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MENTAL DISORDER AMONG MEDICAL STUDENTS IN ALMAAREFA UNIVERSITY

Alhanoof Abdulhakeem Hazazi, Alaa sami Khwiter, Deema Ghalib Almutairi, Wedd Ahmad Alnufaiee, Nouf Fahad Abdulwahed, *Aseel Ghassan Odeh, Salma Sultan Alhajri, Mai Fahad Alassaf, Almaha Bassam Albalawi and Asmaa faisal Alabbadi

Saudi Arabia.

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***Corresponding Author: Aseel Ghassan Odeh**

Saudi Arabia.

ABSTRACT

The mental health of prospective medical students has been associated with ethnic group, extracurricular activity, parents' educational level and previous academic achievement in some studies but not in others. Depression is a common mental disorder that causes people to experience depressed mood, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, low energy, and poor concentration. The stresses that begin in medical school tend to continue throughout the years of practicing medicine. The findings of the study will help provide predictors that can be modified in order to prevent or minimize such mental disorders among them. The aim of study is to Identify the common mental health disorders among medical students in Almaarefa colleges for science and technology (MCST) in Al-Diriya. This study will be of an observational descriptive cross- sectional design. The data will be collected from 255 medical students excluded the preparatory year students by non-probability quota sampling technique. It will be an electronic questionnaire prepared especially for it, written in English. The link will be distributed via MCST Moodle. It is constructed of 4 sections, first section is about demographic data, the second is about depression which includes patient health questionnaire PHQ-9, the third is about anxiety westside test and the fourth section which is about eating disorders, SCOFF testing scale was used. All data will be cleaned, coded, entered and analyzed using PSPP. The results will be expressed in tables and graphs as frequencies and percentages. Suitable statistical tests will be used, confidentiality will be intact.

KEYWORDS: This study will be of an observational descriptive cross- sectional design.

INTRODUCTION

Background

Understanding of the definitions of wellness and illness has changed from the mid-20th century to modern times, moving from a diagnosis- focused to a person-focused definition of mental illnesses, and from an "absence of disease" model to one that stresses positive psychological function for mental health'.[1] Medical school is inherently a stressful and challenging academic experience, which may make medical students vulnerable to depression, anxiety, and eating disorders.[2] Eating disorders include intense emotions and abnormal behaviors around food and weight. They are associated with serious emotional and physical problems that can have life-threatening consequences. Despite the fact that eating disorders affect four times as many people as breast cancer, most people are not knowledgeable about eating disorders, their causes, consequences, or the warning signs that can indicate that someone needs help. There are several eating disorders such as : Anorexia Nervosa and Bulimia Nervosa.[3] Anxiety is a general term for several disorders that cause nervousness, fear, apprehension, and worrying. These disorders affect how students feel and behave and can cause physical symptoms. Mild anxiety is vague and unsettling, while severe anxiety can seriously affect day-to-day living.[4] Patterns of coping prior to medical school, as well as personality traits, support systems, and many other factors, affect who will experience stress and their ability to deal with it.[2] proposed that stress in doctors is a product of the interaction between the demanding nature of their work and their often obsessive, conscientious, and committed personalities. In the face of extremely demanding work, a subjective lack of control and insufficient rewards are powerful sources of stress.[5]

Problem STATEMENT

The mental health of prospective medical students has been associated with ethnic group, extracurricular activity, parents' educational level and previous

academic achievement in some studies but not in others.[6] Depression is a common mental disorder that causes people to experience depressed mood, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, low energy, and poor concentration.[7] Furthermore, Eating Disorders affect more than 10 million people in the United States and those rates are continuing to climb.[3]

Importance of the study

Studies that investigate the mental health of physicians in practice have shown that the stresses that begin in medical school tend to continue throughout the years of practicing medicine(2).The findings will help provide predictors what can be modified in order to prevent or minimize such mental disorders in medical students.

Hypothesis

Academic performance is expected to be associated with mental health disorders.

General Objective

To Identify the common mental health disorders among medical students in Almaarefa colleges for science and technology (MCST)

Specific Objectives

1. To identify the types and grades of the mental disorders (Depression, Anxiety and eating disorders) among medical students.
2. To identify the factors that are associated with mental health disorders.
3. To demonstrate the relation between mental health disorders and student academic performance.

Literature Review

Fernanda, 2016 in Brazil conducted a study to evaluate personal and institutional factors related to depression and anxiety prevalence of students from 22 Brazilian medical schools. The research carried out 1,152 of sample. The results showed that the depressive symptoms were 41 %, state-anxiety 81.7 % and trait-anxiety in 85.6 %. There was a positive relationship between levels of state ($r = 0,591$, $p < 0.001$) and trait ($r = 0,718$, $p < 0.001$) anxiety and depression scores. He concluded that there was a high prevalence of anxiety and depressive symptoms in the study participants.[1]

A study was conducted by Baldassin in Brazil in 2008. The aim of the study was to investigate the characteristics of depressive symptoms among medical students and to survey possible correlations with several risk factors. The sample size was 481. There were 184 (38.2%) students with depressive symptoms. The internship period resulted in the highest BDI scores in comparison to both the basic ($p< 0.001$) and intermediate ($p< 0.001$) periods. Affective, cognitive, and somatic clusters were significantly higher in the internship period. An exploratory analysis of possible risk factors showed that females ($p = 0.020$) not having a parent who practiced medicine ($p = 0.016$), and the internship period ($p = 0.001$) were factors for the development of depressive symptoms. He concluded that There is a high prevalence towards depressive symptoms among medical students, particularly females, in the internship level, mainly involving the somatic and affective clusters, and not having a parent who practiced medicine.[2]

A study conducted by Ngasa in Cameroon in 2017. The aim of the study was to determine the prevalence and predisposing factors associated with depression among medical students in Cameroon (preclinical and clinical), also evaluated the impact of depression on self-reported academic performance. The research was carried out on 340 medical students. About a third of them (30.6%, 95% CI: 22.8–36.7) were found to have major depressive disorder (Patient Health questionnaire Score ≥ 10). With regards to the severity of depression, 214 (34.6%), 163 (26.4%), 21 (3.4%), and 5 (0.80%) students were classified as having mild, moderate, moderately severe and severe depression respectively. The presence of a chronic disease (OR: 3.70, 95% CI: 1.72–7.94, ($p = 0.001$), major life events (OR: 2.17, 95%CI: 1.32–3.58, $P = 0.002$), female gender (OR: 1.59,95% CI: 1.06–2.37, $p = 0.024$) and being a student at the clinical level (OR: 4.26, 95% CI: 2.71–6.71, $p < 0.001$) were independently associated with depression. There was no association between depression and self-reported academic performance, (OR: 1.2, 95% CI: 0.9–1.7, $p = 0.080$). He conducted the prevalence of major depressive disorders among medical students in Cameroon is high and is associated with the presence chronic disease, major life events, female gender and being a student at the clinical level.[3]

A study conducted by Heinen in Germany in 2017. The aim of that study was to test the applicability of a general population-based stress model in a sample of medical students. The sample size was in 321 first year medical students. He found that in January 2014, all 385 first year medical students admitted in autumn 2013, were invited to participate in the study, of which 360 students completed the questionnaire. Due to missing values, the final sample included 321 subjects yielding an 83% response rate of all first year medical students of the year 2013 cohort at University Medical Center Hamburg-Eppendorf (60% women, mean age 22 years, 30 with migration background). The sociodemographic characteristics of the sample In comparison to German surgeons in a study of Mache the students in our sample ($p < .001$). He concluded that the students reported higher levels of perceived stress, anxiety and depression than the general German population validation samples or students in earlier studies. It's observed that the amount of perceived stress in medical students was buffered by joy, optimism and self-efficacy, and determined levels of anxiety and depression.[4]

A study was conducted by Kumar in India in 2017. The aim of that study was to assess the prevalence of

depression and its relation to stress level and other factors among medical students. The sample size was 330 medical students, the overall prevalence of depression was found to be 48.4%. According to the cutoff scores, (51.6%) students scored as normal,(33.6%) as mild, (13.5%)as moderate, (0.7%)as severe, and(0.7%) students scored as very severe depression. Depression was significantly less among those with mild stress (OR=0.010) and moderate stress level (OR=0.099) compared to severe stress level and those without interpersonal problems (OR=0.448). He concluded that the symptoms of depression are common among medical students. Furthermore, prevalence was found to be more among those with interpersonal problems compared to those without interpersonal problems.[5]

Yadav, 2017 in India, conducted a study that aimed to assess the presence of anxiety symptoms in students in pre-examination period. The study was carried out on 619 children. Total of 170 children (27.5%) had anxiety symptoms, similarly the various subgroups had increased frequency compared to the known prevalence in this age group. Age (p = 0.023), years spent in the current school (p = 0.006), living with parents (p = 0.033), presence of domestic stressors (p = 0.026), and grade deterioration (p =0.001), all were significantly associated with increased frequency of these symptoms. To conclude this study attempts to give evidence of increased anxiety symptoms, during pre-examination phase, compared to the reported prevalence in this age group.[6]

Saravanan, 2014 in Malaysia presented a study aimed to identify the prevalence of depression and anxiety among medical students attending a private university and to examine differences according to participants' gender, year of study, and stage of training. Among 358 medical students level of depression was reported by 34.9% of the sample while anxiety was reported by 44% of the sample. No significant relationship between gender, year of study, or stage of training was found with depression. There was a significant relationship between gender and anxiety (p = 0.01) and no relationship was found between year of study or stage of training and anxiety. This study concluded that female students experienced more anxiety compared to male students. Stressors were the predictor of depression and anxiety. Universities have to consider the stressors due to frustration, pressure, and conflict and their physiological and emotional reactions to stressors.[7]

A study was carried out by Adhikari in Nepal in 2017. The aim of the study was to determine the prevalence of various mental disorders among medical students of Nepal. The sample size was 370 medical students. The percentage rates were 29.2% (95% CI, 24.4% – 34.3%) depression, 4.1% (95% CI, 2.0% – 6.2%) panic syndrome, 5.8% (95% CI, 3.4% – 8.3%) anxiety syndrome. A significantly higher percentage of preclinical students reported depression compared to clinical students (33% vs 22.4%; X2 = 4.344, P = 0.037). In conclusion, he found that there was a high prevalence of poor mental health among medical students of Nepal.[8]

A study was conducted by Rehman in Pakistan in 2018. The aim of that study was to find an association between self-reported academic performance with different socio-demographic factors, health behaviours and mental health amongst university students. The sample size was 813 respondents, 334(41.1%) were males and 479(58.9%) females. The findings showed significant relation to academic performance of the students (p<0.05). The item 'troubling in mind' was highly related to academic performance followed by feelings of 'loneliness' and 'depression'.Moreover,(73.7%) students were of medical discipline,(7.5%) engineering and,(18.8%) were in other fields. Overall,(15.5%) subjects reported excellent,(29.8%) very good,(38.1%) good,(12.3%) satisfactory and (4.3%) not satisfactory academic performance. However, residential status of students played a significant role in this regard (p=0.011). He concluded that a constructive association existed among healthy behaviour and academic performance.[9]

A study conducted by Azad in Pakistan in 2017. The study aimed to determine the frequency of anxiety and depression in medical students of Foundation University Medical College (FUMC), Islamabad. The sample size was 150 medical students. Mild depression was seen in 37.46% and moderate to severe depression was observed in 14% students. About 19% of the students had moderate to severe anxiety. In Second year students time of assessment was significantly related to depression and anxiety (p-0.000). Females had higher association with depression in final year (p-0.037). He concluded that prevalence of depression and anxiety found high among medical students in a private medical college.[10]

A study was conducted by Inam in Pakistan in 2003. The aim of the study was to assess anxiety and depression levels among medical students of a private university. The Sample size was 252. It was found out that (60%) students had anxiety and depression. Prevalence of anxiety and depression in students of 4th year, 3rd year, 2nd year and 1st year was 49%, 47%, 73% and 66% respectively. It was significantly higher in 1st year and 2nd year, as compared to 3rd and 4th year (p<0.05). He concluded that the prevalence of anxiety and depression was high among newly entered students (1st and 2nd year) as compared to students who have cleared the first professional examination (3rd and 4th year).[11]

Silva, 2017 in Portugal, published research to determine the prevalence of depression in medical students, its change during the course, if depression persists for affected students, what are the factors associated with depression. The sample size was 238. The result of depression ranged between 2.9% and 38.2% (p < 0.05).

Persistent depression cluster 19.7% presents high levels of trait-anxiety, dissatisfaction with academic ratings. An examination of burnout literature reveals that it is prevalent in medical students (28–45%), and depression and burnout seem to be closely linked. Interaction between variables associated with depression over time: emotional exhaustion: $p < 0.01$, academical inefficacy: $p < 0.05$, Learning problems: $p < 0.05$, relationship problems:,$p<0.05$, satisfaction with social activities: $p < 0.001$. In conclusion, that personal factors (anxiety traits, relationship patterns and academic burnout) are relevant for maintenance of high levels of depression during medical training.[12]

In Singapore, 2016 Puthran did study about Prevalence of depression amongst medical students. The aim of study was to identify the prevalence of depression among medical students. The research was carried out on 62728 medical students. Year 1 students had the highest rates of depression at 33.5% (95% CI 25.2–43.1%); rates of depression then gradually decreased till it reaches 20.5% (95% CI 13.2–30.5%) at Year 5. And this represented a significant decline ($p = 0.005$). There is no difference between medical students and non- medical students in the prevalence of depression. In conclusion, Depression affects almost one-third of medical students.[13]

A study was conducted by Auerbach in USA in 2017. The aim of that study was to examine the associations of mental disorders with college entry and attrition. The sample size was (n = 1,572) college students and (n = 4,178) nonstudents. One-fifth (20.3%) of college students had 12-month of Mental Disorders.83.1% of these cases had pre-matriculation onsets. Disorders with pre-matriculation onsets were more important than those with post-matriculation onsets in predicting subsequent college attrition, with substance disorders and, among women, major depression the most important such disorders. Only 16.4% of students with 12-month disorders received any 12-month healthcare treatment for their mental disorders. He concluded that the mental disorders are common among college students, have onsets that mostly occur prior to college entry, in the case of pre- matriculation disorders are associated with college attrition, and are typically untreated. Detection and effective treatment of these disorders early in the college career might reduce attrition and improve educational and psychosocial functioning.[14]

A study was conducted by Eddy in USA in 2008. The aim of this study was to examine diagnostic crossover longitudinally in anorexia nervosa and bulimia nervosa to describe the validity of the eating disorders classification system. The sample size was 216 women with a diagnosis of anorexia nervosa or bulimia nervosa were followed for 7 years. Over 7 years, women with anorexia nervosa experienced diagnostic crossover: more than half crossed between the restricting and binge eating/purging anorexia nervosa subtypes over time; one-third crossed over to bulimia nervosa but were likely to relapse into anorexia nervosa. Women with bulimia nervosa were to cross over to anorexia nervosa. He concluded that the support the longitudinal distinction of anorexia nervosa and bulimia nervosa but do not support the anorexia nervosa subtyping schema.[15]

A study conducted by Taylor in USA in 2006. The aim of that study was to determine if an Internet-based psychosocial intervention can prevent the onset of eating disorders (EDs) in young women at risk for developing EDs. The sample size was in 480 women with high weight. There was a significant reduction in Weight Concerns Scale (WCS) scores in the SB intervention group compared to the control group at post intervention ($p < 0.001$), one year ($p < 0.001$) and two years ($p <0.001$). The slope for reducing WCS was significantly greater in the treatment compared to the control group ($p = 0.023$). Over the course of follow-up, 43 participants developed subclinical or clinical EDs. Bay Area site sample with baseline compensatory behaviors, 4% of participants in the intervention group developed EDs at one year and 14.4% by two years. Rates for the comparable control group were 16% and 30.4%, respectively. He concluded that the among college-age women with high weight and shape concerns, an eight-week Internet-based cognitive-behavioral intervention can significantly reduce weight and shape concerns for up to two years and decrease risk for the onset of EDs, at least in some high-risk groups.[16]

A study was conducted by Al- saadi in Syria in 2017. The objective of the study was to investigate the prevalence and risk factors of depression, anxiety and stressamong medical students at Damascus University during the period of war. The Sample size was 350 students. The result showed Prevalence of depression, anxiety and stress was 60.6%, 35.1%, and 52.6%, respectively. Depression was more likely in females and those with “intermediate” or “insufficient” personal income. (AOR = 1.779; 95% CI 1.096, 2.889 and AOR = 3.603; 95% CI 1.875, 6.923, respectively). Anxiety was more likely in females and those with“insufficient” personal income while less likely in fifth- and sixth-year compared to second-year students (AOR = 2.292; 95% CI 1.226, 4.284). He concluded that Syrian medical students suffer from high rates of psychological distress. Females, second-year students and those with “insufficient” personal income were the most affected.[17]

A study conducted by Abdelaziz in Bahrain in 2017. The aim of the study was to examine the association between physical symptoms and depression among medical students. The sample size was 160. Depression was observed Nearly nineteen percent of the participants have moderate to severe depression, and 42.2% has moderate to severe physical symptoms. Participants reported different physical symptoms, sleep problems, 40%; lethargy, 31.9%; and headaches, 23.8%. Sleep and gastrointestinal symptoms were the most associated with depression, ($p<0.001$) and ($p< 0.05$) respectively. He

concluded that depression and physical symptoms are considerably high among medical students in Bahrain. Physical symptoms appear to be the first indication of depression.[18]

In Saudi Arabia, 2015 Kulsoom did study about stress, anxiety, and depression among medical students in a multiethnic setting: the aim was to measure depression, anxiety, and stress among medical students. Among 575 medical students, Prevalence of depression 43%, anxiety 63%, and stress 41% was high which during the exams then reduced (to 30%, 47%, and 30%, respectively) to some extent after examinations. There was a relation between year of enrollment and depression (p=0.003) students who had attended university preparatory program (UPP) had higher DASS-21 scores. Also a relation between smoking and anxiety (p=0.004) was statically significant. In conclusion, the students had high "baseline" traits of depression, anxiety, and stress, and these were higher if an examination was near, especially among Saudis and those who had attended UPP. Being smoker or female scored higher levels of "baseline" depression, anxiety, or stress. Students suggested that study burden and a busy schedule were the major reasons for their high DASS-21 scores.[19]

A study was conducted by Ibrahem in Saudi Arabia in 2013. The aim of the study was to determine the prevalence and predictors of anxiety and depression among female medical students. The Sample size was 450 medical students. The result showed that 31.8% of students were normal according to HADS-Anxiety, While 33.3% & 34.9% of students had a borderline & morbid anxiety, respectively. Regarding depression, 63.6% of students were normal according to HADS-Depression, While 21.8% & 14.7% had a border-line & morbid depression, respectively. Students who had academic failure were about twice more prone to anxiety than others (OR=2.05; 95% CI: 1.28–3.26, P=0.001) and higher rate of depression (24.6%) compared to others (13.1%). In Conclusion Medical students encountered high rates of anxiety and depression compared to others. Academic problems and major life events were the main predictors.[20]

METHODOLOGY

• Research approach

• Study design

It will be an observational descriptive cross-sectional study design (2018-2019).

• Study Area and population

The study will take place in Medical students in Almaarefa Colleges for science and Technology (MCST) in Al-Diriya, Riyadh, Kingdom of Saudi Arabia. Almaarefa Colleges is a private establishment of higher education. The colleges are medicine, pharmacy, nursing, computer science and information system population.

• Sample size and technique

The data will be collected from 255 medical students by non-probability quota sampling technique excluding the preparatory year students.

• Data needs

• Tool

The study will be based on a questionnaire that is prepared especially for it. It is constructed of 4 sections. First section is about demographic data, the second is about depression which includes patient health questionnaire PHQ-9 (0-4 = no depression, 5-9 = mild, 10-19 = moderate, 20 or more = severe). The third is about anxiety westside test, scoring key is measured by the sum of the 10 questions divided by 10 (if less than 2.5= no anxiety, 2.5-2.9 = mild anxiety, 3-3.9 = moderate, 4-5= severe). The fourth section is about eating disorders, according to SCOFF test. Those who answer 2 questions yes or more are classified with an eating disorders those who score less than two have no eating disorder.

• Data Collection Method

It will be an electronic questionnaire written in English. The link will be distributed via MCST Moodle.

• **Data analysis**: All data will be cleaned, coded, and entered using PSPP. The results will be expressed in tables and graphs as frequencies and percentages. Suitable statistical tests will be used.

• **Ethical consideration**: The protocol of the study will be reviewed and approved by the Institutional Review Boards of the Faculty of Medicine, Al- Maarefa Colleges. Permission will be taken before the participants open the questioner link. The data will be kept confidential secured to maintain the privacy. Moreover, data will only be used for this research.

RESULTS

Academic Level

	Frequency	Percent
1	2	1.8
2	5	4.4
3	25	21.9
4	17	14.9
5	9	7.9
6	7	6.1
7	22	19.3
8	10	8.8
9	12	10.5
10	1	.9
11	3	2.6
12	1	.9
Total	114	100.0

Gender

	Frequency	Percent
male	34	29.8
female	80	70.2
Total	114	100.0

Marital State

	Frequency	Percent
Single	111	97.4
Married	2	1.8
Divorced	1	.9
Total	114	100.0

Table 2: academic level * Depression.

	Mild Depression	Moderate Depression	Severe Depression	Total
1	0	0	2	2
2	0	1	4	5
3	0	4	21	25
4	2	0	15	17
5	0	1	8	9
6	0	2	5	7
7	2	10	10	22
8	0	4	6	10
9	0	3	9	12
10	0	0	1	1
11	0	3	0	3
12	0	0	1	1
Total	4	28	82	114

Table (2) Student of various academic level were investigated for depression. Of those who were between level (1-4) 43% had some degree of depression. The proportion of depression was 42% in those who were in level between (5-8). It was 15% in the senior's level. This variation in the proportion of depression across the academic level was statistically not significant (p=0.01).

Table 3: marital state * Depression.

	Mild Depression	Moderate Depression	Severe Depression	Total
single	4	28	79	111
married	0	0	2	2
divorced	0	0	1	1
Total	4	28	82	114

Table (3) Students of various marital status were investigated for depression. The majority were severely depressed despite their marital state. Out of the 114, 111 were single and all have a degree of depression. 2 were married and both have severe depression. 1 was divorced and also have severe depression. This constant proportion of depression along their marital state was statistically insignificant. (P-value= 0.878).

Table 4: do you live with your family * Depression.

34		Mild Depression	Moderate Depression	Severe Depression	Total
	Yes	1	25	60	86
	No	3	3	22	28
Total		4	28	82	114

Table (4) Show the correlation between students living with their family and depression. (70%) of people living with their families have severe depression while (30%) of them have mild to moderate depression. Those not living with their family (78%) have severe depression, while the rest (22%) have mild to moderate depression. The proportion of depression across students both living alone or with family is statistically significant (p-value=0.013).

Table 5: GPA * Depression.

		Mild Depression	Moderate Depression	Severe Depression	Total
	Decreased	2	21	56	79
	Steady	1	4	15	20
	Increased	1	3	11	15
Total		4	28	82	114

Table (5). Indicate that (69%) students with decreased GPA, (70%) of them have severe depression, while the rest (30%) have mild to moderate depression. (18%) of students were found with a steady GPA, (75%) of them

have severe depression, while (15%) have mild to moderate depression. Students with increased GPA (13%), (73%) of them have severe depression, while the rest (27%) have mild to moderate depression. The proportion of depression across GPA was statistically not significant (P-value= 0.872).

Table 6: payment of fees * Depression.

		Mild Depression	Moderate Depression	Severe Depression	Total
	total scholarship	0	10	10	20
	partial scholarship	0	6	18	24
	out of pocket	4	12	54	70
Total		4	28	82	114

Student of the various payment method were investigated for depression. Of those who were on total scholarship 50% had some degree of depression. The proportion of depression was 75% in those who were on partial scholarship. It was 77% of those who paid their fees out of pocket. This variation in proportion of depression across the payment of fees it was statistically significant. (p value = 0.0545). This is shown in table 6

Table7: academic level * Anxiety.

		No Anxiety	Mild Anxiety	Moderate Anxiety	Severe Anxiety	Total
	1	0	0	0	2	2
	2	0	1	4	0	5
	3	4	4	8	9	25
	4	3	3	2	9	17
	5	1	1	5	2	9
	6	1	1	3	2	7
	7	8	6	2	6	22
	8	3	2	2	3	10
	9	7	3	0	2	12
	10	0	0	1	0	1
	11	2	1	0	0	3
	12	0	0	1	0	1
Total		29	22	28	35	114

Table (7) Students of the different educational level were investigated for anxiety. Those who were in level 1-4 86% has some degree of anxiety, in level 5-8 the proportion of anxiety is 73% and it was 47% in the senior levels 9-12. This variation in the proportion of anxiety across the academic level was statically significant (P=0.0056).

Table8: GPA * Anxiety.

		No Anxiety	Mild Anxiety	Moderate Anxiety	Severe Anxiety	Total
	Decreased	21	15	18	25	79
	Steady	3	5	6	6	20
	Increased	5	2	4	4	15
Total		29	22	28	35	114

As shown in table (8), students were investigated for anxiety and GPA, students with decreased GPA 27% experience some anxiety, student with steady and increased GPA proportion of anxiety is 23%. the proportion of anxiety and GPA wasn't significant (P= 0.884).

Table 9: marital state * Anxiety.

		No Anxiety	Mild Anxiety	Moderate Anxiety	Severe Anxiety	Total
	single	28	21	27	35	111
	married	1	1	0	0	2
	divorced	0	0	1	0	1
Total		29	22	28	35	114

Table (9) Students of various marital state were investigated for anxiety out of 114 students of those who were single 111 students 21 of them have mild anxiety, 27 have moderate anxiety, 35 have severe anxiety and the rest have no anxiety. 2 students were married one of them has mild anxiety. one student was divorced and has moderate anxiety.

Table10: do you live with your family * Anxiety.

		No Anxiety	Mild Anxiety	Moderate Anxiety	Severe Anxiety	Total
	Yes	21	17	18	30	86
	No	8	5	10	5	28
Total		29	22	28	35	114

Table (10) shows the correlation between anxiety and living conditions whether students were living with family or alone. Of those who had no anxiety 72.4% of them lived with their family. While, those with mild anxiety 77.3% lived with family. On the other hand, those with moderate anxiety 64.3% lived with family. Lastly, those who have severe anxiety were 85.7% living with family. The proportion of anxiety with living conditions was statistically not significant. (p- value= 0.255).

Table11: payment of fees * Anxiety.

		Anxiety				Total
		No Anxiety	Mild Anxiety	Moderate Anxiety	Severe Anxiety	
	total scholarship	9	2	5	4	20
	partial scholarship	4	10	4	6	24
	out of pocket	16	10	19	25	70
Total		29	22	28	35	114

Table (11) Student and their way of payment of fees were investigated for Anxiety. Of those who had total scholarship (45%) had no anxiety and (55%) had different rates of anxiety. The proportion of anxiety in partial scholarship was (17%) when the proportion of those with no anxiety was (16.6%). It was (30%) of those who pay on out of pocket had Anxiety and (22%) do not had anxiety. This variation in this proportion of Anxiety across the payment of fees. It was statistically significant (p=0.0723).

Table 12: payment of fees * SCOFF.

		Eating disorders	No eating disorders	Total
	total scholarship	5	15	20
	partial scholarship	12	12	24
	out of pocket	31	39	70
Total		48	66	114

Table (12) showed the investigation for the relation between eating disorders and payment of fees. the proportion of eating disorders was (25%) in those who had a total scholarship, while (75%) of students have no eating disorder. those who are on a partial scholarship were equal 50% for each, (44%) of students who paid out of their own pocket had eating disorders, while (56%) were with no eating disorders. Relation between payment of fees and eating disorders was statistically not significant P-value = 0.207.

Table 13: academic level * SCOFF.

		Eating disorders	No eating disorders	Total
	1	1	1	2
	2	1	4	5
	3	15	10	25
	4	3	14	17
	5	4	5	9
	6	4	3	7
	7	10	12	22
	8	3	7	10
	9	7	5	12
	10	0	1	1
	11	0	3	3
	12	0	1	1
Total		48	66	114

Table (13) .Students with the various academic level were investigated for eating disorders. Of those who were level 1-4 (41%) had eating disorders and (59%) showed no eating disorders. The proportion of eating disorders was (44%) in those who were level 5 - 8 and (56%) showed no eating disorders. It was (41%) in the senior level with eating disorders and (59%) with no eating disorders. This variation in the proportion of eating disorders across the academic levels was statistically not significant p-value=0.191

Table 14: GPA * SCOFF.

		Eating disorders	No eating disorders	Total
	Decreased	32	47	79
	Steady	7	13	20
	Increased	9	6	15
Total		48	66	114

Table (14) indicate that students with decreased GPA (41%) have an eating disorder and (59%) have no eating disorder. those with a steady GPA (35%) have an eating disorder, while the rest (65%) have no eating disorders. Students with increased GPA (60%) have an eating disorder while (40%) have no eating disorder. Relation between GPA and eating disorders was statistically not significant P-value = 0.291.

Table 15: marital state * SCOFF.

		Eating disorders	No eating disorders	Total
	single	46	65	111
	married	1	1	2
	divorced	1	0	1
Total		48	66	114

Table (15) showed the students who were single (41%) have an eating disorder while the rest (59%) have no eating disorder, and those who were married were equal (50%) for each, while the divorced students (100%) having an eating disorder. Relation between marital state and eating disorders was statistically not significant P-value = 0.485.

Table 16: do you live with your family * SCOFF.

		Eating disorders	No eating disorders	Total
	yes	38	48	86
	no	10	18	28
Total		48	66	114

Table (16) showed a correlation between students living with their family and eating disorders. (44%) of them have eating disorders, while the rest (56%) showed no eating disorders. those who does not live with their family (36%) have an eating disorders, and the rest (64%) does not have eating disorders. Relation between residency and eating disorders was statistically not significant P-value = 0.287.

DISCUSSION

Table 2: The decline in the proportion of depression as the academic level advance was not expected. The first year of medical school and the excitement of becoming a doctor was overpowered by the volume and speed of material presented to the freshman year students. They will feel depressed for the impossibility of managing all the studies. In a study conducted in Cameroon its results where Similar compared to this study regarding the depression through academic level. Depression is to be expected whenever the students start their curriculum. Installing procedures that identify and support depressed students, specially the few with persistently low mood is crucial.

Table 3: The proportion of depression regarding the marital state was unexpected. Whether you were single or married or even divorced the stress that is acquired by medical school tend to be the same despite your status. In a study conducted by Al-Saadi in Syria in 2017, the findings were similar compared to this study regarding the depression. Medical school is competitive and requires extra-long hours of studying and work. Everyone is trying so hard to achieve the highest scores possible in order to eventually get to the best career possible, and it can be overwhelming.; this fierce of competition can lead to depression. Students should be encouraged that everyone is going through this battle.

Table 4: Our results indicate that there is relation between depression and living with family or alone. This goes in line with a study of depression, anxiety and stress among medical students in two medical colleges of Nepal by Kunwar. D in 2016. Students living alone or with family have a major effect on them physiologically. Student should get the help that they need inside of the university.

Table 5: Our study revealed that there is no relation between GPA and depression. This goes against a study done in KU leaven university which proves otherwise. Depression can affect students level of academic performance. Further investigation should be done.

Table 6: The increment in the proportion of depression as the payment advise was expected. Student who pay for their education from their own money have more depression than on those who are on scholarship. In study conducted in the American College Health Association (ACHA) depression increases in students who they pay their own fees. Depression is to be expected when responsibility increase as fees. Attending medical school is a huge deal regarding the tuition fees. With that being said it, it creates more burdens on the student who is going to pay by his or her parents' money however, that will get them to study harder and work more so they would feel it was worth it.

Table 7: The decrease in the proportion of anxiety as education level progresses was expected. Freshmen students at first experience some anxiety about the university system and the new environment, after time they adjust and anxiety decreases. in a study that was conducted in Singapore, 2016 Puthran did study about prevalence of depression amongst medical students. The aim of the study was to identify the prevalence of depression among medical students. The research was carried out on some medical students. Year 1 students had the highest rates of depression, the rates then gradually decreased. Anxiety is expected at the beginning. and it's a good thing to happen because it motivates the students to cope with their colleague. students should reassure that anxiety is usual and it helps.

Table 8: The relationship between anxiety and GPA was clear, students who suffered anxiety had decreased GPA. A study was conducted by Kumar in India in 2017. The aim of that study was to assess the prevalence of depression and its relation to stress level and other factors among medical students. We advise the students to focus on revision and repetition of the lectures to get marks and to improve the GPA.

Table 9: The increase in the proportion of anxiety in single students were expected. while married students have a lower level of anxiety because being in a relationship give them feeling of safety and stability. In a study conducted in King Abdul-Aziz university, Jeddah in Saudi Arabia. Students who were single were having more anxiety than students who were married. Anxiety is to be expected in single students more than married students. It is a good thing to build a relationship that help us to cope and decrease our level of anxiety.

Table 10:

Table 11: There is a relationship between Anxiety and scholarship. This goes in line with study by Azad in Pakistan in 2017[10] which showed that anxiety found high among medical students in a private medical college. We found that there is growing concern among students who are out of scholarship while students who are within the scholarship are less. We recommend universities and educational attachments to reduce tuition fees because they cause an increasing concern for students.

Table 12: Our result indicates that students who pay out of their own pocket are more likely to have an eating disorder compared with the other students who are on a total or partial scholarship, students with partial scholarship have more risk to have an eating disorder than those on a total scholarship. As a result, the way of payment could cause a stress on the students leading them an eating disorder. Due to lack of data, there should be more studies about the relation between payment of fees and eating disorders among medical students.

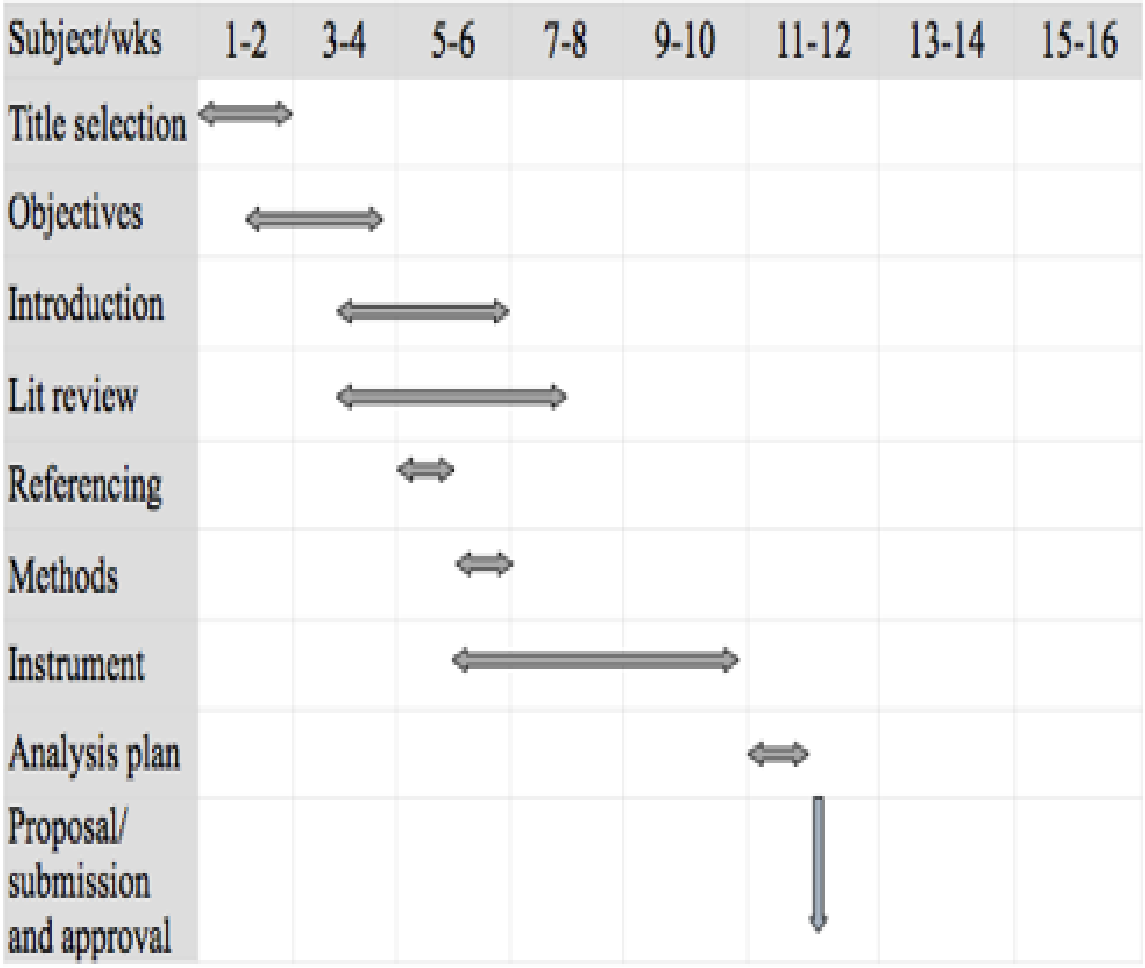
Table 13: The decline in the proportion of eating disorders as the educational level advances was expected. Students first years in the university as they experience new things they face the risk of having eating disorders. The last years when they get used to it eating disorders declines. Due to lack of data, there should be more studies about the relation between academic levels and eating disorder among medical students.

Table 14: Our result indicates that students who pay out of their own pocket are more likely to have an eating disorder compared with the other students who are on total or partial scholarship, students with partial scholarship have more risk to have an eating disorder than whose on a total scholarship. As a result, the way of payment could cause a stress on the students leading them an eating disorder. Due to lack of data, there should be more studies about the relation between payment of fees and eating disorders among medical students.

Table 15: The study showed that the correlation had an effect on the students, which may lead to eating disorders, although the majority of the students were singles, and the percentage was different among them, while the married or divorced students showed a greater proportion of exposure to eating disorders. Due to lack of participate and data, there should be more studies about the relation between marital state and eating disorders among medical students.

Table 16: Our research indicates the relation between living alone or with the family and their effect on students eating lifestyle. The study proved that there is no relation between them. but the psychology state of the student is the main impact on the problems of eating. Due to lack of data, there should be more studies about the relation between residency and eating disorders among medical students.

Time plan:



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