

Prevalence of Depressive Symptoms among Medical and Non-Medical Male Students in King Faisal University Al-Ahsaa

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Abstract: Depression, according to World Health Organization is “a common mental disorder, characterized by sadness, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, feelings of tiredness, and poor concentration”. It may be chronic or recur even if it treated. It affects individual life, eventually if untreated may end with suicide (1). Medical education and training can contribute to the development of depressive symptoms that might lead to possible academic and professional consequences (4).

Aim: The aim of this study was to estimate the prevalence of depressive symptoms among Saudi medical and non-medical students in King Faisal University (KFU) .

Specific Objectives:

1. To describe the clinical manifestations of the depression in medical and non medical students.
2. To identify the most risk factors commonly associated with depressive symptoms.

Method: A cross sectional study was done using BDI questionnaire which is distributed to the students from college of medicine and college of engineering in King Faisal University during February-March 2016. A total number of 403 students participated in the study.

Result: The prevalence of depressive symptoms among participants was 53.9%, it was higher within college of engineering 56.8% compared to the prevalence of medical college students which was 50.8%, although this difference was not significant. Significant association was found between severe depressive symptoms and part time workers (P value 0.001) .

Conclusion: The results of this study showed that both medical and non-medical students have a high prevalence of depressive symptoms. Our findings are consistent with the findings from other studies conducted locally and in other parts of the world using different screening measures for depression; therefore, early screening of the psychiatric morbidity and preventive programs should begin early in their university study..

Keywords: King Faisal University (KFU), World Health Organization, Medical and Non-Medical Male Students.

1. INTRODUCTION

Depression, according to (WHO) is “a common mental disorder, characterized by sadness, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, feelings of tiredness, and poor concentration”. It is a common problem encountered in primary health care (PHC) and patients may presented in mild, moderate or severe stage of depression, most mild cases may be treated with psychotherapy while moderate to severe cases need advanced treatment with pharmacotherapy. It may be chronic or recur even if it treated. It affects individual life, eventually if untreated may end with suicide⁽¹⁾.

More than 350 million people Worldwide diagnosed with depression, which gives prevalence around 5%. It affects female more than male and it is common in younger age group and unemployed persons⁽²⁾.

A large study done in 2010 showed the prevalence of depression in Middle East is 7.35%, which almost near to the global prevalence, same study found that the prevalence in Egypt is 5.29% while it is 5.27% in Lebanon and 6.74% in Turkey. In Saudi Arabia its 5.9% and in Oman 5.25% while it is higher in other gulf Cooperation Council (GCC) Countries reach up to 8.62% and 8.12% in Bahrain and United Arab Emirates respectively⁽³⁾.

Medical education and training can contribute to the development of depressive symptoms that might lead to possible academic and professional consequences. Several studies found that the prevalence of depression is increased among the medical students and the susceptibility to high rates of morbidity during their study, and can affect their life, study and future career⁽⁴⁾.

A study done in United State by Honney et al comparing prevalence of depressive symptoms among medical and non-medical students found that the prevalence is 48.8% in medical students and they are more prevalent in mild depressive symptoms while its 59% in non-medical students and they have higher prevalence in moderate and sever symptoms⁽⁵⁾.

Literature review done by Bacchi S et al, conclude that medical students have same or less depressive symptoms compared to other non-medical students although there are limitations to the comparison that he has done⁽⁶⁾.

Dyrbye et al. Systematically reviewed the literature reporting on depression, anxiety, and burnout among U.S. And Canadian medical students. The authors concluded that medical school is a time of significant psychological distress for physicians-in-training⁽⁷⁾.

In Brazil, Baldassin et al. Found that there is high prevalence toward depressive symptoms in medical students 38.2% specially internship students, female and those who have no parent practiced medicine⁽⁴⁾.

El-Gilany et al, found that in Egypt the prevalence of depression among medical students is 26.6%⁽⁸⁾.

Data from Iran concluded that the prevalence of depression among universities students ranging between 36% to 66%⁽⁹⁾, with a recent study done in a medical science school showed the prevalence of 52.6% among their students⁽¹⁰⁾.

In 2012 a study done locally in King Saud University, Riyadh, Saudi Arabia found prevalence of depressive symptoms among medical students around 48.2%⁽¹¹⁾.

Another study conducted locally in College of Medicine, Qassim University, Saudi Arabia to estimate the prevalence of depression and anxiety among medical students which was around 66.6% 44.4% in female and male respectively⁽¹²⁾.

A similar study done in Saudi Arabia on medical students of Umm Al-Qura University found that there is high level of depressive symptoms 30.9% among students in their first three years of the program (the undergraduate program consists of 6 studying years in addition to internship year)⁽¹³⁾.

Another study done in King Abdulaziz university, Jeddah, among female medical students show prevalence of depression 14.7%⁽¹⁴⁾.

Amr et al studied the depression and anxiety prevalence among undergraduate students in King Faisal University in Al-Ahsa, and they found depressive symptoms among 24.4% of students⁽¹⁵⁾.

There are no such data or studies done locally comparing medical to non-medical students to help in estimating the prevalence of depression and related risk factors among these groups.

Both medical and non-medical students face stresses, challenges and burdens that make them more prone to mental health problem such as anxiety, depression and burn out. We will study both groups to estimate their depression prevalence and compare it to each other to help better understanding the problem and possibly establish an early prevention program.

The aim of this study was to estimate the prevalence of depressive symptoms among Saudi medical and non-medical students in King Faisal University.

2. METHODOLOGY

The study was conducted in King Faisal University (KFU) in February and March 2016, KFU was established 1975 and considered the first university in the eastern province, although there was no medical school till year 2003 when the first batch started their first medical year under the umbrella of KFU⁽¹⁶⁾. Same for college of engineering which started their academic activity in 2007. KFU located in Alahsa area which considered one of the largest area with high population reach up to 1,220,000 people from different socioeconomic classes⁽¹⁷⁾.

This is a cross-sectional study where the simple random technique was used to choose between non-medical colleges, college of engineering was chosen to compare it with college of medicine . First year in both colleges considers preparatory year with general courses (English, physics, math) so it was not included in the sampling. Only Saudi nationality students were enrolled in the study, however since there is only male students and no female department in college of engineering, we conducted our study on male side of medical college to avoid any possible bias.

Considering total number of students in medical college is (516) while in college of engineering is (875). Sample size was estimated using equation $N = (Z_{\alpha/2})^2 p(1-p) / d^2$

With prevalence of depression among university students in Saudi Arabia almost 30%⁽¹³⁾ our sample size were around 323, 10% was added from both colleges to compensate for missed data (total of 403) .

Any students of both colleges were eligible to participate to this study except the first year as mentioned earlier. A total number of students in both colleges was 1391. Any male student of both colleges who attended the classroom during the time of questionnaire distribution was eligible to participate in this study. The exclusion criteria was as following: first year students, absent students and history of chronic disease.

Convenience sample technique was used and self-administered questionnaire was distributed anonymously to all participants found in the classroom during the administration process (total of 403) any unreturned questionnaire was considered loss.

Our questionnaire was in Arabic and consisting of two parts, first part is about biographic data which includes age(per year), history of chronic disease(no, yes and specify), marital status(single, married), smoking(yes, no), drug and alcohol use (yes, no), family income monthly (<10000SR,10000-15000SR, >20000SR), parents level of education (high school , secondary, elementary, primary, others), part time working (yes , no) and any family history of psychiatric disease (yes, no) . The second part is the Beck Depression Inventory (BDI) tool which used to assess the depressive symptoms and it is widely used in research area⁽¹⁸⁾.

BDI is a tool contains 21 questions about symptoms of depression, each question scores 0-3 and total scoring between 0-63. Scoring results interprets as following: 0-9 Minimal or none, 10-18 mild, 19-29 moderate and 30-63 severe symptoms. Items of questionnaire includes the following: sadness, pessimism, past failure, guilty feelings, punishment feelings, self-dislike, self-criticalness, suicidal thoughts or wishes, crying, loss of interest in sex, agitation, loss of interest, indecisiveness, worthlessness, loss of energy, changes in sleeping pattern, irritability, changes in appetite, concentration difficulty, tiredness or fatigue and loss of pleasure. The cut-off points for depressive symptoms was 10 scores and above. Any missed item was filled with highest score equal to 3. An Arabic version which has a sensitivity and specificity 99% and 89% respectively was used in this research⁽¹⁸⁾.

The study was approved by the ethical committee of Joint program of Family Medicine eastern province and permission from dean college of medical and engineering school was obtained, the aim of this study was explained and a verbal consent was taken from participants before questionnaire distribution.

Statistical method:

Collected data were processed, entered and analyzed by SPSS version20. Score of depressive symptoms was considered as dependent variable and compared to independent variables: age group, specialty, marital status, smoking, alcohol and drug consumption, parents level of education, socio-economic status, part time employment and family history of depression, Chi-Square test was used to compare between two categorical groups with P value equal or less than 5% considered as a significant value.

3. RESULTS

403 questionnaires were distributed hand by hand and collected back, one questionnaire was returned unfilled, response rate was 99.75%, Out of these participants , 34 were excluded (33 had history chronic disease and 1 questionnaire returned unfilled) as they met the exclusion criteria, resulted in 369 students completed the study.

Almost half of participants were medical students 48.5% while 51.5% from college of engineering as shown in table 1, their age were ranging from 19-26, age was categorized into two groups; less than 22 and 22 and more.

Table 1 : Distribution of male students in KFU Alahsa per training

Variable	Categories	No.	%
Training	Medical	179	48.5
	Non-medical	190	51.5

Most of students were single 96.5% the remaining 3.5% were married. High level of parent education (bachelor degree or more) was reported in 71.7% while remaining 28.3% reported low level of parents education. Total family income less than 10,000 SR was found in 25.3%, between 10,000-20,000 SR in 38.2% and more than 20,000 SR in 36.5% as shown in table 2.

Table 2: Socio-demographic data of male students in KFU in Alahsa

Variable	Categories	No.	%
Age>22	No	169	45.8
	Yes	200	54.2
Marital Status	Married	13	3.5
	Non-married	356	96.5
Parent's level of education	Low level	104	28.3
	High level	263	71.7
Family income monthly	SR 10000 >	88	25.3
	SR 20000-10000	133	38.2
	20000<	127	36.5

Smoking reported in 17% among participants and only 4 participants 1.1% reported alcohol or drugs using , family history of depression reported in 10.4% among participants , only 30 participants 8.1% worked outside the official college hours as shown in table 3,4 .

Table 3 : Habits and Family history of depression among male students in KFU Alahsa

Variable	Categories	No.	%
Smoking	Yes	62	17
	No	303	83
Drugs and alcohol	Yes	4	1.1
	No	363	98.9
Family history of depression	Yes	38	10.4
	No	329	89.6

Table 4 : Number and percentage of part time workers among male students in KFU Alahsa

Variable	Categories	No.	%
Part time working	Yes	30	8.1
	No	339	91.9

In this study, the prevalence of depressive symptoms among participants was 53.9%, as shown in table 5.

Table 5. Depressive Symptoms among male students in KFU Alahsa

Training		Depressive Symptoms		Total
		YES	NO	
Medical	Count	91	88	179
	% within specialty	50.80%	49.20%	100.0%
Non Medical	Count	108	82	190
	% within specialty	56.80%	43.20%	100.0%
Total	Count	199	170	369
	% within specialty	53.90%	46.10%	100.0%

The prevalence was 50.8% within Medical college students (mild symptoms 34%, moderate 13.4% and severe 2.8%). The prevalence was higher 56.8% within college of engineering (mild symptoms 37.9%, moderate 14.2% and severe 4.7%) although this difference was not significant. More details about severity of depressive symptoms shown in figures 1 and 2.

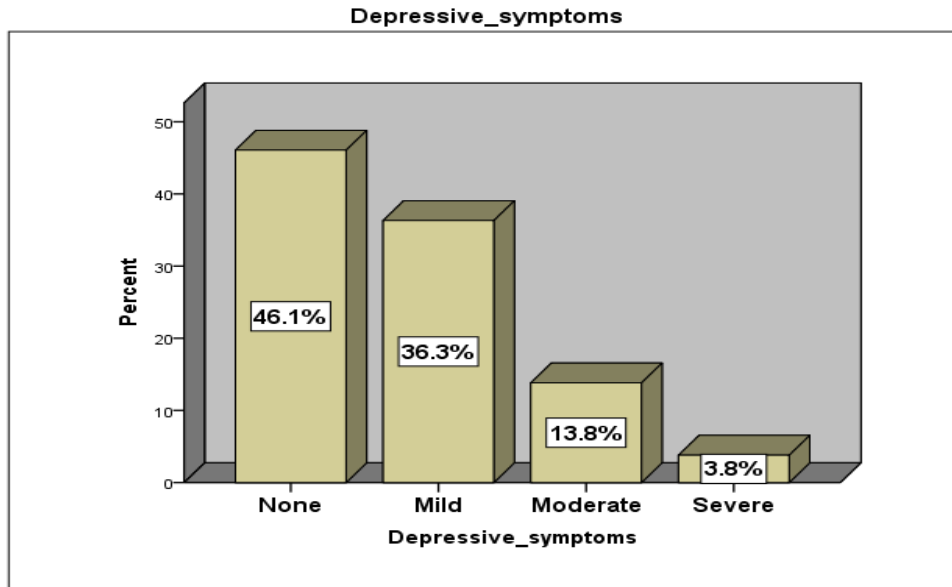
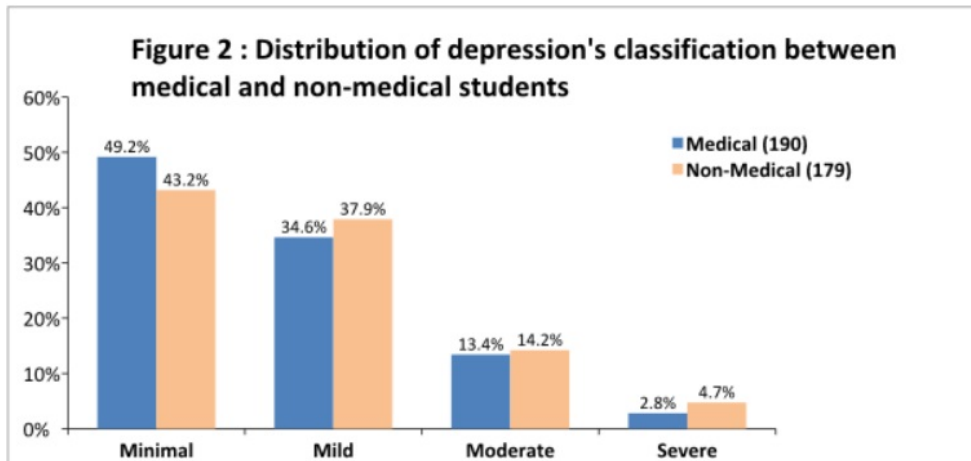


Figure 1 prevalence of categories of depressive symptoms among male students in KFU Alahsa



We compared the depressive symptoms with the independent variables which showed more mild and moderate depressive symptoms in non-married and higher prevalence of severe symptoms in married participants, although it was not significant.

Mild depressive symptoms were associated with low parents level of education. While high total family income (> 20,000 SR monthly) associated more with moderate and severe symptoms 16.5% and 5.5% respectively however it was not statistically significant as shown in table 6.

Table 6: distribution of categories of depressive symptoms per soci-demographic data among male students in KFU Alahsa

Variable	Categories	Minimal		Mild		Moderate		Severe	
		No.	%	No.	%	No.	%	No.	%
Age	18-21	79	46.7	62	36.7	22	13	6	3.6
	22+	91	45.5	72	36	29	14.5	8	4
Marital Status	Non-Married	163	45.8	131	36.8	50	14	12	3.4
	Married	7	53.84	3	23.07	1	7.69	2	15.3
Parent's level of education	High level	125	47.5	89	33.8	37	14.1	12	4.6
	Low level	44	42.3	44	42.3	14	13.5	2	1.9
Family Income Monthly	< 10000 SR	38	43.2	33	37.5	13	14.8	4	4.5
	10000-20000 SR	61	45.9	53	39.8	16	12	3	2.3
	>20000	59	46.5	40	31.5	21	16.5	7	5.5

Smokers reported more moderate and severe symptoms while non smokers reported more mild symptoms although, non alcohol and drug users had depressive symptoms in all level (mild 36.9%, moderate 13.2% and severe 3.6%), only 4 participants reported drug and alcohol use and 3 of them 75% had moderate symptoms (P value 0.005).

Family history of depression associated more with moderate and severe symptoms 21.1% and 5.3% respectively which shown in table 7

Table 7 : distribution of categories of depressive symptoms per habits and family history of depression among male students in KFU Alahsaa

Variable	Categories	Minimal		Mild		Moderate		Severe		P value
		No.	%	No.	%	No.	%	No.	%	
Smoking	Yes	26	41.9	20	32.3	12	19.4	4	6.5	0.005
	No	142	46.9	112	37	39	12.9	10	3.3	
Drugs and alcohol	Yes	1	25	0	0	3	75	0	0	
	No	168	46.3	134	36.9	48	13.2	13	3.6	
Family history of depression	Yes	15	39.5	13	34.2	8	21.1	2	5.3	
	No	155	47.1	119	36.2	43	13.1	12	3.6	

A significant association was found between severe depressive symptoms and part time workers (P value 0.001) as shown in table 8.

Table 8 : distribution of categories of depressive symptoms among part time worker in male students in KFU Alahsaa

Variable	Categories	Minimal		Mild		Moderate		Severe		P value
		No.	%	No.	%	No.	%	No.	%	
Part time working	Yes	14	46.7	9	30	2	6.7	5	16.7	0.001
	No	156	46	125	36.9	49	14.5	9	2.7	

4. DISCUSSION

The prevalence of depressive symptoms was found in 53.9% among participants in this study (50.8% in medical students and 56.8% in non-medical students), which is almost near to the results from a study done at King Saud University, Riyadh, Saudi Arabia which showed a prevalence of 48.2% ⁽¹¹⁾ and another study done in Qassim university and the result was 44.4% among male students⁽¹²⁾.

Another study was done in Umm Al-Qura University, Makkah, Saudi Arabia used the BDI tool found a prevalence of depressive symptoms 30.9% which the author explained by relatively small sample size⁽¹³⁾. Other studies done locally and used different assessment tool to diagnose depression rather than to assess severity of depressive symptoms, one of these studies done in King Abdulaziz university, Jeddah and it resulted in prevalence of depression 14.7% among female students only⁽¹⁴⁾, although similar study done in King Faisal University in Al-Ahsa, and they found depression among 24.4% of students⁽¹⁵⁾.

Studies done in the region and neighbor countries showed similar results, studies from Iran concluded that the prevalence of depression among universities students ranging between 36% to 66% ⁽⁹⁾, with a recent study done in a medical science school showed the prevalence of 52.6% among their students⁽¹⁰⁾, another study done in Egypt by El-Gilany et al, found that the prevalence of depression among medical students is 26.6% ⁽⁸⁾, similar to this result was found in a study done in Dubai medical college female students 28.7%⁽¹⁹⁾, this may be due to the difference of gender and relatively small sample size (165 female participants) comparing to this study which almost the double.

In addition , A study was done in a medical college in India, which reported a depression prevalence rate of 49.1% ⁽²⁰⁾, a higher prevalence was found in Pakistan 60% ⁽²¹⁾, and this may be attributed to study setting in private university, which may lead to increase the prevalence of depressive symptoms as explained by the author.

In the western countries the prevalence range between 38.2% - 48.8% in medical students and up to 59% in non-medical students which showed almost similar results to our study that non-medical students had a higher prevalence of moderate to severe symptoms than medical students^(4, 5). A study done in Brazil showed prevalence of depressive symptoms 38.2% among medical students, although it used the BDI tool but with higher cut-off point for depressive symptoms⁽⁴⁾.

Lower prevalence was found in a study done in United states and showed 25% of depression among medical students⁽²²⁾, this result may be similar to other studies done locally as mentioned earlier, however study setting, characteristics of participants and different tools and measurements may contribute to this variation between results.

We did not find any local study compared depressive symptoms in medical and non medical students, although no significant difference was found in this study between the two groups (P value 0.583), this may be better explained by the idea that both college of medicine and college of engineering share in difficulty of curriculum, level of competency and study stressors.

This study showed significant finding between part time working, drugs and alcohol using and severity of depressive symptoms (P value 0.001 and 0.005 respectively) although, this result may be limited by total number of study (only 4 out of 369 reported alcohol and drug using) it is supported by study done in Pakistan which found that drug abusers were 2.6 times more likely to have depression⁽²³⁾, in addition to a study conducted in India showed more depressive symptoms among substance abuser odds ratio 4.34.⁽²⁰⁾

Although in this study, we did not investigate about college year of study, other studies found that first and second college year students more prone to have depressive symptoms^(11, 12, 19, 20), instead in our study, we used the age group as independent factor as we excluded first year students from this study and no significant difference was found between the age groups.

In this study we could not find any significant relation between family history of depression and depressive symptoms, despite that many studies done before had found such significant relation between them^(5, 23). We thought this may be due to under diagnosis of depression in our area and lacking of screening programs.

No difference was found in the monthly income groups in relation to the severity of depressive symptoms, and this is going with finding of studies done in a different country⁽²¹⁾.

Single students were more prone to develop mild and moderate symptoms, while married students were prone to severe symptoms, this observation was in consistent with results from different authors^(24, 25)

5. CONCLUSION

The results of this study showed that both medical and non-medical students have a high prevalence of depressive symptoms. Our findings are consistent with the findings from other studies conducted locally and in other parts of the world using different screening measures for depression, therefore, early screening of the psychiatric morbidity and preventive programs should begin early in their university study.

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