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Prevalence and degree of burnout among medical students in Jeddah University using Maslach Burnout Inventory (MBI)

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ABSTRACT

Burnout is broadly used term that is spread more recently than before. Medical student burnout can cause serious distress on the student that could cause severe consequences. There has been increased attention to burnout and many studies has been conducted to estimate the prevalence and the effect of burnout. This study aims to use the Maslach Burnout Syndrome (MBI) to estimate the prevalence and extent of burnout in medical students at the University of Jeddah in 2021. A cross section study was used. The study included 271 medical students in university of Jeddah who completed the second year (first in the college) until the end of internship of 2021 batch. The total of participants in the study is 271 and they completed a self-administered questionnaire. 27% of participants are females and 73% are males. According to the method of the assessment, the prevalence of burnout is 20%. The three areas of burnout i.e., Burnout, depersonalization, and personal achievements has been found to be in mild to high rate category with (20%) of medical students having burnout.

Keywords: Burnout, medical students, Maslach Burnout Inventory.

1. INTRODUCTION

Work Burnout is broadly used term and spread out more recently in the past few years than before. Burnout can be interpreted by means of the dimensions of exhaustion, cynicism and lack of efficacy from the "Maslach Burnout Inventory-General Survey" (MBI-GS) (Kristensen et al., 2005). The term was first introduced by Freudenberg in 1974 as it describes the outcome of major stress and high ideals in "assisting" professions. Since then, the term was widely spread and established in psychosocial research in 1990s (Montero-Marín et al., 2009) using different approved tools and assessment scales to determine who's at risk of being in the burnout domain. The definition is now

applicable for all types of work, studying, gender and different socioeconomic status; some jobs could carry more risk for burnout than other jobs due to overwork, exhaustion, increased demands and the necessity to sacrifice themselves for others. Burnout depends on nature of the person, workload, social support and coping of the person with these stressful situations (Montero-Marín et al., 2011).

Many studies conducted the effects of burnout on college students, where studying in universities to achieve a scientific degree could be challenging and stressful both physically and mentally (Alqurashi et al., 2022). College of medicine is no exception, where the student is required to acquire knowledge and retain an enormous scientific and medical information in a limited time over the course of 7 years of studying in the medical school (Altannir et al., 2019), in addition there are many difficulties like stressful environment, lack of support, potential sleeping disorder, minimal relaxation time and other responsibilities outside medical school are common problems facing the medical student, all of these are participating factors in increasing the risk of burnout among them. Furthermore, burnout and stress are similar in symptoms, with burnout attributed specifically to occupational stressors (Cecil et al., 2014).

Studies suggest that mental health problems worsen after students start medical school and stays low throughout training. On a personal level, this dejection can lead to or contribute in drugs or other substance abuse, affects relationships, leading to suicide, and wearing down from the profession. On a professional level, research suggests that distress might contribute to depression and consequently may affect students' interactions with patients and their care, communication with faculty, and it is associated with lower medical student empathy scores and with lower professionalism climate scores (Dyrbye et al., 2005; Brazeau et al., 2010).

Burnout during medical school is a major concern with possible long-term effects on physical and mental capabilities, many studies in different countries across the world displayed the prevalent during medical school, with major US studies estimating that at least (50%) of medical students may be troubled by burnout during their medical school years. Articles and research show that burnout may continue beyond education years in medical school, and is, sometimes, associated with suicidal ideation and psychiatric disorders (Ishak et al., 2013). At the Universities of St Andrews and Manchester 26.7% of participants met the criteria to be considered ‘burned out’ (Cecil et al., 2014). Another study was conducted in the spring of 2009, attending 7 US medical schools to determine the relationship between measures of professionalism and burnout of US medical students, the results found that (52.8%) of students had burnout (Dyrbye et al., 2010). Where in Saudi Arabia, a recent study published in 2019 at Al Faisal University in Riyadh, the overall burnout prevalence was 13.4% (Altannir et al ., 2019). As demonstrated by different study’s the range for burnout is widely different worldwide.

This research is focused on how many medical students in Jeddah University are having or potentially suffering from “burnout” in their medical school career as student. Our work focusing in 3 major elements: Burnout, personal achievement and depersonalization by using burnout test Maslach Burnout Inventory (MBI) adjusted to suit the medical student burnout assessment. This research explores the prevalence of burnout of medical students to see and discuss how common is the burnout and to which degree does extend.

Objectives

This study aims to measure the prevalence and the degree of burnout of medical students in Jeddah University using Maslach Burnout Inventory (MBI) in Jeddah 2021.

2. METHODOLOGY

The survey of the study was administered at college of medicine in university of Jeddah. Jeddah University consider as the second largest university after King Abdul-Aziz University in Jeddah city. It’s considered as main destination for high school graduate students, with different faculties and different specialties offers the desired specialty according to students wishes.

A cross-sectional analytic study was adopted. All Medical students (male and female) who finished the second year until the students who finished the internship this year are included in the study. The Sample size was calculated to detect burnout prevalence in the range 8% [11] - 13.4% [12], with 95% confidence interval, 80% statistical power and 5% margin error. The target sample size was calculated as N=116.

Data collection tool was an Arabic questionnaire structured by the Maslach Burnout Inventory (MBI) is recognized as the leading measurement tool of burnout and validated by more than 35 years of extensive research and application. The MBI measures burnout as defined by the World Health Organization and it is used in majority of burnout research and literature (Boudreau et al., 2015).

Study period

Preparatory period (4-8 weeks) (July 2021)

Field work (4 weeks) (September 2021)

Writing the report (2-4 weeks) (Finished in November 2021)

3. RESULTS

A total of 271 participants in the study completed the self-administered questionnaire. 73% of the participants are Male and 27% are Female. Most of the participants (57%) are in the 18-21 age groups, the mean of age for the participants is 21.7, and the age group is between 22-25 represents 36%. Most of the population in the research is in the 2nd year of medical college. 30% of the participants are smokers. Most of the participants don't have any chronic diseases (84%), 14.1% have only one chronic disease and 1% have two chronic diseases. Asthma is the highest prevalence with 7%, depression 4%, Diabetes 3%, and Hypertension 2%.

According to the burnout category of The Maslach Burnout Inventory (MBI), 23% have High-level burnout, 38% Moderate burnout, and 39% Low-level burnout (Figure 1). Most of the participants have High-level burnout in the Depersonalization category (71%), Moderate burnout represents 18%, and Low-level burnout is equal to 11% (Figure 2). In the personal achievement category: 80% with High-level burnout, 14% with Moderate burnout, and 7% with Low-level burnout (Figure 3). According to the interpretation method of the assessment, the amount of participants who have burnout in the study is 20% (Figure 4).

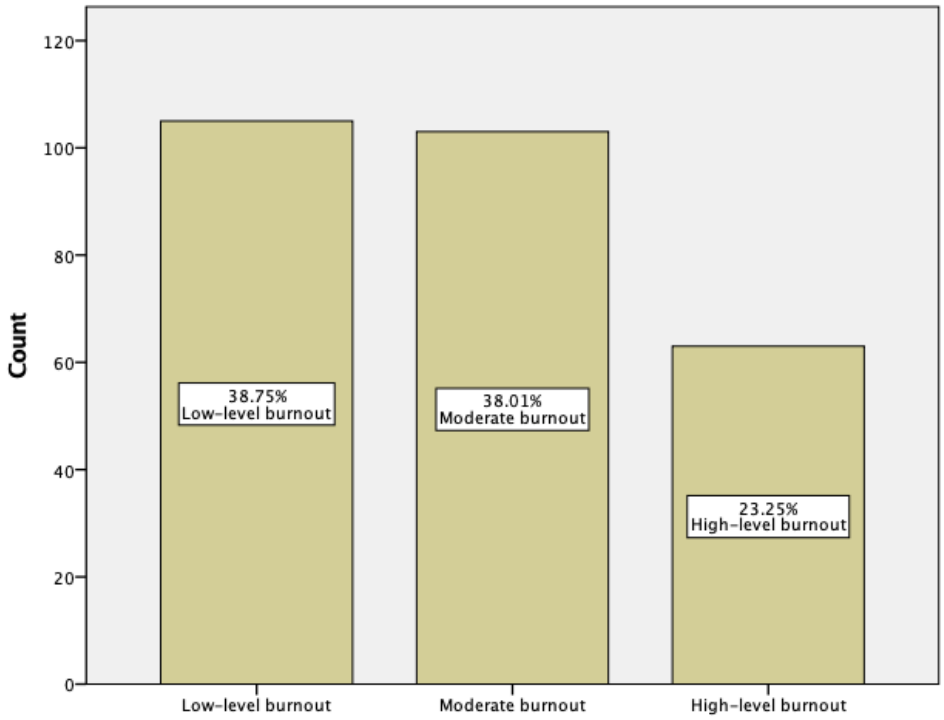

Figure 1 Burnout Category in the Maslach Burnout Inventory (MBI)

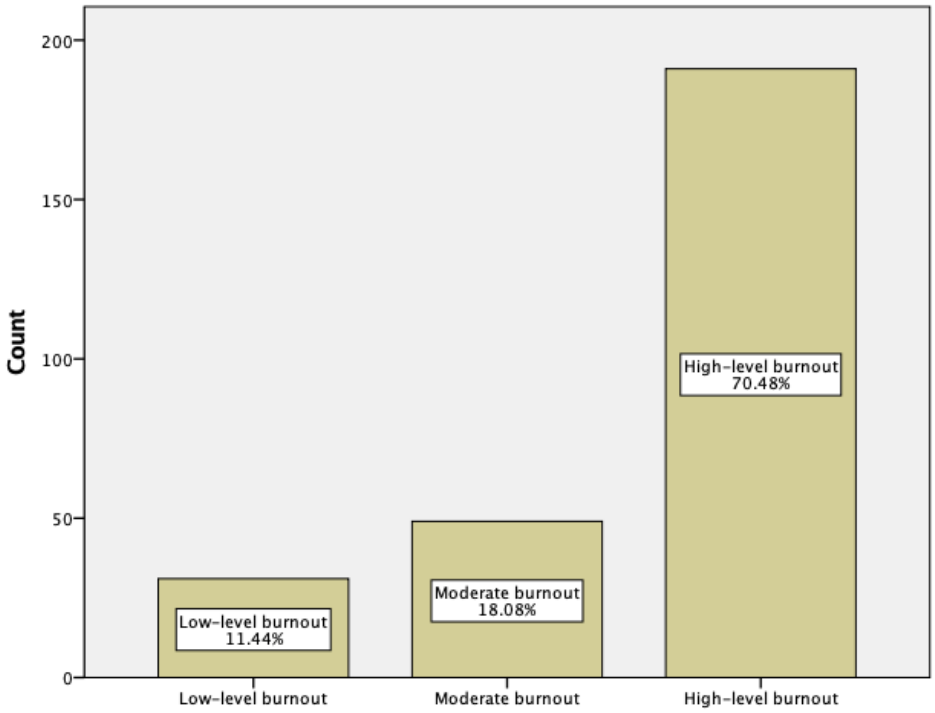

Figure 2 Depersonalization Categories in the Maslach Burnout Inventory (MBI)

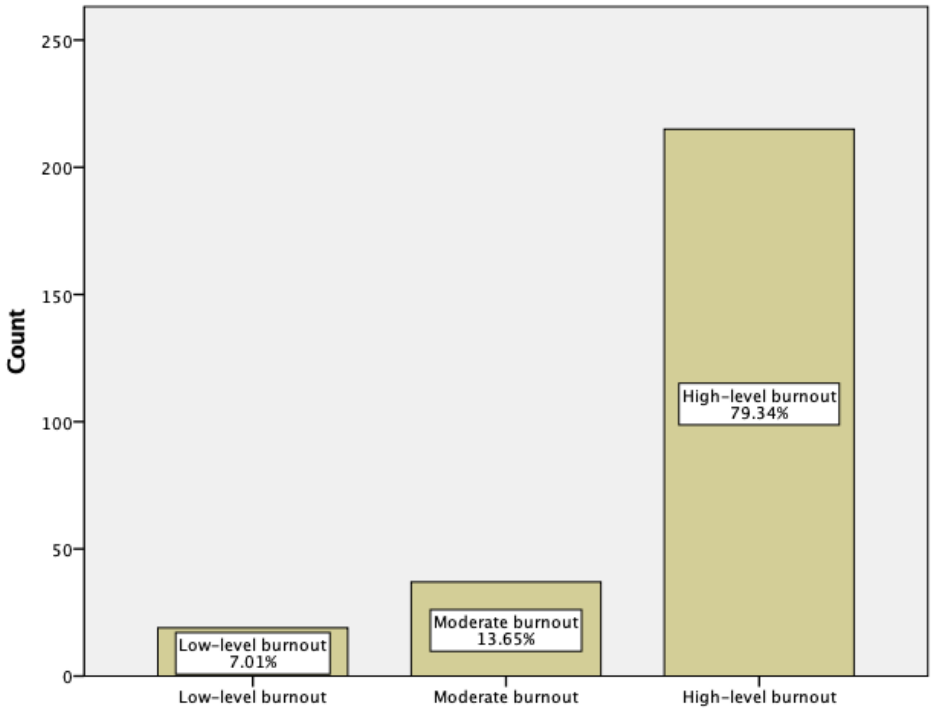

Figure 3 Personal Achievement Categories in the Maslach Burnout Inventory (MBI)

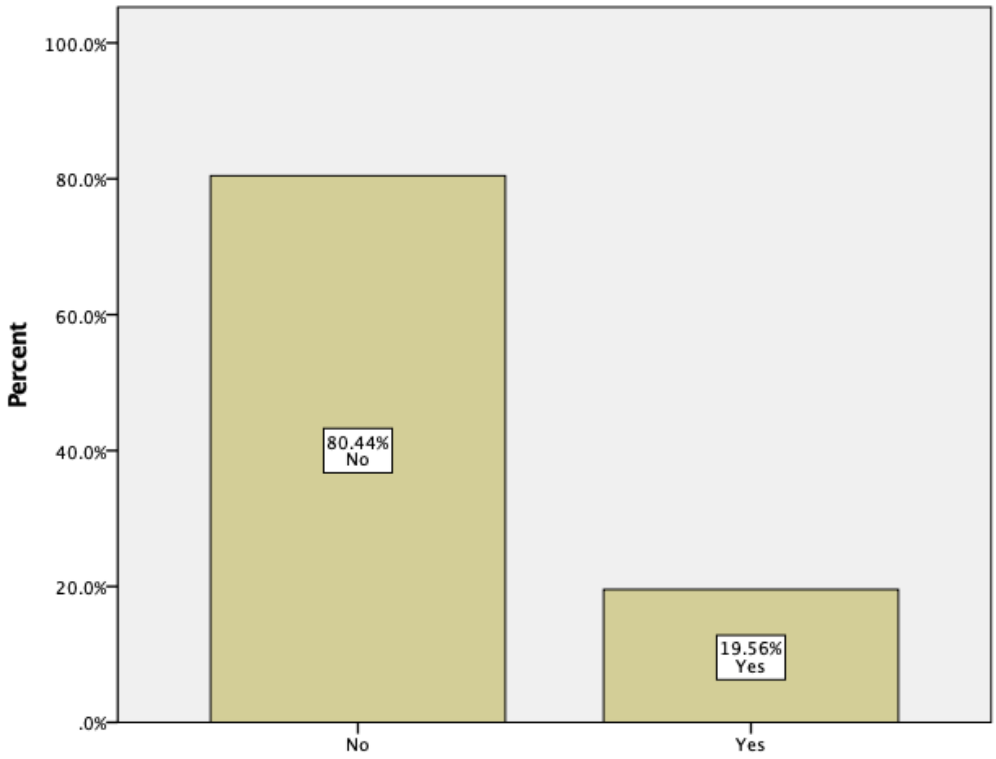

Figure 4 the participant has burnout?

In Table 1, 60% of whom has burnout was male and 40% female. The correlation between gender and burnout is statistically significant with a p-value (<0.016). In table 2 (77%) of whom has burnout was in the 18-21 age group, 21% was in 22-25 age group, and 2% in 26-28 age group. The correlation between the age group and burnout is statistically significant with a p-value (<0.003). In table 3, 29% has burnout in the 2nd academic year and 13% in the 4th year. The correlation between academic year and burnout is statistically significant with a p-value (<0.001).

Table 1 Gender * the participant has burnout?

			The participant has burnout?		Total
			No	Yes	
Gender	Male	Count	167	32	199
		% within Gender	83.9%	16.1%	100.0%
		% within the participant has burnout?	76.6%	60.4%	73.4%
	Female	Count	51	21	72
		% within Gender	70.8%	29.2%	100.0%
		% within the participant has burnout?	23.4%	39.6%	26.6%
Total		Count	218	53	271
		% within Gender	80.4%	19.6%	100.0%

	% within the participant has burnout?	100.0%	100.0%	100.0%

Table 2 Age Groups * Burnout Category

			Burnout Category			Total
			Low-level burnout	Moderate burnout	High-level burnout	
Age Groups	18 - 21	Count	48	60	46	154
		% within Burnout Category	45.7%	58.3%	73.0%	56.8%
	22 - 25	Count	49	34	15	98
		% within Burnout Category	46.7%	33.0%	23.8%	36.2%
	26 - 28	Count	8	9	2	19
		% within Burnout Category	7.6%	8.7%	3.2%	7.0%
Total		Count	105	103	63	271
		% within Burnout Category	100.0%	100.0%	100.0%	100.0%

Table 3 Academic Year * Burnout Category

			Burnout Category			Total
			Low-level burnout	Moderate burnout	High-level burnout	
Academic Year	2nd Year	Count	40	54	46	140
		% within Burnout Category	38.1%	52.4%	73.0%	51.7%
	3rd Year	Count	10	14	2	26
		% within Burnout Category	9.5%	13.6%	3.2%	9.6%
	4th Year	Count	10	5	10	25
		% within Burnout Category	9.5%	4.9%	15.9%	9.2%
	5th Year	Count	17	12	1	30
		% within Burnout Category	16.2%	11.7%	1.6%	11.1%
	6th Year	Count	17	7	2	26
		% within Burnout Category	16.2%	6.8%	3.2%	9.6%
	Intern	Count	11	11	2	24
		% within Burnout Category	10.5%	10.7%	3.2%	8.9%
Total		Count	105	103	63	271
		% within Burnout Category	100.0%	100.0%	100.0%	100.0%

4. DISCUSSION

According to the data analysis and burnout category, prevalence of burnout among medical students in the university of Jeddah was (20%), personal achievement is the highest value (80%) among other burnout categories, according to the criteria and method of assessment (Maslach Burnout Inventory). 60% of those who have burnout are males and 40% are females. On another scale, results show that the second-year students have highest level of burnout (73%), followed by fourth year students (16%). This could be connected to starting with the preclinical year in (2nd year students) and starting in the clinical year (4th year students) as it may be considered a new challenge for the students, the correlation of academic year and burnout level are significantly correlated with p value (<0.001).

Furthermore, students age is possible indictor of the extent of burnout, and therefore younger students were more prone to high level of burnout with relation between age group and burnout level and it was significantly correlated with p-value (<0.003). So, this strong relevance between age and burnout is supportive factor for the relation between academic year and burnout level. There is a high percentage of smoking among the participants, 30% of students are actively smoking, which is a high percentage that would give raise to different concerns, one of it is the correlation of smoking and the increase of prevalence of burnout among students but there is no significant correlation in our study. While there are a multiple environmental and cultural factor that could contribute to the increase of smoking percentage level.

In comparison with other studies similar in Saudi Arabia, the overall prevalence of burnout in Qassim university medical students in 2021 was 8%, while using the same criteria and method of assessment (Maslach Burnout Inventory) (Alqifari et al., 2021). Also, other similar study was conducted in Riyadh, Saudi Arabia in 2019 among clinical and preclinical medical students studying at Al-Faisal University, the overall prevalence for burnout was 13.4% using the same criteria and method of assessment (Maslach Burnout Inventory) (Altannir et al., 2019). The prevalence of burnouts was variable between the three studies by using the same criteria and method of assessment. That could be possibly explained by the different factors and environment at each university by its own. Personal achievement in our research is similar to Al-Faisal University paper (Altannir et al., 2019), where personal achievements were considered the highest value in burnout category.

5. CONCLUSION

The three domains of burnout i.e., burnout, depersonalization and personal achievement were found at mild to high rate with (20%) of burnout of medical students at Jeddah university, nevertheless the progression of years and experience have a major role in decreasing level of burnout. The level of burnout of medical students at university of Jeddah is considered high in comparison with other studies conducted from other universities in Saudi Arabia that could be an alarm to put more effort on finding out the reasons for this high percentage and suggest solutions to help in future.

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Author's contributions

Mohammed Qashqary designed the study, wrote, revised, and edited the manuscript. Ahmed Alotaibi, Hashim Alattas, Ziyad Alghamdi, Abdulrahman Alqahtani has participated in planning, manuscript writing and editing, summarizing, and manuscript reviewing.

Ethical approval

The study was approved by the bioethics committee for scientific and medical research at university of Jeddah (Ethical approval code: HAP-02-J-094).

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Conflicts of interest

The authors declare that there are no conflicts of interests.

Data and materials availability

All data associated with this study are present in the paper.

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