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# Comparison of depression and anxiety levels among students: An observational study in Dhaka City

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**Abstract**

**Purpose:** The aim of this study was to compare differences in depression and anxiety levels among college students by type of college, gender, socioeconomic status, sleeping time, and health status.

**Research methodology:** For the purpose of this study, three (3) public and three (3) private colleges were selected from the colleges of the National University in Dhaka city by applying the purposive sampling method. In total, 192 respondents were selected using simple random sampling. Subsequently, survey data were analyzed using means, standard deviations, percentages, frequencies, and a simple linear regression model.

**Results:** The mean scores for Depression, Anxiety according to college type (government versus non-government) were $\boldsymbol{M_{Govt.}} = (\mathbf{73.67, 37.69})$, $\boldsymbol{M_{Non-govt}} = (\mathbf{85.80, 46.13})$ $respectively$ statistically different. At the depression level, Government and Non-government College students were both minimally depressed, but at the anxiety level, government and non-government college students were mild (37.69) and severe (46.13), respectively. In the regression model, this study found statistically significant differences in depression and anxiety by college type and gender.

**Limitations:** The main limitation of this study was that the number of participants was small, which in many cases may not represent the entire population. Second, the participants had difficulty understanding the scale used in the depression and anxiety questionnaire.

**Contribution:** The results of the current study will help Bangladeshi psychological society, various universities, research institutes, and government policymakers formulate strategies for mental health.

**Novelty:** The method applied and the results obtained in this study will open up new horizons of ideas instead of long-standing conventional ideas for studying the depression and anxiety of students studying at the National University of Bangladesh.

**Keywords:** *Depression, Anxiety, National University Students, Statistical Modeling*

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## 1. Introduction

Recently, frustration and anxiety among students in Bangladesh have reached extreme levels, which has turned into a social crisis, and this issue has become a matter of great concern for both society and the country. When we say health, we often understand or understand only physical health. However, no

matter how good one's physical health is, if one's mental health is poor, one cannot function normally. Furthermore, if he is suffering from depression or anxiety, no productive work can be done from him. Therefore, the question is, what does depression and anxiety mean?

*"Feeling down or having a bad day is not depression anxiety; More than that. When bad feelings or unhappiness persist for a long period and interfere with normal functioning, the condition is called depression and anxiety."*

Now that the youth in the future will be young, we will have high expectations of the citizenry that will emerge. However, too much cannot be expected from a depressed, stressed young generation. When mental health is poor, personal development will not occur, and individuals will always have irritability. It is also true that depression and anxiety are not always caused by their own actions; they are also influenced by the society in which they live.

The precise causes of depression and anxiety remain unknown. A blend of biological, psychological, environmental, and genetic factors may be responsible. To comprehend the feelings of depression and anxiety levels of students at the National University in Bangladesh, this study exclusively considered psychological aspects.

Depression and anxiety are the most common psychological problems faced by students at National University, Bangladesh. Although depression and anxiety are less common during childhood, they increase during adolescence. However, in more severe cases of depression, adolescents show symptoms of low self-esteem, self-blame, hopelessness, suicidal thoughts, anger, and peevishness. From the bulk of the research, it can be inferred that depression and anxiety may be experienced simultaneously. Students are a unique group of people who pass through the most critical period of life, in which they experience many stressful events. As education proceeds to a higher level, students face more stressful events such as tough syllabi, challenging work assignments and projects, and residing in hostels; such challenges need to be solved effectively. It is the duty of educators to help their students cope with such stressors, which allows them to have stable mental health. Moreover, unemployment, divorce, heartbreak, family stress, loneliness, controlling behavior, smoking, lack of sleep, frequent alcohol consumption, poor nutrition, being a woman, and poor mental and physical health increase the risk of depression and anxiety among university students.

## 2. Literature review

Depression and anxiety are the fastest-growing diseases among the student community in Bangladesh, which is a common mental disorder but a leading cause of disability. Students represent a distinct community that emerges from one of life's crucial stages, during which they encounter several difficult situations (Buchanan, 2012). Higher education exposes students to more stressful situations, such as those requiring coursework, challenging projects and job assignments, and living in dormitories. These difficulties must be managed effectively. Teachers have the responsibility to support their students in managing these pressures so that they can maintain stable mental health (Kumaraswamy, 2013). Depression is a multifaceted condition that causes a great deal of social load and impairs one's ability to operate on an individual, social, interpersonal, and professional level (Hysenbegasi, Hass, & Rowland, 2005).

An internalized, perhaps fictitious, activation of nervousness is called anxiety. Anxiety is an unconscious response to depressive tendencies that can develop into extreme dread or panic. Additionally, it has been noted that worried children have trouble solving and learning problems. Physical and psychological symptoms include frequent urination, shaking of hands and lips, dry mouth, and restless sleep. Stress is a danger that threatens human health. Biological and psychological disorders arise when an organism's ability to adapt fails to meet environmental demands (Ericson & Gardner, 1992). Previous research on mental health issues has shown that students expect to be well prepared for future demands, pressures, and growing obligations in their social and academic lives. These factors can contribute to mental health issues among university students (Cohen, Gianaros, & Manuck, 2016).

According to a survey of university students in Australia, 53% experienced psychological anguish. According to Stallman (2008), 27.1 sample of Turkish university students had depression, 47.1% had anxiety, and 27% had stress. A study on the prevalence and socio-demographic correlations of depression, anxiety and stress among a group of university students was conducted by Bayram and Bilgel (2008) and Adlaf, Gliksman, Demers, and Newton-Taylor (2001). In Canada, 30% of undergraduate students had psychological problems, whereas in Malaysia, 41.9% of medical students had emotional illnesses. Mohd Sidik, Rampal, and Kaneson (2003) investigated, Asian nations reported higher rates of stress, anxiety, and depression than any other nation. High levels of stress, anxiety, and depression were found in medical students in India, according to a research that involved 51.3%, 66.9%, and 53% of them, respectively. Iqbal, Gupta, and Venkatarao (2015) examine that, previous studies on DAS among Pakistani university students revealed a significant incidence of anxiety and depression.

Ghazawy et al. (2021) discovered that stress, anxiety, and depression impacted 70.5, 53.6, and 47.8% of Egyptian students, respectively, in an outstanding study of university students in Egypt. Asif, Mudassar, Shahzad, Raouf, and Pervaiz (2020) went into the incidence of stress, anxiety, and depression among university students in Sialkot, Pakistan. Anxiety, stress, and depression affected university students at average rates of 75.4%, 88.4%, and 84.4%, respectively.

Rasheduzzaman, Al Mamun, Faruk, Hosen, and Mamun (2021) examined sad Bangladeshi university students. The main risk factors for depression, which were common at 28.7%, were female sex, status as a first-year student, drug use, physical and mental illness since the previous year, stressful life events, family psychiatric history, and individual suicidal tendencies. Including all the factors examined, the final model explained 23.5% of the variance in depression.

Al-Qaisy (2011) studied students at Tafila Technical University (Al-Qaisy, 2011). According to the Pearson coefficient value, academic accomplishment and depression were negatively correlated, whereas academic success and anxiety were positively correlated. The study's findings showed that while men were more depressive than women, women were more nervous. A study on anxiety and depression in medical students was conducted in 2021 by Fcca et al. and in 2021 by (Mirza, Baig, Beyari, Halawani, & Mirza, 2021). This article examines the level of anxiety and depression among medical students as well as any other risk factors that could be present. Compared with those from other countries, those from the Middle East reported experiencing depression more frequently. Women are more commonly affected by these disorders than men.

Hossain, Alam, and Masum (2022) reported that over 40% of students had extremely high levels of anxiety. They also found that students' anxiety levels were associated with their family structure and area of residence (rural versus urban). The pupils' family type, birth order, and accommodation type were all related to their depression level at a 5% significance level. Faisal, Jobe, Ahmed, and Sharker (2022) investigated the mental health, anxiety, and depression of Bangladeshi university students during the COVID-19 epidemic. Their research revealed that 53% of the participants in their study had moderate-to-poor mental health, 72% had depressive symptoms, and 40% had moderate-to-severe anxiety.

Three groups were identified in Demirci, Akgönül, and Akpinar (2015) study on university students: those who did not use smartphones (22.3%), those who used them occasionally (37.9%), and those who used them frequently (39.8%). This study examined the relationship between severity of smartphone use and sleep quality, depression, and anxiety. The findings demonstrated that women outperformed males in smartphone addiction scores. The group with extensive smartphone use scored higher on sadness, anxiety, and daytime dysfunction than did the group with little smartphone use. The results of the Smartphone Addiction Scale showed a positive correlation with anxiety, dejection, and sleep quality ratings.

In a significant study of medical students, Saravanan and Wilks (2014) found that 44% (n = 158) of students had anxiety and 34.9% (n = 125) of students experienced depression. More female students displayed anxiety than male students. Stress is also a predictor of anxiety and depression. The ways in

which anxious and non-anxious students experienced stressors differed markedly from those of depressed and non-depressed students due to dissatisfaction, change, and their emotional reactions to stress.

Md. Hossain Nayan used a range of machine learning (ML) algorithms in 2022 to try and predict mental illness among college students. The results of the survey showed that 45% of males and 55% of women, or 76.9% of the eligible respondents, were between the ages of 21 and 25 years. Notably, research has revealed that severe anxiety and depression are more common in women than men.

The aim of a study conducted by Patwary et al. was to obtain information about university students' knowledge, attitudes, and practices (KAP) was the aim of a study conducted by Patwary et al. (2022). The results revealed that approximately 50% of the students showed a high level of awareness of these guidelines, and 59% of the students reported participating in behavioral patterns aligned with the COVID-19 criteria. However, 39% of the participants expressed animosity toward the COVID-19 guidelines. Subsequent research has shown that if non-quarantined children had a negative attitude, they were three times more likely to have certain outcomes.

Sarker, Gain, Saha, Mondal, and Ifte (2024) studied the variables that significantly influence secondary school students' learning habits. They found that the mother's job had no effect on the son's learning habits. On the other hand, gender and residence status had a significant effect on learning habits. Adamu, Olayinka, and Usman (2024) investigated the factors that influence the performance of students in the Mai Idris Alooma Polytechnic Geidam Yobe State in Northeastern Nigeria. In this study, they worked on five factors influencing students' academic performance such as a) personal conditions, b) study habits, c) home-related aspects, d) school-related aspects, and e) lecturer-related factors. Among these, study habits had little effect on students' academic performance in the case study.

### *2.1 Rationale of the study*

Anxiety and depression are common problems in Bangladesh. Depression is becoming increasingly common in women. There are few ways to go about in these circumstances. What relationship do gender, socioeconomic position, place of residence, sleep duration, and depression/anxiety have? The factors that affect depression and anxiety more than the others are unclear. In today's environment, gender is a key determinant for those who experience anxiety and sadness more frequently. The quantity of sleep, site of residence, and socioeconomic status have an effect on depression and anxiety-related factors. How much do depression and anxiety differ by sex, socioeconomic status, location, and amount of sleep? The study will Thus, it is essential to understand how gender, socioeconomic position, location, and sleeping patterns affect depression and anxiety.

Therefore, it is unclear how depressed and anxious students at National University are right now. Determining whether gender, socioeconomic position, residential status, sleeping time, anxiety, and depression are statistically related is the primary goal and purpose of this study. In this way, this study can help people overcome this issue and maintain a healthy lifestyle.

### *2.2 Research Questions*

1. Is there a significant relationship between mental disorders (anxiety, depression) and institution type (government and non-government colleges)?
2. Is there a significant difference in total depression and anxiety scores in terms of gender, socioeconomic status, and residential status?

### *2.3 Objectives of the study*

Thus, this study aimed to investigate the impact of anxiety and depression levels in terms of gender, college type, socioeconomic status, residential status, and sleeping time.

1. To determine the severity of depression and anxiety among students of government and non-government colleges.
2. To compare depression and anxiety levels according to gender, socioeconomic status, and residential status.

3. To determine the relationship between depression, anxiety, and demographic factors (type of college, Gender, Socioeconomic status, residential status, and sleeping time).

### *2.4 Limitations of the study*

As the study was restricted to National University students and only a small number of students participated, the findings cannot be applied to all Bangladeshi national university students. Insufficient demographic data and unnatural responses may lead to divergent findings. The study was also postponed because it was challenging to obtain the college authorities' permission to gather the required data. Furthermore, there was insufficient funding or time to complete the research.

## 3. Methodology

Students at the National University in the Dhaka Division were the study's target group. Through field research, preliminary data were gathered from government and non-government colleges at National University. Purposive sampling was used to select three government institutions and three non-government colleges from among the colleges in Dhaka. In-person interviews and structured questionnaires were used to gather the primary data. A systematic questionnaire was used to gather the opinions of 192 respondents (from government and non-government colleges). A total of 192 respondents were randomly chosen for the sample. The distribution of the research sample is as follows:

Table 1. Sample Allocation of the study

| Types of college | College Name | Male | Female | Total |
|---|---|---|---|---|
| **Government** | Govt. Tolaram College | 16 | 16 | 32 |
| | Govt. Haraganga College | 16 | 16 | 32 |
| | Narsingdi Govt. College | 16 | 16 | 32 |
| **Non-Government** | Habibullah Bahar College | 16 | 16 | 32 |
| | Siddheswari College | 16 | 16 | 32 |
| | Hazi Misir Ali Degree College | 16 | 16 | 32 |
| **Total** | | **96** | **96** | **192** |

Secondary data were gathered from a variety of publications, including books, journals, articles, newspapers, and relevant websites. Demographic characteristics, depression, and anxiety were the three main elements of the questionnaire. For this study, multiple-choice questions and a five-point Likert scale were created, while adhering to statistical principles and procedures. Respondents were urged to express themselves openly and honestly about their thoughts and ideas regarding the prevalence of depression and anxiety among students at the National University of Bangladesh. Means, standard deviations, percentages, frequencies, and basic linear regressions were used to analyze the survey data.

## 4. Results and discussions

Table 2. The Frequency Distribution of Depression and Anxiety Scores by Types of College

| Types of Colleges | | Depression Score | Anxiety Score |
|---|---|---|---|
| **Govt. College** | Mean | 73.67 | 37.69 |
| | N | 96 | 96 |
| | Std. Deviation | 23.559 | 14.307 |
| **Non-govt. College** | Mean | 85.80 | 46.13 |
| | N | 96 | 96 |
| | Std. Deviation | 27.163 | 15.920 |
| **Total** | Mean | 79.68 | 41.91 |
| | N | 192 | 192 |
| | Std. Deviation | 26.066 | 15.677 |

Table 02 shows that there are differences between the government and non-government groups in terms of mean anxiety and depression scores. The mean anxiety score of non-government college students

(46.13) was higher than that of government college students (37.69), and the mean depression score of private college students (85.80) was higher than that of government college students (73.67). The total mean depression and anxiety scores among national university students are (79.68) and (41.91) respectively.

According to the depression scale, the severity of depression levels of the government and non-government college students (M = 73.67, 85.70) were both minimal. On the other hand, the anxiety scale of the government and non-government college students had mild and severe anxiety levels (M = 37.69, 46.31).

Table 3. Frequency Distribution of Depression and Anxiety scores by Gender

| Gender | | Depression Score | Anxiety Score |
|---|---|---|---|
| | Mean | 73.67 | 37.69 |
| **Male** | N | 96 | 96 |
| | Std. Deviation | 23.559 | 14.307 |
| | Mean | 85.70 | 46.13 |
| **Female** | N | 96 | 96 |
| | Std. Deviation | 27.163 | 15.920 |

Table 03 revealed that the depression score of female students (M = 85.70) was higher than that of male students (M = 73.67). Again, the anxiety score of the female students (M = 46.13) was higher than that of the male students (M = 37.69). The results suggest that there was a difference between males and females in depression and anxiety scores between men and women.

Table 4. Frequency Distribution of Depression and Anxiety scores by Socio-economic Status

| Socioeconomic status | | Depression score | Anxiety score |
|---|---|---|---|
| | Mean | 96.12 | 54.69 |
| **Upper Class** | N | 16 | 16 |
| | Std. Deviation | 23.807 | 15.391 |
| | Mean | 76.67 | 40.24 |
| **Middle Class** | N | 150 | 150 |
| | Std. Deviation | 24.494 | 15.254 |
| | Mean | 86.92 | 43.65 |
| **Lower class** | N | 26 | 26 |
| | Std. Deviation | 31.514 | 14.977 |

Table 04 revealed that the height mean score for depression was obtained by the upper-class students (96.12), the lower-class students held the middle position (86.92), and the lowest mean score was obtained by the middle-class students (76.67).

On the other hand, the highest mean score for anxiety was obtained by the upper-class students (54.69), the lower-class students held the middle position (43.65), and the lowest mean score was obtained by the middle-class students (40.24).

Table 5. Frequency Distribution of Depression and Anxiety scores by Residential Status

| Residential status. | | Depression score | Anxiety score |
|---|---|---|---|
| | Mean | 79.45 | 42.16 |
| **Urban** | N | 154 | 154 |
| | Std. Deviation | 27.226 | 16.354 |
| | Mean | 80.61 | 40.89 |
| **Rural** | N | 38 | 38 |

| | | | |
|---|---|---|---|
| | Std. Deviation | 20.997 | 12.706 |

Table 05 revealed that the highest mean score of depression was obtained by rural students (80.61), and the lowest mean score was obtained by urban students (79.45). On the other hand, the highest mean score of anxiety was obtained by urban students (42.16), and the lowest mean score was obtained by rural students (40.89).

### *4.1 Depression and Anxiety Model Analysis*

*4.1.1 Depression Model Analysis*

Table 6. Model Summery

| Model | R | $R^2$ | F | Sig. |
|---|---|---|---|---|
| **Depression Score** | 0.239 | 0.78 | 2.838 | 0.026 |

**Dependent Variable:** Depression Score
**Predictors:** (constant), type of college, socioeconomic status, gender, sleeping time, and residential status.

The coefficient of determination was 0.78, which means that the independent variable can explain 78% of the variation in the dependent variable. Therefore, approximately 78% of the total variation in depression is explained by the predictors. Also, there is a statistically significant relationship between the Depression score and types of college, gender, socio-economic status, sleeping time, and residential status (predictor's variable) which is significant at 5% level of significance (0.026)

Table 7. Regression model showing the depression level among the types of college, gender, sleeping time, socio-economic status, and Residential status

| Model | Unstandardized | Coefficients | standardized | Coefficients | |
|---|---|---|---|---|---|
| | B | Std Error | Beta | t | Sig. |
| **(Constant)** | 66.708 | 11.783 | | 5.662 | .000 |
| **Types of College** | 12.031 | 3.670 | .231 | 3.278 | **0.001** |
| **Gender** | 12.307 | 3.721 | .237 | 3.307 | **0.001** |
| **Sleeping Time** | -2.047 | 2.986 | -.050 | -.686 | 0.494 |
| **Residential Status** | 2.002 | 4.786 | .031 | .418 | 0.676 |
| **Socio-economic Status** | -2.143 | 4.103 | -.038 | -.522 | 0.602 |

**Dependent Variable:** Depression Score
**Predictors:** (constant), type of college, socioeconomic status, gender, sleeping time, and residential status.

To examine the effect of the type of college, gender, socio-economic status, sleeping time, and residential status on depression level, a regression model was applied to the data, and the results are presented in table (06) shows above. The model was confirmed with an F-value of 2.838, which was significant at the 5% level of significance, indicating that the model had the ability to capture the contribution. This implies that the type of college, socioeconomic status, gender, sleeping time, and residential status impact depression levels at the 5% level of significance; this result conforms to the effect on depression level.

The independent variable of college type on depression level showed a variation of 12.307 (β= 0.231), while the t-value was 3.278 at the 5% level of significance, confirming the model. The results indicated that the type of college had a positive impact on depression levels. Again, gender on depression level showed a variation of 12.031 (β= 0.237), while the t-value was 3.307 at the 5% level of significance,

confirming the model. The results indicated that the type of college had a positive impact on depression levels. However, sleeping time, socioeconomic status, and residential status had no significant effect on depression scores.

*4.1.2 Anxiety Model Outcome*

Table 8. Model Summery

| Model | R | $R^2$ | F | Sig. |
|---|---|---|---|---|
| **Anxiety Score** | 0.292 | 0.88 | 4.343 | 0.02 |

**Dependent Variable:** Anxiety Score
**Predictors:** (constant), type of college, socioeconomic status, gender, sleeping time, and residential status.

The coefficient of determination was 0.88, which means that the independent variable can explain 8% of the variation in the dependent variable. Therefore, predictors explained approximately 8% of the total variation in depression. Also, there is a statistically significant relationship between the Depression score and types of college, gender, socio-economic status, sleeping time, and residential status (predictor's variable) which is significant at 5% level of significance (0.02)

Table 9. Regression model showing the Anxiety level among the types of college, gender, sleeping time, socio-economic status, and Residential status

| Model | Unstandardized Coefficients | | standardized Coefficients | | |
|---|---|---|---|---|---|
| | B | Std Error | Beta | t | Sig. |
| **(Constant)** | 37.944 | 6.981 | | 5.435 | 0.000 |
| **Types of College** | 5.425 | 1.034 | 0.432 | 2.762 | **0.020** |
| **Gender** | 8.448 | 2.205 | 0.270 | 3.832 | **0.000** |
| **Sleeping Time** | -0.554 | 1.769 | -.022 | -.313 | 0.755 |
| **Residential Address** | -0.221 | 2.836 | -.006 | -.078 | 0.938 |
| **Socio-economic Status** | -3.655 | 2.431 | -.109 | -1.504 | 0.134 |

**Dependent Variable:** Anxiety Score
**Predictors:** (constant), type of college, socioeconomic status, gender, sleeping time, and residential status.

To examine the effect of the type of college, gender, socio-economic status, sleeping time, and residential status on anxiety level, a regression model was applied to the data, and the results are presented in table (08) shows above. The model was confirmed with an F value of 4.343, which was significant at the 5% level, indicating that the model had the ability to capture the contribution. This implies that the type of college, socioeconomic status, gender, sleeping time, and residential status impact anxiety levels at the 5% level of significance; this result conforms to the effect on anxiety level. The independent variable of college type on anxiety level showed a variation of 5.425 (β= 0.432), while the t-value was 2.762 at a 5% level of significance, confirming the model. The results indicated that the type of college had a positive impact on anxiety levels. Again, gender on anxiety level showed a variation of 8.448 (β= 0.270), while the t-value was 3.832 at a 5% level of significance, confirming the model. The results indicated that the type of college had a positive impact on anxiety levels. However, sleeping time, socioeconomic status, and residential status had no significant effect on anxiety scores.

***4.2 Discussions***

This study found significant disparities in the levels of depression and anxiety among students attending government colleges (73.67, 37.69) and non-government colleges (79.68, 41.91), indicating that non-

government college students experience higher levels of sadness and anxiety than government college students. The results of this study also showed substantial disparities in sadness and anxiety levels between male and female students (73.67, 37.69, and 85.70, 46.13, respectively). This indicates that compared to male students, female students experience higher levels of depression and anxiety. However, ratings for sadness and anxiety among college students varied according to their residence status. The two other elements that have the greatest effects on the analysis of the depression and anxiety level scores are the type of college and gender.

## 5. Conclusion

Contemporary authorities are quite concerned about the symptoms of depression and anxiety among pupils, since they interfere with their intellectual growth. After analyzing the study's findings, it became clear that students experience depression and anxiety in a variety of ways. Consequently, every institution should establish a mental assistance desk and counseling facility where students may seek help if necessary. Government-affiliated agencies and non-governmental organizations (NGOs) ought to step forward to look into how depressed and anxious students in the National University are reducing and to help ease their strain. Finally, the family's parents must be informed about what their children are doing and whether there are any issues. Many issues can be eliminated or resolved by doing so.

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