

Assessment of Depression among Applied Medical Science College Students at Taif University: A Questionnaire Survey

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Abstract

Psychological stress associated with depression is common among medical students and considered as an important indicator for mental health. Mental disorders might cause numerous undesirable personal and professional consequences such as; growing cynicism and social isolation. This study aimed to assess the degree of depression among undergraduate students in College of Applied Medical Sciences at Taif University. The presence and severity of depression was measured by using the patient health questionnaire (PHQ-9) scoring. The overall percentage of depression in the study is seen in 75.7% of the students, with major depression (Scores>15) found in 18.7% of students. The result of this study revealed the proportion of male and female students who had depression, to be 62% and 81.4% respectively and this difference showed statistical significance (P value<0.05). The highest percentage of students with major depression (moderately severe and severe) belonged to nursing department followed by radiological sciences, then laboratory department and lastly physical therapy, although there was no statistically significant difference found between these courses (P value>0.05). Interestingly, the percentage of students decreased sequentially as the depression severity score became higher.

Keywords: Stress; Depression; Students; Taif university

Introduction

Psychological stress associated with depression is common among medical students and considered as an important indicator for mental health [1]. Such mental disorders might lead to numerous undesirable personal and professional consequences such as; growing cynicism, substance abuse, smoking, alcohol consumption, and social isolation [2]. According to the World Health Organization (WHO), a person could be termed depressed if he shows a variable combination of loss of interest or pleasure, feeling of guilt, feeling hopeless, feeling restless, low mood, low self-esteem, disturbed sleep, disturbed concentration or disturbed appetite [3]. A number of several studies have documented stress among medical students ranging from 12% to 73% [4-7]. In 2015, Kulsoom and Afsar showed that the smoking and female sex were associated with higher levels of depression, anxiety or stress compared to other medical students amongst college of medicine at Al-Faisal University, Riyadh, Saudi Arabia [8]. Another more recent study performed at medical school in Bursa, Turkey has found that 30.5% of the participants have mild and moderate degree of depression while 8.5% have severe and extremely severe levels of depression [9]. However, a study done on medical students and residents in the USA showed that 12.0% of the respondents had major and 9.2% had mild/moderate depression [10].

Different research studies have mentioned the reasons behind student's depression and stress. Low financial support was significantly associated with stress among nursing students [11]. In addition, the level of academic year was associated with depression and stress severity. Highest level of depression was seen in first year amongst 331 undergraduate medical students at a private medical college in Gujarat when assessed by using patient health questionnaire (PHQ-9) [12]. One of the interesting findings was that of Nagendra and colleagues, where they have shown problematic relationships and parental conflicts to be associated with higher depression levels [13].

Student's gender was also linked to the higher depression and stress level; where the females showed higher stress levels than males but the difference did not reach statistical significance among medical students at King Saud Bin Abdulaziz University for Health Sciences [14].

The aim of this study was to determine the prevalence of anxiety and depression among undergraduate students attending the following programs, general nursing, clinical laboratory, radiotherapy and physical therapy of Applied Medical Sciences College at Al- Taif University, Saudi Arabia.

Method

Study design

This was a cross-sectional study conducted at College of Applied Medical Sciences, using paper-based patient health questionnaire (PHQ), developed by Kroenke et al. [15]. The study was conducted between January to March 2017. Male and female students attending the following programs, general nursing, clinical laboratory, radiological sciences and physical therapy participated in this study. Completed questionnaires were collected at least two months before the examination period in order to avoid the effect of exam-related stress and psychological changes that would otherwise affect their response. All students showing willingness to participate were included in the study. The students with any major diagnosed illness were excluded from the study. Also, responses with missing values or incomplete questionnaire were excluded.

The presence of depression and its severity was based on PHQ-9 scoring, which consists of nine questions for screening, diagnosing, monitoring and measuring the severity of depression level. When the PHQ-9 scoring is between 5 to 9 minimal symptoms of stress

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is presented. When the PHQ-9 scoring is between 10 to 14 minor depressions, dysthymia or mild major depression is indicated. Major depression, moderately severe and major depression, severe are indicated when PHQ-9 scoring is between 15 to 19 or higher than 20 respectively [15].

Data analysis

The response to all part of the questionnaire were assessed by rating scales as not at all, several days, more than half the days or nearly every day. The data was collected and analyzed statistically using chi-square test (χ^2) to find any significant difference (P value) between numbers of depressed subjects among various programs in the college.

Ethical Consideration

Ethical approval for this study was obtained from the ethics review committee of Applied Medical Sciences College at Al-Taif University. All information obtained at each course of the study was kept confidential.

Results

A total of 267 participants enrolled in the study. Participants were male and female students at different academic levels in general nursing (44 students), clinical laboratory (101 students), radiotherapy (72 students) and physical therapy (50 students) (Table 1). The mean age of the male and female participants was 20 (± 2) years. Out of 267 participants, 188 (70.4%) were females and 79 (29.6%) were males (Table 1). The overall prevalence of depression was seen in 75.7% of the students. The proportion of male and female students who had depression was 62% and 81.4% respectively; P value<0.001 (Table 2).

Table 3 shows gender-based distribution of depression among different programs at the college. It was found that significant difference exists in the depression rates between male and female counterparts in the departments of laboratory sciences ($\chi^2=13.3$; P=0.000) and physical therapy ($\chi^2=6.29$; P=0.012). The difference between male and female subjects were not significant in radiological sciences ($\chi^2=0.84$; P=0.361) and nursing ($\chi^2=1.97$; P=0.160) departments. Higher number of females showed mild, moderately severe and severe scores of depression as compared to male counterparts. The only PHQ-9 depression severity score where males had a higher percentage as compared to females was a score of 5-9 (minimal depression).

The prevalence of minimal and minor depression was about 57.0% whereas prevalence of moderate and severe depression was about 18.7% among all sections of the college. The percentage of students without any depression symptoms were 24.3% (Table 4). Highest percentage of students with major depression (moderately severe and severe) belonged to nursing department (22.7%), followed by radiology (22.3%), then clinical laboratory sciences department (16.9%). Lowest percentage of students with major depression was in physical therapy

Gender	Physical therapy	General nursing	Radiotherapy	Clinical laboratory
Male	20	14	20	25
Female	30	30	52	76

Table 1: Shows the number of participants among different departments.

Study Variable	Depression (N=267)			χ^2 value; P value
	Present	Absent	Total	
Male (n=79)	49 (62%)	30 (38%)	79	$\chi^2=11.317$ P<0.001
Female (n=188)	153 (81.4%)	35 (18.6%)	188	
Total	202 (75.7%)	65 (24.3%)	267	

Table 2: Shows the distribution of depression among male and female students.

Department	Male		Female		χ^2 value; P value
	Total Number	Number Depressed	Total Number	Number Depressed	
Physical therapy	20	12	30	27	$\chi^2=6.29$ P=0.012
Nursing	14	9	30	25	$\chi^2=1.97$ P=0.160
Radiology	20	17	52	39	$\chi^2=0.836$ P=0.361
Clinical laboratory	25	11	76	62	$\chi^2=13.3$ P=0.000

Table 3: Distribution of depression according to gender and programs in the college.

Department	None 0-4	Minimal depression 5-9	Mild depression 10-14	Moderately severe depression 15-19	Severe depression 20 or more
Physical therapy	11 (22%)	19 (38%)	13 (26%)	5 (10%)	2 (4%)
Nursing	10 (22.7%)	19 (43.2%)	5 (11.4%)	8 (18.2%)	2 (4.5%)
Radiology	16 (22.2%)	23 (31.9%)	17 (23.6%)	12 (16.7%)	4 (5.6%)
Clinical laboratory	28 (27.7%)	30 (29.7%)	26 (25.7%)	16 (15.9%)	1 (1%)

Table 4: Number and percentage of students in each department showing different grades of depression, according to PHQ-9 scores.

department (14%). On the contrary, maximum number of students having depression with minimal symptoms and minor depression were found to belong to the department of physical therapy (64%). This was followed by departments of radiology (55.5%), clinical laboratory sciences (55.4%) and lastly nursing (54.6%; Table 4). The percentage of students showing all levels of depression taken together, were between 72% and 78%, in each course (78%, 77.8%, 77.3% and 72.3% in physical therapy, radiology, nursing and clinical laboratories department, respectively). There was no statistically significant difference between these number of students (P value more than 0.05; P=0.546).

Discussion

Prevalence of depression among college students of medical sciences is a matter of great concern as it may impair behavior of students, affect academic performance, lead to diminished learning and therefore affect patient healthcare upon employment of these students. In the current study, patient health questionnaire (PHQ-9) has been utilized to detect the prevalence of depression among students of the college of applied medical sciences. The PHQ-9 is a multipurpose instrument for screening, diagnosing, monitoring and measuring the severity of depression.

The study revealed that the overall prevalence of depression including both male and female students is seen in 75.7% of the students which is quite similar to the findings of Khan et al. (70%) and Inam et al. (60%) [16,17]. Previous study of Steptoe et al. also showed that Asian countries had the highest incidence of depression as compared to other countries [18]. However, this percentage is quite high as compared to the findings of Sreeramareddy et al. (20%) and Chan DW (21%) [19,20]. Besides academic pressure and changing environment at college, the high percentage of the study population having depression could be related to social and cultural factors existing in the society. Interpersonal relationships of the pupils within their families such as between parents and between parents and children could be a factor in furthering depression. This when combined with the social

environment could play a lead role in exacerbating anxiety, depression and mood disorders in this vulnerable population of society.

Considering male and female students separately, we found differences in depression scores among the two genders. Similar to our results, some previous studies [21-24] showed higher levels of depression among female students. Some western studies [25,26] have also shown female gender to be significantly correlated with anxiety, depression and psychological distress. However, findings of some studies [21,23,27] are contrary to our results and found no differences in depression among male and female students.

An interesting finding of this study was that the percentage of students having severe depression varied among different courses, although it did not reveal any statistically significant difference. Nursing and radiology courses had the highest number of students (22.7% and 22.3% respectively) followed by clinical laboratory (16.9%) whereas physical therapy had the least number (14%). This can be attributed to the nature of the course and its demands. Furthermore, if taken together (minimal, mild, moderate and severe depression), percentage of students having depression were almost the same in each course, with P value being more than 0.05.

Conclusion

Implication of anxiety and depression are of serious concern that could result in loss of potential to handle various stressors encountered at college, impairment of functioning in classroom performance and later in clinical practice. In the light of high percentage of depression seen in this study, it is imperative to identify the stressors and address the issue through effective counseling and instituting appropriate measures.

References

1. Basnet B, Jaiswal M, Adhikari B (2012) Depression among undergraduate medical students. *Kathmandu Univ Med J (KUMJ)* 10: 56-59.
2. Notman MT, Nadelson C (1979) Adaptation to stress in physicians. In: Shapiro E, Lowenstein L (eds.), *Becoming a Physician: Development of Values and Attitudes in Medicine*. Cambridge Press, USA. p. 201.
3. Marcus M, Yasamy MT, van Ommeren M, Chisholm D, Saxena S (2017) Depression, A Global Public Health Concern. World Health Organization, Geneva.
4. Cuttilan AN, Sayampanathan AA, Ho RCM (2016) Mental health issues amongst medical students in Asia: a systematic review. *Ann Transl Med* 4: 72.
5. Saipanish R (2003) Stress among medical students in a Thai medical school. *Med Teach* 25: 502-506.
6. Carter AO, Elzubeir M, Abdulrazzaq YM, Revel AD, Townsend A (2003) Health and lifestyle needs assessment of medical students in the United Arab Emirates. *Med Teach* 25: 492-496.
7. Inam SN, Saquib A, Alam E (2003) Prevalence of anxiety and depression among medical students of a private university. *J Pak Med Assoc* 53: 44-47.
8. Kulsoom B, Afsar NA (2015) Stress, Anxiety, and Depression among medical students in a multi ethnic setting. *Neuropsychiatric Dis Treat* 11: 1713-1722.
9. Ediz B, Ozcakir A, Bilgel N (2017) Depression and anxiety among medical students: Examining scores of the beck depression and anxiety inventory and the depression anxiety and stress scale with student characteristics. *Cogent Psychology* 4: 1-12.
10. Goebert D, Thompson D, Takeshita J, Beach C, Bryson P, et al. (2009) Depressive symptoms in medical students and residents: A multi school study. *Acad Med* 84: 236-241.
11. Acharya R, Chalise H (2015) Self-Esteem and Academic Stress among Nursing Students. *Kathmandu Univ Med J* 52: 298-302.
12. Vankar JR, Prabhakaran A, Sharma H (2014) Depression and Stigma in Medical Students at a Private Medical College. *Indian J Psychol Med* 36: 246-254.
13. Nagendra K, Gouli C, Kalappanavar NK, Kumar V (2012) Prevalence and association of depression and suicidal tendency among adolescent students. *Int J Biomed Adv Res* 03: 714-719.
14. Saeed AA, Bahnassy AA, Al-Hamdan NA, Almudhaibery FS, Alyahya AZ (2016) Perceived stress and associated factors among medical students. *J Family Community Med* 23: 166-171.
15. Kroenke K, Spitzer RL, Williams JB (2001) The PHQ-9: Validity of a brief depression severity measure. *J Gen Intern Med* 16: 606-613.
16. Khan MS, Mahmood S, Badshah A, Ali SU, Jamal Y (2006) Prevalence of depression, anxiety and their associated factors among medical students in Karachi, Pakistan. *J Pak Med Assoc* 56: 583-586.
17. Inam SB (2007) Anxiety and depression among students of a medical college in Saudi Arabia. *Int J Health Sci* 1: 295.
18. Steptoe A, Tsuda A, Tanaka Y, Wardle J (2007) Depressive symptoms, socio-economic background, sense of control, and cultural factors in university students from 23 countries. *Int J Behav Med* 14: 97-107.
19. Sreeramareddy CT, Shankar PR, Binu VS, Mukhopadhyay C, Ray B, et al. (2007) Psychological morbidity, sources of stress and coping strategies among undergraduate medical students of Nepal. *BMC Med Educ* 7: 26-31.
20. Chan DW (1991) Depressive symptoms and depressed mood among Chinese medical students in Hong Kong. *Compr Psychiatry* 32: 170-180.
21. Grant K, Marsh P, Syniar G (2002) Gender differences in rates of depression among undergraduates: measurement matters. *J Adolesc* 25: 613-617.
22. Wade TJ, Cairney J, Pevalin DJ (2002) Emergence of gender differences in depression during adolescence: national panel results from three countries. *J Am Acad Child Adolesc Psychiatry* 41: 190-198.
23. Bostanci M, Ozdel O, Oguzhanoglu NK (2005) Depressive symptomatology among university students in Denizli, Turkey: prevalence and socio-demographic correlates. *Croat Med J* 46: 96-100.
24. Iqbal S, Gupta S, Venkatarao E (2015) Stress, anxiety & depression among medical undergraduate students & their socio-demographic correlates. *Indian J Med Res* 141: 354-357.
25. Kaya M, Genc M, Kaya B, Pehlivan E (2007) Prevalence of depressive symptoms, ways of coping, and related factors among medical school and health services higher education students. *Turk PsikiyatriDerg* 18: 137-146.
26. Dahlin M, Joneberg N, Runeson B (2005) Stress and depression among medical students: a cross-sectional study. *Med Educ* 39: 594-604.
27. Bayram N, Bilgel N (2008) The prevalence and socio demographic correlations of depression, anxiety and stress among a group of university students. *Soc Psychiatry Psychiatr Epidemiol* 43: 667-672.