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Prevalence of alexithymia and its association with burn out among medical field students at Umm Al-Qura University in Saudi Arabia

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ABSTRACT

Background/Aim: Alexithymia is the sub clinical inability to recognize and describe one's feelings. In the medical field, students often become emotionally blind when dealing with the difficulties of their studies, which can lead to burnout syndrome. This study's purpose is to assess prevalence of alexithymia and its association with burnout among medical field students at Umm Al-Qura University (UQU), Saudi Arabia. *Methodology:* A cross sectional survey of medical field students at UQU was conducted to assess the prevalence of alexithymia using the Toronto Alexithymia Scale and academic burnout, measured using the Maslach Burnout Inventory. T-tests were run to assess specialties and gender differences. *Result:* A total of 387 medical field students completed the study questionnaire. The prevalence of alexithymia among medical field students was 36.7% and alexithymia was detected among 42.2% of female students compared with 30.4% of male students (P=0.033). A significant relation was found between alexithymia among medical field students at UQU and their burnout (P=0.001). *Conclusions:* One third of the study participants may have alexithymia. Given the important association between burnout and alexithymia, increasing awareness of alexithymia and providing self improvement programs for burnout prevention is highly recommended.

Keywords: Alexithymia, Burnout, Medical field

1. INTRODUCTION

Burn out syndrome is defined as feelings of exhaustion or depletion of energy, increased mental distance from one's work, thoughts of negativism or cynicism and reduced professional efficacy (Maslach & Leiter et al., 2016). Burn out is usually a major problem in health care due to its consequences,

which include depression, job dissatisfaction, sub standard patient treatment, professional blunders, absenteeism and an intention to leave the profession (Prins et al., 2007; Suñer-Soler et al., 2014). Recently the number of medical field students has been increasing every year, especially in developing countries (Slavin et al., 2016). Numerous studies have found that students in the medical field are more prone to burn out because of their education and nature of their specialized training (e.g., program duration and emotional demands) (Schmitz et al., 1999; Slavin et al., 2016), specifically during the preclinical years (Guthrie et al., 1998). These findings suggest that emotional difficulties associated with burn out may be related to emotional 'blindness' as a defense strategy against negative and over whelming feelings such as alexithymia (Sifneos et al., 1973).

Alexithymia is a personality feature defined by a subclinical failure to recognize and describe one's emotions. It is characterized by the inability to identify and distinguish feelings from body sensations of emotional arousal, as well as the inability to describe one's feelings to others (Sifneos et al., 1973). Moreover, alexithymia is associated with burnout syndrome, specifically its emotional exhaustion component, as well as dissociation and depersonalization (Grabe et al., 2000). Burn out is frequently associated with an increased risk of suicidal thoughts (Dyrbye et al., 2008), cynicism and low empathy (Thomas et al., 2007), all of which can affect one's professional life by increasing the risk of dropping out (Dyrbye et al., 2010), as well as a general decline in job performance. Many studies indicate that the high frequency of burn out and alexithymia are major problems faced by students (Guthrie et al., 1998; Hamaideh et al., 2017) (Guthrie et al., 1998; Hamaideh et al., 2017) and that alexithymia plays a major direct and indirect role in the development of burn out syndrome, making it a significant factor affecting academic performance and college experience (Popa-Velea et al., 2017).

In furthermore, according to a recent study conducted in Jeddah, Saudi Arabia (Alzahrani et al., 2020), almost half (49%) of clinical and preclinical medical students suffer from alexithymia. There is also a significant association between alexithymia and academic performance, with a decrease in risk among clinical year students. This suggests that alexithymia might be a particular risk factor in the development of burn out syndrome and its association with poor academic performance. Therefore, raising awareness could improve the effectiveness of early intervention. Against this background, the present study aimed to assess the prevalence of alexithymia and its association with burn out and academic performance among medical field students at Umm Al-Qura University (UQU) in Saudi Arabia.

2. MATERIALS AND METHODS

Study design

This study is a cross sectional study was conducted among male and female medical field students (Faculties of Medicine, Pharmacy, Dentistry and Nursing) from 6 December 2021 to 22 February 2022.

Study setting

We obtained ethical approval from UQU research ethics committee (number: HAPO-02-K-012-2022-01-909). This study was conducted at UQU, Saudi Arabia.

Participants

We included all students eligible to answer our questionnaire and that agreed to participate. However, we excluded any student recently diagnosed with a mental health disorder.

Sample size

The intended sample size in this study was determined by Epi Info™ 7.1.5 (Centers for Disease Control and Prevention, Atlanta, Georgia, USA). The smallest possible sample size to achieve an accuracy of ± 5% with a 95% confidence interval was 342 participants. However the final data set comprised 387 students.

Data collection

A structured self administered questionnaire in English was distributed electronically to medical field students. In the first part, we gathered participants' characteristics, including their gender, specialty, study year and GPA. Then, the second part of the questionnaire evaluated the prevalence of burn out using the Maslach Burn out Inventory, which assesses occupational exhaustion, depersonalization and personal accomplishment (Maslach & Jackson et al., 1981). For the last part, we assessed the prevalence of alexithymia using the Toronto Alexithymia Scale, which assesses the difficulty in describing, identifying feelings and thinking externally (Bagby et al., 1994).

Statistical analysis

We used Microsoft Excel spread sheets to input the information. The data were extracted, reviewed, coded and entered in to IBM SPSS version 22 Statistical Software (SPSS, Inc Chicago, IL, USA). Two tailed tests were used for the statistical analysis. A P-value of less than 0.05 was considered to be statistically significant. For burn out, the overall score of each item within each domain was obtained by summing all the items' discrete scores. The burn out level for each dimension was categorized as low, moderate or high with reference to the cut off points of the scale (Maslach & Jackson et al., 1981). The overall score of each domain was also summed and categorized in the same way (Bagby et al., 1994). Analysis based on frequency and percentage distribution was descriptive was carried out for all the variables, including students' gender, academic year and GPA. Students' burn out and alexithymia were also described in tables and graphs. The distribution of alexithymia among medical field students using their personal data and its relationship with students' burn out by was assessed by cross tabulation. Associations were tested using the Pearson chi square test and exact probability test for small frequency distributions.

3. RESULTS

A total of 387 medical field students completed the study questionnaire of which 206 (53.2%) were women. Regarding specialty, 193 (49.9%) were in the Faculty of Medicine, 80 (20.7%) in the Faculty of Pharmacy, 63 (16.3%) in the Faculty of Nursing and 51 (13.2%) in the Faculty of Dentistry. As for GPA, 227 (58.7%), had a GPA of 3.5–4.0 and 111 (28.7%), had a GPA of 3.0–3.49. As for academic year, 238 (61.5%) were in their preclinical years (second and third years), while 149 (38.5%) were in their clinical years. Table 1 shows the burn out among medical field students at UQU in Saudi Arabia. Occupational exhaustion was low in 147 (38%) students, moderate in 124 (32%) students and high in 116 (30%) students. Depersonalization was low in 162 (41.9%), moderate in 116 (30%), and high in 109 (28.2%) students. Personal accomplishment was low in 329 (85%), moderate in 38 (9.8%) and high in 20 (5.2%) students.

Table 1 Burn out among medical field students of UQU in Saudi Arabia

Burn out	No	%
Occupational exhaustion		
Low	147	38.0%
Moderate	124	32.0%
High	116	30.0%
Depersonalization		
Low	162	41.9%
Moderate	116	30.0%
High	109	28.2%
Personal accomplishment		
Low	329	85.0%
Moderate	38	9.8%
High	20	5.2%

Over all prevalence of alexithymia among medical field students at UQU in Saudi Arabia a total of 142 (36.7%) students complained of alexithymia 130 (33.6%) had possible alexithymia, while 115 (29.7%) had no alexithymia showed in Figure 1.

Table 2 shows the distribution of alexithymia among medical field students at UQU in Saudi Arabia by their personal data. Alexithymia was detected among 42.2% of female students compared with 30.4% of male students (P=0.033). In addition, 45% of pharmacy students complained of alexithymia compared with 28.6% of nursing students and 35.8% of medicine students (P=0.049). No significant relation was detected between alexithymia and student's GPA.

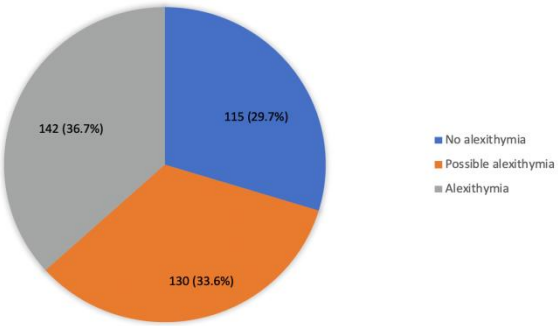

Figure 1 Over all prevalence of alexithymia among medical field students of UQU

Table 2 Distribution of alexithymia among medical field students of UQU in Saudi Arabia by their personal data

Factors	Alexithymia						p-value
	No alexithymia		Possible alexithymia		Alexithymia		
	No	%	No	%	No	%	
Gender							
Male	63	34.8%	63	34.8%	55	30.4%	.033*
Female	52	25.2%	67	32.5%	87	42.2%	
Speciality							
Dentistry	13	25.5%	19	37.3%	19	37.3%	.049*
Medicine	52	26.9%	72	37.3%	69	35.8%	
Nursing	25	39.7%	20	31.7%	18	28.6%	
Pharmacy	25	31.3%	19	23.8%	36	45.0%	
GPA							
< 2.5	2	40.0%	3	60.0%	0	0.0%	.717$
2.5-2.99	15	34.1%	14	31.8%	15	34.1%	
3.0-3.49	32	28.8%	36	32.4%	43	38.7%	
3.5-4.0	66	29.1%	77	33.9%	84	37.0%	
Academic year							
2nd year	35	31.0%	37	32.7%	41	36.3%	.930
3rd year	41	32.8%	39	31.2%	45	36.0%	
4th year	21	30.0%	23	32.9%	26	37.1%	
5th year	13	24.5%	20	37.7%	20	37.7%	
6th year	5	19.2%	11	42.3%	10	38.5%	

P: Pearson X^2 test$: Exact probability test* P < 0.05 (significant)

Table 3 shows the relation between alexithymia among medical field students at UQU and their burn out. Alexithymia was detected among 63.8% of students with high occupational exhaustion compared with 19% of those with low occupational exhaustion (P=0.001). Further, alexithymia was detected among 54.1% of students with a high depersonalization level compared with 21% of those with a low level (P=0.001).

Table 3 Relation between alexithymia among medical field students of UQU and their burn out

Burn out	Alexithymia						p-value
	No alexithymia		Possible alexithymia		Alexithymia		
	No	%	No	%	No	%	
Occupational exhaustion							
Low	70	47.6%	49	33.3%	28	19.0%	.001*
Moderate	35	28.2%	49	39.5%	40	32.3%	
High	10	8.6%	32	27.6%	74	63.8%	
Depersonalization							

Low	80	49.4%	48	29.6%	34	21.0%	.001*
Moderate	24	20.7%	43	37.1%	49	42.2%	
High	11	10.1%	39	35.8%	59	54.1%	
Personal accomplishment							
Low	93	28.3%	119	36.2%	117	35.6%	.148$
Moderate	15	39.5%	7	18.4%	16	42.1%	
High	7	35.0%	4	20.0%	9	45.0%	

P: Pearson X^2 test$: Exact probability test* $P < 0.05$ (significant)

4. DISCUSSION

The present study estimated the prevalence of alexithymia among medical field students at UQU in Saudi Arabia and its association with burn out and academic performance. We found that 37.7% of our sample had alexithymia, which is higher than the prevalence found in studies conducted in Jordan (24.6%) (Hamaideh et al., 2017), Iran (21.8 %) (Faramarzi & Khafri et al., 2017) and France (20.7 %) (Guilbaud et al., 2002), the high rate in our study could be attributable to a combination of factors that raise the likelihood of alexithymia rather than being only a result of psychological discomfort or behaviors that occur in specific contexts (Martínez-Sánchez et al., 2003). These factors include the frequency at which individuals are exposed to mental health problems such as posttraumatic stress disorder, depression and doubts about the legitimacy of mental disorders as well as the use of informal care (Alzahrani et al., 2020; Tang et al., 2020). This study found that women display a statistically significantly higher level of alexithymia than men (P=0.033); this finding is consistent with prior research revealing that gender is a risk factor for alexithymia (Hamaideh et al., 2017; Zhu et al., 2017). According to our results, alexithymia was significantly more prevalent among pharmacy students (45%, P=0.049) than other medical specialties. This can be explained by fact that the students at the Faculty of Pharmacy had the worst sleep quality according to a previous study, which can affect difficulties in identifying and describing emotions (Rehman et al., 2018; Siddiqui et al., 2020).

In terms of academic performance our results found that alexithymia did not correlate with students' GPA. However, Faramarzi and Khafri (Faramarzi & Khafri et al., 2017), found that students with a low GPA are more likely to have alexithymia than students with a high GPA and that the academic year of the study does not predict alexithymia. Although another study found that students in their pre clinical years are more likely to experience alexithymia than those in their clinical years. This could be attributed to the significantly higher work load and highly challenging environment of entering a medical program (Alzahrani et al., 2020). Regarding burn out, alexithymia was associated with a statistically significant increase in occupational exhaustion (63.8%) and was detected among 54.1% of students with high depersonalization. However, there was no significant correlation with personal accomplishment. These results differ from those of a previous study that found that alexithymia is associated with all three dimensions of burn out (Katsifaraki & Tucker et al., 2013). The current study's results contrast to an earlier report of a decreased prevalence of alexithymia among nursing students (Katsifaraki & Tucker et al., 2013), although their sample had more clinical exposure. Another study (Sayed et al., 2012) found problems with the learning environment in the faculty. This confirms the role of a good back ground in reducing the chance of developing alexithymia regardless of clinical exposure. The study's findings revealed the importance of building an optimal practice environment as an essential element affecting mental health conditions. This is especially important given that the work environment has a greater impact on burn out than the facility and individual characteristics (Takemura et al., 2020). As the learning environment affects students' motivation and achievement, it is critical to obtain feedback from students about their perceptions of their learning environment.

As our study reported associations between alexithymia and emotional exhaustion, we emphasize the importance of activating the role of academic mentors to provide adequate educational and psychological guidance. This can ensure that experts provide students with the tools to build personality, which can decrease the tendency to develop alexithymia. As our findings indicate that burn out is statistically related to alexithymia, it is recommended to provide self improvement programs (e.g., life skills training) to boost students' psychological health, as a previous study indicated that although organizational factors are important determinants of the development of burn out, a particular strength of this study is that it assessed alexithymia in medical field students, which may help identify individuals who require additional support to understand and regulate emotions in clinical practice. This mainly occurs when practicing in hospitals following graduation, as effective communication is essential for establishing an effective doctor patient relationship and practicing high quality medicine. None the less we acknowledge that our research has some limitations.

First this cross sectional survey was conducted using an online questionnaire, which increased the potential for sampling bias. Second being limited to a single university may have affected the study's generalizability. Third the data came from students' self

reports, which may lead to response bias from social desirability or negative affection. Further research could include a study with a larger sample size in multi center universities to ensure that the targeted population is more representative.

5. CONCLUSION

This study found that one third of the study participants may have alexithymia and that the scores may rise or fall over time, with a significant association between burn out and alexithymia. These data provide a starting point for the further study of the risk factors that could increase the prevalence of alexithymia. A campaign to increase the awareness of alexithymia and provide self improvement programs for burn out prevention is highly recommended.

Authors' contributions

Dai: Created the study design, wrote the introduction and methodology reviewed the manuscript and gave final approval of the manuscript; Nawras: Interpretation and writing of results, sheared in writing the introduction and methodology, review and final approval of manuscript; Warif: Statistical analyses wrote the discussion; Rania: Data entry, validation and coding, shared in writing the discussion; Jamila: shared in writing the discussion and gathered references; Abdullah: Supervised the study, reviewed and edited the manuscript and gave final approval of the manuscript.

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Ethical approval

The study was approved by the Medical Ethics Committee of Umm Al-Qura University (ethical approval code: HAPO-02-K-012-2022-01-909.

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Conflict of interest

The authors declare that there is no conflict of interests.

Data and materials availability

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

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