Medical Science

Anxiety among medical and non-medical students in Al Majmaah University, Saudi Arabia

Khaled El Tohami Medani[1], **Anas Mohammed Ali Alothaim**[2], **Abdulrahman Jaser Faris Almutairi**[2], **Mohammed Ghanem Faleh Alotaibi**[2], **Nasser Jamal Aljasir**[2], **Abdulkhaliq Qaed Salem Almutairi**[2]

DISCOVERY
SCIENTIFIC SOCIETY

ABSTRACT

Background / Introduction: Definition of anxiety according to American Psychological Association: is an emotion characterized by feelings of tension, worried thoughts and physical changes like increased blood pressure. *Objectives:* The objective is to evaluate and compare anxiety among medical and non-medical in Al Majmaah University. *Methodology:* The design was cross-sectional to evaluate and compare anxiety between medical and non-medical among 310 students in Al Majmaah University, Saudi Arabia. Beck anxiety inventory questioner is administrate to (SPSS) was used to analysis. *Results:* Show that most of the students were healthy 80%, while the moderate anxiety 10.3% and concerning level of anxiety show 9.7%. *Conclusion:* There is nearly similar complain of anxiety in both medical and non-medical in al Majmaah university but the deference in moderate and concerning level we see increase number in of moderate in non-medical while increase in concerning level in medical students.

Keywords: anxiety, medical students, non-medical students, Al Majmaah University.

1. INTRODUCTION

Younger adult age is described as an identification forming time during which persons go through physical also social modifications, along with different engagements of behavior, emotion, reproductive, socioeconomical and learning fields. Several researches have concentrated on the mental health of medical student as their college is believed to be a time of important psychological difficulty for doctors who are under training. Some parts of training might have inadvertent negative impact on their emotional also mental wellbeing. Those researches have reported that there is increase prevalence percentage of psychological illness, such as anxiety within medical trainees. And also, people assume that non-medical colleges are easier than

medical colleges and there is less anxiety and stress (Alvi et al., 2010; Ngo-Thi et al., 2021).

The American Psychological Association typifies anxiety and stress concluded emotional state of tension, worried thoughts, and physical fluctuations. Anxiety is more linked to autonomic stimulation, skeletal muscle tautness and situational complications, though stress is more correlated to irritability and trouble relaxing (Liu et al., 2021). Anxiety illness is the most common kind of emotional disorder. According to the APA (American psychological association), females are more likely affected than males (McLean et al., 2011). Students at higher education (such as in university) are in risk for several stressful experiences throughout their learning and often they must cope with this situation on their own. Studies showed that anxiety, stress and depression are more likely to occur in the medical community than the non-medical and general population. As future doctor's mental wellbeing of the medical students is very significant issue and we should consider it seriously. Improvements in medical education, reorganization of present mental health services for students depending on their need and follow up persons who are at high risk could help in protection and improvement of their mental health (Quek et al., 2019). Study in Wah Cantt, Pakistan from 2007-2008 study showed that median age was 21.4 years and female predominance n=202 (72.4%). Anxiety is present within n=133(47.7%) and depression was present in n=98 (35.1%) and both depression and anxiety were found in n=68 (24.3%) of the total students' number (Mumford et al., 197).

Another study in Karachi, Pakistan 2006 interviewed 142 students of Medical College. The student mean age is 21.3 years. Most of those (59%) are females. A huge prevalence of depression and anxiety approximately (70%) was found (Khan et al., 2006). Another study was done on students of University Malaysia Pahang, a survey involved 770 students to identify sources of anxiety and the results showed 5 main sources which are exam anxiety, presentation anxiety, mathematic anxiety, social anxiety and language anxiety (Bayram et al., 2008). Another study was done to determine prevalence of depression and anxiety in 2015 at university of Santa Catarina. The study included 346 medical students and simple random sampling was used. The results indicate that the prevalence of anxiety was 35.5% and depression 32.8% among medical students and it was higher among females (Iqbal et al., 2015).

Other study in 2015 that done by Bibi Kulsoom Department of Biochemistry, Alfaisal University, Riyadh, Saudi Arabia and Nasir Ali Afsar Department of Pharmacology, College of Medicine, Alfaisal University, Riyadh, Saudi Arabia on All 575 medical students across the 5 years of study that show A total of 76.8% and 74.9% of students participated in pre-and post-examination groups, respectively. Prevalence of depression, anxiety, and stress was high (43%, 63%, and 41%, respectively) which reduced (to 30%, 47%, and 30%, respectively) to some extent after examinations (Kulsoom et al., 2015).

Objectives

To explore and compare the prevalence of anxiety among medical and non-medical students in Al Majmaah University, Kingdom of Saudi Arabia (KSA)

2. METHODOLOGY

Study design

The study design is cross sectional comparative study to find out the prevalence of anxiety among medical and non-medical students at Majmaah University in Majmaah city, Saudi Arabia.

Study area

The study was conducted in Majmaah University, which is located about 180Km north of Riyadh, its area is about 30000km^2, the population is about 133,000 persons, most common economic activities there are animal grazing and agriculture. Majmaah University was established in 24th of August in 2009, it has 13 different colleges and the number of students in medical college is around 350.

Study population

Both male and female medical students of 2nd to 5th year of Majmaah university were included and students from college of education of 2nd to 4th year of Al Majmaah University were included as non-medical students. Students of preparatory year, tutors and college staff were excluded.

Study duration

The study was carried out during the academic year 2019/2020. Data collected during the period from 1 December, 2019 to 31 March, 2020.

Sampling

Sample size

The sample size of this study has been calculated by the following formula:

$n = (Z^2 \times pq)/d^2 = (Z^2 P(1-P))/d^2$

(Where, n= Sample size, Z = Standard deviate, P= Prevalence, Q= 1-p, d= error accepted)

The total sample was 310

Sample technique

The sample was a multistage cluster sample Colleges were clustered as medical and non-medical from each cluster we selected males and females proportional to their number each participant was selected randomly. 155 students were medical (100 were male, 55 were female) and 155 were non-medical (100 were male, 55 were female)

Data collection

Data was collected by beck anxiety inventory questionnaire which was previously used in similar study design. These variables were added: Gender, GPA, year, income, maternal status, living, and regularity with original batch and college.

Data analysis

The Data was analyzed by computer using SPSS statistical software version 25.

Ethical concern

Ethical approval was obtained from ethical committee of Majmaah University, we informed the participants about the aim of the study, the confidentiality was preserved, and the participation was voluntary.

3. RESULTS

Table 1 shows that males were 199 (64.2%) and females were 111(35.8%). The family income was less than 2500 in 16 (5.2%) students and 2500-less 5000 were 13 (4.2%) students and 5000-less than 7500 were 23 (7.4%) students and 210 (67.7%). 34 (11%) of the students were married and the other 276 (89%) were single. The living status for those who live with family was 177 (57.1%) and for those who live without their families were 133 (42.9%). Table 2 shows that GBA, most of the students 125 (40.3%) were under 4-less than 4.5 category and 82 students (26.5%) were 3-less than 4 and 68 (21.9%) students were more than 4.5 and 30 students (9.7%) were 2-3 and only 5 (1.6) students were less than 2. Being regular with the batch the majority of student were regular which is 242 (78.1%) and 68 (21.9%) of them were not regular. Regarding Number of years in college those who spent one year were 78(25.2%) students and those who spent 2-3 years were 158(51%) students and those who spent 4 or more years were 74(23.9%) students. The college, Medical students were 155(50%) and non-medical students were 155(50%).

Table 1 Socio-demographic characters

	Frequency	Percent
Gender		
Male	199	64.2
Female	111	35.8
Total	310	100.0
Family income		
less than 2500	16	5.2
2500-less 5000	13	4.2
5000-less than 7500	23	7.4
7500-10000	48	15.5
more than 10000	210	67.7

Total	310	100.0
Marital status		
Single	276	89.0
Married	34	11.0
Total	310	100.0
Living with family		
Yes	177	57.1
No	133	42.9
Total	310	100.0

Table 2 University information

	Frequency	Percent
GPA		
less than 2	5	1.6
2-3	30	9.7
3-less than 4	82	26.5
4-less than 4.5	125	40.3
more than 4.5	68	21.9
Total	310	100.0
Being regular with the batch		
Regular	242	78.1
Irregular	68	21.9
Total	310	100.0
Number of years in college		
1	78	25.2
2-3	158	51.0
4 or more	74	23.9
Total	310	100.0
The college		
Medical	155	50.0
non-medical	155	50.0
Total	310	100.0

Table 3 shows the signs and symptoms of anxiety among the affected students. For those who selected not at all, it was highly seen in faint, fear of dying and difficulty in breathing which accounts for 289(93.2%), 250(80.6%), 214(69%) respectively. About mildly, but it did not bother me much it was higher in numbness which is 131 (42.3%). Regarding moderately, it was not pleasant at times, it was higher in unable to relax 77 (24.8%) for it bothered me a lot, it was higher in nervous 52 (16.8%). Table 4 and figure 1, shows the result of the student categories after using beck anxiety inventory. For low anxiety there were 245 (79%) of students, for moderate anxiety there were 37 (11.9%) of students, for concerning level of anxiety there were 28 (9%) of students. Table 5 shows that students with low anxiety level were 245, 162 (66.1%) were males while 83 (33.9%) were females. Students with moderate anxiety level were 37, 19 (51.4%) were males while 18 (48.6%) were females. Students with concerning level of anxiety were 28, 18 (64.3%) males while 10 (35.7%) were females. The association is not statistically significant.

Table 3 The signs and symptoms of anxiety

Sings / symptoms	not at all	Mildly, but it did not bother me much	moderately it was not pleasant at times	it bothered me a lot	Total
Numbness or tingling	128 (41.3%)	131 (42.3%)	33 (10.6%)	18 (5.8%)	310 (100%)
Feeling hot	191 (61.6%)	76 (24.5%)	31 (10%)	12 (3.9%)	310 (100%)
Wobbliness in legs	166 (53.5%)	75 (24.2%)	53 (17.1%)	16 (5.2%)	310 (100%)
Unable to relax	129 (41.6%)	62 (20%)	77 (24.8%)	42 (13.5%)	310 (100%)
Fear of worst happening	147 (47.4%)	73 (23.5%)	44 (14.2%)	46 (14.8%)	310 (100%)
Dizzy or lightheaded	195 (62.9%)	90 (29%)	2 (0.6%)	23 (7.4%)	310 (100%)
Heart pounding / racing	153 (49.4%)	100 (32.3%)	40 (12.9%)	17 (5.5%)	310 (100%)
Unsteady	176 (56.8%)	54 (17.4%)	51 (16.5%)	29 (9.4%)	310 (100%)
Terrified or afraid	155 (50%)	66 (21.3%)	55 (17.7%)	34 (11%)	310 (100%)
Nervous	77 (24.8%)	111 (35.8%)	70 (22.6%)	52 (16.8%)	310 (100%)
Feeling of choking	202 (65.2%)	64 (20.6%)	30 (9.7%)	14 (4.5%)	310 (100%)
Hands trembling	181 (58.4%)	74 (23.9%)	47 (15.2%)	8 (2.6%)	310 (100%)
Shaky / unsteady	192 (61.9%)	30 (9.7%)	55 (17.7%)	33 (10.6%)	310 (100%)
Fear of losing control	188 (60.6%)	23 (7.4%)	61 (19.7%)	38 (12.3)	310 (100%)
Difficulty in breathing	214 (69%)	56 (18.1%)	31 (10%)	9 (2.9%)	310 (100%)
Fear of dying	250 (80.6%)	21 (6.8%)	13 (4.2%)	26 (8.4%)	310 (100%)
Scared	211 (68.1%)	51 (16.5%)	33 (10.6%)	15 (4.8%)	310 (100%)
Indigestion	178 (57.4%)	40 (12.9%)	65 (21%)	27 (8.7%)	310 (100%)
Faint / lightheaded	289 (93.2%)	10 (3.2%)	11 (3.5%)	0 (0%)	310 (100%)
Face flushed	213 (68.7%)	39 (12.6%)	37 (11.9%)	21 (6.8%)	310 (100%)
Hot / cold sweats	113 (36.5%)	118 (38.1%)	43 (13.9%)	36 (11.6%)	310 (100%)
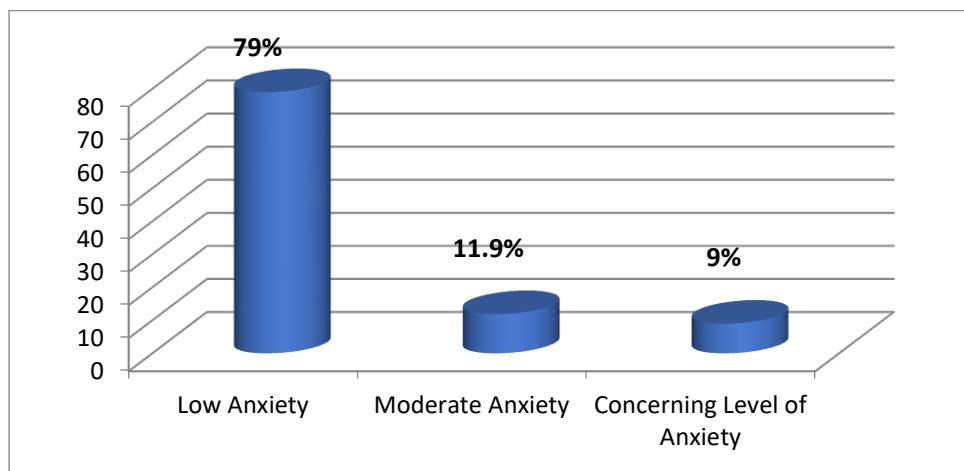
Figure 1 Level of Anxiety among the studied students

Table 4 Level of Anxiety

Level of Anxiety	Frequency	Percent
Low Anxiety	245	79.0
Moderate Anxiety	37	11.9
Concerning Level of Anxiety	28	9.0
Total	310	100.0

Table 5 The relation between Gender and level of Anxiety

Gender/Anxiety level	Low Anxiety	Moderate Anxiety	Concerning Level of Anxiety	Total
Male	162 (66.1%)	19 (51.4%)	18 (64.3%)	199 (64.2%)
Female	83 (33.9%)	18 (48.6%)	10 (35.7%)	111 (35.8%)
Total	245 (100%)	37 (100%)	28 (100%)	310 (100%)

(P=0.205)

Table 6 shows that students with low anxiety level were 245. Eleven (4.5%) of them have family income less than 2500, 8 (3.3%) of them have family income between 2500 – 5000, 16 (6.5%) of them have family income between 5000 – 7500, 36 (14.7%) of them have family income between 7500 – 10000 and 174 (71%) of them have family income more than 10000. students with moderate anxiety level were 37. Three (8.1%) of them have family income less than 2500, 2 (5.4%) of them have family income between 2500 – 5000, 6 (16.2%) of them have family income between 5000 – 7500, 8 (21.6%) of them have family income between 7500 – 10000 and 18 (48.6%) of them have family income more than 10000. Students with concerning anxiety level were 28. Two (7.1%) of them have family income less than 2500, 3 (10.7%) of them have family income between 2500 – 5000, 1 (3.6%) of them have family income between 5000 – 7500, 4 (14.3%) of them have family income between 7500 – 10000 and 18 (64.3%) of them have family income more than 10000. The association is not statistically significant.

Table 7 shows that 217 (88.6%) of students with low anxiety level were single while 28 (11.4%) were married, 33 (89.2%) of students with moderate anxiety level were single while 4 (10.8%) were married, 26 (92.9%) students with concerning level of anxiety single while 2 (7.1%) were married. The association is not statistically significant. Table 8 shows that students with low anxiety level were 245, One hundred and forty-three (58.4%) of them were living with their families while 102 (41.8%) were not. Students with moderate anxiety level were 37, nineteen (51.4%) of them were living with their families while 18 (48.6%) were not. Students with concerning level of anxiety were 28, fifteen (53.6%) of them were living with their families while 13 (46.4%) were not. The association is not statistically significant.

Table 6 The relation between Family income and level of Anxiety

Family income/Anxiety level	Low Anxiety	Moderate Anxiety	Concerning Level of Anxiety	Total
less than 2500	11 (4.5%)	3 (8.1%)	2 (7.1%)	16 (5.2%)
2500-less 5000	8 (3.3%)	2 (5.4%)	3 (10.7%)	13 (4.2%)
5000-less than 7500	16 (6.5%)	6 (16.2%)	1 (3.6%)	23 (7.4%)
7500-10000	36 (14.7%)	8 (21.6%)	4 (14.3%)	48 (15.5%)
more than 10000	174 (71%)	18 (48.6%)	18 (64.3%)	210 (67.7%)
Total	245 (100%)	37 (100%)	28 (100%)	310 (100%)

(P=0.074)

Table 7 The relation between marital status and level of Anxiety

Marital status /Anxiety level	Low Anxiety	Moderate Anxiety	Concerning Level of Anxiety	Total
single	217 (88.6%)	33 (89.2%)	26 (92.9%)	276 (89%)
married	28 (11.4%)	4 (10.8%)	2 (7.1%)	34 (11%)
Total	245 (100%)	37 (100%)	28 (100%)	310 (100%)

(P=0.895)

Table 8 The relation between Living with family and level of Anxiety

Living with family/Anxiety level	Low Anxiety	Moderate Anxiety	Concerning Level of Anxiety	Total
Yes	143 (58.4%)	19 (51.4%)	15 (53.6%)	177 (57.1%)
No	102 (41.8%)	18 (48.6%)	13 (46.4%)	133 (42.9%)
Total	245 (100%)	37 (100%)	28 (100%)	310 (100%)

(P=0.653)

Table 9 shows that students with low anxiety level were 245. Four (1.6%) of them have GPA less than 2, 22 (9%) of them have GPA between 2 – 3, 70 (28.6%) of them have GPA between 3 – 4, 100 (40.8%) of them have GPA between 4 – 4.5 and 49 (20%) of them have GPA more than 4.5. Students with moderate anxiety level were 37. None of them have GPA less than 2, 3 (8.1%) of them have GPA between 2 – 3, 7 (18.9%) of them have GPA between 3 – 4, 15 (40.5%) of them have GPA between 4 – 4.5 and 12 (32.4%) of them have GPA more than 4.5. Students with concerning anxiety level were 28. One (3.6%) of them have GPA less than 2, 5 (17.9%) of them have GPA between 2 – 3, 5 (17.9%) of them have GPA between 3 – 4, 10 (35.7%) of them have GPA between 4 – 4.5 and 7 (25%) of them have GPA more than 4.5. The association is not statistically significant.

Table 10 shows that 188 (76.7%) of students with low anxiety level were regular with their batches while 57 (23.3%) were not, 30 (81.1%) of students with moderate anxiety level were regular with their batches while 7 (18.9%) were not and 28, 24 (85.7%) students with concerning level of anxiety were regular with their batches while 4 (14.3%) were not. The association is not statistically significant. Table 11 shows that 64 (26.1%) of students with low anxiety level spent 1 year in the college, 127 (51.8%) of them spent 2 – 3 years in the college and 54 (22%) of them spent 4 years or more in the college. Students with moderate anxiety level, 6 (16.2%) of them spent 1 year in the college, 18 (48.6%) of them spent 2 – 3 years in the college and 13 (35.1%) of them spent 4 years or more in the college. Students with concerning anxiety level, 8 (28.6%) of them spent 1 year in the college, 13 (46.4%) of them spent 2 – 3 years in the college and 7 (25%) of them spent 4 years or more in the college. The association is not statistically significant.

Table 12 and figure 2, show that Students with low anxiety level were 245. One hundred and twenty four (50.6%) of them were in medical college while 121 (49.4%) were in non-medical college. Students with moderate anxiety level were 37. Sixteen (43.2%) of them were in medical college while 21 (56.8%) were in non-medical college. Students with concerning level of anxiety were 28. Fifteen (53.6%) of them were in medical college while 13 (46.4%) were in non-medical college. The association is not statistically significant.

Table 9 The relation between GPA and level of Anxiety

GPA/Anxiety level	Low Anxiety	Moderate Anxiety	Concerning Level of Anxiety	Total
less than 2	4 (1.6%)	0 (0%)	1 (3.6%)	5 (1.6%)
2-3	22 (9%)	3 (8.1%)	5 (17.9%)	30 (9.7%)
3-less than 4	70 (28.6%)	7 (18.9%)	5 (17.9%)	82 (26.5%)
4-less than 4.5	100 (40.8%)	15 (40.5%)	10 (35.7%)	125 (40.3%)
more than 4.5	49 (20%)	12 (32.4%)	7 (25%)	68 (21.9%)
Total	245 (100%)	37 (100%)	28 (100%)	310 (100%)

(P=0.396)

Table 10 The relation between Being regular with batch and level of Anxiety

Regularity with the batch/Anxiety level	Low Anxiety	Moderate Anxiety	Concerning Level of Anxiety	Total
Regular	188 (76.7%)	30 (81.1%)	24 (85.7%)	242 (78.1%)
Irregular	57 (23.3%)	7 (18.9%)	4 (14.3%)	68 (21.9%)
Total	245 (100%)	37 (100%)	28 (100%)	310 (100%)

(P= 0.543)

Table 11 The relation between numbers of years in the college and level of Anxiety

Number of years in the college/Anxiety level	Low Anxiety	Moderate Anxiety	Concerning Level of Anxiety	Total
1	64 (26.1%)	6 (16.2%)	8 (28.6%)	78 (25.2%)
2-3	127 (51.8%)	18 (48.6%)	13 (46.4%)	158 (51%)
4 or more	54 (22%)	13 (35.1%)	7 (25%)	74 23.9%)
Total	245 (100%)	37 (100%)	28 (100%)	310 (100%)

(P=0.418)

Table 12 The relation between the college and level of Anxiety

The college/Anxiety level	Low Anxiety	Moderate Anxiety	Concerning Level of Anxiety	Total
Medical	124 (50.6%)	16 (43.2%)	15 (53.6%)	155 (50%)
non-medical	121 (49.4%)	21 (56.8%)	13 (46.4%)	155 (50%)
Total	245 (100%)	37 (100%)	28 (100%)	310 (100%)

(P=0.645)
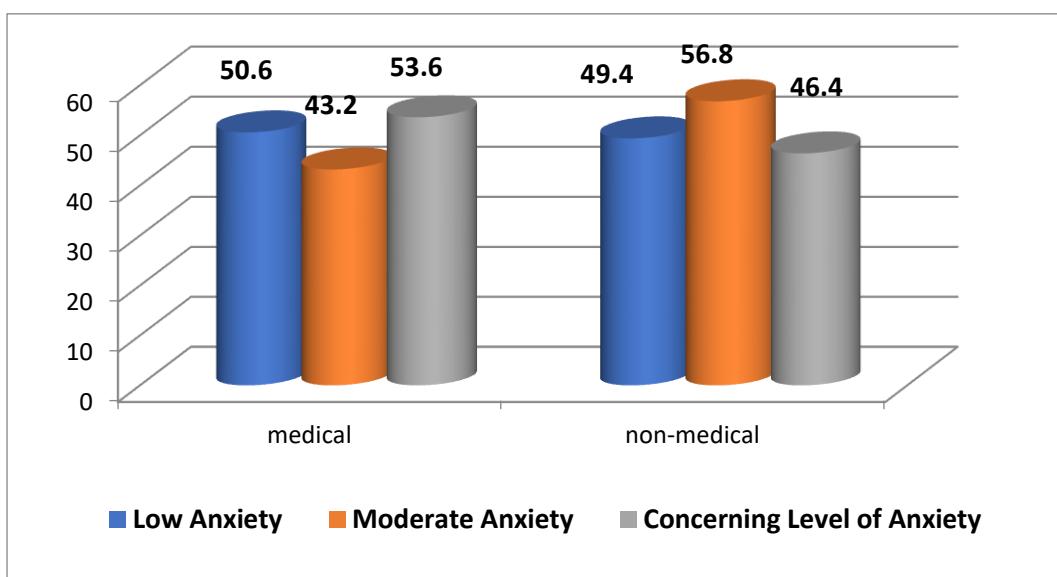
Figure 2 Anxiety level in medical and non-medical students

4. DISCUSSION

The study shows lower prevalence of anxiety among student in Majmaah in contrast to previous studies. In our study we assess the anxiety among medical and non-medical students while considering many aspects such as gender, income, accommodations, marital status, university year and GPA. Previous studies show high prevalence of anxiety in many different countries for both medical and non-medical student. The current study showed that most of the students (79%) were suffering from low level of anxiety, while the moderate anxiety 10.3% and concerning level of anxiety show 9.7%. Students with moderate anxiety level were 37, 19 (51.4%) were males while 18 (48.6%) were females. Students with concerning level of anxiety were 28, 18 (64.3%) males while 10 (35.7%) were females. This is inconsistent to the American psychological association, which stated that females are more likely affected than males (McLean et al., 2011). Another study was done to determine prevalence of depression and anxiety in University of Santa Catarina. The results indicate that the prevalence of anxiety was 35.5% among medical students but the prevalence was higher among females (Iqbal et al., 2015). A Study in Pakistan showed that anxiety is present in 47.7% of the students (Mumford et al., 197). Another study in Karachi, Pakistan a huge prevalence of depression and anxiety approximately (70%) was found in students of Medical College (Khan et al., 2006). In Alfaisal University, Riyadh, Saudi Arabia, the prevalence of anxiety was high 63%, which reduced to 47% after examinations (Kulsoom et al., 2015).

In our study, the signs and symptoms of anxiety among the affected students was for those who selected not at all, it was highly seen in faint, fear of dying and difficulty in breathing which accounts for 289 (93.2%), 250 (80.6%), 214 (69%) respectively. About mildly, but it did not bother me much it was higher in numbness which is 131 (42.3%) Regarding moderately, it was not pleasant at times, it was higher in unable to relax 77 (24.8%). For it bothered me a lot, it was Numbness or tingling in 5.8%, feeling hot in 3.9%, unable to relax in 13.5%, Fear of worst happening in 14.8%, terrified or afraid in 11%, nervous in 16.8%, feeling of choking in 4.5%, unsteady 10.6%, fear of losing control in 12.3%, difficulty in breathing in 2.9%, fear of dying in 8.4%, indigestion in 8.7%, face flushed in 6.8% and hot / cold sweats in 11.6% but was higher in nervous 52 (16.8%). While the ASA, characterizes anxiety and stress by; emotional state of tension, worried thoughts, and physical fluctuations but Anxiety is more accompanied with autonomic stimulation, skeletal muscle tautness and situational complications, though stress is more correlated to irritability and trouble relaxing (Liu et al., 2021).

Concerning the difference between anxiety level in medical and non-medical students; low anxiety was 50.6% in medical compared to 49.4% in non-medical, moderate anxiety in medical students was 43.2% and 56.8% in non-medical, severe was 53.6% in medical and 46.4% in non-medical respectively. In a cross-sectional study, in Umm Al-Qura University, Makkah, Saudi Arabia, approximately 53% of the participants were found to be suffering from anxiety. The analyses showed that the non-medical students revealed a significantly high anxiety score equated to the medical students (p=0.002). Family struggles were a mutual risk factor for the studied psychological disturbances. Female sex and travelling distance from houses to college were important interpreters of depression and anxiety (Mirza et al., 2021).

5. CONCLUSION

In summary, from our study we concluded that, there is very high prevalence of low anxiety among student (79%) more than 3\4 of the students. Half of the students are medical and the other half is non-medical students. (11.9%) of students have Moderate Anxiety, (43.2%) of them are in medical college while the rest are in non-medical college. and (9%) of students have Concerning Level of Anxiety, (53.6%) of them are in medical college while the rest are in non-medical college.

Limitations of the study

In This study we face some limitations, because some students refuse to participate in the study.

Recommendations

Medical students and students in general need to be educated about the risk of anxiety and the major consequences associated with it. We advise the university to ensure that the stress level among students is in the normal range, identify the major causes of it such as exams, and reduce these causes. Based on our study results, we advise the students to be in healthy life style to avoid stressful lifestyle.

Informed consent

Informed consent was obtained from all participants included in the study.

Ethical considerations

Prior to the start of the study, ethical approval was obtained from the Deanship of Scientific Research with approval No. MUREC Dec.24/COM-2018/13.

Author Contributions

All the authors contributed evenly with regards to data collecting, analysis, drafting and proofreading the final draft.

Conflicts of interest

The authors declare that they have no conflict of interest.

Data and materials availability

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

REFERENCES AND NOTES

1. Alvi T, Assad F, Ramzan M, Khan FA. Depression, anxiety and their associated factors among medical students. J Coll Physicians Surg Pak 2010; 20(2):122-6.

2. Bayram N, Bilgel N. The prevalence and socio-demographic correlations of depression, anxiety and stress among a group of university students. Soc Psychiatry Psychiatr Epidemiol 2008; 43(8):667-72.

3. Iqbal S, Gupta S, Venkatarao E. Stress, anxiety and depression among medical undergraduate students and their socio-demographic correlates. Indian J Med Res 2015; 141(3):354-7.

4. Khan MS, Mahmood S, Badshah A, Ali SU, Jamal Y. Prevalence of depression, anxiety and their associated factors among medical students in Karachi, Pakistan. J Pak Med Assoc 2006; 56(12):583-6.

5. Kulsoom B, Afsar NA. Stress, anxiety, and depression among medical students in a multiethnic setting. Neuropsychiatr Dis Treat 2015; 11:1713-22.

6. Liu Y, Pan H, Yang R, Wang X, Rao J, Zhang X, Pan C. The relationship between test anxiety and emotion regulation: the mediating effect of psychological resilience. Ann Gen Psychiatry 2021; 20(1):40.

7. McLean CP, Asnaani A, Litz BT, Hofmann SG. Gender differences in anxiety disorders: prevalence, course of illness, comorbidity and burden of illness. J Psychiatr Res 2011; 45(8):1027-35.

8. Mirza AA, Milaat WA, Ramadan IK, Baig M, Elmorsy SA, Beyari GM, Halawani MA, Azab RA, Zahrani MT, Khayat NK. Depression, anxiety and stress among medical and non-medical students in Saudi Arabia: An epidemiological comparative cross-sectional study. Neurosciences (Riyadh) 2021; 26(2):141-151.

9. Mumford DB, Saeed K, Ahmad I, Latif S, Mubbashar MH. Stress and psychiatric disorder in rural Punjab. A community survey. Br J Psychiatry 1997; 170:473-8.

10. Ngo-Thi TT, Tran-Thien GP, Dang-Thi NT, Tran-Chi VL. "Medical Student Syndrome" in Vietnamese psychology students. Medical Science, 2021;25(111);1061-1070

11. Quek TT, Tam WW, Tran BX, Zhang M, Zhang Z, Ho CS, Ho RC. The Global Prevalence of Anxiety among Medical Students: A Meta-Analysis. Int J Environ Res Public Health 2019; 16(15):2735.