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Prevalence of Depressive Symptoms among University Students in Oman

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Abstract

Objectives: To study the prevalence of depressive symptoms and its association with gender, academic year, and college among university students in Oman.

Methods: A cross-sectional study was conducted among Omani students attending the students' clinic of the Sultan Qaboos University (SQU). A systematic sampling of students, males and females, from different colleges, who visited the clinic during the study period, was carried out. The self-administered *Patient Health Questionnaire* (PHQ-9) was used to screen for propensity to depression.

Results: A total of 481 students participated in the study (243 males and 238 females). Overall, 133 (27.7%) of the participants (66 males and 67 females) had depression of various grades based on the PHQ-9 diagnostic criteria using a cut point of more than 11. Depression score at the cut point of 11 was not statistically associated with gender, college and the academic year.

Conclusion: Tendency for depression might be a common health problem among college students in Oman attending primary health care facilities. Further research on socio-demographic characteristics and the effect of depression on the academic performance is needed.

Keywords: Prevalence; Affective disorders; Depression; PHQ-9; University Students; SQU; Oman.

Introduction

Depression is one of the most commonly encountered emotional distresses in both the general public and in various types of clinical populations.[1-3] While options for effective treatments are widely available, this disorder is often under-diagnosed and under-treated.[4] In Oman, preliminary studies on emotional distress have emerged in recent years including depression.[5,6] A study of the prevalence of depressive symptoms among adolescent secondary school Omani students using the *Child Depressive Inventory* showed that 17% of the sample had mild depressive symptoms.[7] Converging view is that emotional disorders among students have adverse effect on their functioning and adjustment which has, in turn, repercussion in denting their vital period for learning and social development. Emotional distress in young adults is associated with an increased risk of alcohol and drug abuse and suicidal behaviors.[8] In addition, the disruption in relationships and learning caused by depression has been associated with academic and social disadvantages.[9]

There are various factors that could contribute to depression on such cohort. University life marks a transitional period for students, during which some students move away from family home for the first time, lose the traditional adult supervision and the traditional social support.[10] In addition, some students might have to deal with financial difficulties for the first time in their lives.[11] These changes have been recognized as risk factors for developing depression.[12] According to Porter,[13] up to 60% of university students left university without finishing their studies due to inability to manage psychological conditions such as depression, anxiety and maladjustment. Therefore, understanding factors impeding academic achievement would be critical in order to contemplate mechanisms to shield vulnerable student from succumbing into emotional distress that would have negative repercussion to their quality of life. In addition, such identification would lay groundwork for evidence-based prevention and contemplating strategies for effective management.

Within the above-mentioned background, studies are needed to explore the magnitude and the associated factors contributing to emotional disorder among college going population. The overall interrelated aim of this study was to explore whether depression is endorsed among the youth of Oman. The study also aimed to explore the association between depression and gender, academic year and college specialization among the students.

Methods

A cross-sectional study was conducted over a seven-month period starting from April 2009 at the students' clinic of the Sultan Qaboos University (SQU). The students' clinic at Sultan Qaboos University (SQU) was established in 1986 when the university was opened and started to function. The clinic is part of the Department of Family Medicine and Public Health at Sultan Qaboos University Hospital. It provides primary care services to

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about 14,680 university students. During the year of the study, the number of visits to the clinic was around 27,500 visits, which was nearly two visits per students per year.

The target population of this study was undergraduate students attending the students' clinic. Both male and female students from different colleges attending the clinic during the study period were enrolled in the study. Those who could not wait to fill the questionnaire, visited the health centre for purposes other than patients' care, and those who refused to give consent were excluded from the study. A sample size of 450 was estimated to be adequate to detect an assumed prevalence of 25%, with an error of 4% on either side of the estimate, a confidence level of 95% and power of 80%.

The nine-item depression Patient Health Questionnaire (PHQ-9) was a self-administered measure designed for use in primary care and non-psychiatric settings. It contained items derived from the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition (DSM IV).[14] The classification system pertains to: (1) anhedonia, (2) depressed mood, (3) trouble sleeping, (4) feeling tried, (5) change in appetite, (6) guilt or worthlessness, (7) trouble concentrating, (8) feeling slowed down or restless, and (9) suicidal thoughts.

The PHQ-9 has been validated in multiple studies conducted in primary care; medical outpatients; and specialist medical services in different cultures. It has been found to be acceptable and is as good as longer clinician-administered instruments in a range of settings, countries, and populations.[10,15-20] A validation study of the Arabic version of the PHQ-9 in primary care conducted in Saudi Arabia showed that depression module of the PHQ-9 was valid in Saudi population using the criterion standard of Structural Clinical Interview (SCID) based psychiatric interview.[20]

Selection of participants was done using a systematic random technique, by taking every 2nd student according to their order of attendance to the reception desk. The participants were requested to fill the Arabic version of the PHQ-9. If he/she declined the next student was asked. The completed questionnaires were collected at the end of the day by the nurses and handed over to the researcher.

The total score was then categorized into a diagnostic algorithm based on the DSMIV.[17] A total score more than 11 was used as the cut point to diagnose depression in this study. Quantitative and qualitative descriptive statistics were used to depict depression. Chi square test was used to evaluate the statistical association between levels of depression and the demographic variables and *p*-value of 0.05 and less was considered significant. Non-parametric statistical tests were computed to examine the association between depression and gender, academic year and college.

This study was approved by the Medical Research Committee and the Ethical Committee of the College of Medicine and Health Sciences at Sultan Qaboos University in 2009. A written consent was obtained from all participants before filling the questionnaire and checked by the attending physician.

Results

A total of 481 students (243 males and 238 females) participated in the study. The average age of the students was 20.75 ± 1.66 years. More than half of the participants were in their first three years of academic life (n= 265, 58%).

Table 1 presents the prevalence of depression by severity according to demographic characteristics of the participants. Nearly a quarter of the participants (n=133, 27.7%) had a depression score of more than 11. Sixty six (27.2%) of the male students had a depression score above 11, of which 14 (21.2%) had a score of more than 20 (severe depression). On the other hand, 67 (30.7%) female students had a depression score more than 11 of which 19 (26.9%) had a score of more than 20. However, the difference between male and female students was not statistically significant (p=0.34).

Table 1: Prevalence of depression by severity according to demographic characteristics of the students.

Demographics		Severe Depression (Score ≥20) N (%)	Moderate Depression (Score 16-19) N (%)	Mild Depression (Score 11-15) N (%)	Normal (Score ≤ 10) N (%)	Total frequency N (%)
Sex	Male	14 (5.8)	23 (9.5)	29 (11.9)	177 (72.8)	243 (50.5)
	Female	19 (8.0)	29 (12.2)	25 (10.5)	165 (69.3)	238 (49.5)
Academic year	1st – 2nd year	13 (7.8)	16 (9.6)	17 (10.2)	121 (72.5)	167 (36.3)
	3rd -4th year	11 (5.8)	21 (11.0)	25 (13.1)	134 (70.2)	191 (41.5)
	≥ 5th year	9 (8.8)	13 (12.7)	8 (7.8)	72 (70.6)	102 (22.2)
College	Education	8 (9.8)	11 (13.4)	8 (9.8)	55 (67.1)	82 (17.2)
	Arts	6 (8.5)	5 (7.0)	7 (9.9)	53 (74.6)	71 (14.9)
	Science	4 (4.0)	13 (12.9)	16 (15.8)	68 (67.3)	101 (21.2)
	Medicine and Nursing	2 (4.9)	2 (4.9)	3 (7.3)	34 (82.9)	41 (8.6)
	Commerce	5 (7.0)	9 (12.7)	10 (14.1)	47 (66.2)	71 (14.9)
	Engineering	3 (4.3)	7 (10.1)	6 (8.7)	53 (76.8)	69 (14.7)
	Agriculture	6 (14.3)	5 (11.9)	3 (7.1)	28 (66.7)	42 (8.8)

Furthermore, there was no association between the severity of depression and the academic year (p=0.75). However, 30% of the senior students (5th year and above) whom scored above 11, had a score more than 20 compared to 19% among the 3rd and 4th year students (p=0.25). Around 23.7% (n=33) of the students scoring more than 11 were from the college of Science. Within the students who enrolled to the college of commerce; around 34% scored more than 11. While approximately 17% of the Medical and nursing students scored more than 11. Among students scoring more than 11; around 43% of the agriculture students scored more than 20. However, the difference between the colleges and the severity of depression was not statistically significant (p=0.49).

The average depression score was 9.2 (SD=5.8) and the median score was 8.0 (inter-quartile range {IR} is 5-13). The median score for female students was significantly higher than the median score of the male students (9.0 *vs*. 8.0, p=0.026). Students in their 5th year had lower median scores compared to students in the fourth and students in the first or second years, 7.0 *vs*. 9.0 *vs*. 8.0, respectively. However the difference was not statistically significant (p=0.067).

The frequency and percentage of students responding to each question regarding depressive symptoms experienced in the last two weeks were measured using PHQ-9. Feeling down, depressed or hopeless were the most frequently reported symptom (n=382, 80%). Trouble concentrating on things such as reading and watching television was reported by 376 (78.0%) students of which 67 (17.8%) students reported it as a nearly daily problem. Trouble falling or staying asleep or sleeping too much was the most common symptom reported nearly on a daily basis (n=83, 17.2%). Twenty-two (4.6%) students reported suicidal thought on a nearly daily basis.

Discussion

The results of this study show that 27.6% of the sample endorsed propensity towards emotional distress in the form of depression. This figure largely falls within the international rate from similar population. This study underscores the view that subclinical depression is high in such populations. Studies from other countries showed a wide variety of rates ranging between 10% and 44%.[21-25] This variation has been explained to be due to cultural differences, differences in the healthcare system, and differences in the population and the tools used in the study. Moreover, the rate is higher when compared to a community study conducted on school students in Oman.[7] This difference could indicate that university life has factors which might contribute to stress and trigger maladjustment that expresses as depression. Most students who join university in Oman are leaving their homes for the first time. This might subject them to loss of the traditional social support and supervision in addition to residing with other students and peer relationships. Moreover, there is a change in the style of learning from what the students are used to in school. These changes may act as risk factors to depression in university students in Oman. The other factor that could contribute to the present observation is the fact that it was self-selecting cohort who, for various reasons was seeking consultation in a medical setting. Further studies to explore such confounders are needed.

The present study showed no significant difference in the rate of depression between males and females, which is contrary to the well known notion that depression is more common in women in general. Moreover, the findings of this study support the results of the previously mentioned national survey including Omani adolescents where the rates of depression were found to be similar across gender.[7] Furthermore, similar results were shown in international studies on university students and were explained to be due to female students being able to express themselves better and being more confident.[22,26-28] In addition, there is an indication that women are outperforming males in academic performance.[22]

The question could be that newly found confidence in females would be related to their lower score in indices of depression. Another explanation could be that the majority of female students reside, due to sociological reason, at university hostels adjacent to the college. In SQU, males student are left to fend on their own and the university, being the one national university, draws student population from different corners of Oman.

Poor concentration is a well known symptom of depression. In this study the increased reporting of poor concentration could be explained by the fact that poor concentration is especially recognizable in university students as it affects their daily academic performance. In addition poor concentration may be a consequence of poor sleep.

Poor sleep was highly reported by depressed subjects in this study. Sleep disturbance is extremely common in university students. The literature has shown that there is a rise in the number of students with sleep disturbances. In 1982, 26.7% of students reported sleep problems compared to 68.3% in 1992.[29]

As indicated by the *International Classification of Sleep Disorders*,[30] disturbance in sleep is usually accompanied by undesirable daytime consequences; decreased levels of motivation, performance, concentration, attention, and humor, as well as increased fatigue and somnolence. Such changes are expected to have undesirable effects on the students' academic performance. Hence, the association between insufficient sleep duration and lower university grades is understandable and has been reported in the literature.[31] Information about the characteristics of the individual student's sleep habits might be useful for counseling students on how to cope best with the problem.

One of the limitations of this study is that a score of 11 and above was used to diagnose depression in this study. This is higher than the usual score of more than 10 which is used by different studies in the literature.[20] However, clinicians and researchers vary in their choice of cut point according to the study population. Studies in clinical settings have used a score of more than 11 and more than 12 as cut scores.[20] As our study took place in a clinical setting the cut point was raised in order to increase the specificity. However, research carried out on community samples might consider using a cut point of 10 a better screening measure.

Another limitation of this study is that it did not assess the other potential factors that may have a relationship with depression such as the academic performance, life style and socioeconomic factors. These factors could also be potential confounders that might have masked the association between depression and gender. For example, female students are known to have better academic performance than males and if bad academic performance is associated positively with depression, positive association of gender and depression would be veiled. Extrapolation of the results to other groups of similar age in the community might not also be viable.

In Table 1 the number of students from the College of Medicine is 41 (8.5%) which is only 9% of the total number of medical students enrolled, and 34 (83%) of these were normal. The number of students is small to make generalizations. However the propensity of depression is less in the students of the College of Medicine, 17% as compared to the overall 27% because there is easy access to the psychological and psychiatric help which can improve their emotion, besides they may be aware of different strategies to relieve stress. Other factors could be that they being the students with very high academic performance do not want to accept being depressed.

Although PHQ-9 was proved to be a good and reliable screening tool, it has been advised that screening tools should not be used solely to decide patient management and they should be used alongside proper assessment by the treating physician.[32] There is a need to have a multi-disciplinary approach for detecting and managing depression at universities. In addition, the results suggest the need for mental health promotion activities targeting university students.

Conclusion

In summary, we found that depression is common in SQU students with no preponderance between males and females. Further research studying socio-demographic factors and the effect of depression on the academic performance is needed.

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