Generalized Anxiety Disorder Among Health Sciences College Students, Majmaah: A cross-sectional study

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ABSTRACT

Objectives: This study aims to estimate the prevalence of Generalized Anxiety Disorder among health sciences college students at Majmaah University and evaluate the related social risk factors.

Methods: A descriptive cross-sectional study was conducted at the Majmaah University of Saudi Arabia by using a random sampling technique. A standardized pretested questionnaire comprised of a Generalized Anxiety Disorder 7-item (GAD-7) scale was used to collect the data. Comparison between qualitative data was done by Chi-square test and a p-value < 0.05 was considered significant.

Results: A total of 631 male and female students were completed the survey out of which 54.8% were females and 45.2% males. The study revealed that the majority of the study participants suffered from stress before (70.5%), while 29.5% don't. The study also found that the prevalence of generalized anxiety disorder among study was 38.2% with mild anxiety, and 26.6% with moderate anxiety. However, 19.5% of study participants with severe anxiety, while 15.7% were normal with a score of less than 5. The overall prevalence of generalized anxiety disorder among university students was (84.3%); The results revealed that female students were significantly more anxious than male students.

Conclusion: The current study confirms that the prevalence of generalized anxiety disorder was high among university students. It is recommended to give personalized advice and psychological counseling services which might be helpful to overcome this psychological condition.

Keywords: *GAD, health sciences colleges students, University of Majmaah, Saudi Arabia*

INTRODUCTION

Anxiety disorders, such as generalized anxiety disorders, are episodes of great fear or terror that reoccur frequently and can cause panic attacks. Anxiety disorders impact up to 20% of adults annually1. The symptoms of generalized anxiety disorder include fear, worry, and a persistent sense of being overpowered. The hallmarks of a generalized anxiety disorder include persistent, excessive,

and irrational worry over recurring events.2 This anxiety may have multiple focuses, including money, family, health, and the future. It is excessive, challenging to manage, and frequently accompanied by vague psychological and physical symptoms.3

The American Psychiatric Association's DSM-III was the first diagnostic guide to recognize generalized anxiety disorder. It was once believed that panic and generalized anxiety disorder were the two main components of anxiety neurosis. According to the DSM-III, a generalized anxiety disorder must be uncontrollable, diffuse (i.e., not concentrated on a single significant life concern), excessive, or irrational in comparison to actual life conditions, and it must last for a minimum of one month. For a generalized anxiety disorder diagnosis, there were also several associated psychophysiological symptoms needed.4 Early clinical trials testing DSM-III, according to this classification, indicated that the disease seldom occurred without another concomitant anxiety or mood disorder.5,6 Some critics hypothesized that generalized anxiety disorder would be better understood as a prodrome, residual, or severity marker rather than a specific condition due to the significant comorbidity between it and major depression. 5,6,7,8As the length of the generalized anxiety disorder rises, the rate of comorbidity with other conditions reduces. Based on this finding, the generalized anxiety disorder DSM-III-R group suggested a revised definition known as DSM-V. The Diagnostic and Statistical Manual (DSM-5) defines anxiety as excessive worry and anxious expectations that occur more days than not for at least six months4. Patients with generalized anxiety disorder show symptoms of restlessness, facing difficulty focusing or sleeping, and dizziness.4 This intricate web of risk factors, such as genetics, brain chemistry, personality, and life events, contributes to developing anxiety disorders.4

A 7-item generalized anxiety disorder scale (GAD-7) was created by Spitzer et al.9 to diagnose GAD in affected people. The GAD-7 is a multilingual assessment tool utilized in prior studies with various groups10,11 The GAD-7's first validation with a sizable primary care sample revealed that the instrument showed solid validity and reliability12.

The Global Burden of Disease (GBD) Project and chosen patient samples in Saudi Arabia were the primary sources of prior research on mental health issues in the KSA. The 2015 GBD study found that drug use disorders, depressive disorders, and anxiety disorders are the third, fourth, and sixth most frequent causes of disability in the KSA, respectively13. Given its propensity to impair learning and performance, stress is particularly crucial in education14. Medical training is transitioning from high school to a new environment that combines adult study with lax supervision.15 Medical school in Saudi Arabia typically lasts six years. Students acquire the knowledge, abilities, and attitudes necessary to get ready for their future careers during these years.16 The student's physical and emotional health may be impacted by the training needs, which could then affect their academic performance. Also, there is a lot of competition in medical schools because students are vying for positions in future fields of study and employment, which could act as another risk factor for mental illness.17 Students are exposed to actual patients and adverse outcomes like death, and the transition from preclinical to clinical years in medical college may be anxiety-inducing and unpleasant for them.15 According to a meta-analysis published in 2019, 33.8% of medical students globally reported having anxiety (95% Confidence Interval [CI] = 29.2-38.7).18 A few studies have been completed to analyze the anxiety symptoms of medical students in the Kingdom of Saudi Arabia.16,19,20 Still, very less research has been done to determine the relationship between anxiety in medical students and associated risk factors. Hence, this study also sought to determine the prevalence of generalized anxiety disorder among students at Majmaah University Saudi Arabia and the contributing variables and relationships between sociodemographic parameters and generalized anxiety disorder in this population.

METHODOLOGY

This descriptive cross-sectional study was conducted at Majmaah University, Saudi Arabia, to investigate anxiety among health science college students for six months. We used a random sampling technique for data collection. A sample size of 631 was determined using the sample size equation following prior research in Saudi Arabia by Abeer Alatawi et al21. in 2020 that found 68% of students had anxiety14. The information was gathered via a self-administered questionnaire that asked questions on sociodemographic traits, academic aspects like the GPA, perceptions of challenges students had since being admitted to the university, and assessed specialization readiness. The GPA in KSA is calculated using a 5-point scale, just like in the US. The Generalized Anxiety Disorder (GAD) instrument was also included in a portion of the questionnaire. In both clinical practice and research, the GAD-7 questionnaire is a reliable and effective instrument for detecting anxiety and gauging its severity.9 A seven-item questionnaire asked participants how often, throughout the preceding two weeks, they had been afflicted by each symptom. There were four possible answers for each question: 0 meant "not at all," 1 meant "a few days," 2 meant "more than half the days," and three meant "almost every day." The overall GAD-7 score varied from 0 to 21. Cutoffs for minimum, mild, moderate, and severe anxiety were 0–4, 5–9, 10–14, and 15–21, respectively. A score of 10 or above on the GAD-7 demonstrated great sensitivity (89%) and specificity (82%) for identifying cases of anxiety.9,22 GAD-7 scores of 10 or more were therefore considered indicative of anxiety in the current study, whereas scores of 10 or less were considered to indicate no anxiety. Except for interns, all male and female college students majoring in health sciences at Majmaah University were chosen. The respondents received the consent form and information sheet in Arabic and English. The Declaration of Helsinki was followed in this study, and each participant gave free informed consent. IRB was obtained from Majmaah University. IBM SPSS Version 13.0.25 was used to code and clean the data.

The SPSS software was also used for statistical analysis, focusing primarily on descriptive statistics. Numerical values were determined by data analysis. Data for categorical variables were first coded, then descriptive statistics were used to analyze them (e.g., frequency and percentage). They were presented using quantitative data like frequencies, percentages, means, and confidence intervals. Results were also presented using tables. Chi-square, Kruskal-Wallis, and Mann-Whitney tests were used to compare qualitative data. Significant data had a p-value of 0.05 or lower.

RESULTS

The survey was completed by 631 students overall, both male and female. Among them 45.2% were male and 54.8% were females. The majority (75.1%) were between the ages of 18 and 22; 22.5% were between the ages of 23 and 26; and 1.0% were older than 30. 95.9% of the participants were married. A total of 41.4% of participants were in the College of Medicine, 33.9% were in applied health science, and 24.7% were in dentistry. We observed that 14.35 participants had a GPA below 3.5, while 30.1% had a GPA ranging from 4.5 to 5.00, 30% from 4 to 4.49, and 25.7% from 3.5 to 3.99.

On the other hand, more than half of the participants (52.6%) rely on family and academic assistance for their income. However, 34.1% rely exclusively on academic support, 7.8% have other sources of income, and 5.5% rely on family support as their only source of income. Residents of Majmaah made up slightly more than half of the participants, followed by Zulfi locals (17.9%) and Riyadh residents (17%). The majority of our participants, however, reside with their parents, followed by 9.4% who are single, 5.2% who live with friends, and 1.1% who live with family. Most study participants (61.6%) slept 6 to 8 hours a day, 20.3% slept more than 8 hours, and 16.8% slept 3 to 5 hours. Only 1.3% of the participants slept for less than three hours daily (Figure 1).

Kruskal-Wallis test showed that there was a significant difference in GAD-7 scores according to income, where the GAD-7 score was significantly higher in students who depend on university support as an income, got the highest

mean rank (345.54) (P<.05). Moreover, Kruskal-Wallis test revealed that "living arrangements" have an impact on GAD-7 score among students, that GAD-7 score was significantly higher in a student who lives alone, got the highest mean rank (353.42) (P<.05). However, the results of this study showed that Age, Marital status, BMI, GPA and City of residence have no significant impact on GAD-7 score (P>.05) (Table 1).
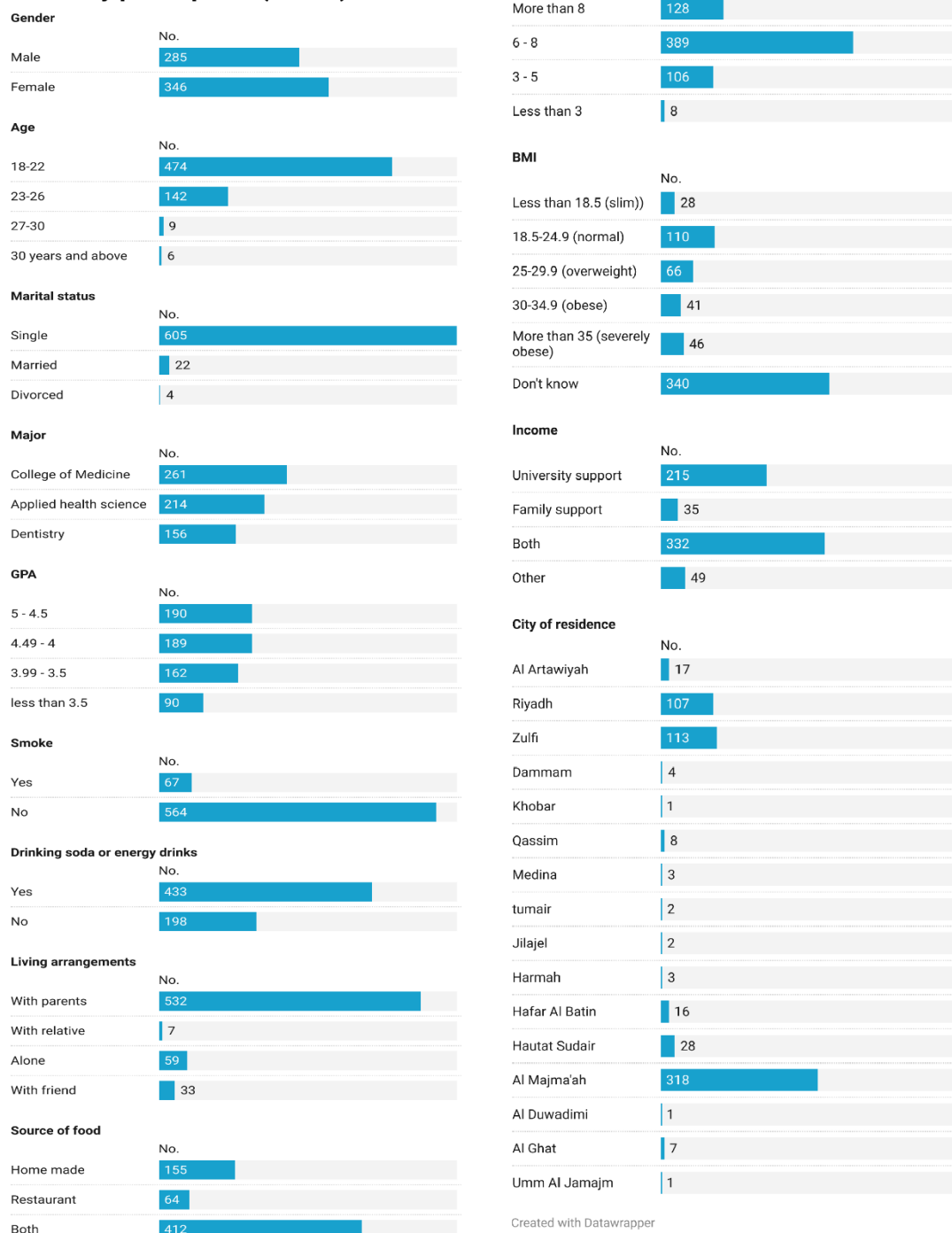

FIGURE 1: Demographic and basic information of study participants

TABLE 1: Correlation between socio-demographic variables and GAD (n=631)

Age	N	Mean Rank	Kruskal-Wallis H	P value
18-22	474	324.48	7.362	.061 ns
23-26	142	298.67		
27-30	9	197.56		
30 years and above	6	233.67		
Marital status				
Single	605	317.60	1.450	.484ns
Married	22	287.27		
Divorced	4	231.88		
BMI				
Less than 18.5 (slim))	46	345.60	2.216	.819 ns
18.5-24.9 (normal)	41	317.05		
25-29.9 (overweight)	66	327.61		
30-34.9 (obese)	110	301.74		
More than 35 (severely obese)	28	319.43		
Don't know	340	313.95		
Major				
College of Medicine	261	304.42	1.897	.387 ns
Applied health science	214	321.70		
Dentistry	156	327.56		
GPA				
5 - 4.5	190	327.91	2.377	.498 ns
4.49 - 4	189	299.97		
3.99 - 3.5	162	317.70		
less than 3.5	90	321.46		
Income				
University support	215	345.54	10.749	.013*
Family support	35	293.79		
Both	332	306.55		
Other	49	266.26		
Living arrangements				
With parents	532	317.04	8.545	036*
With relative	7	213.64		
Alone	59	353.42		
With friend	33	254.12		

Mann-Whitney test was used to evaluate the effect of societal and medical risk factors on the GAD. The findings showed that except for the elements, all of the social and medical factors listed in the above table affected GAD (p< 0.05) (Table 2). It was discovered that having a family issue while studying and having a family history of mental illness were significantly associated with GAD (p< 0.05). According to the study's findings, their financial difficulties in school were substantially connected with a higher GAD-7 score (p< 0.05) (Table 3).

TABLE 2: Correlation between social and medical risk factors and GAD (n=631)

Variables	N	Mean Rank	Sum of Ranks	Mann-Whitney U	P value
Stressful					
Yes	445	364.57	162232.00	19773.000	.000**
No	186	199.81	37164.00		
Ever failed in any module					
Yes	186	335.38	62380.00	37781.00	.084
No	445	307.90	137016.00		
Did you participate in a research project					
Yes	347	306.37	106310.00	45932.00	.142
No	284	327.77	93086.00		
Any family problem during the study					
Yes	285	366.66	104498.50	34866.00	.000**
No	346	274.27	94897.50		
Any Family history of mental disorder					
Yes	46	395.98	18215.00	9776.00	.002**
No	585	309.71	181181.00		
Any Financial problem during the study					
Yes	276	349.39	96432.50	39773.00	.000**
No	355	290.04	102963.50		
Diagnosed with any medical problem during the study					
Yes	121	361.40	43729.50	25361.500	.002**
No	510	305.23	155666.50		
Diagnosed with any psychiatric problem during the study					
Yes	54	455.38	24590.50	8052.500	.000**
No	577	302.96	174805.50		

In the current study's questionnaire, participants were also asked if they had any problems as children. The majority (83.3%) responded that they had not faced any academic difficulties while 5.7% reported academic difficulties, 4% reported physical abuse, 3.6% reported an early breakup with their parents, and 1.3% did not specify any problems, but 1% reported sexual harassment and only 0.6% participants reported bully. However, the results of this study showed that students who were not prepared for their future specialties had significantly higher GAD-7 scores (p< 0.05). The significant findings were that having experienced stress in the past was associated with higher GAD-7 scores. Also, it was discovered that those who encountered problems as children, specifically "physical abuse," as well as those who had medical and psychiatric issues while in school, had considerably higher GAD-7 scores (P< 0.05) (Table 3).

TABLE 3: Correlation between social and medical risk factors and GAD (n=631)

Variables	N	Mean Rank	Kruskal-Wallis H	P value
Did you choose your future specialty				
Yes	436	306.50	3.848	.146 ns
No	68	337.91		
Not willing to choose	127	336.88		
Are you ready for a future specialty?				
Yes	376	284.60	34.432	.000**
No	57	417.30		
Maybe	167	346.94		

Neutral	31	343.97		
Any problem experienced during childhood				
Physical abuse	25	454.96	10.749	.013*
Early separation from parents	23	356.15		
Difficulty in school	36	391.04		
Sexual harassment	6	430.42		
Bullying	4	300.88		
Will not specify	8	408.06		
None	529	300.00		

DISCUSSION

The current results confirm that the prevalence of generalized anxiety disorder was high among students. Various studies have been conducted worldwide on the frequency of anxiety and depression among medical professionals.[16,21,2223] However, comparisons across various studies are sometimes erroneous or challenging due to variations in participant characteristics, cultures, study tools, and techniques. The findings of the Indonesian study revealed that Nursing students felt pressure and worry during their clinical experiences[14]. Student's academic achievement, professionalism, and capacity to oversee the healthcare of their patients may all suffer as a result of anxiety[12]. The current study observed 38.2% of participants with mild anxiety, 26.6% with moderate anxiety, and 19.5% with severe anxiety. These results are comparable with the study of El-Gillani[20] and higher than the studies of Al-Shamlan[24], Talih et al[22]., and Azad et al[25]. El-Gilany et al[20]. observed a 38.8% prevalence of generalized anxiety disorder among Egyptian male medical students using the hospital anxiety and depression scale (HADS). Based on information gathered using the Depression, Anxiety, and Stress Scale 21 (DASS-21) instrument, AlBahhawi et al[26]. study at Jazan University in Saudi Arabia found that 65.7% of the students experienced symptoms of anxiety. Al-Shamlan and colleagues[24] researched medical students of Imam Abdulrahman Bin Faisal University (IAU), Eastern Province, KSA. Their study reported 31.7% of medical students suffered from moderate anxiety while 14.3% had severe anxiety symptoms.[24] Using the GAD-7 instrument, Talih et al[22]. found that 22.7% of medical students in Lebanon reported symptoms of anxiety. Mousa et al[27]. conducted surveys of 126 residents and 336 medical students in New York. According to its findings, anxiety was present in 20.3% of students and 15.9% of residents from various specializations. One Pakistani study conducted by Azad et al[25]. in 2017 found that 19% of its medical students experienced moderate to severe anxiety symptoms, according to the Beck Anxiety Scales.

Our study revealed that generalized anxiety disorder was significantly associated with gender, where female students were likely to have a higher anxiety rate than male students (P <0.05). This finding aligns with several studies, including study 20, which indicated that generalized anxiety disorder affects twice as many women as men in the United States. Moreover, Baxter et al. (2014) showed in a study conducted in the United States that women are more likely than men to experience anxiety disorders (point prevalence, 5.2% versus 2.8%)[28]. A high GAD score was observed among students receiving scholarships from universities to fulfill their academic expenditures more than those financially dependent on their families (p< 0.05). This result highlights the importance of family support; however, students depended on University to cover their needs and lacked this emotional support and absence, resulting in anxiety.

Age, marital status, BMI, major, GPA, and place of residence, however, were not associated with Generalized anxiety disorder. This finding contrasts with a study conducted in the USA[28], which concluded that marital status and age were significant variables. However, the findings related to GPA were also in contradiction to the study conducted by the study' of Al-Johani, in which he revealed that social anxiety disorder

was more frequently reported among students who had previously failed medical school because a lower GPA was associated with a higher likelihood of the condition.[29] Earlier Saudi investigations have also discovered a similar inverse association.[30,31] This may be attributed to the intense competition in medical schools, where students compete for better grades and GPAs to be considered for postgraduate residency programs and employment. Medical students are more susceptible to mental health issues due to these pressures.[24]

Moreover, it was found that having family issues while in school and having a family history of mental illness were significantly associated with Generalized anxiety disorder (p<0.05). Students' academic achievement, professionalism, and capacity to oversee the healthcare of their patients may all suffer as a result of anxiety. This finding aligns with past literature, including one by Ghazwani in 2016 of secondary school boys in Abha, Saudi Arabia, which found that physical or emotional abuse by parents was a significant risk factor for stress[32]. University students are an essential part of society; as a result, it is crucial to remove any barriers standing in the way of their academic success, particularly psychological pressures, because they have a detrimental effect on performance and, consequently, educational outcomes. The lengthiest education and training program, the pressure of numerous written and clinical examinations, oral presentations, interactions with patients and their families, and exposure to difficult life-or-death situations are just some of the academic challenges that medical students are more likely to face. Hence, to overcome academic obstacles, medical students need to be physically and mentally healthy, have strong personality structures, and be motivated to develop their professional and communication abilities.

STUDY LIMITATIONS
This study has limitations, including a small sample size and a short duration of data collection targeting only health science students.

CONCLUSION
The current study confirms that the prevalence of generalized anxiety disorder was high among university students. It is advised to implement student counseling programs that place a strong emphasis on coping mechanisms. This encourages routine mental health exams, saying that giving health science students personalized advice and psychological counseling services might be helpful.

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