and burnout [19]. Because burnout has a negative impact on both of patient care and medical residents themselves, there is a need to developing effective interventions to address burnout at both the individual and organizational levels.

There is variation in the prevalence of burnout among different medical specialties, this maybe because different medical specialties have different emotional and work demands [20]. A meta-analysis study suggested that the top three specialties that had the highest prevalence of burnout were radiology, neurology, and general surgery, while specialties that had the lowest prevalence of burnout were psychiatry, oncology, and family medicine [21]. In our study about (41.8%) of residents in the medical specialty reported a high level of exhaustion compared to (13.4%) in the surgical specialty, about half (50.7%) of medical specialty residents reported a high level of depersonalization in contrast (13.9%) in the surgical specialty reported the same, only (4%) of medical specialty reported high levels of personal accomplishment while none of the surgical residents reported high levels of personal accomplishment in this study. The present study showed a statistically significant difference of occupational exhaustion was observed between medical and surgical specialties among resident doctors. But, depersonalization and personal accomplishment assessment did not reveal a significant difference between the two specialties. This can be justified by the fact that there is a significant difference between the number of participants from surgical specialties (37) and the number of participants medical specialties (164) in this study. Similar results were found Can and his colleagues who examined the burnout among 855 assistant physicians trainees in the surgical and non-surgical branches, their study found that emotional exhaustion among those in the non-surgical branches was significantly higher in comparison to those in the surgical branches, but there was no significant difference between the surgical and non-surgical groups from the viewpoint of the feeling of personal accomplishment and desensitization [22]. US- based study reported that the highest burnout levels were among emergency medicine physicians while the lowest levels were in dermatology and preventive medicine [23]. While, Alosaimi and his colleagues found in their study in Riyadh that the prevalence of burnout didn't show statistical significant difference between different specialties [24]. Upton et al. also assessed the prevalence of psychological morbidity among different surgical specialties in UK and found that there was no significant difference between different specialties [25]. The discrepancies in the burnout levels among different specialties across different studies may be due to the variations in patient or organizational culture in different populations [20]. But in general, symptoms of burnout among medical and surgical residents can arise from many causes such as; continually changing work environments, poor work–life balance, limited healthcare resources, bureaucratic requirements, litigious environments, micro-management by the administration, sensationalist media reports

of medical errors, and poor clinical supervision [21].

Physician residents commonly have many responsibilities, and they will Progress through the healthcare system from learners to providers through the time, subsequently, their responsibilities and patient load will increase, which may contribute to increase the prevalence of burnout [9]. But in our study the levels of occupational exhaustion and depersonalization were higher among juniors compared to seniors, while the level of personal accomplishment assessment was higher among seniors compared to junior residents. In our study there was significant difference of occupational exhaustion, depersonalization and personal accomplishment assessment levels between junior and senior resident doctors. Our results here are consistent with what found by Aldrees and his colleagues in Riyadh, Saudi Arabia that the prevalence of burnout was higher among residents than consultants [4], and Ozyurt et al who reported that the mean scores of depersonalization and emotional exhaustion were significantly higher among Turkish physicians younger than 29 years old compared to those who were older [26], Campbell et al also who reported that younger surgeons are more susceptible to burnout than older surgeons [27]. But not consistent with results of Alenezi et al [9] and Dinibutun [28] who found that the level of emotional exhaustion was lower among younger physicians compared to older physicians. The difference in the results of different studies can be attributed to the variation in work environments.

Conclusion

Residents in the medical specialty and Junior residents in the present study showed higher burnout levels. This study showed a statistically significant difference of occupational exhaustion between medical and surgical specialties among resident doctors, in addition to, statistically significant difference of occupational exhaustion, depersonalization and personal accomplishment assessment levels between junior and senior resident doctors.

Recommendation

- Conduct more studies on the same issue involving a larger number of participants.
- Development and implementation of policies to enhance resident doctors' health in Saudi Arabia.
- Conduct facilitated discussion groups to reduce the burnout among resident doctors .
- Promote a healthy work environment.
- Improve working conditions and work–life balance.

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