

**A cross-sectional study on the prevalence and associated risk factors of
depression among adult females in Bangladesh**

By

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for the degree of Bachelor of Pharmacy (Hons)

School Of Pharmacy

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Declaration

It is hereby declared that

1. The thesis submitted is my/our own original work while completing degree at BRAC University.
2. The thesis does not contain material previously published or written by a third party, except where this is appropriately cited through full and accurate reference.
3. The thesis does not contain material which has been accepted, or submitted, for any other degree or diploma at a university or other institution.
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Ethics Statement

Noparticipants were harmed, and anonymity was maintained

Abstract/ Executive Summary

Depression is a substantial global health concern that affects more women than men, especially in low and middle-income countries like Bangladesh. The primary inquiry of this research is, *"How closely do depressive symptoms and demographic characteristics in adult Bangladeshi women pertain to each other?"* The objective of this study was to address a significant gap in literature, specifically the lack of data on certain groups of people. This study employs an analytical design and includes a representative sample of adult women aged 15-45 years from both rural and urban settings. The Depression Anxiety and Stress Scale 21 (DASS-21) was used to find out about depressive symptoms and other medical concerns. This study of adult women demonstrates that there is to be for a targeted program designed for greater awareness of mental health issues. This study contributes to a broader understanding of women by examining an area that has not been thoroughly researched, thereby strengthening their psychological and physiological strategies. The overall prevalence of depression among adult female was high, with a considerable proportion from moderate to severe. The degree of severity instances of depression was determined by using the standard scoring procedure to the depressive disorder scores that were then categorized. Female adults in Bangladesh are at an increased chance of acquiring symptoms of depression due to the prevalence of a variety of socio-cultural stresses, as well as nutritional deficits and lifestyle. Through the involvement of adult females, the purpose of this study was to ascertain the prevalence of depression and to identify the risk variables related to it.

Keywords: Depression, Depression Anxiety and Stress Scale 21 (DASS-21), Adult Females, Socio-Demographic Factor, Nutritional, Lifestyle, Mental Health Program

Dedication

To my mother, for her endless sacrifices and encouragement, and to my father, for teaching me the value of integrity and providing unwavering mental support , every word of this work carries the echo of your guidance.

I also dedicate this work to every woman out there fighting a silent battle, carrying the weight of unseen mental struggles. May this work, even if only a small part, bring awareness and hope to every woman whose voice goes unheard.

Acknowledgement

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List of Acronyms

WHO	World Health Organization
BMI	Body Mass Index
CI	Confidence Interval
OR	Odds Ratio
MDD	Major Depressive Disorder
DASS	Depression Anxiety Stress Scale
BMC	BioMed Central (journal publisher)

Glossary

Depression	A common mental health disorder characterized by persistent sadness, loss of interest, and impaired daily functioning.
Bivariate analysis	Refers to a dataset where each data point is associated with two different variables
Body Mass Index (BMI)	A measurement of a person's leanness or corpulence in accordance with their weight and height, and is used to quantify tissue mass
Multivariate analysis	Refers to a dataset where each data point is associated with two different variables
Confidence Interval (CI)	Range of values used to estimate a true effect size or its association in a population, at a given probability
Odds Ratio (OR)	The probabilities of an event occurring with a certain exposure, as contrasted to the odds of it occurring without that exposure, are compared using a statistical measure that is employed in regression analysis
Major Depressive Disorder (MDD)	A clinically diagnosed severe form of depression characterized by intense and prolonged symptoms.
Depression Anxiety Stress Scale (DASS)	A psychological assessment tool measuring depression, anxiety, and stress levels

Chapter 1

Introduction

1.1 Background of the Study

Psychological disorders, implying the absence of mental well-being, make a consequential augmentation in the realm of health problems worldwide. Depression, especially, paralyses the whole mind and body in case of severe conditions in which an individual loses their ability to connect with their surroundings, fails to produce a chain of rational thoughts, and thus leads an uncertain life. The promotion of mental health in various parts of the world is gaining consideration, but in developing nations like Bangladesh, it bears a disproportionate burden of this apparent taboo. On the other hand, this kind of disorder is dormant in low and middle-income countries, and Bangladesh can be a primary scenario for the demonstration of various psychosocial disorders like depression. Nevertheless, these novel perspectives show that the majority of low- and middle-income nations continue to place little emphasis on psychological wellness (Prince et al., 2007).

Concerning physical disorders, prior studies have indicated a correlation between various demographic, lifestyle, and health-related aspects and spike indicators associated with depression. This kind of correlation might be anticipated given that symptoms of several health issues, such as dyspnea, exhaustion, paleness, and heart palpitations, typically coexist with signs and symptoms of depression or anxiousness (Lever-van Milligen et al., 2014). However, the kind of dual burden of depression remains underexplored in this context. In the concurrent years, the widespread of major depressive disorders has been illustrated to be higher in women than in men. The estimated global yearly recurrence of major despair was 5.5% and 3.2%, respectively, which represents a 1.7-fold larger risk in adult females (Albert,

2015). A total of 1019 adult females actively participated in this study in the age range of 15-45 years. Additionally, socioeconomic variables regulating the dietary intake of iron across all animal sources, including meat, fish, and poultry, were analyzed. The primary observations revealed that depressive symptoms were significantly predicted by lifestyle, food habits, and financial conditions. However, there is a lack of coherence in the research based on gender obstacle concerning chronic conditions and relapse of depression. There are no distinctions between genders in the general prevalence of chronic depression or recurrence of depression, according to certain research. According to the findings of other investigators, women are more likely to experience persistent and recurring depression (Burt & Stein, 2002). Through the process of evaluating the prevalence, perception, and possible co-occurrence of these ailments, this investigation can help guide community-based therapies, diagnostic initiatives, and focused wellness initiatives.

1.2 Research Gap

The DASS-21 was formulated to measure the varied symptoms common to modern manifestations of each state while retaining a high degree of discrimination among them. It has been validated as a reliable measure of psychological symptoms and correlates of stress, anxiety and depression (Lovibond & Lovibond, 1995). Despite the apparent benefits, detailed documentation, grading criteria and their relevance to the low-middle-income country setting are conspicuously absent. The main utility of the DASS was to measure and compare the extent of the 3 core symptoms of stress, anxiety, and depression. Thus, the DASS allows a way of measuring more than just how severe you feel a patient's symptoms are, but how they responded to the questions. Although the scale can be helpful for the detection of stress, anxiety and depression, it should not replace the medical interview. This three-factor model works quite well when using robust estimation techniques. However, it remains to be

discovered whether this is considered a clinical diagnosis or merely an index of how much people generally suffer. These scales have been translated into Bengali for the ease of women with low literacy.

1.3 Objective

There are significant implications for the welfare of individuals as well as for the advancement of society and the economy, and psychological issues like depression are a worldwide issue that impacts both developed and developing nations. Although it can be identified at any stage of a person's life, the illness is far more common in adult women and children starting at age 10. Major Depressive Disorder (MDD) has been identified as one of the primary aggravating factors in the global burden of mental distress (WHO, 2002). There are nonetheless substantial variations in the prevalence of depression among Bangladeshi adult females between the ages of 15 and 45, and the illness has increased in frequency when combined with emotional disorders. However, there is a severe lack of research on the connection between adult Bangladeshi women's demographic position and mental health in the rural area. The goal of the research is to provide practical and pertinent insights for improving treatment and mitigation of depression, considering existing national and international studies on the subject as well as established Bangla methods for mental health assessment. The major objective of this analytical investigation is to investigate the correlation between the levels of the presence of depression in 1019 adult women. When taking into consideration the fact that both ends of the depressive symptom spectrum have been linked with reduced conditions of physical well-being, it was determined that the low end and the high end of such mental conditions were distinctly varying in the severity level of depressive periods. It was further investigated whether the clinical psychiatric factors, such as

lifestyle, demographic characteristics, and other medical conditions, have a role in determining whether there is a correlation between low or high levels of mental illnesses.

1.4 Significance

The primary objectives of this survey study are to observe the prevalence of depression using the DASS-21 and to quantify the variability of symptoms among non-clinical participants (n=1019 adult females). Experts were very interested in the Bangla version of the Depression Anxiety Stress Scale-21 (DASS-21-BV) since it could be used to look at the emotional and mental health of Bangladeshi people in a variety of ways. No academic studies have assessed the psychological properties of the scale (Bangla version) (Lever-van Milligen et al., 2014). There is a growing body of information that demonstrates a correlation between mild and severe levels of depression. This illustrates physiologically plausible mechanisms, such as inadequate oxygen delivery and neurotransmitter synthesis, that may contribute to the exacerbation of depression, which are already prevalent in specific segments of the Bangladeshi population (Park et al., 2022; Rabby et al., 2023). This study aims to improve risk categorization by systematically analyzing the emotional status of adult females, update integrated screening campaigns that incorporate mental health assessments into anemia treatments and vice versa, and guide economically viable, gender-sensitive initiatives within healthcare settings in primary care and educational institutions. The findings can facilitate a transition from segregated treatment of individuals to collaborative efforts aimed at preempting difficulties. This is where Bangladesh can have the most impact on public welfare (Rabby et al., 2023).

Chapter 2

Methodology

2.1 Participants

This mixed method studies the information obtained from 1,019 adult females aged 15 to 45 years, representing diverse socio-economic and educational backgrounds in both urban and rural areas. The ratio of samples gathered was 60% from rural areas and 40% from urban areas. Recruitment was done by observing people and subsequently asking them queries concerning their prior use of antidepressants or iron deficiency medicines. This also includes ladies who were pregnant. Women in this group were not taken into consideration since these indicators can change and influence mental health status. Before getting any information, everyone who took part was briefed about the research's goals, how it would be conducted, and how their confidentiality would be maintained. After participants consented to take part in the study, they were given the questionnaire. This research achieved a more thorough understanding of the correlations between lifestyle, daily dietary consumption, and mental health among Bangladeshi adult females by incorporating women from diverse socioeconomic backgrounds.

2.2 Procedure

A mixed-method study was conducted, incorporating both quantitative and qualitative analyses through verbal interactions and interrogations of participants. First, they were asked to give their written consent, and then they were given the questionnaire. Those who were unable to read were helped to fill out the form. The form consists of three parts: "Demographic Questions," "Lifestyle and Diet History," and "Mental Health Related

Information." Each part had the DASS-21 questionnaire in it. The questions were asked in both English and Bangla during the interview, as the respondents requested.

2.3 Sample Characteristics

The adult females who took part in this study were mostly between the ages of 15 and 45. The respondents had a wide range of education levels, from illiterate to graduate, and they were employed in a variety of fields, such as students, housewives, service workers, and business owners. A substantial percentage (60%) of the respondents reside in either rural or metropolitan areas (40%), originate from diverse economic origins, and demonstrate a variety of dietary and physical activity patterns. Samples were taken that focused on sociodemographic information, nutritional status, and clinical state. The person's smoking status was also considered. Several investigations have shown that eating tobacco-based products can make it more likely that you will have several health problems, such as coronary heart disease and blood disorders, especially multiple sclerosis (Mohammed et al., 2024).

2.4 Mental Health Assessment

Depression, Anxiety, and Stress Scale (DASS-21), a validated self-report instrument, was used in the assessment of mental health status. Depression, anxiety, and stress are three correlated states of emotions that can be evaluated by the DASS-21, which is intended to quantify the degree of intensity of emotions in each of these conditions. Dysphoria, destitution, devaluing of life, self-pitying, lack of pleasure or engagement, anhedonia, and apathy are some of the indicators that are evaluated by the Depression subscale (Lovibond & Lovibond, 1995). Respondent had to rate on a four - point severity scale implying: **0 = Did not apply to me at all, 1 = Applied to some degree, or some of the time, 2 = Applied to me to a considerable degree, or a good part of the time, and 3 = Applied to me very much, or most**

of the time. In conducting the analytical study of the status of mental health among adult females in Bangladesh, the DASS-21 can efficiently quantify the severity of depression. The mentioned scores can interpret the status of emotional distress, but do not constitute a clinical diagnosis. Descriptive statistics like chi-square, regression analyses, mean scores, and frequency distributions were used to carry out analytical and variable interpretation of whether low or high levels of lifestyle are associated with depressive symptom severity (Yang et al., 2022).

2.5 Data Analysis

This study employed the depression subscale (DASS-D) of the DASS-21. The questionnaire was a key part of the assessment of depression symptoms in adult women in Bangladesh. A thorough evaluation conducted in Malawi indicated that the depression component has higher levels of internal consistency. Conversely, some subscales demonstrated inconsistent reliability, underscoring the DASS-D's robustness in detecting depressive symptoms in contexts characterized by similarly constrained resources (Moya et al., 2022). For this research, we took the raw feedback from the data we collected for the seven questions about depression: Q3, Q5, Q10, Q13, Q16, Q17, and Q21. They were then summed up, and then those numbers were multiplied by two to get a final alignment score that met DASS standards. These scores were also organized into severity levels, from "normal" to "extremely severe." Additionally, the collected data served as continuous variables for the correlational analysis of categorical predictors in regression models. This took advantage of the scale's psychometric strengths in the group that was being studied.

Chapter 3

Result

The extraction of the data that was collected and associated details, along with the use of Chi-square tests, enabled the study to identify initial correlations between categorical socio-demographic, occupational, lifestyle, and clinical variables and depression. Through the examination of basic connections, the study might explain underlying social and behavioral trends that may contribute to specific demographics, including urban dwellers, divorced individuals, and younger adults, among others.

Depression = 606	n	%	χ^2	df	p
Age (years)	320	65	27.357	2	<0.001
15-25	173	63			
26-35	113	45			
36-45					
BMI (kg/m2)	38	48	7.797	2	0.020
CED (<18.5)	354	63			
Normal (18.5–24.9)	214	57			
Overweight (≥ 25.0)					

Table 1: Association of age and BMI with depression among adult females (Chi-square analysis)

The parameter of age has been determined due to the extensively documented association between depression and age-dependent patterns, which are intricately connected with various developmental, social, and physiological aspects throughout life. Table 1 reveals the chi-square test revealed an exceptionally substantial difference ($\chi^2=27.357$, $p<0.001$), indicating that the prevalence was greatest within the age groups of 15–25 years (65.0%) and 26–35 years (62.9%), in contrast to a proportion of only 45.4% observed in the 36–45 years age bracket. As a result, this is an indication for mental issues like depression to be disproportionately concentrated among young adults, for reasons such as economic instability, transitional life stages, and career pressure.

Body Mass Index (BMI) displayed a statistically significant association with depression ($\chi^2 = 7.797$, $df = 2$, $p = 0.020$). Among those with BMI values less than 18.5, 48% of them reported depression ($n=38/79$). Among individuals categorized within the normal Body Mass Index (BMI) range of 18.5 -24.9, a significant proportion, specifically 63%, of adult females exhibited symptoms associated with depression, as indicated by the study sample size of 354 out of 564 participants.

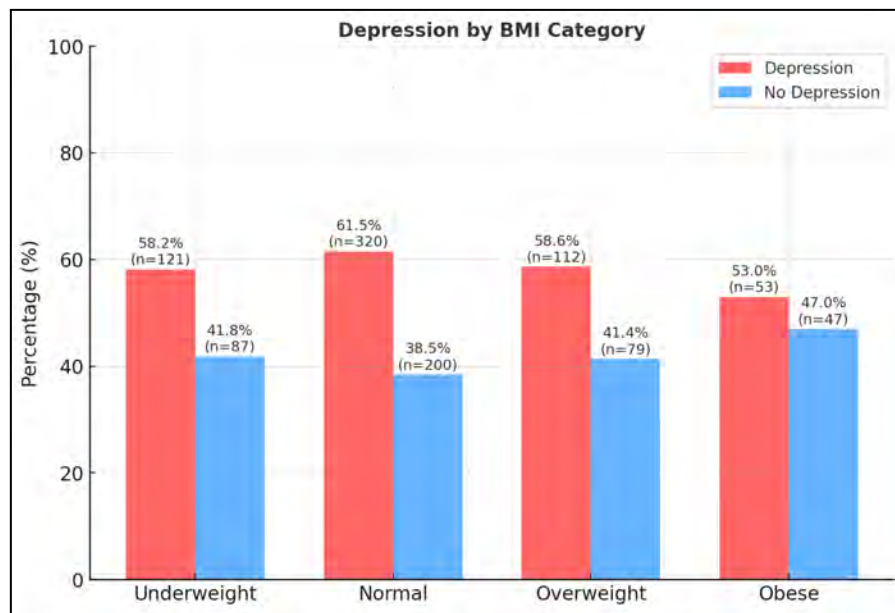


Figure 1: Depression Prevalence by BMI category

In the overweight category, defined as a Body Mass Index ($BMI \geq 25.0$), it emerged that 57% of the respondents exhibited symptoms of depressive disorders, with a sample size of 214 out of 376 who participated. The non-linear trend suggests that nutritional status interacts with psychological well-being in a complex manner, where not only undernutrition but also average weight can be the precursor for psychological distress. Figure 1 illustrates a bar chart for the depression prevalence by BMI category.

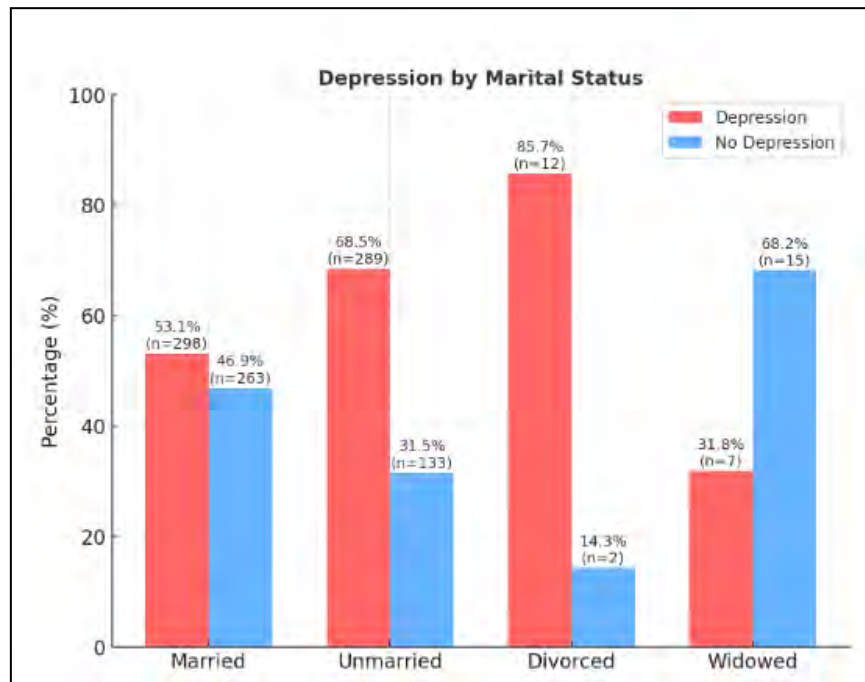


Figure 2: Depression Prevalence by Marital Status

Furthermore, Figure 2 demonstrates the presence of depressive symptoms by marital status. Determination of marital status was a crucial part of the study as it revealed that this kind of status was strongly correlated with depression ($\chi^2 = 34.590$, $df = 3$, $p < 0.001$). The level varied substantially across various categories: 53% ($n=298/561$) of married women displayed symptoms of psychological distresses whereas the percentage increased significantly for divorced women ($n = 12/14$). i. e. 86%. Moreover, signs and symptoms for 68% of unmarried women ($n = 289/422$) and 32% of widowed women ($n = 7/22$) were depressed.

Level of education	51	50	62.791	3	<0.001
Illiterate	100	43			
Primary	174	57			
Secondary	281	74			
Graduate or above					
Occupational status	283	69	65.509	4	<0.001

Student	181	45			
Housewife	115	74			
Service	3	50			
Business	24	52			
Unemployed					
Economic status	168	49	33.364	2	<0.001
Low	250	60			
Middle	188	72			

Table 2: Association of education, occupation, and economic status with depression among adult females (Chi-square analysis)

The degree of educational attainment exhibited a noteworthy association with depression, as indicated by the statistical analysis ($\chi^2 = 62.791$, $df = 3$, $p < 0.001$). As shown in Table 2, half of the female participants who demonstrated an inability to read or write exhibited symptoms indicative of depression ($n = 51/102$). The median of incidence of depression showed a notable rise concerning educational achievements: 43% of the population who attended elementary school ($n = 100$ out of 231), 57% of people who had finished secondary school ($n = 174$ out of 306), and 74% of other individuals who had finished college or university or an equivalent ($n = 281$ out of 380).

Consequently, Figure 3 reveals the women with the highest degrees of academic achievement had the greatest likelihood of acute depression restrictions. This contradictory tendency may be due to increased knowledge, cultural expectations, or scholastic pressures imposed on women with higher levels of educational options. The findings are in line with the notion that younger, unmarried people, who are more likely to be interested in courses of study, are more likely to be negatively impacted.

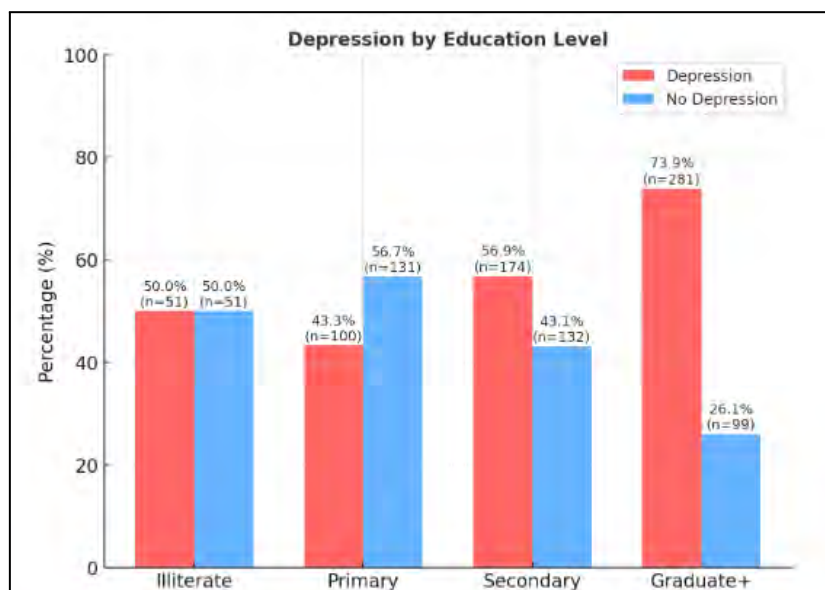


Figure 3: Depression distribution by Education Level

A strong coalition emerged between occupational ($\chi^2 = 65.509$, $df = 4$, $p < 0.001$) and economic status ($\chi^2 = 33.364$, $df = 2$, $p < 0.001$) with various symptoms related to mental distress is shown in Figure 4. Among 50% of businesswomen ($n = 3/6$), 52% of the unemployed ($n = 24/46$), and $n = 181/402$. i.e, 45% of the housewives showed signs and symptoms of depression. Females who were students reported the highest rate of 69%. On the other hand, the prevalence rate for low low-income groups and the middle-income groups is 49% and 60% respectively. Counterintuitively, higher economic status was correlated with mild to moderate depression. This may be the indicator for psychosocial stressors that come with higher social expectations and occupational pressure in more affluent groups.

However, among these factors, habitational qualities (urban or rural areas) showed one of the strongest associations ($\chi^2 = 113.395$, $df = 1$, $p < 0.001$). 78% of the females ($n = 356/459$) residing in urban areas selected symptoms for depression, while the percentage is only 45% for those in rural areas. Figure 4 illustrates these conditions.

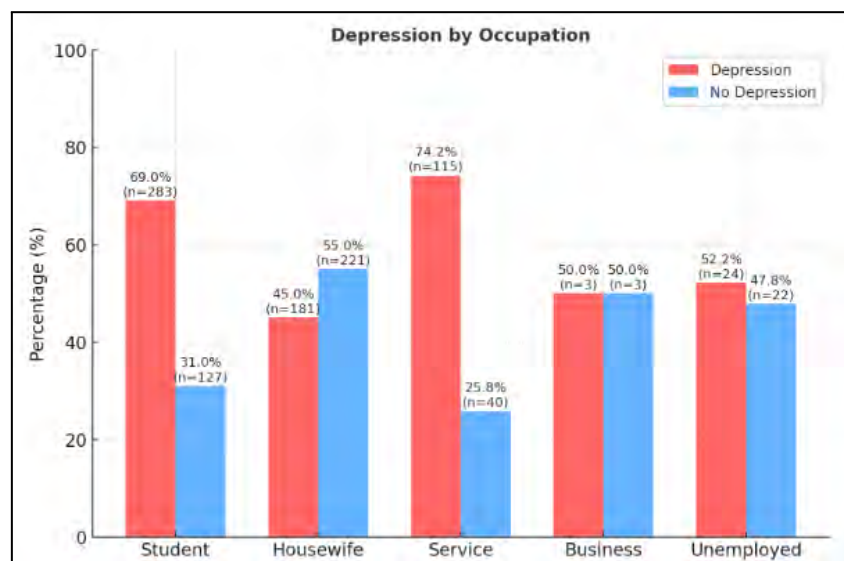


Figure 4: Depression distribution by Occupation

The main reason for this can be observed from Table 3 which shows an increased desire for formation of nuclear families that reflects the absence of extended family support, whereas joint family structures may prove to be a buffer against any kind of psychological stress.

Residence area	356	78	113.395	1	<0.001
Urban	250	45			
Rural					
Family type	414	62	4.050	1	0.044
Nuclear	192	55			
Joint					
Smoking habit	10	91	4.560	1	0.033
Smoker	596	59			
Non-smoker					
Physical exercise	59	61	0.174	1	0.677
Yes	547	59			

No					
Daily physical activity	135	73	37.564	2	<0.001
No activity	76	78			
High physical labor	395	54			
Specific diet	42	72	4.275	1	0.039
Yes	564	59			

Table 3: Association of residence, family, smoking, physical exercise and diet with depression among adult females (Chi-square analysis)

The main reason for this can be the observed from Table 3 which shows an increased desire for formation of nuclear families that reflects the absence of extended family support, whereas joint family structures may prove to be a buffer against any kind of psychological stress. In addition to habitations, daily physical activities appeared to have some effects, as 73% of the respondents (n = 135/185) with no daily activity with a chi-square value of $\chi^2 = 37.564$, df = 2, p < 0.001, which is marginally close to the value of 78% (n = 76/98) adult females doing high physical labor. Apart from these, a specific diet, dietary supplements, and intake of medications were other probable indicators that were observed.

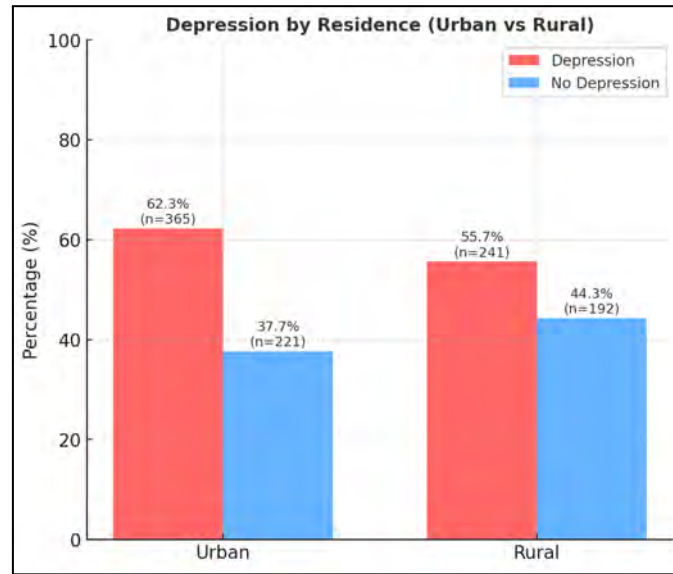


Figure 5: Depression distribution by place of residence (urban vs. rural)

Depression prevalence was 72% among those on a specific diet (n = 42/58) compared to 59% among those without (n = 564/961). Unlike some specific diets and the administration of certain medications, statistics revealed that dietary supplements had no significant relationship with depression. Data was found to be $\chi^2 = 4.275$, df = 1, p = 0.039 for women in diet, while it is 67% for those in medication ($\chi^2 = 6.824$, df = 1, p = 0.009).

Dietary supplements	104	62	0.360	1	0.549
Yes	502	59			
No					
Intake of medications	157	67	6.824	1	0.009
Yes	449	57			
No					
Changes in appetite	202	62	10.448	2	0.005
Loss of appetite	74	72			
Excessive eating	330	56			

Table 4: Association of dietary supplements, changes in appetite with depression among adult females (Chi-square analysis)

In addition to dietary supplements and involvement in various types of diets, the data found from Table 4 and 5 for changes in appetite were statistically significant ($\chi^2 = 10.448$, $df = 2$, $p = 0.005$). Females who had a loss of appetite ($n = 202/326$) were observed to be 62% less depressed than the 72% women who have a habit of eating in excess. Both sides of the spectrum of appetite changes are thus correlated to the presence of depressive episodes.

Tiredness or drowsiness	331	60	0.002	1	0.965
Yes	275	59			
Dizziness or blurred vision	296	59	0.062	1	0.804
Yes	310	60			
Difficulty in sleeping					
	208	60	0.145	1	0.703
Yes	398	59			
No					

Table 5: Association of tiredness, dizziness, and sleeping habit with depression among adult females (Chi-square analysis)

Figure 6 show a substantial proportion of the participants lacked adequate awareness of their mental health status. Only 383 women, or 37.6%, were able to precisely determine that they had symptoms of depressive disorders out of the total sample that was assembled. On the contrary, most women, or 623 women, were oblivious that they were experiencing symptoms

of depressive disorder. A comparatively small percentage of participants (n = 13; 1.3% of the total) delivered responses that were either inaccurate or inconclusive.

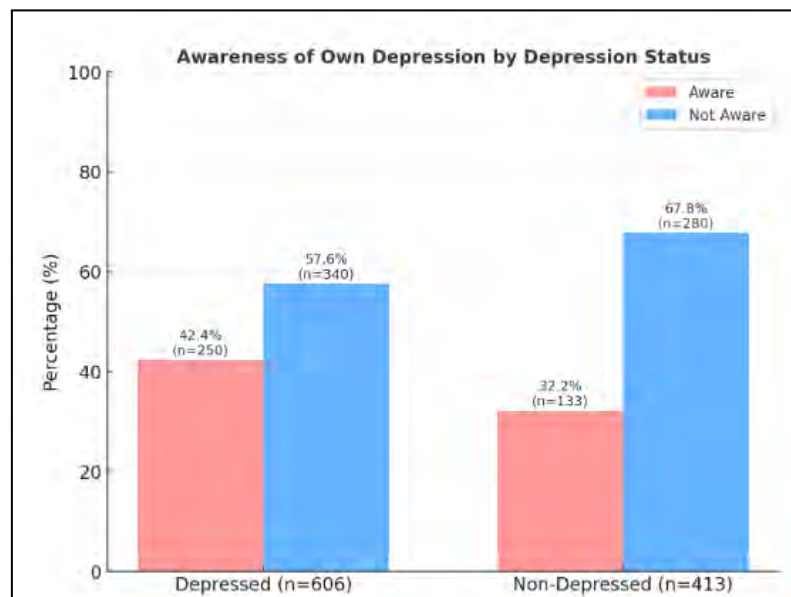


Figure 6: Awareness of own Depression

When further stratified by depressive status, Figure 6 reveals the disparities that became evident among women who were clinically classified as depressed (60%), and a very small number of women acknowledged their condition (40%). In contrast, a significantly high number of women (59%) remain unaware of their symptoms. The lack of self-recognition or reluctance in sharing one's issues suggests that more than half of the depressed women in the sample, both in urban and rural areas, continued their daily lives without identifying the psychological distress they were going through. However, interestingly, among those without depression, approximately 32% believed themselves to be suffering from clinical depression, reflecting the possibility of misinterpreting usual emotional stress as depression.

The research observations additionally demonstrate a significant lack of understanding and self-awareness regarding psychological well-being among Bangladeshi women. The substantial percentage among individuals experiencing depressive symptoms but do not know about it, demonstrates how essential it is to initiate health promotion advertising campaigns

that focus on promoting awareness, implementing a culturally customized psychoeducation with readily available mental health treatments in communities is likely crucial for enhancing consciousness, diminishing stigma, and fostering timely involvement with medical attention. In addition to complementing the Chi-square findings, *Regression Analysis* was performed to assess predictors of depression while searching for potential confounders. Multivariate logistic regression is one of the central purposes to overcome the limitations of bivariate chi-square analysis. By the process of simultaneously including multiple variables in the model, this classification of analysis aids in identifying factors that accurately predict depression. This type of model identifies true risk factors, yielding a precise picture of mental health determinants. Essential variables like Adjusted Odds Ratios (*AORs/ORs*), 95% confidence intervals (*CI*s), and *p* values.

	Depression N=606		
	OR	95% CI	p-value
Age (years)			
15-25	1.185	0.731 to 1.921	0.492
26-35	1.655	1.131 to 2.423	0.009
36-45	1		
BMI (kg/m2)			
CED (<18.5)	0.598	0.353 to 1.015	0.057
Normal (18.5–24.9)	1.099	0.823 to 1.469	0.522
Overweight (≥25.0)	1		
Marital status			
Married	1.758	0.669 to 4.623	0.253
Unmarried	1.877	0.606 to 5.811	0.275
Divorced	6.753	1.104 to 41.327	0.039
Widowed	1		

Table 7: Regression analysis of predictors of depression among adult females

Concerning various age groups, Table 6 and 7 show that compared to the oldest group (36–45 years), women aged 26–35 years were significantly more likely to report depression (OR = 1.655, 95% CI = 1.131–2.423, $p = 0.009$). Although bivariate analysis demonstrated that (15–25) had the highest prevalence of depression, in multivariate regression, the 26–35 age group showed the strongest independent risk. As for the BMI values, underweight status (CED, BMI <18.5) had a lower but marginally non-significant association with psychological distress (OR = 0.598, 95% CI = 0.353–1.015, $p = 0.057$). These values contrasted concerning the chi-square results, but the 95% CI included 1, preventing firm conclusions.

Level of education			
Illiterate	0.685	0.331 to 1.419	0.309
Primary	1.009	0.587 to 1.735	0.974
Secondary	1.253	0.789 to 1.989	0.339
Graduate or above	1		
Occupational status			
Student	2.167	1.035 to 4.539	0.040
Housewife	0.848	0.424 to 1.695	0.641
Service	2.493	1.179 to 5.271	0.017
Business	0.863	0.146 to 5.108	0.871
Unemployed	1		
Economic status			
Low	0.876	0.510 to 1.505	0.631
Middle	0.861	0.540 to 1.372	0.529

High	1		
------	---	--	--

Table 8: Regression analysis of predictors of depression among adult females

Different factors, such as occupation, marital status, residential areas, and physical activities, were consistent across both methods, strengthening the corroboration of their role in depression. For instance, both types of analysis confirmed the evidence that divorced women are at the highest risk of depression. Regression table quantified this risk with an OR of 6.753, which has a 95% CI value of 1.104-41.327, and $p = 0.039$. This indicates six times increase in value compared to the widowed women. On the other hand, both analyses reflect the burden of workplace stress and performance pressure for adult females belonging to the categories of service holders and students. Regression confirmed higher odds (students: OR = 2.167, $p = 0.040$; service holders: OR = 2.493, $p = 0.017$), and it was observed that the percentage of depression rates was 69% among students and 74% among service holders, respectively, for chi-square data. Moreover, the urban-rural division was one of the strongest observations. Chi-square indicated 78% of urban women and 45% of rural women suffered from depression related symptoms. Meanwhile, (OR = 2.240, 95% CI = 1.472–3.407, $p < 0.001$) was the regression value extracted for the urban women who demonstrated twice more risk of such conditions.

Residence area			
Urban	2.240	1.472 to 3.407	<0.001
Rural	1		
Family type			
Nuclear	0.934	0.646 to 1.349	0.714
Joint	1		

Smoking habit			
Smoker	1.286	0.129 to 12.794	0.830
Non-smoker	1		
Physical exercise			
Yes	1.051	0.572 to 1.930	0.873
No	1		
Daily physical activity			
No activity	1.949	1.336 to 2.845	0.001
High physical labor	2.852	1.685 to 4.825	<0.001
Medium level	1		
Specific diet			
Yes	1.090	0.487 to 2.442	0.834
No	1		

Along with the inconsistencies of urbanization, which highlight the structural risk factor for poor mental health, it was revealed that both sedentary lifestyles and physically demanding work are detrimental, as the depression rate for inactive females and high labour women is 73% and 78% respectively. The same goes for multivariate data (OR = 1.949, $p = 0.001$, and OR = 2.852, $p < 0.001$) for inactive and high physical labor.

Intake of medications			
Yes	1.045	0.667 to 1.637	0.848
No	1		
Changes in appetite			
Loss of appetite	1.301	0.963 to 1.758	0.086
Excessive eating	1.651	1.014 to 2.691	0.044

No change	1		
Tiredness or drowsiness			
Yes	0.640	0.432 to 0.946	0.025
No	1		
Dizziness or blurred vision			
Yes	0.665	0.447 to 0.989	0.044
No	1		
Difficulty in sleeping			
Yes	0.847	0.573 to 1.252	0.405
No	1		

Table 9: Regression analysis of predictors of depression among adult females

In the context of Bangladeshi women, depression is shaped by structural, socioeconomic, psychological, and biological stressors. These results accentuate the need for integrated mental health strategies that address both social determinants and psychological vulnerabilities.

Chapter 4

Discussion

The primary objective of this study was to investigate how widespread depression occurs among women in Bangladesh, along with which variables might lead to it. Consideration was focused on the ways in which clinical, social, lifestyle, and demographic characteristics interact with other variables. Depression is not uniformly dispersed throughout the community, as evidenced by statistics; rather, it can be affected by social disparities, norms of culture, and the conditions of activities that people participate in daily. The fact that depression among Bangladeshi women is caused by psychological deficiencies as well as

more significant cultural problems becomes abundantly obvious when all these factors are considered.

4.1 Age and Developmental Challenges

A substantial amount of variation regarding the severity of depression was found to exist between different age groups, as was seen. It reflects the numerous pressures that women feel at various stages in their life that they are impacted a wide range of symptoms. The research showed that younger women, particularly those who were in their late teens and twenties, were the most susceptible to suffering from depression. This was especially true for women who were in their late teens. There is a possibility that this is tied to the difficulties that are associated with transitional life, such as the expectations to perform well in school, the anxiety that comes with worry about possible employment opportunities, and the expectations of society. Women in their late twenties and early thirties, who commonly had to combine the stresses of family life or early professional duties, were at an increased risk. This was especially true for women who were in their early thirties. More specifically, this was the case for women who were in their early thirties at the time. These findings were found in a study that was conducted. On the other hand, the incidence of depression was found to be even greater among younger women. Compared to these patterns of behavior, depression in Bangladesh appears to have a closely related relationship to the stage of maturity that a woman is in, as well as the specific obstacles that age presents for women. This is the case in Bangladesh.

4.2 Marital Transitions

The significant value of marriage and family in Bangladeshi society is further demonstrated by the findings that marital status has been identified to represent one of the most consistent indicators of despair. A combination of the sentimental impact of a broken marriage, the

stigma and shame resulting from it, and the financial uncertainty that it frequently entails, divorced women had the greatest levels of depression. The protective effects of companionship and financial stability may be reflected in the fact that married women demonstrated significantly lower levels of depression. However, it is pertinent to note that these traits are not universally effective. In contrast, widowed women reported much lower symptoms of depression compared to divorced or unmarried women. This could be because widowed women have the companionship of their families and communities, which might help them feel less isolated. The effects of these findings underscore how cultural norms approximately marriage influence the psychological wellness trajectories of adult females.

4.3 Education, Employment, and Psychological Strain

From the collected samples and further extractions of the analysis, educated women, particularly those pursuing professional careers, face heightened academic and occupational pressures. The findings related to occupations supported this trend: Adolescents and those who work in service sectors indicated an increased incidence of depression, which was supported by the data concerning jobs. It seems probable that this situation is a representation of the psychological strain youngsters suffer because of preparing for assessments, fulfilling requirements for performance, and not being certain about occupational sources they might have in the future. It is feasible for service professionals to develop psychological disorders as a consequence of a range of factors, such as the stress that is associated with their professional lives, the fact that they work for prolonged periods, and their challenge of balancing the responsibilities of their jobs with those of their households. On the other hand, women who were employed in the business world and those who were housewives had fewer instances of depression. This is likely because they were subjected to fewer associated with performance stressors.

4.4 Socioeconomic Positions and Urban-Rural Divide

While one might expect financial hardship to increase depression risk, women from higher-income families were more likely to become vulnerable. There might be a likelihood that such behavior is a manifestation of the "hidden responsibilities" of authority, encompassing higher social standards, assertions on lifestyle, and the quest for excellence in academic or professional platforms. Women of middle-income also suffered more anxiety as they struggled to balance their objectives with the constraints of their financial standing. By contrast, rural life, despite its hardships, may offer a stronger social support system and slower-paced routines that protect them from mental distress. To effectively deal with the concern of women's emotional wellness in Bangladesh, it is crucial to take into consideration the socioeconomic and societal factors that prevail. Urban women reported higher rates of depression compared to rural women, while residential context further shaped mental health. Exposure to pollution, competitive work and study environments, and erosion of traditional community networks are likely to contribute to this disparity.

4.5 Physiological and Emotional Well-being

While intense physical labor may result in fatigue, physical strain, and constrained possibilities for relaxation or self-care, sedentary lives can lead to physical ailments and a sense of emptiness. A lack of activity can also contribute to a significant rise in negative emotions. On the other hand, moderate activity proved to be protective, delivering advantages that were physically as well as mentally beneficial. This is attributed to changes in eating habits or struggles with body image that are brought to the forefront. The administration of vitamin and mineral supplements failed to result in the observation of a discernible protective impact, which shows that the addition of supplements on their own is not sufficient to compensate for the psychological effects that are caused by dietary and lifestyle choices. On the other hand, the conclusion that the use of medicine was additionally linked with elevated

levels of depression, particularly among women who were suffering from chronic conditions, reflects the psychological toll that long-term health issues have effects for adult females.

4.6 Psychosomatic Aspects of Depression

Mental conditions like depression very often exist along with other symptoms; it frequently speaks through the body. According to many studies done beforehand, physical symptoms were deeply intertwined with depressive experiences, being the embodiment of psychological distress. One of the most prominent examples was changes in appetite. Among the subjects, those who reported eating excessively were more likely to suffer from hidden depressive symptoms because, for some, edibles may act as a form of comfort or a coping mechanism. In contrast, the same coping mechanism works as a decrease in food intake. These kinds of disruptions in appetite regulations caused by underlying mood changes are often unheard of and about 70% of the time are never talked about. In the culture of Bangladesh, where diets and meals shared with family bear significant cultural importance, these adjustments may also have an influence on interactions that women have with others among them, occasionally rendering them even more secluded. Similarly, fatigue, persistent drowsiness, or tiredness were seen to be commonly associated with depression. According to the subjects, these physical symptoms were often overlooked as “normal exhaustion” from childcare or household tasks, while these were the symptoms of underlying mental struggles. Another tangible sign that has been proved to have a positive linkage with symptoms connected with depression is the sensation of disorientation or eyesight issues caused by the condition. Although at first glance these may appear to be separate health issues, this is not often the case. Stress, nutritional deficiencies, and psychosomatic symptoms related to mental exertion are commonly found to occur simultaneously with these health issues.

4.7 Socio-Cultural Context in Bangladesh

Going beyond individual experiences and acknowledging the cultural and social frameworks is vital in acquiring a better understanding of depression among women in Bangladesh. Mental health is never constructed by biology alone; it is more often interwoven with societal expectations, gender roles, and family structures (nuclear or joint families). Women tend to place greater emphasis on family and marital obligations, and childcare responsibilities from a young age, oftentimes at the expense of attaining their own ambitions or personal independence. As an illustration, women are particularly negatively impacted by the stigma attached to divorce or postponed marriage, which frequently have higher risk of developing symptoms associated with depression. There has been a notable increase in the educational and job opportunities for women during the last few decades. New paths to empowerment and independence have been made possible as a result. Because psychological distress is sometimes viewed as an inability to fulfill anticipated duties, social stigma is another distinguishing element that may dissuade women from openly discussing it. Lastly, the interaction of traditional and modern values illustrates Bangladesh's wider cultural shift. The troubling picture of women who suffer from depression at the nexus of contemporary society and tradition is reflected in the continuation of patriarchal standards, economic disparity, and limited access to mental health care.

Chapter 5

Conclusion

The findings of this study expressed that depression among Bangladeshi women is not the result of a single factor; it is a culmination of multiple and intersecting influences- social, environmental, and biological. In conjunction with physiological variables, the social circumstances affecting women in their communities throughout Bangladesh were significant factors that contributed to depression. Metropolis women were over twice as likely to be dejected as women who lived in rural locations. Consequently, urban centers can be good places for individuals to reside; nonetheless, they can also be challenging places to live because of congestion, monetary issues, and weaker connections with the community, which makes women especially susceptible. Students and service holders also faced greater risks, indicative of the substantial pressures of academic success and career obligations that especially impact young women as they navigate their professional and personal lives. The safeguarding of women's mental health is not only advantageous to them in response, but also beneficial for communities, households, and the future of the country. People must cease to perceive depression as a discrete battle; it is a public health issue with implications for everyone in society. To effectively deal with it, one needs to be kind, comprehending, and work collaboratively in all areas of biology, society, and regulations.

5.1 Limitations

1. Some participants gave answers without proper knowledge, which might have affected some of the survey results.
2. The study was conducted in a limited number of participants and areas that may not represent the whole female population of Bangladesh.
3. Lifestyle variables and mental health status were based on self-reported answers, which may introduce biased or inaccurate responses.
4. Chronic illness, genetic predisposition, and other environmental stressors were not controlled, which might affect the observed statistics.

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<https://saanys.org/wp-content/uploads/2014/09/Van-online2018.pdf#page=32>

Appendix A.

Consent was taken prior to collection of samples. The questionnaire for the inform consent is attached below-

QUESTIONNAIRE FOR THE INFORM-CONSENT

১. এই গবেষণা কর্মের ধরণ, উদ্দেশ্য এবং পদ্ধতি সম্পর্কে কি পুরো : হ্যাঁ / না
জানতে পেরেছেন?
২. এই গবেষণায় যে আপনাকে শারীরিক, মানসিক এবং সামাজিক কোন : হ্যাঁ / না
ঝুঁকির সম্মুখীন হতে হবে না, এ বিষয়ে কি যথেষ্ট অবহিত হয়েছেন?
৩. এই গবেষণায় আপনার শরীর অথবা কোন অঙ্গ-প্রত্যঙ্গে যে ক্ষত বা : হ্যাঁ / না
আঘাত তৈরী করা হবে না, এ সম্পর্কে কি অবহিত হয়েছেন?
৪. এই গবেষণার ফলাফল এবং সম্ভাব্য কল্যাণের বিষয়ে আপনার : হ্যাঁ / না
ধারণাটি স্পষ্ট হয়েছে কি?
৫. এই গবেষণা কর্মে অংশগ্রহণ, সহযোগিতাদান, অথবা বিরত থাকার : হ্যাঁ / না
সিদ্ধান্ত আপনি কি স্বাধীন ভাবে গ্রহণ করতে পারছেন?
৬. গবেষণা কর্মে অংশগ্রহণের ফলে আপনার মৌলিক মানবাধিকার কি : হ্যাঁ / না
ক্ষুণ্ণ হচ্ছে?
৭. আপনি কি, পরিপূর্ণ ভাবে জ্ঞাত যে, আপনার তথ্যাবলীর গোপনীয়তা : হ্যাঁ / না
বজায় রাখা হবে?
৮. গবেষণা কর্মে অংশগ্রহণের জন্য আপনাকে কোন পারিশ্রমিক অথবা : হ্যাঁ / না
ভ্রমণভাতা দেয়া হবে না, এ বিষয়টি কি যথেষ্ট অবগত আছেন?

অনুমতি পত্র

এই গবেষণা কর্মের উদ্দেশ্য, পদ্ধতি ও উপযোগিতা সম্পর্কে পূর্ণ ধারণা পেয়ে, এর নীতিগত বৈশিষ্ট্য সমূহের প্রতি আমার সম্মতি প্রকাশ করছি। গবেষণা কর্মে অংশগ্রহণের জন্য আমি কোন ব্যক্তি বা গোষ্ঠি দ্বারা প্রভাবান্বিত হইনি অথবা আমার মৌলিক মানবাধিকার ক্ষুণ্ণ হয়নি। অতএব, যথাযথ পর্যালোচনা সাপেক্ষে আমি স্ব-প্রণোদিত হয়ে এই অনুমতি পত্রে স্বাক্ষর করছি।

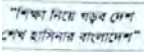
নাম :

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স্বাক্ষর

Appendix B.

The ethical approval statement is attached below-

	
SOUTHEAST UNIVERSITY	51/A & 252, Tejgaon I/A Dhaka-1208, Bangladesh Phone: 8878502, 8878497 766348518, 01632261081
Fax: 880-2-55034109 E-mail: info@seu.edu.bd Web: www.seu.edu.bd FB: fb.com/seu.official.info	

Ref: SEU/Pharm/CECR/022/2024 Date: 19.11.2024

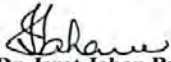
Project Title: A study on the hemoglobin levels and mental health status among the adult females in Bangladesh

Name of the Investigators: Dr. Md. Rabiul Islam, School of Pharmacy, BRAC University and Dr. Md. Siddiqui Islam, Department of Pharmacy, Southeast University

CECR Reference No.: SEU/Pharm/CECR/022/2024

Ethical Approval

This is to certify that the research project entitled “A study on the hemoglobin levels and mental health status among the adult females in Bangladesh” presented by Dr. Md. Rabiul Islam, School of Pharmacy, BRAC University and Dr. Md. Siddiqui Islam, Department of Pharmacy, Southeast University was reviewed by Committee for Ethical Compliance in Research and was found to be compliant with Ethical Standards of Department of Pharmacy, SEU.


Dr. Israt Jahan Bulbul
Convener (Acting)
Committee for Ethical Compliance in Research

Appendix C.

Section 1: Demographic questions

1.1 বয়স বছরে (Age in years)

☐ ১৫-২৫ (15-25)

☐ ২৬-৩৫ (26-35)

☐ ৩৬-৪৫ (36-45)

1.2 শিক্ষার স্তর (Level of education)

☐ পড়ালেখা করি নাই (Illiterate)

☐ প্রাথমিক (Primary)

☐ মাধ্যমিক (Secondary)

☐ স্নাতকোত্তর/উর্ধ্ব (Graduate/above)

1.3 পেশা (Profession)

☐ চাকরি (Service)

☐ ব্যবসা (Business)

☐ গৃহিণী (Housewife)

☐ ছাত্র (Student)

☐ বর্তমানে কাজ করছেন না (Unemployed)

☐ অন্যান্য (Others) (Please specify)

1.4 বৈবাহিক অবস্থা (Marital Status):

☐ অবিবাহিত (Unmarried)

☐ বিবাহিত (Married)

☐ তালাকপ্রাপ্ত (Divorced)

☐ বিধবা (Widowed)

1.5 ওজন-কেজিতে (Body weight in Kg):

1.6 উচ্চতা- ফুট ও ইঞ্চিতে (Height in Feet and Inches):

1.7 পরিবারের মাসিক আয়- হাজারে (টাকা) (Monthly family income) (BDT in thousand):

1.8 বসবাসের এলাকা (Area of residence)

☐ শহর (Urban)

☐ গ্রাম (Rural)

1.9 আপনার সাথে বসবাসরত মানুষের সংখ্যা (Number of people living with you):

1.10 ধূমপানের অভ্যাস? (Smoking status?)

☐ ধূমপায়ী (Smoker)

☐ অধূমপায়ী (Non-smoker)

☐ প্রাক্তন ধূমপায়ী (Ex-smoker)

1.11 অ্যালকোহল বা কোনো বিনোদনমূলক ওষুধ সেবনের অভ্যাস (Alcohol or any recreational drugs consumption habit?)

☐ হ্যাঁ (Yes)

☐ না (No)

Section 2: Lifestyle and diet history (জীবনধারা এবং খাদ্য সম্পর্কিত তথ্য)

2.1. আপনি কি কোনো নির্দিষ্ট ডায়েট অনুসরণ করেন? (Do you follow a specific diet e.g., vegetarian, keto)?

☐ হ্যাঁ (Yes)

☐ না (No)

2.2 আপনি আপনার ক্ষুধায় কোন সাম্প্রতিক পরিবর্তন অনুভব করেছেন? (Did you experience any recent change in your appetite?)

☐ হ্যাঁ, অতিরিক্ত খাওয়ার অভ্যাস (Yes, overeating habit)

☐ ক্ষুধা কমে যাওয়া (Loss of appetite)

☐ কোন পরিবর্তন নেই (No change)

2.3 আপনি কি কোনো পুষ্টি বা ভিটামিন সম্পূরক গ্রহণ করে থাকেন? (Do you take any Food/Nutritional/vitamin supplements):

☐ হ্যাঁ (Yes)

☐ না (No)

2.4. আপনি কি ঘুমাতে অসুবিধা অনুভব করেন বা ঘুমের ব্যাধির কোন অভিজ্ঞতা আছে? (Do you have trouble sleeping or have any experience of sleeping disorders)

☐ হ্যাঁ (Yes)

☐ না (No)

2.5. আপনি কি প্রায়শই কোনো ধরনের ওষুধ নেন? (Do you take any sort of medications frequently?)

☐ হ্যাঁ (Yes)

☐ না (No)

যদি হ্যাঁ হয়, অনুগ্রহ করে বলুন [If yes, name of medicine(s)]

2.6. আপনি কি দৈনন্দিন কাজে স্বাভাবিকের চেয়ে বেশি ক্লান্ত বা তন্দ্রাচ্ছন্ন হয়ে পড়েন? (Do you feel tired or drowsy doing daily chores more than usual?)

☐ হ্যাঁ (Yes)

☐ না (No)

2.7. আপনি কি প্রায়ই স্বাভাবিক কাজ করতে মাথা ঘোরা অনুভব করেন বা ঝাপসা দেখতে পান? (Do you often feel dizzy or have blurred vision while doing normal work?)

☐ হ্যাঁ (Yes)

☐ না (No)

2.9. আপনার দৈনন্দিন শারীরিক কার্যকলাপের মাত্রা কি? (Are you involved in daily physical activity?)

☐ উচ্চ শারীরিক শ্রম (High physical labor)

☐ মাঝারি স্তর (Medium level)

☐ কোন কার্যকলাপ নেই (ডেস্ক কাজ) (No activity at all (desk job))

2.10. আপনি কি সপ্তাহে অন্তত পাঁচবার নিয়মিত ব্যায়াম করেন? (Do you perform regular exercise at least five times a week?)

☐ নিয়মিত (Regular)

☐ অনিয়মিত (Irregular)

☐ একদমই নয় (Not at all)

Section 3: Mental health related information (মানসিক স্বাস্থ্য বিষয়ক তথ্য)

3 (d). আমি কোন ইতিবাচক অনুভূতি পাই না (I couldn't seem to experience any positive feeling at all)

☐ একেবারেই না (Not at all)

☐ কদাচিৎ (Rarely)

☐ মাঝে মাঝে (Sometimes)

☐ প্রায়ই (Frequently)

5 (d). কোনো নতুন কাজ শুরু করার মতো ইচ্ছাশক্তি পাই না (I found it difficult to work up the initiative to do things)

☐ একেবারেই না (Not at all)

☐ কদাচিৎ (Rarely)

☐ মাঝে মধ্যে (Sometimes)

☐ প্রায়ই (Frequently)

10 (d). আমার মনে হয় আমার জীবনের সামনে ভালো কিছু নেই (I felt that I had nothing to look forward to)

☐ একেবারেই না (Not at all)

☐ কদাচিৎ (Rarely)

☐ মাঝে মধ্যে (Sometimes)

☐ প্রায়ই (Frequently)

13 (d). আমি কষ্ট এবং হতাশায় ডুবে যাই (I felt down-hearted and blue)

☐ একেবারেই না (Not at all)

☐ কদাচিৎ (Rarely)

☐ মাঝে মধ্যে (Sometimes)

☐ প্রায়ই (Frequently)

16 (d). আজকাল জীবনের কোনো কিছু আমাকে উৎসাহিত করতে পারে না (I was unable to become enthusiastic about anything)

☐ একেবারেই না (Not at all)

☐ কদাচিৎ (Rarely)

☐ মাঝে মাঝে (Sometimes)

☐ প্রায়ই (Frequently)

17 (d). আমার জীবন মূল্যহীন মনে হয় (I felt I wasn't worth much as a person)

☐ একেবারেই না (Not at all)

☐ কদাচিৎ (Rarely)

☐ মাঝে মাঝে (Sometimes)

☐ প্রায়ই (Frequently)

21 (d). আমার মনে হয় জীবন অর্থহীন (I felt that life was meaningless)

☐ একেবারেই না (Not at all)

☐ কদাচিৎ (Rarely)

☐ মাঝে মাঝে (Sometimes)

□ প্রায়ই (Frequently)

Appendix D.

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement. The rating scale is as follows:

0 Did not apply to me at all - NEVER

1 Applied to me to some degree, or some of the time - SOMETIMES

2 Applied to me to a considerable degree, or a good part of time - OFTEN

3 Applied to me very much, or most of the time - ALMOST ALWAYS

		N	S	O	AA	D	A	S
1	I found it hard to wind down	0	1	2	3			
2	I was aware of dryness of my mouth	0	1	2	3			
3	I couldn't seem to experience any positive feeling at all	0	1	2	3			
4	I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3			
5	I found it difficult to work up the initiative to do things	0	1	2	3			
6	I tended to over-react to situations	0	1	2	3			
7	I experienced trembling (eg, in the hands)	0	1	2	3			
8	I felt that I was using a lot of nervous energy	0	1	2	3			
9	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3			
10	I felt that I had nothing to look forward to	0	1	2	3			
11	I found myself getting agitated	0	1	2	3			
12	I found it difficult to relax	0	1	2	3			
13	I felt down-hearted and blue	0	1	2	3			
14	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3			
15	I felt I was close to panic	0	1	2	3			
16	I was unable to become enthusiastic about anything	0	1	2	3			

11	I found myself getting agitated	0	1	2	3			
12	I found it difficult to relax	0	1	2	3			
13	I felt down-hearted and blue	0	1	2	3			
14	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3			
15	I felt I was close to panic	0	1	2	3			
16	I was unable to become enthusiastic about anything	0	1	2	3			
17	I felt I wasn't worth much as a person	0	1	2	3			
18	I felt that I was rather touchy	0	1	2	3			
19	I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)	0	1	2	3			
20	I felt scared without any good reason	0	1	2	3			
21	I felt that life was meaningless	0	1	2	3			
TOTALS								

Scoring the DASS

The scale to which each item belongs is indicated by the letters D (Depression), A (Anxiety) and S (Stress). For each scale (D, A & S) sum the scores for identified items. Because the DASS 21 is a short form version of the DASS (the Long Form has 42 items), the final score of each item group (Depression, Anxiety and Stress) needs to be multiplied by two (x2).

Interpreting the DASS

Once multiplied by 2, each score can now be transferred to the DASS profile sheet, enabling comparisons to be made between the three scales and giving percentile rankings and severity labels.

DASS Severity Ratings

The DASS is a quantitative measure of distress along the 3 axes of depression, anxiety¹ and stress². It is not a categorical measure of clinical diagnoses.

Emotional syndromes like depression and anxiety are intrinsically dimensional - they vary along a continuum of severity (independent of the specific diagnosis). Hence the selection of a single cut-of score to represent clinical severity is necessarily arbitrary. A scale such as the DASS can lead to a useful assessment of disturbance, for example, individuals who may fall short of a clinical cut-off for a specific diagnosis can be correctly recognized as experiencing considerable symptoms and as being at high risk of further problems. However, for clinical purposes it can be helpful to have 'labels' to characterized degree of severity relative to the population. Thus, the following cut-of scores have been developed for defining mild/moderate/severe/ extremely severe scores for each DASS scale.

Note: the severity labels are used to describe the full range of scores in the populaion, so 'mild' for example means that the person is above the populaion mean but probably sill way below the typical severity of someone seeking help (ie it does not mean a mild level of disorder).

The individual DASS scores do not define appropriate interventions. They should be used in conjunction with all clinical information available to you in determining appropriate treatment for any individual.

¹Symptoms of psychological arousal

²The more cognitive, subjective symptoms of anxiety

DASS 21 SCORE

DEPRESSION ANXIETY STRESS

SCORE SCORE SCORE

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	Depression	Anxiety	Stress
Normal	0 - 4	0 - 3	0 - 7
Mild	5 - 6	4 - 5	8 - 9
Moderate	7 - 10	6 - 7	10 - 12
Severe	11 - 13	8 - 9	13 - 16
Extremely Severe	14 +	10 +	17 +