

Depression among Medical Students in Saudi Arabia

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Abstract

Background: stress may be experienced by college students especially medical students because they have several psychological and academic stressors. Due to the increase in stress the depression prevalence increases. There are several factors for depression including gender. Assessing depression between medical students is very important for early treatment as a lack in treatment leads to poor outcomes.

Aim: To investigate the prevalence rate of depression in medical students in KSA.

Methods: this study was performed on 1171 medical students from different years of college; the PHQ-9 questionnaire was used.

Results: low rates were found for the depressive syndrome and depressive disorder with equal rates for moderate and severe symptoms, females expressed more depression severity than males.

Conclusion: depression prevalence rate was low between medical students and females expressed more depression and depressive symptoms than males.

Keywords: Depression prevalence, Depression in KSA, Medical student's depression

Introduction:

College students may experience stress due to the nature of college life ^[1]. Medical education is considered to be stressful ^[2]. The medical students have psychological and academic stressors ^[3]. Prevalence of depression in high school students has been observed to range from 14% to 33% and stress reaches 35% ^[4,5]. Medical students experience higher levels of depressive symptoms than the others ^[6].

The risk factors for depression and stress were reported to be birth order, gender, familial history of chronic diseases, history of relative loss and history of psychiatric illness ^[4]. It was suggested that several factors may affect determinants of depression between students such as the difference in culture ^[7]. Risk factors for medical students including student abuse and hazing ^[8,9], sleep deprivation ^[10] academic stress and workload ^[11,12]. Assessing of stress and depression between university students is an area of research ^[1]. There were high rates of psychological morbidity between students, such as anxiety and depressive symptoms have been reported from several parts of the world ^[2].

Depression prevalence and depression symptoms between students differ between different studies from 1.4% to 73.5% ^[13,14], other studies ^[15,16] found that rates of depression in medical students ranged from 2.9% to 38.2%. It was found that 16.8%

of students in mainland China were depressed ^[17], while in Taiwanese study ^[18] the level of suicidal ideation was high and exceeded 10%. Also, it was found that in Chinese physicians, the frequency of depressive symptoms was over 65% ^[19].

Depression was suggested to be more prevalent in females than in males' medical students ^[20-26], younger students ^[27-29]. Depression of medical students may lead them to commit suicide ^[21,30,31]. Some studies ^[32,33] reported that 11.2% to 17.4% of medical students experience suicidal ideation annually. In a recent study, also it was reported that medical students experience high rates of depression and suicidal ideation ^[34].

Suicidal behavior is a complex phenomenon; there are several predictors of suicidal behavior ^[35]. Suicide is the second cause of death for youths, whose age ranges from 15 to 24 years in the USA ^[36]. Suicide involves a fundamental element which is suicidal thoughts which gradually increase in severity ^[35]. These thoughts tend to be more prevalent in university students ^[35]. Suicidal ideation vary from 4.9% to 35.6% ^[12,37]. It was found that suicidal ideation prevalence was more frequent as revealed by percentages of 26%, 35% ^[38] and reached up to 43% ^[39]. In another study, it was found that 12% of students had suicidal thoughts and 2.6% of

them experienced persistent suicidal ideation [40].

Also, it was found that 4.4% to 23.1% of medical students experience suicidal ideation and suicidal attempts ranged from 0.0% to 6.4% [15]. Beside that, it was found that suicidal thoughts were more frequent in females and 67.6% of the suicidal ideators were females [41]. Physicians recorded high rates of suicide [42,43], these high rates show the results of untreated psychological symptoms in medical students [17,44]. So we aimed to evaluate the rates of depression in medical students in KSA in order to solve any problem in its beginning.

Subjects and Methods

Subjects

The present study included 1171 medical students from different years of college, the study was performed in the period from 24th May 2017 to 22nd June 2017. The study covered the 5 regions in KSA, the north, south, east, west and central regions of Saudi Arabia.

Questionnaire

The Patients Health Questionnaire (PHQ-9) was used in this study to investigate depression. This questionnaire was composed of 2 questions; the first included 9 items, there

were 4 options for answering scored from 0 to 3 points.

Statistical analysis

Microsoft Excel 2010 was used for data entry and the statistical package for social science (SPSS version 24) was used for data analysis. The simple descriptive statistic was used; Also frequencies are used for qualitative data.

The study was done after approval of the ethical board of Qassim University and an informed written consent was taken from each participant in the study.

Results

The present study included 1171 respondents, 443 (37%) of them were male while the large majority 738 (63%) were females. Most of them (34.9%) were from the central region, 25.5% were from the west region, 16.6% were from the east region, while 13.9% were from the north region and the least percent 9.1% was from the south region. Most of the students (21.3%) were intern followed by those from the third year (16.3%), those from the sixth year (14.1%) and close percents 13.6%, 13.1% and 13% for those from fifth, fourth and second year respectively. The least percent of students was those from the first year (8.6%) table1.

Table1: Demographics for all participants

Characteristics	N (%)
Gender:	
Male	433(37%)
Female	738(63%)
Region:	
North region Saudi Arabia	163(13.9%)
South region Saudi Arabia	106(9.1%)
East region Saudi Arabia	194(16.6%)
West region Saudi Arabia	299(25.5%)
Central region Saudi Arabia	409(34.9%)
College year	
First year	101(8.6%)
Second year	152(13%)
Third year	191(16.3%)
Fourth year	153(13.1%)
Fifth year	159(13.6%)
Sixth year	165(14.1%)
Intern	250(21.3%)

The percents of answers about each question in the questionnaire are shown in table2.

Table2: percents of answers for each question regarding each answer for all participants

Question	Not at all	Several days	More than half the days	Nearly every day
a. Little interest or pleasure in doing things	20.6%	40.9%	20.5%	18%
b. Feeling down, depressed, or hopeless.	18.2%	40.5%	22.4%	18.8%
c. Trouble falling/staying asleep, sleeping too much.	22.9%	33.4%	20.2%	23.6%
d. Feeling tired or having little energy.	11.4%	38.9%	25.3%	24.4%
e. Poor appetite or overeating.	29.1%	29.4%	21.5%	19.9%
f. Feeling bad about yourself, or that you are a failure, or have let yourself or your family down.	30.9%	28%	18.8%	22.2%
g. Trouble concentrating on things, such as reading the newspaper or watching TV.	38.9%	29.8%	15.5%	15.7%
h. Moving or speaking so slowly that other people could have noticed. Or the opposite; being so fidgety or restless that you have been moving around more than usual.	54%	23.1%	12.7%	10.2%
i. Thoughts that you would be better off dead or of hurting yourself in some way.	59.1%	22.5%	8.6%	9.8%

The final question assessed the difficulty that participants faced in case of having any problem that we investigated, most of them said it was somewhat difficult (520 persons), followed by those who said not difficult at all (347 persons), while 226 persons found it very difficult and only 91 persons found it extremely difficult.

We used the instruction of the PHQ-9 questionnaire to determine the rates of the major depressive disorder and other depressive syndromes, interpretation of the questionnaire was used to determine the recommended actions toward the participants. The range of scores was 0 to 30 with a mean of 12.11 ± 7.17 . Major depressive disorder was suggested if 5 or more of the 9 items were checked as at least 'more than half the days'. In the present study, only 6.3 % (74 persons) chose more than half of the days more than 5 times. Regarding gender, the previous answer was chosen more by a female (47 females), however, there was

no significance difference between male and female regarding the presence of major depressive disorder. Another depressive syndrome was suggested when a., b. or c. of the 9 items were checked as at least 'more than half the days'. For a, there were 243 (20.5%) chose 'more than half the days', close percent (22.4%) was recorded for the previous answer for b (265 persons) while lower rate (20.2%) was found for c. These low rates indicated that another depressive syndrome was less common. Regarding gender, for item a, b and c, more females (166 females) chose more than half the days when compared to males (77 males), also in item b, more females (185 females) than males (80 males) chose the previous answer, the same was found for item c, where 156 females chose the previous answer whereas 83 males chose it. This indicates that the female tends to have depressive syndrome than male. A guide for PHQ-9 scores was obtained from the questionnaire, table 3 summaries the score and recommended actions as well as the percent of the study in each score.

Table 3: Percents of participants in each score and recommended actions

Score	Recommended Actions	Percent of participants
0-4	Normal range or full remission. The score suggests the patient may not need depression treatment.	15.5%
5-9	Minimal depressive symptoms. Support, educate, call if worse, return in 1 month.	23.4%
10-14	Major depression, mild severity. Use clinical judgment about treatment, based on patient's duration of symptoms and functional impairment. Treat with antidepressant or psychotherapy.	25.4%
15-19	Major depression, moderate severity. Warrants treatment for depression, using antidepressant, psychotherapy or a combination of treatment.	17.8%
≥20	Major depression, severe severity. Warrants treatment with antidepressant and psychotherapy, especially if not improved on monotherapy; follow frequently.	17.8%

Regarding gender, most of males and females had the mild severity of major depression 24.7% and 25.9% respectively. More female (24.7%) had minimal depressive symptoms, while 21.2% of the male had minimal depressive symptoms. More males (23.7%) than females (10.7%) were in normal range,

the percent of a male who had moderate severity was 13.9, while the percent of a female was 21.1%. the sever severity was more dominant between females (18.6%) than males (16.4%), there was a significant difference between males and females regarding severity symptoms of depression (P<0.001) table4.

Table4: Comparison between depression levels between gender

Gender	Normal range N (%)	Minimal depressive syndrome N (%)	Major depression	Major depression	Major depression	P-value
			Mild severity N (%)	Moderate severity	Severe severity	
Male	104(23.7%)	93(21.2%)	108(24.7%)	61(13.9%)	72(16.4%)	0.001
Female	80(10.7%)	184 (24.7%)	193(25.9%)	150(20.1%)	139(18.6%)	

Discussion

In the present study, we assessed the depressive syndrome and depressive disease between medical students, the depressive syndrome was less common between participants and depressive disease was the least (6.3%). The rate of prevalence of depressive disease in the present study was the least between the previous studies, where in a previous study in Taif, it was found that 34% of the students had sort of depression [2].

In another study at King Faisal University, it was found that the prevalence of depressive symptoms was 24.4% [1], while in

another study in India [45] the depression was estimated to be 18.5% among young adults. There was a study [46] has a very close rate to our rate of depression prevalence (6.8%), however, the previous study was performed on the general population. In an Egyptian study [47], it was reported that prevalence of depression among Egyptian medical students was 18.3%. The findings of our study are the lowest between all the previous studies, this may attribute to differences in socio-cultural and scales used. It was mentioned that cultural factors affect the cultural variation in depression prevalence [3].

In the current study, female expressed more depressive disorder and depressive syndromes than male. The opposite was found by **Amr *et al.*** ^[1] who found that male students were more likely to suffer depression.

In agreement with our study, in an Egyptian study ^[48], it was found that female students suffered depression than male students. Also the same was reported by a Portuguese study on medical students ^[3], where it was reported that female had a higher prevalence of depression than male students. It is known that medical students have an extreme fear of failure and making mistakes, experience an exaggerated sense of responsibility and strive to achieve as well as they have personality traits of obsession ^[49] these factors assist in developing depression ^[1], however, the depression prevalence was the lowest in our study.

In the presents study, depending on the score of the questionnaire it was found that most of the participants (25.4%) had the mild severity of depression and equal percent had either moderate or severe severity and higher percent (23.4%) had minimal depressive symptoms and the least rate was normal. In the present study, also females reported a higher prevalence of depression severity than males. **Dahlin *et al.*** ^[50] reported that the prevalence of depressive symptoms was higher between Swedish female students than male students. This scoring is a guide for recommendations that should be performed.

In the present study, most of the participants had mild severity and this means clinical judgment about treatment, based on patient's duration of symptoms and functional impairment is required and treatment with antidepressant or psychotherapy should be performed. Although the diagnosis of mental illness is performed, many medical students don't receive the required care ^[51]. The lack of treatment may lead to poor outcomes ^[51], including poor academic performance, negative repercussions on long-term patient care and school dropout ^[3]. There are studies reported that inadequate treatment was significant between depressive medical students ^[51,52].

Conclusion

We found a very low prevalence of depression and depressive syndromes and females experienced more depression than

male. By assessing the severity of depression symptoms, the higher rate was recorded for mild severity, while moderate and severe severities were obtained in equal rates with high prevalence in the female.

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