

Depression level of undergrad students: BDI scale

Abstract

When a person goes through a time span between adolescence to adulthood, can fall into depression as their roles and responsibilities change. Under-graduation time is the important time for this type of transformation. Sometimes few factors cause serious mental affect on the students. Therefore, this study wants to investigate the depression levels of the university students. Gender, residential status, cumulative grade point average (CGPA) and year of studying are considered as influencing factors of depression. Using simple random sampling, 119 students of different years of the Institute of Statistical Research and Training (ISRT), University of Dhaka, Bangladesh are taken. Beck Depression Inventory (BDI) scale is used to analyze the depression level. The significant association between the categorical variables is measured using chi-square test. After analyses it is found that gender and residential status have significant effect on depression. Most of the students are in borderline mood. The girls and students who are living outside the campus are found to be depressed than that of the boys and students living inside the campus respectively. Depression level is varying with studying year. It gradually decreases over studying years, but interestingly increases in last year of studying. Students with better results are inclined to be more depressed than their counterpart.

Keywords: depression, Beck depression inventory scale, gender, contingency table.

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Introduction

Under-graduation years are the important lifespan that makes an adolescent to adulthood. In this time a student falls in a new environment. In this student life one can enjoy various pleasant moments as well as can face some problems such as separation from family, an unknown environment, feeling loneliness, economic difficulties, adjusting to new residence. These types of changes in all sectors can affect one's psychology. However depression is one of the most serious problems may easily affect the university students. Nowadays many countries are thinking about depression. Many surveys and projects are taking steps to know the level of depression, analyzing the consequences and how to cure depression. Sometimes a higher depression level is so crude that one can commit suicide. Inspiration from the thriving needs to focus on depression, this study wants to know the factors which are closely related on depression and how close the relation is!

Depression is one kind of mental disorder that presents with depressed mood, feeling guilty, loss of interest, no enthusiasm, decrease concentration, insomnia, change in appetite, indecisiveness, committing suicide, oversleeping, feeling alone etc. Marcus et al.¹ Depression can affect individual life, academic performance, relationship and many other attitudes. There may be a negative relationship between depression and academic performance Al-Qaisy.² Depression is one of the major causes of illness and disability, and sometimes it can abandon someone from social life. Depression affects approximately 19 million Americans, or 9.5% of the population in one-year period. At some point in their lives, 10%-25% of women and 5%-12% of men would likely become clinically depressed. Globally, more than 300 million people of all ages suffer from depression WHO.³

This study tries to know the levels of depression of undergraduate and graduate students and thrives to find the answers of the question:

Do the depression levels of students show a significant difference according to their gender, CGPA, residential status and graduation years?

Ustun et al.,⁴ aimed to investigate the depression, anxiety and hopelessness of the final year students and the related factors. Purposive sampling is used and 144 students were taken from which 55 of boys and 89 are girls. BDI scale was used to measure depression. They have found that depression was not significantly differing according to their gender and departments. Al-Qaisy² studied on the identification of impact of mood disorders, mainly anxiety and depression among a sample of students for their academic achievement. Applying on 200 students it was found that females were more anxious than males, but surprisingly males were more depressed than females. DeLisle & Holden⁵ in their paper determined the degree to which suicidal risk predictors are distinct using a sample of undergraduate students, the factor analyses indicated that depression, hopelessness, and psychache comprise three separate, but correlated factors. Kaya et al.,⁶ aimed to explore the prevalence of depressive symptoms, ways of coping and their relationships to socio-demographic variables among students using BDI scale. The students from families with lower levels of income had a higher frequency of depressive symptoms. They have concluded that the rate of mental health problems was quite high among the students.

Methods

The sample of 119 randomly selected students of Institute of Statistical Research and Training (ISRT), University of Dhaka, Bangladesh from 1st to 4th year Honors and M.S. classes were surveyed. Chi-square test is used in this study to test for association between two categorical variables. The test statistics is defined Agresti⁷ as follows:

$$\chi^2 = \sum_k \sum_j \frac{(o_{ij} - E_{ij})^2}{E_{ij}}$$

where O_{ij} ($i=1,2,3,\dots,r$ and $j=1,2,3,\dots,k$) denotes observed frequencies and E_{ij} ($i=1,2,3,\dots,r$ and $j=1,2,3,\dots,k$) denotes the expected frequencies.

The data were obtained by using BDI questionnaire that was applied to the students. This data are collected from the students in between 15 to 25 June in the year 2017. The study uses simple random sampling from the population list and the sample size is 119.

The Beck Depression Inventory (BDI) scale was introduced to measure the level of depression of young and adults by Beck et al. in 1961. The scale is not aiming at the prevention of depression, rather it measures the level of depression prefixes. There are 21 questions with numerical score each. Students choose answers to describe themselves according to unhappiness, despondency, loss of pleasure, guilty sense, punishment sense, self-dislike, suicidal notion, weeping, solicitude, loss of gusto, uselessness, loss of power, disturbance in sleeping pattern, irritability, changes in greed, concentration hardness and tiredness. Each answer is scored from 0 to 3. This study is evaluated depression according to the depression Table 1.

Table 1 Level of depression

Total score	Levels of depression
0-10	normal
11-20	borderline
20-over	severe

Results

Figure 1 finds that most of the students are in borderline mood and less in the severe mood. About 32% students are in normal mood, whereas about 24% students are in severe depression (Figure 1).

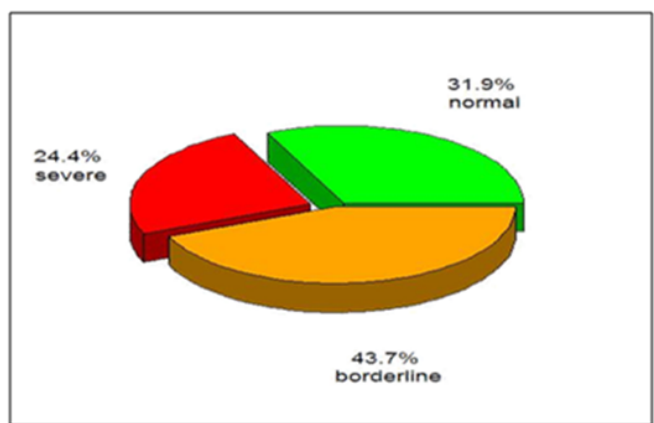


Figure 1 Depression and percentage allocation.

Table 2 depicts the depression level of sampled students in ISRT according to gender. This study focuses on the socio-demographic characteristics and analyses are done based on the literature review and noteworthy characteristics.

Table 2 Depression levels according to gender

Gender	Depression level			Total
	Normal	Borderline	Severe	
Boy	26	25	10	61
%	42.62	40.98	16.39	
Girl	12	27	19	58
%	20.69	46.55	32.76	
Total	38	52	29	119

Among the girls 32.76% are in severe case of depression and 16.39% boys are found to be in severe case. The depression level is approximately two times greater than that of boys. The test statistic χ^2 value is 7.95 and p-value is 0.019, indicates that girls are significantly more depressed than the boys at 5% level of significance Table 3.

Table 3 Depression levels according to CGPA

CGPA Level	Depression level			Total
	Normal	Borderline	Severe	
<3.5	17	24	9	50
%	34	48	18	
≥ 3.5	10	17	12	39
%	25.64	43.59	30.77	
Total	27	41	21	119

Table 3 dictates the depression levels of students for their results (in CGPA). It is found that 18% of low (<3.5) CGPA holder students are in severe depression, whereas about 31% students with high (≥ 3.5) CGPA are in severe depression. Students with better results are suffering from depression at higher percentages. As the p-value is greater than 0.05 means the association between CGPA and depression level is not significant (Table 4).

Table 4 Depression levels according to student's residence

Residence status	Depression level			Total
	Normal	Borderline	Severe	
Inside campus	21	16	9	46
%	45.65	34.78	19.57	
Outside campus	17	36	20	73
%	23.29	49.32	27.4	
Total	38	52	29	119

About 20% students who are staying inside the university campus are severely depressed shown in Table 4. About 27% students who live in outside campus like own house or rentals are in severe depression. This may be the reason that the students living inside campus enjoy their time with friends and as of an independent life, can share their problems with friends and seniors. The outside campus students may not get this type of sharing. The χ^2 test shows significant association between the residence and depression level at 5% level of significance.

In Table 5, analysis shows that about 26% from 1st year, 25% from 2nd year, 17% from 3rd year, 35% from 4th year bachelor honors students and 14% of MS student are suffering from severe depression. Here the depression level is gone high at their last year of graduation, may be the uncertainty of job market, anxiousness of post-student life responsibilities play significant role here. As MS students are determined to have their higher study on the relevant subject matter, depression level goes down again.

Table 5 Depression levels according to study year

Year	Depression level			Total
	normal	borderline	severe	
1st year	10	10	7	27
%	37.04	37.04	25.93	
2nd year	8	10	6	24
%	33.33	41.67	25	
3rd year	5	10	3	18
%	27.78	55.56	16.67	
4th year	6	13	10	29
%	20.69	44.83	34.48	
MS	9	9	3	21
%	42.86	42.86	14.29	
Total	38	52	29	119

Discussion

The analysis of this study peeps into the controversial results with other papers. The gender has significant effect on depression and found that girls are approximately two times greater in percentage of depression than of the boys. It may be happened that girls are bit more anxious than the boys. Girls have greater CGPAs than boys. Al Quaisy² found that depression level is higher in boys. Ustun et al.,⁴ found 71.47% girls and 74.17% boys are in depression with insignificant association. Montesano et al. (2017) in their study revealed that 10-25% of women and 5-12% of men would likely to be clinically depressed, similar kinds of results are illustrated in this study. The higher CGPA holders are more in depression than the lower CGPA holders. This result has the dissimilarity with Kaya et al.⁶ The residential status affects in depression level significantly. Students who live outside campus are in depression, shows the wisdom of sharing may lessen the anxiousness. Students residing inside the campus can share their thoughts, problems and feel relax as many friends stay together of same age. Study year has an insignificant effect on depression. But it depicts that final year (4th year) undergrad students are thinking of uncertainty, restive job market and upcoming conscientiousness on their shoulder.⁸⁻¹⁰

Conclusion

This study aims to know only the level of depression of undergraduate and graduate students, a follow-up study on the determinants would signify towards the policy making in near future.

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Conflict of interests

Author declares that there is no conflict of interest.

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