

Factors Related to Depressive Symptoms among College Students in Bangladesh

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Abstract: Introduction: Depression is a significant contributor to the global burden of disease and affects people in all communities across the world. Approximately 322 million people are affected due to depression that consequence can even lead to suicide. **Objective:** The aim of the study is to identify the factors that related to depressive symptoms among college students in Bangladesh. **Methods:** A descriptive correlational study design was utilized. A random sampling was used to recruit 186 college students who were studied at Uttara high school and college, Ideal school and college, Motijheel, Dhaka. The data were collected through self-administered questionnaire which include demographic data questionnaire and the Center for Epidemiologic Studies Depression scale (CES-D) of 20 items. Data were analyzed using descriptive statistics (mean, frequencies, percentages, SD) and inferential statistics two sample t-test, Pearson correlation and ANOVA. **Results:** The mean age of the participants was $17.05 \pm .70$ years, ranging from 15-19 years. Overall participants 46.8% had depressive symptoms among them more female 67.8% were depressive symptoms than male 32.2%. Some demographic factors were significantly associated with depressive symptoms to the age ($r = .184, p = .012$), monthly family income ($r = -.167, p = .023$), smoking ($t = -3.521, p = .001$), academic performance ($F = 7.058, p = .001$), academic stress ($F = 10.157, p = .000$), satisfaction of study ($F = 11.579, p = .000$) and stressful life event ($t = -5.216, p = .000$). **Conclusion:** This finding suggested that in order to prevent depression among college students, school and family based strategies should be developed and implemented. Also the nurse administrators could apply this findings in Bangladesh for develop proper intervention programs to reduce depression.

Key words: Depressive Symptoms, Factors, College students, Center for Epidemiologic Studies Depression Scale (CES-D).

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I. Introduction

Depression is a common mental disorder that characterized by depressed mood, loss of interest or pleasure, decreased energy, feeling of guilt or low self-worth, disturbed sleep, loss of appetite, and poor concentration. Moreover it often comes from symptoms of anxiety²². Depressive problems can be chronic or recurrent and lead to factual impairment in an individual's ability to take care of his or her every day responsibilities. The episode of depressive symptoms can be categorized as mild, moderate and severe²². It often starts at a young age and recurrent throughout life¹².

Globally 322 million people were living with depression²³. Consequence of depression can lead to suicide 1 million per year which translates to 3000 suicide every day. It is the leading cause of disability 7.5% worldwide. The neighboring country of India prevalence of depression was 4.5% and disease burden 7.1%²³. In Bangladesh the prevalence of depressive disorder is 4.1% and total year lived with disability disease burden 7.1%. Globally depression is more common in females 5.1% than males 3.6%²³.

Multiple evidence reported that various factors increasing the risk of depression among college students such as- age^{4,14}, lower socioeconomic status, gender^{3,7,13,20,21}, familial disharmony, unsuccessful affair and domestic violence². Lack of social support, social status, post traumatic stress disorder, sleeping problem¹⁵, smoking^{2,11,14,17}, poor academic performance, academic stress^{14,24}, stressful life event^{2,13}, satisfaction of study

^{4,20}, family history of depression ^{9,20}, religion ¹⁴, education level of father ²⁴, mother education ⁴, study year ^{4,14}, financial difficulties ^{11, 17}.

It is estimated that about 15% of the college population may be struggling with depressive symptoms ²⁵. Despite suicide can be an ultimate outcome of depression ⁶. Since depression is a major problem faced by many college students ⁵.

However, there is a very limited study on factors related to depression has been carried out in Bangladesh. Even though many studies have examined the factors related to depression among college students in western countries. Therefore still there is a need to examine factors that associated with depression among college students in Bangladesh. Hence the researcher has interested to conduct a study on factors related to depressive symptoms among college students in Bangladesh.

General Objective

The aim of the study is to identify the factors that related to depressive symptoms among college students in Bangladesh

Specific Objectives

1. To describe the socio-demographic characteristics among college students in Bangladesh.
2. To explore the prevalence of depressive symptoms among college students in Bangladesh.
3. To examine the relationship between socio-demographic characteristics and depressive symptoms among college students in Bangladesh

II. Materials and Methods

This descriptive correlation study was carried out on Bangladeshi college students who were attending at Ideal School and College, Motijheel, Uttara High School and College, Dhaka, Bangladesh from June 2018 to June 2019. A total 186 participants (both male and female) college student's were in this study.

Study design: A descriptive correlation study

Study Location: This was a college level educational institute which offers 11th grade students, at Motijheel Ideal School and College, Uttara High School and College, Dhaka.

Study Duration: June 2018 to June 2019

Sample size: 186 college students 125 female and 61 male

Sample size calculation: The sample size was determined using the statistical power analysis which was set as significance level (α) of 0.05, an expected power of 0.80 ($1-\beta$) and accepted median effect size of 0.30 (γ) estimated sample size is 143. Due to potential dropout, 30% attrition rate added and the total sample size was 186.

Subject and selection method: Simple random sampling technique was used to recruit the sample, students who were attending two selected college and met inclusion criteria. In this study researcher used lottery system to recruit the participant's.

Inclusion criteria: All 11th grade students who eligible and willingly agree to participate in the study were included in this study.

Exclusion criteria:

1. Student who were mentally retarded.

Procedure methodology:

The researcher highly considered about the human rights of the participants of this study. The approval was obtaining from Institutional Review Board (IRB) of National Institute of Advanced Nursing Education and Research (NIANER), Mugda Dhaka (IRB No. Exp. NIA-S-2018-33) and Bangabandhu Sheikh Mujib Medical University (BSMMU). Permission was taken from the college principal and responsible teacher of selected college.

The researcher was to explain clearly the purpose of the study, the procedure, the possible benefits, and risks of the study to the participants. The researcher informed the participants that they had right to choose whether they were willing to participate or not and they can withdraw from the study at any time after consenting to participate in the study. Confidentiality and anonymity was maintained strictly.

The researcher introduced herself to the subjects in class room and explained and provided the written consent form and verbally informed the participants about the techniques of fill-up the self-administered questionnaire. The researcher distributed the self-administered questionnaire with the help to college students at selected college in Dhaka.

The researcher read the questionnaire to subjects, explain details repeatedly until the subject understood, and ensured time that was appropriate for each subject to answer the questionnaire. Then the researcher checked the questionnaires to ensure that it was completed properly.

Research process was completed in encouraging atmosphere. Participants were thanked for their participation in the study. Some questionnaire were excluded from the analysis as participants left more than one questions blank in “CES-D” or skipped details in demographic section. Data were collected throughout December 2018 to January 2019 following the instrument:

A set of standardized structured and self- administered questionnaire were used for data collection. PartI: Socio demographic characteristics questionnaire: This part consisted of 18 items including:age, Gender, religion, academic year of study, nature of residency, Parental status, loss of parent (s), father’s educational level, father’s occupation, mother’s occupation, type of family, monthly family income,family history of mental illness, smoking habit, stressful life event, academic stress, academic performance, satisfaction of study

Part-II: Depressive symptoms were measured by using 20 items Center for Epidemiologic Studies Depression Scale (CES-D) ¹⁶. These items were rated on a 4 – point Likert scale range from 0= rarely or none of the time (less than one day), 3= most or all of the time (5-7 days). The minimum and maximum score are 0 and 60, with cut –off point 22. Score <22 non depressive symptoms and Score ≥22 = depressive symptoms ^{2, 3}. Internal consistency reliability as measured by Cronbach’s alpha has been found to be appropriately .85 in general population. In the current study reliability of the scale Cronbach’s alpha was .84.

Statistical analysis:

Data was analyzed using SPSS software (version 22). Descriptive statistics such as frequencies, percentages, range, means and standard deviation were used to analysis the subjects’ Socio-demographic characteristics. Inferential statistics was used to find out the relationship between socio-demographic characteristics and depressive symptoms of college students by using two sample test (t), Pearson correlation (r), and ANOVA (F) a significance level of p<0.05 was considered as a statistically significance.

III. Results

1. Socio-demographic characteristics of the participants.

Table 1 showed the characteristics of the participants. In this study, a total of 186 college students completed questionnaire from the selected two colleges. The participants were from 11th grade students between the age of 15-19 years old with the mean age of the participants 17.05 (SD=.70) years. From the total study participants (32.8%) were male, mainly Muslim (94.6%) and mostly (94.6%) came from urban areas. Most parents of students (95.2%) were living together. Had no experiences about loss or death of parent (92.5%). Most of the fathers of participants (77.4%) educational level were higher than H.S.C. More than half of the fathers of participants (57.5%) were service holder. Only (14.0%) mothers of participants were house wife. Majority of the participants (88.7%) were belonging to nuclear family. The mean family income was 49924.73, SD=27213.167, range= 15000-150000.

Among the participants only (8.6%) had history of mental illness. Few of the participants (5.9%) had occasionally smoking habit. Only (17.2%) of the participants had GPA< 3.5 poor academic performance. More than half of the participants (59.7%) had medium academic stress. Around one third of the participants (34.4%) had experience of stressful life event. Level of satisfaction of the study, one third of the participants (33.3%) were less satisfied to study.

Table1 Distribution of socio- demographic characteristics of the study participants (N=186)

Variables	Frequency (n)	Percentage (%)
Age (years), (Mean=17.05, SD=.70, Range-15-19)		
Gender		
Female	125	67.2
Male	61	32.8
Religion		
Muslim	176	94.6
Hindu	10	5.4
Nature of residence		
Urban	176	94.6
Sub urban	10	5.4
Parental status		
Separated	9	4.8
Living together	177	95.2
Loss of parent (s)		
Yes	14	7.5
No	172	92.5
Father’s educational level		

Primary	18	9.7
Secondary	24	12.9
H.S.C or above	144	77.4
Father's occupation status		
Unemployed	7	3.8
Service	107	57.5
Business	72	38.7
Mother's occupation status		
House wife	160	86.0
Service holder	26	14.0
Types of family		
Nuclear	165	88.7
Joint	21	11.3
Monthly family income(BD Taka)	(Mean=49924.73, SD=27213.167, Range= 15000-150000)	
History of mental illness		
Yes	16	8.6
No	170	91.4
History of smoking		
Not at all	175	94.1
Occasionally	11	5.9
Academic performance		
GPA<3.5 Poor	32	17.2
GPA>4.5 Medium	54	29.0
GPA>4.9 Better	100	53.8
Academic stress		
Less stress	16	8.6
Medium stress	111	59.7
Greater stress	59	31.7
Stressful life event		
Yes	64	34.4
No	122	65.6
Satisfaction of study		
More satisfaction	21	11.3
Medium satisfaction	103	55.4
Less satisfaction	62	33.3

2. Prevalence of depressive symptoms of the participants

Table 2.1 showed the prevalence of depressive symptoms among the participants. It was found that out of 186 participants nearly half of the participants (46.8%) had depressive symptoms. Among them more female participants (67.8%) were depressive symptoms than male (32.2%). Table 2.2: revealed that the total mean score of the center for epidemiologic studies depression scale was 20.79 (SD=21.4) where highest response (68.8 %) among participants were about I thought my life had been a failure.

Table 2.1. Distribution of depressive symptoms among the participants (N=186)

Variables	CES-D score	M(SD)	Frequency	Percentage
Not Depressive symptoms	0-21	12.95 (5.09)	99	53.2
Depressive symptoms	≥22	29.66 (6.46)	87	46.8

Table 2.2. Distribution of each items of Center for Epidemiologic Studies Depression Scale (CES-D) among the participants (N=186)

Items	Rarely or none of the time Less (than 1 day)	Some or little of the time (1-2 days)	Occasionally or moderate amount of time (3—4 days)	Most or all of the time (5-7 days)	M (SD)
	n(%)	n(%)	n(%)	n(%)	
I was bothered by things that usually don't Bother me.	87 (46.8)	42 (22.6)	39 (21.0)	18 (9.7)	.94 (1.03)
I did not feel like eating; my appetite was poor.	108 (58.1)	26 (14.0)	37 (19.9)	15 (8.0)	.78 (1.02)
I felt that I could not shake off the blues even with help from my family or friends.	103 (55.4)	37 (19.9)	27 (14.5)	19 (10.2)	.80 (1.03)
I felt I was just as good as other people.	78 (41.9)	40 (21.5)	30 (16.2)	38 (20.4)	1.15 (1.17)
I had trouble keeping my mind on what I was doing.	41 (22.0)	44 (23.7)	53 (28.5)	48 (25.8)	1.58 (1.09)
I felt depressed	63 (33.9)	40 (21.5)	53 (28.5)	30 (16.1)	1.27 (1.09)
I felt that everything I did was an effort.	44 (23.7)	48 (25.8)	44 (23.6)	50 (26.9)	1.54 (1.12)
I felt hopeful about the future.	104 (55.9)	41 (22.0)	16 (8.6)	25 (13.5)	.80 (1.07)

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I thought my life had been a failure.	128 (68.8)	24 (12.9)	18 (9.7)	16 (8.6)	.58 (.97)
I felt fearful.	93 (50.0)	37 (19.9)	32 (17.2)	24 (12.9)	.93 (1.09)
My sleep was restless.	97 (52.1)	46 (24.7)	28 (15.1)	15 (8.1)	.79 (.97)
I was happy.	52 (28.0)	61 (32.8)	33 (17.7)	40 (21.5)	1.33 (1.10)
I talked less than usual.	92 (49.5)	43 (23.1)	31 (16.7)	20 (10.7)	.89 (1.04)
I felt lonely	75(40.4)	30 (16.5)	40 (21.5)	40 (21.6)	1.26 (1.21)
People were unfriendly.	85 (45.7)	43 (23.1)	36 (19.4)	22 (11.8)	.97 (1.06)
I enjoyed life.	56 (30.1)	53 (28.5)	37 (19.9)	40 (21.5)	1.33 (1.12)
I had crying spells.	98 (52.7)	43 (23.1)	27 (14.5)	18 (9.7)	.81 (1.01)
I felt sad.	46 (24.7)	62 (33.3)	45 (24.3)	33 (17.7)	1.35 (1.04)
I felt that people disliked me.	96 (51.6)	31 (16.7)	30 (16.1)	29 (15.6)	.96 (1.14)
I could not get "going".	109 (58.6)	41 (22.1)	14 (7.5)	22 (11.8)	.73 (1.03)
Total Mean Score =					20.79 (21.4)

Table 3 revealed the relationship between demographic characteristics and depressive symptoms. With regard to participant's demographic characteristics, it was observed that there was a significant relation between depressive symptoms and age, participants those age was increasing >17 were more depressive symptoms compared to those age between 17 ($r=.184, p=.012$). Those monthly family income was lower trend to more depressive symptoms ($r=-.167, p=.023$). Participants those involved in occasionally smoking trend to have significantly more depressive symptoms compared to those smoking habit not at all. There was a significant relation between smoking and depressive symptoms ($t= -3.521, p=.001$). Participants those who were on $GPA<3.5$ poor academic performance showed significantly more likely to develop depressive symptoms compared to those had medium and better academic performance ($F=7.058, p= .001$). Participants who had greater academic stress trends to significantly higher rate of depressive symptoms compared to who had medium and less academic stress, there was a significant relation between academic stress and depressive symptoms ($F=10.157, p= .000$). The result indicates that there were statistically highly significant ($p<0.05$). Those experienced had stressful life event trend to have more depressive symptoms compared to those no experience of stressful life event ($t= -5.216$) there was highly statistically relation between stressful life event and depressive symptoms ($p =.000$). Participants who were less satisfied to study showed higher depressive symptoms compared to those were medium and more satisfied to study ($F=11.579, p =.000$). All other variables showed was not statistically differences on depressive symptoms.

Table 3. Relationship between socio-demographic characteristics and depressive symptoms (N=186)

Variables	M (SD)	t/F/r (p)
Age		.184 (.012)
Gender		
Male	19.75 (10.65)	-.947 (.345)
Female	21.26 (9.90)	
Religion		
Muslim	20.69 (10.09)	-.427 (.670)
Hindu	22.10 (11.61)	
Nature of residence		
Urban	20.72 (10.31)	-.235 (.814)
Sub urban	21.50 (6.93)	
Parental status		
Living together	20.80 (10.06)	.231 (.818)
Separated	20.00 (12.30)	
Loss of parent (s)		
Yes	20.86 (9.77)	.036 (.971)
No	20.76 (10.20)	
Father's education		
Primary	22.17 (6.28)	.356 (.701)
Secondary	19.50 (8.78)	
H.S.C or above	20.80 (10.75)	
Father's occupation		
Unemployed	23.14 (13.08)	.358 (.700)
Service	20.32 (10.59)	
Business	21.19 (9.24)	
Mother's occupation		
House wife	20.62 (9.73)	.822 (.412)
Service holder	21.65 (12.59)	
Types of family		
Nuclear	20.98 (9.94)	.278 (.781)
Joint	19.05 (11.78)	
Monthly family income		-.167 (.023)
History of mental illness		
Yes	22.31 (10.22)	.637 (.525)

No	20.62 (10.16)	
History of smoking		
Not at all	20.13 (9.82)	-3.521 (.001)
Occasionally	30.91 (10.23)	
Academic performance		
GPA<3.5 Poor ^a	26.50 (10.24)	7.058 (.001)a>b>c
GPA>4.5 Medium ^b	20.63 (9.57)	
GPA >4.9 Better ^c	19.00 (9.83)	
Academic stress		
Less stress ^a	16.69 (7.47)	10.157(.000)c>b>a
Medium stress ^b	18.90 (8.94)	
Greater stress ^c	25.37 (11.38)	
Stressful life event		
Yes	26.20 (11.23)	-5.216 (.000)
No	17.91 (8.24)	
Satisfaction of study		
More satisfaction ^a	23.29 (10.66)	11.579 (.000)c>b>a
Medium satisfaction ^b	17.75 (8.48)	
Less satisfaction ^c	20.76 (10.15)	

IV. Discussion

1. Socio-demographic characteristics of the participants.

The study revealed that all participants surveyed were college students who studied at 11th grade in selected college. A total of 186 participants recruited in the study. The participants mean age was $17.05 \pm .70$ this findings is similar to previous studies ^{2,9,11}. It may due to the fact this is the age when the students face family, academic and social pressure also this period students face greater physical and emotional changes that may lead to depressive symptoms. Several religious people were living in Bangladesh among them almost all of them 94.6% were Muslim which is consistent with previous studies ². Most of the participants 88.7% were belong to nuclear family this findings is similar to some previous studies ^{2,9}. It may perhaps the breakdown of joint family and origination of the nuclear family could explain the generation of depressive symptoms at younger ages due to reduced family support. In this study participants' fathers' educational level 12.9% were secondary level which is consistent with previous study ⁴. Only 8.6% of the participants had history of mental illness, similar result revealed the previous study⁹. It is the factors that causes may lead to depression.

2. The prevalence of depressive symptoms of the participants.

In this study, among 186 participants, it was found that nearly half of the participants (46.8%) were reporting depressive symptoms among them more female 67.8% were depressive than male 32.2%. The prevalence of depressive symptoms found to be higher compared with most of the studies reported by other countries. Remarkably, the higher frequency among female participants whereas lower frequency is commonly observed among male participants similar finding revealed at several previous studies ^{7, 9,20, 17, 24}. Moreover, In Bangladesh previous study using similar instruments which conducted among High school and college students reported the prevalence of depressive symptoms is consistent with the current study ². A possible explanation of above is that in Bangladesh perspective women face many obstacles in their daily life from society, family and colleges for this reason women may be more depressive symptoms than male (Table-2).

3. Relationship between socio-demographic characteristics and depressive symptoms.

The present study reported that there was a significant relationship between age and depressive symptoms. This finding is consistent with previous studies ^{4, 14}. It may be due to those participants age were increasing they may think more about future, employment, economy also they face more stressful life for this reason it may lead to depression. Depressive symptoms often starts at a young age and recurrent throughout the life¹².

This study showed, Participants those monthly family income was lower they were more depressive compared to those income level was higher. There is a significant relation between family income and depressive symptoms. Lower family income indicates lower socio-economic status this finding is consistent with previous studies ^{7, 19}. In contrast participants those stay in lower income family they face financial difficulties, low social dignity, low self esteem it may lead to depressive symptoms.

In this study, it was found that a fewer number of participants involved in smoking. Participants those involved in occasionally smoking were more likely to develop depressive symptoms compared to who didn't smoke at all. There was a significant relation between smoking and depressive symptoms ($P < 0.001$). Similar findings revealed several previous studies ^{2, 11,14, 20}. It may be due to the fact that this is the age when the students actually being mingled with their friends building a circular fascicle where there is ample scope of association of depression and smoking.

Interestingly, in the current study Grade Point Average (GPA) of last academic result was used to measure the academic performance of participants. Students who achieved GPA<3.5 poor academic

performance were significantly more depressive symptoms compared to whose GPA >4.0 and GPA>4.9. There was a significant relation between academic performance and depressive symptoms ($P<0.001$). This finding is consistent with previous studies^{17, 14}. It may be due to the fact depressed students were less motivated, less attentive to study at institute, also irregular at home work, and assignment this ultimately may lead to poor academic performance that may lead to depressive symptoms.

The academic stress was also found to be the most significant relation with depressive symptoms. Participants who had the greater academic load due to assignment, home work, and exam pressure faced greater academic stress compared to who had medium and less academic stress. The result is statistically highly significant ($P<0.000$). Some previous studies revealed similar finding^{1, 8, 24}. It may be that greater academic overload generally faced by college students which increasing competitive study environment. Therefore, they normally fight for getting excellent result by successfully completed homework, assignment and exam which may increase their academic stress that may lead to depressive symptoms.

Moreover, there was a significant relation between stressful event and depressive symptoms. Participants who had experienced of at least one any stressful event due to death of beloved one, parent's separation, relationship breakup and chronic disease in last year they were more likely to develop depressive symptoms compared to who had not ($P<0.000$). Similar finding revealed some previous studies^{2, 13, 18}. In the perspective of Bangladesh this is the vulnerable age for college students when they involved in love, affair. After that, when the relation breaks up they become emotionally upset and feel stress and cannot cope with normal situation it may lead to depressive symptoms.

In the current study, it was found that, satisfaction of study finding is consistent with few previous studies^{4, 20, 24}. Students who were less satisfied to study had significantly more depressive symptoms than those who had medium and greater satisfied to study. There is a significant relation between satisfaction of study and depressive symptoms ($P<0.000$). It may perhaps that in Bangladesh study subject determined by parents. Maximum time students do not consent to study this area. When a student' does not consent to study this area, they grow up with lower interest, motion of learning, low inspiration about study. Thus this dissatisfaction with the study may result in depressive symptoms.

V. Conclusion and Recommendations

Conclusion

The study concluded that the overall prevalence rate of depressive symptoms among college students was found to be higher. Special attention needs to be paid who have age ($P= .012$), monthly family income ($P=.023$), smoking ($P= .001$), academic performance ($P=.001$), academic stress ($P= .000$), stressful event ($P=.000$), satisfaction of study ($P= .000$) which lead to depressive symptoms.

This study as a descriptive correlation study, limited number of samples were used and two research settings Ideal school and college, Uttara High school and college, Dhaka were included the participants came from only one city of Bangladesh. Hence, the findings of this study may not be generalized to college students in other region of the country. Therefore, it might be remarkable to replicate this study in other settings including urban and rural areas of Bangladesh

Recommendations

Health education psychosocial counseling or targeted intervention among the student is necessary. Setting up students counseling center in all colleges with the help of mental health professionals and counseling can be given as an early intervention who are at a higher risk of developing mental health problems. Creating awareness among college students through conducting seminar and workshop. This study also suggested several important practical implications for the health care profession or the authorities of medical college to consider suitable strategies at the familial, college and societal level to deal with the depression issue. Future research could benefit from large-scale nationwide studies which include all possible factors related to student's depression.

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