ASSESSING THE PREVALENCE OF PANIC DISORDERS AMONG UNDERGRADUATE MEDICAL STUDENTS IN KARACHI: A CROSS-SECTIONAL STUDY

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ABSTRACT

Objective: This study investigated the prevalence of panic disorders and their correlation with medical stressors among Karachi's undergraduate medical students.

Method: A cross-sectional study was conducted among 296 students from various institutions. The study took place within Karachi's medical institutes. Subjects: 148 male and 148 female students participated, with a mean age of 21.6±1.5.

Interventions: The sample answered a questionnaire in Google Form in which demographic variables were used, questions about anxiety, DSM-5 criteria of panic disorder, and the experiences of medical stressors. Findings: The frequency of panic disorder among the participants was 35.8 per cent and anxiety attacks were reported by 32.4 per cent. Females had overwhelmingly higher rates of panic disorders (p=0.005). But there was no important correlation between medical stressors and panic disorders (p=0.083). Conclusion: The study reveals alarming rates of panic disorder and anxiety in a sample of medical students and the necessity of mental health interventions and increased awareness that gender is male. Additional studies using bigger samples are essential to determine the relationships between panic disorder and stressors. This highlights the need to take the well-being of students seriously and promote holistic mental health care in academic institutions.

Keywords: Panic disorders, medical students, medical stressors, panic disorder attacks.

INTRODUCTION

Panic disorders (PD) are debilitating mental illnesses that involve frequent and unpredictable symptoms of high levels of fear and distress1. Students in universities particularly those studying medicine2 are confronted with massive responsibilities that expose them to a lot of stress. Medical university stress has been identified to be common in many countries, particularly, 41.9% in Malaysia, 31.2% in British universities and 61.4% in Thailand3,4. This pressure increases their susceptibility to illnesses like anxiety, depression and panic disorders that have a great influence on the health and study results of medical students.

Several researches have been done worldwide to examine the incidences of panic disorders among medical and other university going students. In a study by Nazemi et al. (2003) a lie in Iran, they found the prevalence of panic attacks among university students to be 38 percent in the previous year. Their results implied that there were gender difference in panic severity and avoidance which implies cross-cultural variation in the panic experience. In 2016, Auerbach and colleagues surveyed 21 countries and found that 20.3 percent of college students reported to have DSM-IV/CIDI disorders 16. Interestingly, disorders have been seen to start prior to college with prevalence in the rate of panic disorder at 28.1 percent of male and 80 percent of female students. Healthcare treatment of those with disorders was only 16.4% and it is important to emphasize that early intervention is necessary. Moving to 2017, Abolmagd reported a study in Egypt which found that medical students who were 1% of the total participants had panic disorder, but 44% of them had subclinical symptoms of anxiety 17. In Saudi Arabia, Amr and colleagues found prevalence of 21.9% of depression or anxiety symptoms among college

students, where major depression and anxiety were more frequent in women15. Taken together, these researchers highlight the high rate of mental health issues among college-age students worldwide and reiterate the fact that specialized interventions and support service offers a pressing priority to these young adults.

To the best of our knowledge, however, there is no such research that has been carried out in Pakistan on this specific issue. However, one can mention that a high level of stress has been shown to be prevalent amongst medical students in Pakistan with marked prevalence rates between 44%5, 45.5%6, and 60%7, and as high as 74.2%8. The relationship between this increased stress and prevalence patterns of panic disorders amongst medical students in Pakistan however is a field which needs to be explored. It is against this backdrop that a research that explores the occurrence of panic disorders in medical students in Karachi is required. In this study, it might be possible to inform policy makers and the research societies on the mental health status of medical students.

As observed in the study by Falsetti et al., there was an observation that Stress was able to not only initiate the development of panic disorders but it could also be an outcome of having panic disorders9. This research aimed at finding some form of links between the stress levels that Medical Students experience and the incidence of panic disorders. Medical Students encounter the greatest stress-inducing factors that involve a heavy workload and time pressure, a burden of clinical responsibility, a stress of an exam, long studying with limited sleep. In this study, we have called these medical stressors as medical stressors.

METHODS

This was a cross-sectional study conducted among undergraduate medical students in Karachi, Pakistan. Students from the first to the final year of both MBBS and BDS programs in both private and public institutes were approached. The OPENEPI sample size calculator was used to calculate the sample size at 95 percent confidence level. The required sample size was 295 The participants were selected using a non-probability random sampling technique. Inclusion criteria will include undergraduate medical students pursuing their studies in Karachi, pursuing studies in recognized medical institutions, and willing to provide information about their mental health status and experience in the area of panic disorders. On the other hand, postgraduate medical students, students studying healthcare subjects other than undergraduate medicine, students studying in medical institutions that are non-Karachi based and students with Substance Use Disorder (SUD) were excluded from the study. Informed consent was obtained by the participants to participate in the study. DSM 5[10] (Diagnostic and Statistical Manual of Mental Disorders, 5th Edition) criteria for Panic Disorders; was used in which the participants are inquired about the presence of recurrent and unexpected panic attacks along with the persistent concern about having additional attacks and their consequences and ensuring that the participants were not experiencing any physiological and psychological disturbance.

RESULT

Out of 296 medical students, 50% (n=148) were male and 148 (50%) were female, with mean age score 21.6±1.5. The vast majority 98.6% (n=292) were single. Almost three-fourths i.e. 74.3% (n=220) reported owning their residency, and 92. 9 %(n=275) living with their parents. The demographics are mentioned in Table 1.

Table 1. Demographic Characteristics of Study Participants (N = 296)

Variable	Category	%
Gender	Female	50.0
	Male	50.0
Marital Status	Single	98.6
	Married	1.0
Field of Study	BDS	13.9
	MBBS	86.1
Residence Type	Own Home	74.3
	Rented	25.7
Living Arrangement	With Parents	92.9
	With Friends	6.4
	With Spouse	0.7

In the past four weeks, 50% of participants reported experiencing a sudden anxiety or panic attack, with 45.7% indicating that such attacks had occurred previously. Among them, 37.1% reported that some attacks came "out of the blue," and 62.83% were worried or bothered by the possibility of future attacks. According to DSM-5 criteria, 36.1% experienced sudden intense fear peaking within minutes in the past month. During the last reported panic attack, common symptoms included palpitations or a pounding heart (47.97%), sweating (36.14%), shortness of breath or smothering (33.10%), nausea or abdominal distress (28.71%), dizziness or light-headedness (28.04%), fear of losing control (27.70%), trembling (21.62%), and chest pain or discomfort (15.87%). Less frequent symptoms were derealization (12.83%), fear of dying (11.14%), chills or heat sensations (9.79%), and
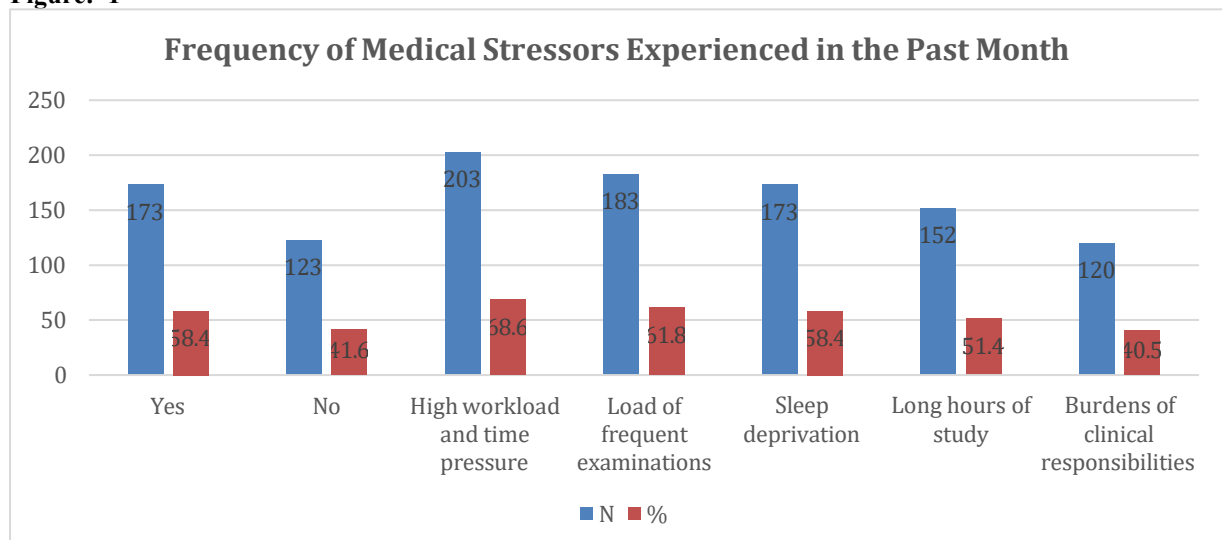
paresthesia (9.45%). Feeling of choking was reported by 35% of participants. Overall, 64.2% experienced four or more DSM-5 symptoms during an attack. Persistent worry about additional attacks was reported by 36.8% of participants, and 37.5% reported behavioral changes to avoid potential triggers in the past month. These key indicators of panic and anxiety are given in Table 2.

Table 2: Key Indicators of Panic and Anxiety Among Participants

Question / Variable	Frequency (n)	Percentage (%)
In the last 4 weeks, have you had an anxiety attack (sudden fear/panic)?	148	50.0
Has this ever happened before?	148	45.70
Do some of these attacks come "out of the blue"?	110	37.10
Are you bothered or worried about having another attack?	186	62.83
DSM-5 Criterion: Sudden intense fear peaking within minutes (Past month)	107	36.10
Symptoms during last anxiety/panic attack		
Palpitations / pounding heart	142	47.97
Sweating	107	36.14
Shortness of breath / smothering	90	33.10
Nausea / abdominal distress	83	28.71
Feeling dizzy / light-headed	83	28.04
Fear of losing control / "going crazy"	82	27.70
Trembling or shaking	70	21.62
Chest pain or discomfort	47	15.87
Feeling of unreality (derealization)	41	12.83
Fear of dying	38	11.14
Chills or heat sensations	33	9.79
Paresthesias (tingling/numbness)	28	9.45
Experienced ≥4 DSM-5 symptoms?	106	64.20
Persistent worry about additional attacks?	109	36.80
Behavioral changes to avoid triggers (Past month)	111	37.50

More than half 58.4% experienced 3 or more Medical stressors in the past month. The most common stress; 203 68.6% (n=203) was "High workload and time pressure" followed by 183 61.8% (n=183) "Load of Frequent Examinations" and 58.4% (n=173) "The sleep deprivation". The least common stress experienced by the participants was 40.5% (n=120) "Burdens of clinical responsibilities". Individual medical Stressors and their occurrence is given in Figure 1.

Figure: 1

Frequency of Medical Stressors Experienced in the Past Month

Out of total Participants, 106 were identified as Panic Positive in accordance with DSM-5 criteria for Panic Disorders, with 64 (60.37%) of them being females and 42(39.63%) being males. Additionally, there were 190 participants identified as panic negative.

Based on the results of the chi-square test, it can be concluded that there is a statistically significant association between gender and panic disorders. The one-sided exact significant p-value of 0.005 indicates that panic disorders are more prevalent in females compared to males, thus, the outcome supporting our Hypothesis. Table 4

Table 4: Gender-Based Difference in Prevalence of Panic Disorder (PD)

Variable	Category	Negative n (%)	Positive n (%)	P value
Gender	Female	84 (44.21%)	64 (60.37%)	**0.005**
	Male	106 (55.78%)	42 (39.62%)	

Among 106 panic positive participants, 69 individuals reported experiencing 3 or more medical stressors in the past month. Based on the results of the chi square test, it can be concluded that there is a suggestive but not statistically significant association between medical stressors and panic disorders. The asymptomatic significant two-sided p-value of 0.083 indicates that while there is a trend suggesting a potential relationship between medical stressors and panic disorders, this association does not reach the commonly used threshold of statistical significance (typically set at 0.05). Further research with larger sample sizes might be needed to determine whether a significant relationship exists between medical stressors and panic disorders in the given population.

DISCUSSION

Stress has the potential to give rise to mental issues and exert an adverse influence on cognitive functioning and the process of learning.[11] The field of medical education is recognized for its challenging nature that often leads to heightened levels of stress. Medical students face an elevated susceptibility to experiencing depression and anxiety disorders when compared to the broader general population.[12] Panic disorder is a commonly occurring anxiety disorder that has garnered substantial attention in recent times. The primary objective of this study was to evaluate the prevalence of panic disorder among medical students and discern the potential stress factors linked to its occurrence.

The results of this study indicated that approximately 35.8% of the medical students encountered episodes of panic disorder, whereas 32.4% experienced occurrences of anxiety attacks. The prevalence of panic disorder has been reported by several studies, the panic prevalence in medical students of Saudi Arabia was found to be 26.5%[13] while the study of Adhikari et al in Nepal revealed that 4.0% of medical students experienced panic disorders[14], and the prevalence of 4.1% among Saudi University Students was reported by Amr et al[15]. In the USA, Auerbach et al. reported anxiety disorder prevalence of 11.7–14.7% and panic disorder prevalence of 1.0–1.2% across groups[16]. In Egypt, Abolmagd et al. found a 2% panic attack prevalence among medical students[17]. Meanwhile, Samreen et al.'s Saudi Arabian study highlighted a 49% anxiety prevalence among pharmacy students[18].

Finding of this study showed that the panic disorder is more prevalent in Female medical students. The statistical analysis confirmed a significant association between gender and panic disorders, validating the hypothesis that panic disorders are more prevalent among female medical students. While a significant portion of participants reported encountering medical stressors, the subsequent statistical analysis yielded an insignificantly associated relationship between these stressors and panic disorders. This implies that most students are successfully coping with these stressors and thus the nullification of our initial hypothesis that there is a possible correlation between medical stressors and panic disorders.

Although this study is the only research conducted in Pakistan to investigate the occurrence of panic disorders in a particular group, the study also has a few limitations. First, causal inferences were not possible because of cross-sectional development. Secondly, the research used self-reported data which could have contributed to measurement error and the validity of results due to recall bias or social desirability bias. Finally, the low level that the study could determine directionality presented a challenge when it came to establishing whether panic disorders affected the variables or the contrary. Neither did we have time and resources to go around in a comprehensive manner.

CONCLUSION

To sum it up, the research contributes to important information regarding the multifaceted nature of factors that trigger panic disorders in medical students. The study results are very clear in showing that there is extensive relationship amid gender and panic disorders with prevalence of 1.5 times higher in women undergraduate medical students in Karachi as expected. This highlights why mental health interventions between male and female medical students must be gender-sensitive to meet specific difficulties that medical students encounter as females. Moreover, the research indicates that there are no significant links between medical stressors and panic disorders in medical students because of the two-sided p-value being 0.083. A larger research study involving a large sample population is required to determine the potential correlation between Panic disorders among medical students and the stress factors that they face.

Acknowledgements

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