

ASSESSMENT OF DEPRESSION AMONG SCIENCE STUDENTS AT A PRIVATE UNIVERSITY: A QUESTIONNAIRE SURVEY

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Abstract

Background: Depression (major depressive disorder) is a common and serious medical illness that negatively affects how you feel the way you think and how you act. Fortunately, it is also treatable. Depression causes feelings of sadness and/or a loss of interest in activities once enjoyed.

Objective: The study investigated the prevalence of depression, anxiety and stress among 120 undergraduate students attending the following programs, Pharmacy, Computer Sciences, Software Engineering & Electrical Engineering of Daffodils International University, Dhaka, Bangladesh.

Methods: The presence and severity of depression was measured by using the patient health questionnaire (PHQ-9) scoring & also assessed their stressors inducing factors.

Result: A total of 120 students participated in this study among male 75 students & female 45 students. The overall prevalence of depression among the students was 56.7 percent. The prevalence of depression was 60.1 percent among female students and 28.07 percent in male students. It shows that highest percentage of depression belonged to female students then male students. Both male and female students gave high ratings to Future concern and academic stress as the main stress inducing factors.

Conclusions: Depression, anxiety and stress have a high detrimental effect to individual and society, which can lead to negative outcomes including medical dropouts, increased suicidal tendency, relationship and marital problems, impaired ability to work effectively, burnout and also existing problems of health care provision. With that, there is a need for greater attention to the psychological wellbeing of undergraduate students to improve their quality of life.

Keywords: *Depression, Science Students, patient health questionnaire (PHQ)*

Introduction

Depression is an illness that affects both the mind and the body and is a leading cause, most of people have felt sad or depressed at times. Feeling depressed can be a normal reaction to loss, life's struggles or an injured self-esteem. But when feeling of intense sadness including feeling helpless, hopeless and worthless last for many days to weeks and keep you from functioning normally, depression may be something more than sadness. It may very well be clinical depression a treatable medical condition [1]. According to the World Health Organization (WHO), a person could be termed depressed if he/she 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[2].

A number of several studies have documented stress among medical students ranging from 12% to 73% [3-6] 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 [7]. 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 [8]. 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 [9].

The causes of depression, anxiety and stress among university students are numerous and varied. For example, some researchers found that increased academic workload, assignment papers, mid-term tests, projects and final examinations caused depression [10-12]. A study also found that these daily hassles of attending university were quite problematic in the first year of study [13]. In a study by Leary [14] shyness was found to be one of the causes of social anxiety. Loneliness, culture shock, and homesickness during the first few month of the first year were also found to have connections with anxiety in foreign students [11]. In addition, several other factors such as financial

problems, unrealistic expectations of students and their parents, poor time management, repeated failure and lack of experience of success, and public speaking or giving a speech were linked to anxiety. [15]

The aim of the study was to determine the prevalence of anxiety and depression among undergraduate students attending the following programs, Pharmacy, Computer Sciences, Software Engineering & Electrical Engineering of Daffodils International University, Dhaka, Bangladesh.

Methods

Study Design

This was a cross-sectional study conducted at Science Students, Daffodil International University, using paper-based patient health questionnaire (PHQ), developed by Kroenke et al. [16]. The study was conducted between Octobers to November 2017. Male and female students attending the following programs, Pharmacy, CSE, SWE & EEE Participated in this study. Completed questionnaires were collected at least one month 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.

Personal Data: This included age, sex, batch, ID no. & Subject.

Depression Scale: 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 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. [16]

Stress inducing factors: After in-depth literature review and peer consultation, five most important

stress inducing factors were selected. The students were asked to strike the factors they thought to be important from the following [17].

- a) Academic stress
- b) Home sickness
- c) Relationships
- d) Hectic lifestyle
- e) Future concerns

Data Analysis:

Data were entered into Microsoft excel and analyzed using SPSS 12.0 statistical software.

Results

A total of 120 participants enrolled in the study. Participants were male and female students at different academic level in pharmacy (30 students), computer sciences (30 students), electrical engineering (30 students) and software engineering (30 students). The mean age of the male and female participants was 21 (± 2) years. Out of 120 students 45 (37.5%) were females and 75 (62.5%) were males.

Table 1 shows the prevalence of minimal depression was about 34.1% whereas the prevalence of minor and major depression was about 19.9% and 2.4%. The percentage of students without any depression symptoms were 43.3% and percentage of students with depression were 56.7%.

Table 2 shows gender based distribution of depression among science students at the university. Considering male and female students separately, we found differences in depression score among the two genders. It shows that highest percentage of depression belonged to female students then male students. On the contrary, maximum number of students having normal level was belonging to male students (45.3%). In this result, we saw that minimal and minor depression symptoms were found in female student's more than male students. On the other hand, major depression was found in male students (2.6%).

Table 3 shows percentage of students showing all levels of depression taken together, were between 46.6% to 63.3%, in each course [59.9%, 56.8%, 46.6% and 63.3% in pharmacy, computer science, software engineering and electrical engineering department, respectively]. In this case, we saw that maximum number of students with

depression belonged to EEE (63.3%), then Pharmacy (59.9%), then CSE (56.8%) & then SWE (46.6%) in respectively. Highest percentage of students with major depression belonged to pharmacy department (6.6%), then EEE (3.3%) department. Lowest percentage of students with major depression was in CSE & SWE department (0.1%). On the contrary, maximum number of students having depression with minimal symptoms was found to belong to the department of CSE (46.7%). This was followed by departments of EEE (40%), SWE (26.7%), and Pharmacy (23.3%). On the other hand, maximum students with normal level were belonging to SWE department (53.4%), then CSE (43.2%), then Pharmacy (40.1%), then EEE department (36.6%) in respectively.

Table 4 shows the different stress level such as academic stress, home sickness, relationship, hectic life style and future concern among science students at undergraduate level. A total 120 students at different academic level were enrolled in the study.

In this case, highest percentage of students having stressed belonged to Future concern (36.6%). This was followed by Academic stress (25.83%), Home sickness (16.7%), Relationship (14.2%) then, Hectic lifestyle (6.6%) in respectively.

Discussion

Prevalence of depression among university students of sciences faculty such as pharmacy, software engineering, computer science and electrical engineering is a matter of great concern as it may impair behavior of students, affect academic performance, lead to diminished learning and therefore affect upon employment of these students. In the current study, patient health questionnaire (PHQ-9) has been utilized to detect the prevalence of depression among university sciences students. The PHQ-9 is a multipurpose instrument for screening, diagnosing, monitoring and measuring the severity of depression. The study showed that the prevalence of depression among science student was 56.7%. Considering male and female students separately, we found differences in depression scores among the two genders. The prevalence of depression was 60.1 percent among female students and 28.07 percent in male students.

Similar to our results, some previous studies showed higher levels of depression among female students [19, 20]. Some western studies have also shown female gender to be significantly correlated with anxiety, depression and psychological distress [21]. Both male and female students gave high ratings to Future concern and academic stress as the main stress inducing factors.

There were several limitations to the study. Our study only included only 120 students in the sample. Also, only the well-studied principal stressors were assessed. The students were not questioned about their coping strategies and possible measures like, student counsellors, to alleviate the situation. However, the study has been able to throw some light about the mental health and their stress inducing factors. Medical schools in the United States and Canada have started health promotion programmes and have reported positive results in reducing the negative effects of stress upon medical student's health and academic performance [22, 23]. Others methods suggested for reducing stress are use of small groups for teaching and support, provision of recreation and sports and more participation in social activities. Even, Leisure activities can reduce stress in medical schools [24]. Studies done in the US regarding the residents' working hours and the stress and the work performance is quite significant and has helped change policies[25].

Conclusions

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 service life. So, steps should be taken to reduce depression, anxiety and stress among undergraduate students. Adequate service should be provided to manage psychological problem by college authority. Further research should be carried out on large sample in different colleges which should include both public and private colleges.

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Table 1: show the numbers and percentage of depression among science students

No of student	Normal (0-4)%	Minimal Depression (5-9) %	Minor Depression (10-14) %	Major Depression (15-20) %	Total Depression %
120	43.3%	34.4%	19.9%	2.4%	56.7%

Table 2: Show the number and percentage of depression among male and female students

Gender	Students	Normal (0-4)%	Minimal Depression (5-9) %	Minor Depression (10-14) %	Major Depression (15-20) %	Total Depression %
Male	75	45.3%	33.4%	18.7%	2.6%	54.7%
Female	45	39.9%	35.7%	22.2%	2.2%	60.1%

Table 3: Shows the percentage of different grades of depression in each department, according to PHQ-9 scores

Department	Normal (0-4)%	Minimal Depression (5-9) %	Minor Depression (10-14) %	Major Depression (15-20) %	Total Depression %
Pharmacy	40.1%	23.3%	30%	6.6%	59.9%
CSE	43.2%	46.7%	10%	0.1%	56.8%
Software Engineering	58.4%	26.7%	14.8%	0.1%	41.6%
EEE	36.6%	40%	20%	3.3%	63.3%

Table 4: shows the different stress level

No of student	Factor	Value
N=120	Academic stress	25.83%
	Home sickness	16.7%
	Relationship	14.2%
	Hectic lifestyle	6.6%
	Future concern	36.6%