

Research Article

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Burnout Impact on Medical Students' Performance in the Eastern Province, Saudi Arabia

Aziza A Alzubaidi^{1*}, Abdullah A Al Shakhs², Fatimah M Alshakhs², Latifah A Alhashim², Mohammed A Almuhanha², Abdullah J Al Abbas³, Meral F Alzimam⁴, Yasir G Alrashdan⁴ and Ahmed A Alsaleh⁵

¹Pediatric senior resident, Saudi program, Kingdom of Saudi Arabia

²King Faisal University, Kingdom of Saudi Arabia

³Imam Abdulrahman Bin Faisal University, Kingdom of Saudi Arabia

⁴Hail University, Kingdom of Saudi Arabia

⁵Majmaah University, Kingdom of Saudi Arabia

***Corresponding author:** Aziza A Alzubaidi, Pediatric senior resident, Saudi program, Kingdom of Saudi Arabia.

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Introduction

Burnout is a mental condition described as a prolonged response to chronic emotional and interpersonal stressors on the job [1]. It is characterized by emotional exhaustion, energy depletion, a feeling of personal inefficacy and cynicism. Many studies concluded that medical students have high level of burnout, ranging from 45% to 50% [1-4]. One huge study done in Saudi Arabia, have reported that burnout level was very high among medical students (76.8%) [5]. Other study done in Lebanon found that burnout was higher among students in pre-clinic years comparing to clinic years (71%) [6,7].

Medical students usually experience more stressors than students from other departments [8-13]. These stressors have many negative impacts on both comprehension of medical students and their cognitive functioning [14]. Medical education stressors might also associate with negative impacts on the physical and mental health of medical students [11-15]. Which might affect not only the personal health of medical students and doctors but may affect the quality of patients care too [16,17].

In Saudi Arabia, our curriculum still considers traditional. We didn't have any noteworthy changes in our pre-clinical and clinical years teaching techniques [17-21]. However, many researchers have concluded that medical students experience more stress when entering clinical environs. They become more inclined to experience compassion fatigue and burnout [22-25].

Despite the extensive data on medical student burnout increasing prevalence, to our knowledge, no national study has evaluated the factors associated with stress, burn out and depression among medical students and its effects on their performance [26-28].

Methods

We carried a cross-sectional study with an online-based data questionnaire on medical students from King Faisal University and Imam Abdel Rahman bin Faisal in Saudi Arabia. 328 medical students were invited to participate in the study. Participation was entirely voluntary, and responses were anonymized.

Ethical consideration

Confidentiality was assured to all participants who agreed to participate in the study. The respondents were given a brief description of the study and its objectives.

Data analysis

After data extracted, were revised, coded, and fed to statistical software, IBM SPSS version 22. All statistical analysis was performed using two-tailed tests and an alpha error of 0.05. A P-value less than or equal to 0.05, considered to be statistically significant. Composite mean was calculated for different burnout domains and overall

mean then categorized into the mild level if the mean was less than 50%, moderate for a mean of 50% to < 75%, and severe for a mean of 75% up to 100%. Descriptive analysis based on frequency and

percent distribution was done for all demographics and burnout data. The relation between burnout level and students' personal data or their GPA was tested using the Pearson chi-square test.

Results

Table 1: Personal characteristics of medical students in Eastern region, Saudi Arabia.

Personal Data		No	%
Gender	Male	145	44.20%
	Female	183	55.80%
University	King Faisal	178	54.30%
	Imam Abdel Rahman bin Faisal	150	45.70%
Academic Level	Academic (1 st -3 rd)	169	51.50%
	Clinical (4 th -5 th)	145	44.20%
	Intern	14	4.30%
	Low	120	36.30%
	Moderate	144	43.90%
GPA	High	42	12.80%
	Very high	22	6.70%

The study included 328 medical students, of which 55.8% were females and 54.3% from King Faisal University and 45.7% from Imam Abdel Rahman bin Faisal University. 51% of the students were at the preclinical stage (first to the third year), and 44.2% were at the clinical years, while 4.3% was an intern. Regarding GPA, 36.3% of the students had a low GPA, and 19.5% had either high or very high grades (Table 1).

Table 2 illustrates the frequency distribution of different burnout domains among the sampled students. Approximately one-half (51%) of the students mostly feel Burn out, and 28.7% mostly feel the inability to take it anymore. As for work/study-related burnout, about one-half of the students (50.3%) had enough energy for family and friends during leisure time, and 37.2% feel that every working hour is tiring for them while only 8.8% feel worn out at the end of the working day. Considering colleagues related

burnout, 64.9% of the participants wonder how long you will be able to continue working with colleagues, 64.1% tired in working with colleagues while 56.4% find it hard to work with colleagues. Considering teachers related burnout, 64.1% of the participants tired in working with teachers, 45.1% find it hard to work with teachers, and 47.9% wonder how long you will be able to continue working with teachers. Overall, 66.5% of the participants had mild personal burnout, while 2.7% had severe burnout. Additionally, 67% of the students had mild work/study-related burnout, and 3.7% had severe burnout. As for colleague related burnout, it was mild among 26.5% of the students and severe among 41.2% of the sample. About teachers' related burnout, it was mild among 28% of the participants, while severe among 32.3% of them. Overall, 44.8% of the participants had mild burnout levels, and 7% had severe burnout (Figure 1).

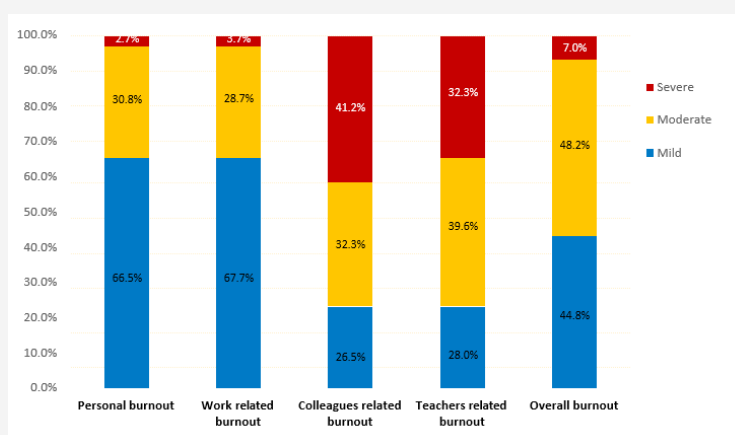


Figure 1: Burnout recorded among sampled medical students in Eastern region, Saudi Arabia.

Table 2: Frequency distribution of different burnout domains among medical students in Eastern region, Saudi Arabia.

Domain	Items	Never	Rarely	Sometimes	Frequently	Always
Nalbur	How often do you feel tired?	20.70%	44.80%	27.70%	6.10%	0.60%
	How often you are physically exhausted?	16.20%	38.70%	31.40%	13.10%	0.60%
	How often you are emotionally exhausted?	33.50%	42.40%	17.70%	6.40%	0.00%
	How often do you think 'I can't take it anymore'?	12.50%	28.40%	30.50%	22.90%	5.80%
	How often do you feel worn out?	9.80%	16.80%	22.60%	34.50%	16.50%
	Do you feel worn out at the end of working day?	32.00%	36.00%	23.20%	8.50%	0.30%
	Are you exhausted in the morning at the thought of another day at work?	20.10%	21.00%	27.10%	24.40%	7.30%
Work related burnout	Do you feel that every working hour is tiring for you?	10.40%	18.00%	34.50%	29.60%	7.60%
	Do you have enough energy for family and friends during leisure time?	6.10%	15.90%	27.70%	37.80%	12.50%
	Are your studies emotionally exhausting?	41.80%	29.30%	18.00%	8.50%	2.40%
	Do your studies frustrate you?	18.30%	23.80%	22.60%	21.60%	13.70%
	Do you feel burn out because of your studies?	28.00%	32.30%	25.30%	12.20%	2.10%
	Do you find it hard to work with colleagues?	7.30%	13.40%	22.90%	38.10%	18.30%
	Dose it drains your energy to work with colleagues?	8.80%	14.30%	22.60%	36.60%	17.70%
Colleagues related burnout	Do you find it frustrating to work with colleagues?	7.60%	10.70%	23.20%	37.50%	21.00%
	Do you think that you give more than you get back when you work with colleagues?	9.10%	10.70%	26.80%	36.60%	16.80%
	Are you tired in working with colleagues?	7.90%	8.50%	19.50%	35.40%	28.70%
	Do you wonder how long you will be able to continue working with colleagues?	7.00%	9.50%	18.00%	36.90%	28.70%
	Do you find it hard to work with teachers?	8.20%	18.00%	28.70%	32.60%	12.50%
	Dose it drains your energy to work with teachers?	8.50%	16.20%	28.40%	32.90%	14.00%
Teachers related burnout	Do you find it frustrating to work with teachers?	8.50%	16.20%	28.40%	32.90%	14.00%
	Do you think that you give more than you get back when you work with teachers?	7.00%	17.10%	22.90%	28.00%	25.00%
	Are you tired in working with teachers?	7.90%	8.50%	19.50%	35.40%	28.70%
	Do you wonder how long you will be able to continue working with teachers?	7.90%	18.00%	26.20%	29.00%	18.90%

Table 3: Distribution of burnout level among sampled medical students according to their personal data.

Personal Data	Overall Burnout						P-Value	
	Mild		Moderate		Severe			
	No	%	No	%	No	%		
Gender	Male	56	0.386	76	0.524	13	0.09	0.1
	Female	91	0.497	82	0.448	10	0.055	
University	King Faisal	72	0.404	94	0.528	12	0.067	0.179
	Imam Abdel Rahman bin Faisal	75	0.5	64	0.427	11	0.073	
Academic Level	Academic	77	0.456	80	0.473	12	0.071	0.987
	Clinical	63	0.434	72	0.497	10	0.069	
	Intern	7	0.5	6	0.429	1	0.071	

P: Pearson χ^2 test

On relating burnout to participants' personal data (Table 3), 9% of male students had severe burnout compared to 5.5% of females without recorded statistical significance ($P=100$). As for the university, severe burnout was recorded among 6.7% of King Faisal University students compared to 7.3% of Imam Abdel Rahman bin Faisal University students ($P=.179$). Regarding academic year, 7.1% of preclinical students and interns had severe burnout compared to 6.9% for students in the clinical years ($P=.987$); however, the

differences were not statistically significant ($P> 0.05$).

Finally, Table 4 shows the effect of students' burnout on their GPA. Exact of 69.6% of students with severe burnout had a low GPA compared to 24.5% of those with mild burnout. Also, 30.4% of the students with severe burnout had a moderate GPA, while none of them recorded a high GPA compared to 44.2% and 31.3% of those with mild burnout, respectively. This association was found to be statistically significant ($P=.001$) (Figure 2).

Table 4: Relation between burnout level and students' GPA among sampled medical students according to their personal data.

Burnout	Overall Burnout						P-Value
	Mild		Moderate		Severe		
	No	%	No	%	No	%	
Low	36	24.50%	68	43.00%	16	69.60%	.001*
Moderate	65	44.20%	72	45.60%	7	30.40%	
High	26	17.70%	16	10.10%	0	0.00%	
Very high	20	13.60%	2	1.30%	0	0.00%	

P: Pearson χ^2 test

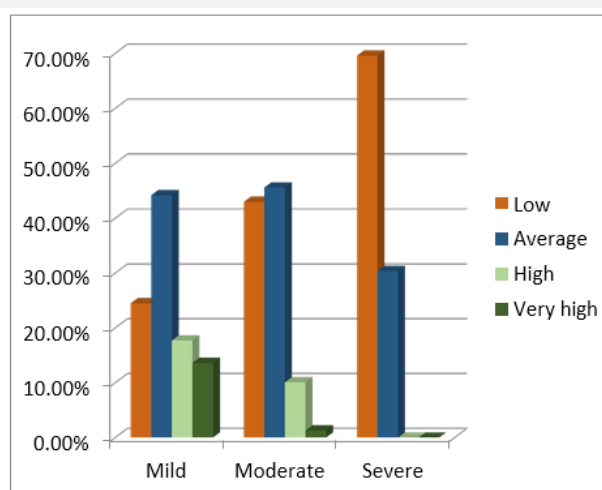


Figure 2: The effect of students' burnout on their GPA.

Discussion

The definition of burnout was introduced by Freudenberger in his psychosocial literature [29,30]. According to WHO, burnout is a syndrome linked to unresolved, long-term, work-related stress [31]. In 2019, the WHO concluded that burn out must be work related [31]. Based on the current classification by WHO (ICD-11), burnout might arise from unsuccessful management of chronic work-related stress, resulting in an occupational syndrome characterized such symptoms as “cynicism associated with one’s job, feelings of negativism or feelings of energy depletion; and reduced professional efficacy” [32].

Many studies found that burnout is nosologically, etiologically

and clinically like depression [33-36]. One study done by Bianchi et al. 2013 directly compared clinically depressed people and depressive symptoms in burned-out workers, no significant differences found in the diagnosis of both groups. clinically depressed people had similar depressive symptoms with burned out workers [37].

medical students’ mental health must always be under the focus as, besides their study-related affairs, responsibilities, and high burden are placed on these students because in medicine they are responsible for their community health care with the unacceptability of errors, favoring the development of anxiety and stress [38-40] (Figure 3).

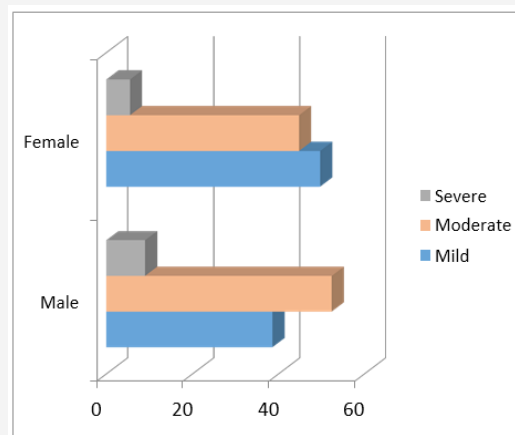


Figure 3: Distribution of burnout level among male and female.

The current study aimed to detect burnout among medical students in the eastern region of Saudi Arabia and assess its relationship with their educational achievement. Our results revealed that more than half of the students had moderate to severe burnout. The most recorded area of burnout was their deal with colleagues, as about 40% of the students had severe burnout in this area, followed by their relationship with teachers. This indicates that the main area of defect in medical students’ life is personal relations and how to overcome other disadvantages.

In Saudi Arabia, Almalki SA, et al. [41] did a cross-sectional study aimed to evaluate the influence of extracurricular activities on burnout and assess burnout level of medical students. They concluded that burnout levels of medical students at King Saud bin Abdulaziz University in Riyadh were very high. The authors suggested that medical curriculum must include leadership skills [41].

Regarding the determinants of burnout, none of the students’ characteristics were related to the degree of burnout. With regard to the effect of burnout on students’ educational achievement, there was a negative association between the degree of burnout and students’ GPA as none of the students with severe burnout had

a high GPA while nearly half of those with mild burnout recorded either high or very high grades.

A study conducted by dos Santos Boni, 2018 [42], to determine the prevalence and the associated factors of burnout among medical students in the first years of undergraduate school. The study revealed that a total of 187 students (187/265, 70.6%) presented high levels of emotional exhaustion, 140 (52.8%) had high cynicism, and 129 (48.7%) had low academic efficacy. Another study conducted by Ebrahim et al. 2018 [43] to detect medical students’ occupational burnout and its relationship with professionalism. The researchers found that 54.3% of the students had low, 35.2% moderate, and 10.4% high job burnout, which is very similar to the current research findings. However, they also found that there was no significant relationship between the increase in academic years and burnout in contrast to our results.

In the present study, on relating burnout to participants’ personal data, 9% of male students had severe burnout compared to 5.5% of females without recorded statistical significance ($P=.100$).

Mutual proactive and reactive coping strategies between the medical students and the universities are encouraged to

prevent and manage burnout among medical students. Various stress management interventions have been suggested to help improve students' health and well-being in the workplace or study environment and lower stress levels. Training employees in ways to control stress in the workplace have also been suggested to be effective in preventing burnout [44-46].

Conclusion and Recommendations

The present study showed a moderately high prevalence of burnout among medical students, especially in their relationships with colleagues and teachers. Also, burnout recorded a major effect on their educational achievement, which was reflected in their GPA. Our study highlights the fact that burnout syndrome has a considerable effect, with great involvement mainly on achievement areas regardless of the academic year or gender. These findings established the need to develop preventive measures focused on the personal relations of the students, providing a better performance, motivation, and social skills in the subsequent stages of their life.

Acknowledgement

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Conflict of Interest

Author has no conflict of interest.

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