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PREVALENCE OF MENTAL DISTRESS AMONG UNDEGRADUATE MEDICAL STUDENTS AT MAJMAAH UNIVERSITY, KINGDOM OF SAUDI ARABIA

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ABSTRACT

Background: Medical Education and Medical Profession are among the most challenging and stressful ones. It also poses many new, challenging and potentially threatening situational demands on the incoming students. Anxiety and depression represents an escalating public health problem among medical students. **Objectives:** The objectives of the study were; to find the prevalence of mental distress among undergraduate medical students studying at College of Medicine, Majmaah University; to explore associations between socio-demographic characteristics and mental distress and to identify mental health and support service needs at Majmaah University for distressed students. **Methods:** It was a cross-sectional study. The data was collected from undergraduate medical students' of either gender studying at College of Medicine, Majmaah University using complete enumeration method. General Health Questionnaire (GHQ-28) was used to collect the data from 162 students. **Result:** The overall prevalence of mental distress among students was 35.8%. Psychosocial disorder (27.2%) was the most prevalent among students, followed by anxiety (24.7%), somatic (14.2%) and depression (10.5%). Male students had higher mental distress as compared to female students (67.6% vs 43.5%, $p<0.001$). Moreover, third year students had higher anxiety level (42.1%) as compared to other year students $p<0.001$. **Conclusion:** Medical students encountered high rates of anxiety and depression. Male students were more mentally distressed as compared to female students. Anxiety was more prevalent in 3rd year students as compared to other groups. Educating the students

through stress management programs and counselling them through mental health units in the College may help in overall reduction of mental distress.

KEYWORDS: Mental distress, stress, medical students, anxiety, depression.

INTRODUCTION

Mental health is an undivided part of health and well-being, as have been stated in the definition of health in the Constitution of the World Health Organization: "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.[1] Mental Illnesses refers collectively to a number of disorders and are characterized by sustained, abnormal alterations in thinking, mood, or behavior associated with distress and impaired functioning.[2] Recent evidence from the World Health Organization indicates that mental illness affects nearly half the population worldwide.[3] Mental health among university students represents an important and growing public health concern for which epidemiological data are needed.[4] Medical education poses many new, challenging and potentially threatening situational demands on the incoming student.[5] Furthermore, Medical students face several stresses during their revolution from insecure students to young knowledgeable physicians.[6,7,8] This can lead to mental distress with negative impact on their cognitive functioning and learning.[9,10] The main purpose of medical schools is to facilitate and foster students' learning through a safe and supportive environment.[11] The estimated prevalence of psychological disturbances reported in different studies among medical students are higher than that in the general population.[12,13,14] A Swedish study done in 2011, reported a 12.9% prevalence of depression among medical students and a total of 2.7% had made suicidal attempts.[15] In 2008, at USA, approximately 50% of medical students experienced stress and burnout and 10% experienced suicidal ideation during their study at medical school.[16] Another study in 2004 conducted in Malaysia, reported that 41.9% of the medical students have mental stress.[17] The corresponding stress rates among medical students in Thailand and Saudi Arabia were 61.4%[18] and 57%[19] respectively. In Arab world, a comparative study conducted among male medical students in Mansoura University, Egypt and King Faisal University, Al-Hassa, Saudi Arabia concluded that anxiety & depression represented a prevalent problem in both countries.[20] In Saudi Arabia, a cross-sectional study conducted in Riyadh, King Saud University, reported high prevalence of depressive symptoms (48.2%) among medical students, it was either mild (21%), moderate (17%), or severe (11%).[21]

Another study done in Jizan University, 2012, reported high prevalence of stress among medical students (71.9%).[22] Another study conducted by Ibrahim et al in 2010 at King Abdul-Aziz University, Jeddah, concluded that Prevalence of morbid anxiety and depression among female medical students was 34.9% and 14.7%, respectively.[23] Thus, mental disorders represent escalating mental health problems among medical students worldwide. However, there are few studies have been conducted among medical students in Riyadh region despite the expanding numbers of medical schools. Therefore, this study was planned to find out the prevalence & main predictors of anxiety & depression among medical students studying at Majma'ah University, Riyadh region, Saudi Arabia.

MATERIAL AND METHODS

It was a cross-sectional study by design. The data was collected from January – March 2015 using complete enumeration sampling method. A total of 162 medical students (139 male and 23 female students) were interviewed during this time period. The study was conducted at College of Medicine, Majmaah University. It's a newly established Medical College in 2011. The University is located in Almajmaah City which lies to the north of Riyadh City and is considered as one of Al-Riyadh Province governorates. The estimated population of Al-Majmaah City is approximately 130000 comprising of citizens and residents.[24] The data was collected by using the General Health Questionnaire (GHQ-28), which was a self-administered screening instrument, designed to detect the current diagnosable psychiatric disorders. It was used in the surveys and clinical settings to identify the potential cases, leaving the task of diagnosing the actual disorders to a psychiatric interview.[25,26] The GHQ-28 item version was introduced incorporating the four subscales of somatic, anxiety, social dysfunctions, and severe depressive symptoms.[25] Each question has four responses. The participants' answers were scored as 0-0-1-1 based on their responses. The total score was determined by adding the score obtained for each answer in the questionnaire. Compared to other versions of the GHQ-short versions; 12 and 30 - the 28 item version was found to be the best in sensitivity (100%), specificity (81.9%), and overall misclassification rate (17.5%), when used in the 4 / 5 casernes threshold score. The GHQ-28 was translated into Arabic language and validated at King Khaled University Hospital in Riyadh.[27] The Cronbach Alpha was 0.77. The questionnaire comprised of two sections: The first part was about the socio-demographic characteristics and the second part related to GHQ-28. The data were entered and analyzed using SPSS 23.0. Mean $\pm$ S.D was given for quantitative variables. Frequencies and percentages were given for qualitative variables. Pearson Chi Square was

applied to observe associations between qualitative variables. A p-value of <0.05 was considered as statistically significant. The study was approved by the ethical committee of Majmaah University. The students consent was also obtained prior to filling the questionnaires. All information was kept purely confidential and was only used for statistical analysis.

RESULTS

The mean age of the students was 19.21±2.21 years. The data was collected from 162 medical students of which n=139 (85.5%) were male students and n=23 (14.2%) were female students. About three fourth of the students were studying in 2nd year n=76 (46.9%), n=38 (23.5%) were studying in the 3rd year, n=27(16.7%) were studying in 4th year and 21(13%) students were studying in 5th year. Only 3.1% of the students were married the remaining 96.9% were singles. About three fourth of the students (75.9%) were living in Majmaah City, whereas, n=39 (24.1%) were non-boarders. Majority of the students n=73 (45.1%) were living with their families, n=57 (35%) students were living alone and n=32 (19.8%) were living with a friend. More than 50% of the students had more than 7 family members, n=67 (41.4%) had family members between 4-7 persons and only a small percentage n=10 (6.2%) had family members less than 4 members. Majority chunk of the students were non-smokers n=135 (83.3%). Around 15% of the students were smokers (smoking shisha and cigarettes), whereas, only 1.9% students were ex-smokers. We also collected data on Educational status of both parent and were assessed separately. Regarding mothers education; majority of them were having University degrees n=61 (37.7%), n=39 (24.1%) had secondary school certificate, about one fifth had primary school certificate and a small percentage were illiterate. Regarding father's education; majority of them were having University degrees n=96 (59.3%), n=33 (20.4%) had secondary school certificate and a small percentage n=6 (3.7%) were illiterate. *(table 1).*

As stated supra, the GHQ-28 item version was used. It is further divided into four subscales; somatic, anxiety, social dysfunctions, and severe depressive.[25] Each question in the sub-scale had four responses. Overall mental distress was prevalent in n=58 (35.8%) of the students, of which n=13 (22.4%) were females and n=45 (77.6%) were males. Psychosocial distress was prevalent in majority of the students n=44 (27.2%), followed by anxiety n=40 (24.7%), somatic distress n=23 (14.2%) and depression n=17 (10.5%). *(table 2).* Mental distress was significantly associated with gender (p=0.025) showing that males are more

mentally distressed than female students *(table 3)*. Year of study was also significantly associated with anxiety (p=0.006) showing that 3rd year students had higher level of anxiety as compared to other students studying in different years *(table 4)*. Residency, place of residence and smoking were not significantly associated with mental distress (p>0.05) respectively.

Table 1: Socio-demographic data of students.

	n (%)		n (%)
Gender			
Male	139 (85.8%)	**Number of family members**	
Female	23 (14.2%)	<4	10 (6.2%)
Academic year		4-7	67 (41.4%)
Second year	76 (46.9%)	>7	85 (52.5%)
Third year	38 (23.5%)	**Smoking status**	
Fourth year	27 (16.7%)	currently smoker	24 (14.8%)
Fifth year	21 (13.0%)	ex-smoker	3 (1.9%)
Mother education		never smoked	135 (83.3%)
Illiterate	19 (11.7%)	**Type of smoking**	
Primary	27 (16.7%)	Shisha	11 (6.8%)
Intermediate	16 (9.9%)	Tobacco cigarettes	10 (6.2%)
Secondary	39 (24.1%)	Shisha and tobacco	3 (1.9%)
University	61 (37.7%)	**Place of residency**	
Father education		Inside Majmaah	123 (75.9%)
Illiterate	6 (3.7%)	Outside Majmaah	39 (24.1%)
Primary	12 (7.4%)	**Residency**	
Intermediate	15 (9.3%)	Alone	57 (35.2%)
Secondary	33 (20.4%)	With family	73 (45.1%)
University	96 (59.3%)	With a friend or else	32 (19.8%)
Marital status			
Married	5 (3.1%)		
Single	157 (96.9%)		

Table 2: Overall prevalence of mental distress in students and its sub-scales.

	Negative	Positive
Somatic	139 (85.8%)	23 (14.2%)
Anxiety	122 (75.3%)	40 (24.7%)
Psychosocial	118 (72.8%)	44 (27.2%)
Depression	145 (89.5%)	17 (10.5%)
Overall mental distress	104 (64.2%)	58 (35.8%)

Table 3: Association between mental distress and gender.

Gender	Mental distress		
	Positive	Negative	Total
Male	45 (32.4%)	94 (67.6%)	139
Female	13 (56.5%)	10 (43.5%)	23
Total	58 (35.8%	104 (64.2%)	162
Pearson Chi Square = 5.007, p=0.025			

Table 4: Association between anxiety and academic year.

Academic year	Anxiety		
	Negative	Positive	Total
Second	66 (86.9%)	10 (13.1%)	76
Third	22 (57.9%)	16 (42.1%)	38
Fourth	20 (74.1%)	7 (25.9%)	27
Fifth	14 (66.7%)	7 (33.3%)	21
total	122 (75.3%)	40 (24.7%)	162
Pearson Chi Square = 12.499, p=0.006			

DISCUSSION

Medicine has always been regarded as a popular choice in tertiary education. As a result of an excess of applicants, only candidates with excellent academic attainment can successfully enter Medicine. Therefore, the medical program is even more competitive and stressful for students who are accepted[28] if this stress is ignored, they are likely to produce further stresses.[29] The current study found that one in two students were screened positive for mental distress. The overall prevalence of mental distress among undergraduate medical students was 35.8%. These results goes in-line with the study conducted in USA.[16] and Malaysia.[8] that reported; approximately 50% of students experienced stress & burnout and 10% experienced suicidal ideation during medical school and that 41.9% of the medical students have mental stress respectively. The present study illustrated the presence of high level of psychosocial (27.2%) and anxiety (24.7%) among medical students. These results partially agree with most studies carried out locally and internationally which stated that highest levels of distresses were anxiety and depression.[30] Also, comparing our findings with other studies conducted in Saudi Arabia, the prevalence of depressive symptoms among medical students was 48.2%[21] and another study conducted in Jizan University, reported that the prevalence of stress among medical students was 71.9%.

Regarding level of depression, our study results contra the studies conducted in US, Canada and Saudi Arabia. The level of depression among medical students in our study was only 10.5% as compare to 23.7% in USA, 21.4% in Canada and 19.5% in Jeddah.[23] In our study,

male medical students had higher level of mental distress. This goes with the study conducted in France.[28] in which mental distress was more prevalent in males than females. Another significant finding in our study was that the students studying in third year had higher level of anxiety as compared to other groups. Again this finding is confirmatory by a study conducted in USA and Canada.[30] in which students studying in 3rd year had higher level of anxiety as compared to other years. In our study no significant association was observed between mental distress and smoking, type of residency and place of residency $p>0.05$ respectively.

Limitations of the study

Firstly, College of Medicine, Majmaah University is a newly established institution, the number of medical undergraduates (males and females) is low. Female College commenced in 2014. Apart from that male undergraduates are also not good in number as compared to other established institutions, though they are now currently in 6th year of study. Secondly, this is a cross sectional study on small population. With passage of time further study is required on larger sample size.

CONCLUSION

Medical students encountered high rates of anxiety and depression. The overall prevalence of mental distress among medical students was 35.8%. Male students were more distressed than female students. Anxiety was more prevalent in 3rd year students as compared to other groups. Educating the students through stress management programs and counselling them through mental health units in the College may help in overall reduction of mental distress.

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