

Prevalence, Determinants and Disparities of Depression and Anxiety among Working Women in Bangladesh: Insights from BDHS 2022

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Abstract

Background

Depression and anxiety constitute significant public health concerns for working women worldwide. This study aimed to estimate the prevalence of depression, anxiety, and the co-occurrence of either condition among Bangladeshi working women, and to examine their associated sociodemographic and household-level determinants, as well as to assess geographic and socioeconomic disparities.

Methods

Using BDHS 2022 data, a weighted sample of 6412 women aged 15–49 is selected. Anxiety and depression symptoms are measured using the generalized anxiety disorder (GAD-7) scale and the Patient Health Questionnaire (PHQ-9) scale, respectively. Multiple logistic regression was used to determine the associated factors.

Results

The findings showed that among 6412 working women, 5.1% are experiencing symptoms of depression, and 20.1% showed symptoms of anxiety, and 21.4% reported either of these conditions. The prevalence of these symptoms was found to be higher (Depression: 5.6%, Anxiety: 23.8%) among 35-49-year-old women and in Khulna (Depression: 8.2%) and Chattogram (Anxiety: 25.4%) division with no formal education (Depression: 6.7%, Anxiety: 26.8%). Additionally, working women from female-headed households (Depression: 4.7%, Anxiety: 19.5%), beating justification (Depression: 4.8%, Anxiety: 19.9%), and those who use no contraceptive method (Depression: 6.9%, Anxiety: 25%) also have a higher prevalence of Depression and Anxiety. In addition, some significant associated factors are identified as age those are 25–34 (Depression AOR: 1.73) and 35–49 (Anxiety AOR: 1.41), Khulna Division (Depression AOR: 2.12) and Rangpur Division (Anxiety AOR: 1.22), Islam Religion (Anxiety AOR: 1.60), Female headed household (Anxiety AOR: 1.26), worked before marriage (Depression AOR: 1.82, Anxiety AOR: 1.28), Beating Justified (Anxiety AOR: 1.48) were more likely to facing either of these conditions with a p-value of less than 0.05.

Conclusions

The findings of this study reveal a high prevalence of depression and anxiety among working women in Bangladesh and identify the influence of some sociodemographic and socioeconomic factors. These results recommended some comprehensive strategies to address the underlying determinants of mental health challenges in Bangladesh.

1. Introduction

Mental health is increasingly recognized as a major public health priority worldwide, with depression and anxiety ranking among the leading causes of years lived with disability and overall disease burden [1, 2]. These common mental disorders significantly impair individuals' capacity to perform daily activities, sustain social relationships, and remain productive in the workforce. Evidence consistently shows that women are disproportionately affected, particularly in low- and middle-income countries (LMICs), where gender inequality, economic insecurity, gender-based violence, and limited availability of mental health services heighten their risk [3, 4]. Women in paid jobs may face additional challenges due to the combined demands of generating revenue and unpaid domestic and caregiving tasks. This "double burden" frequently causes increased stress, emotional weariness, and an increased chance of anxiety and depressive symptoms [5, 6].

Globally, the World Health Organization (WHO) estimated in 2017 that approximately 4.4% of the population is living with depression and 3.6% with anxiety disorders, with both conditions affecting women more frequently than men [7]. Anxiety and depression often impair individuals' ability to carry out everyday activities, including family caregiving and productive work [8]. The magnitude of depression and anxiety varies widely across cultural and geographic contexts [9]. In a population-based survey conducted in China, the prevalence of comorbid depression and anxiety was 9.05%, while the prevalence of depression and anxiety alone was 10.6% and 12.8%, respectively [10]. Malaysia reported a prevalence of 12.3% for depression and anxiety, whereas a systematic review and meta-analysis estimated a prevalence of 34% in Pakistan [11, 12]. The comorbid prevalence of depression and anxiety was recorded as 24.2% in Ghana [13], 10.04% in Ethiopia [14], and 33.6% in Somali and Kenyan refugees [15]. The reported prevalence of comorbid depression and anxiety was 2% in a community-based study in New York [16], while community-level estimates from Australia reported a prevalence of 10% [17]. In Bangladesh, despite notable advances in women's education and participation in the labor force, many continue to face conditions that undermine their mental well-being. Factors such as workplace harassment, excessive working hours, job insecurity, and the persistent stigma around mental illness contribute to sustained psychological distress [18, 19].

National estimates indicate that around 4–5% of Bangladeshi women of reproductive age report moderate-to-severe symptoms of anxiety or depression [20]. Global Burden of Disease (GBD) 2021 modelled data also report a comparable prevalence—around 5–6% for depressive disorders and similar rates for anxiety—within the general population. Access to mental health care remains limited, and even when women experience moderate to severe symptoms, many do not seek professional help due to financial constraints, limited awareness, or fear of social judgment [20]. More specifically, worldwide, only 25% of individuals with anxiety disorders receive treatment, with barriers such as limited awareness, inadequate mental health services, social stigma, and a shortage of trained healthcare providers posing major challenges [21]. A recent survey in Bangladesh reported that only 12% of women exhibiting symptoms of anxiety or depression sought professional help [22], while a separate survey estimated 94% of individuals with psychiatric disorders in Bangladesh do not receive adequate care [23]. The paucity of

mental health specialists and the disproportionate allocation of facilities in implementing adequate mental health policies intensify this situation, which brings attention to the need for enhancing mental health infrastructure in Bangladesh [24]. Addressing these needs aligns with Sustainable Development Goal (SDG) 3, which emphasizes good health and well-being through improved mental health awareness and access to care, as well as SDG 5 on gender equality, as women are disproportionately affected by anxiety disorders due to persistent social and economic inequalities [25].

Evidence from sector-specific studies in Bangladesh, particularly among garment workers, domestic workers, healthcare professionals, and teachers, suggests that working women face elevated risks of anxiety and depression due to occupational stressors, work–family conflict, and limited workplace protections. Nevertheless, these findings are largely based on localized or non-representative samples. Nationally representative evidence examining how employment intersects with sociodemographic, household, and geographic factors to shape mental health outcomes remains scarce. Moreover, any of depression and anxiety, which is associated with greater functional impairment and reduced productivity, has not been adequately explored among working women using population-level data [18]. Understanding the disparities in mental health across socioeconomic and geographic groups is essential in Bangladesh, where regional inequalities persist, and informal employment remains widespread [20]. Additionally, little is known about mental health care–seeking patterns among working women, despite indications that employment-related barriers may further restrict access to services.

A noteworthy step toward addressing this knowledge gap among Bangladeshi women came with the 2022 Bangladesh Demographic and Health Survey (BDHS), which, for the first time, included validated screening tools for depression (PHQ-9) and anxiety (GAD-7) to generate nationally representative estimates of these conditions [22]. However, most existing analyses treat all women of reproductive age as a single group, leaving little understanding of the unique mental health experiences of women who are part of the workforce [20, 25]. This study addresses that gap by focusing specifically on working women in Bangladesh. It will estimate the prevalence of depression, anxiety, and/ or one of these occurring in this population, examine how sociodemographic and household factors shape these outcomes, and identify inequalities across geographic and socioeconomic groups. The results will provide valuable insights for designing targeted, gender-sensitive mental health interventions and workplace programs, ultimately supporting women's well-being and contributing to broader public health and development objectives.

Against this backdrop, this study uses nationally representative BDHS 2022 data to focus specifically on working women in Bangladesh. It aims to estimate the prevalence of depression, anxiety, and either of these conditions; examine associated sociodemographic and household determinants; and assess geographic and socioeconomic inequalities. By addressing critical evidence gaps, this study seeks to inform gender-sensitive mental health policies, workplace-based interventions, and targeted public health strategies to improve the mental well-being of working women in Bangladesh.

2. Methods

2.1. Data Source and Collection Technique

The study was conducted using the 2022 Bangladesh Demographic and Health Survey (BDHS), a nationally representative cross-sectional survey conducted by the National Institute of Population and Research and Training (NIRPORT) in collaboration with ICF and Mitra and Associates. The study is part of the United States Agency for International Development's (USAID) Demographic and Health Study (DHS) program, which has been carried out in 90 low- and middle-income countries. The BDHS 2022 data was freely available upon request at https://www.dhsprogram.com/data/dataset/Bangladesh_Standard-DHS_2022.cfm?flag=0. BDHS 2022 was employed following a stratified two-stage cluster sampling design. In the first stage of the survey, 675 enumeration areas (EAs) were selected with probability proportional to EA size. In the second stage, 45 households per EA were selected following systematic sampling. Among 45 households, 30 were selected for interviewing with a full-length questionnaire, while 15 were selected for the shortened version, to provide valid estimates of key characteristics and to represent the country as a whole, as well as separately for rural and urban areas [22].

Data collection was carried out from June 2022 to December 2022, with trained female interviewers administering standardized, pretested questionnaires in Bangla. Respondents to the mental health module, in which anxiety was measured by the generalized anxiety disorder (GAD-7) scale and the Water Glass Pictorial Scale, and depression symptoms were measured by the Patient Health Questionnaire (PHQ-9) scale, among working women aged 15 to 49 years. A total of 30,078 ever-married women aged 15–49 were interviewed during the survey. After removing missing values and applying sampling weights, 6,412 women were found to be working during the survey and were therefore considered key participants in this study.

Study variables

Outcome variables

The outcome variable of this study was the incidence of anxiety, depression, and either of these within the working female population in Bangladesh aged 15–49. In the BDHS dataset, anxiety was measured by employing the Generalized Anxiety Disorder 7 Scale (GAD-7), which is designed to obtain the primary characteristics of anxiety comprising seven items such as feeling nervous, not being able to control worrying, worrying too much, trouble relaxing, being restless, becoming easily irritated, and feeling afraid [26]. The scale focused on symptoms experienced within the two weeks prior to the survey. Each of the seven items was rated on a four-point Likert scale with scores of 0, 1, 2, 3 corresponding to these responses – ‘Never’, ‘Rarely’, ‘Often’, and ‘Always’. The overall anxiety score was obtained by summing up the responses of all seven items. The overall score ranged from 0 to 21. Scores between 0 and 5 indicated mild anxiety, 6 to 14 represented moderate anxiety, and 15 to 21 reflected severe anxiety [26]. For analytical purposes, a cut-off point distinguishing moderate to severe symptoms from lower levels was applied to create a binary variable for anxiety status. Accordingly, respondents with a GAD-7 score

of 6 or above were classified as having anxiety, while those scoring below 6 were considered not to have anxiety. The GAD-7 demonstrated 89% sensitivity and 82% specificity for detecting generalized anxiety disorder [22].

The status of depression was measured using the Patient Health Questionnaire (PHQ-9), following 9 symptoms that include loss of interest or pleasure, feelings of hopelessness, sleep disturbances, having little energy, appetite fluctuations, low self-esteem, concentration difficulties, restlessness or slowed movement, suicidal thoughts or self-harm ideation [27].

This instrument uses a similar four-point Likert-scale ranging from 0 to 3 corresponding to the responses – ‘Never’, ‘Rarely’, ‘Often’, and ‘Always’. The total PHQ-9 score ranged from 0 to 27, and respondents scoring ten or higher were identified as having symptoms of depression [22, 27]. A cutoff score of 10 or above has been shown to provide 88% sensitivity and 88% specificity for detecting major depression [22].

Explanatory variables

The study included a range of socioeconomic, demographic, and reproductive variables such as women’s age (15–24, 25–34, and 35–49 years), educational attainment (no education, primary, secondary, and higher), frequency of watching television (not at all, once a week, daily), number of living children (0, 1–2, 3+), religion (Islam or others) [28] and current method of contraception (no method, female method, other method). The ‘female method’ category included pill, IUD, injections, female sterilization, periodic abstinence, implant, locational amenorrhea, emergency contraception, and standard day method, while the ‘other method’ category comprised male condom, male sterilization, withdrawal, and other traditional methods. Additional variables considered were place of residence (rural or urban), administrative division (Barishal, Chattogram, Dhaka, Khulna, Mymensingh, Rajshahi, Rangpur, Sylhet), current pregnancy status (no or yes), and current breastfeeding status (no or yes). Factors reflecting women’s autonomy and household context included working before marriage (no or yes), justification of wife-beating (no or yes), sex of the household head (male or female), and household wealth quintile, which was regrouped from the original index as poor (poorest and poorer), middle, and rich (richer and richest) [29].

Statistical analysis

Both descriptive and inferential analyses were conducted in this study, focusing on working women in Bangladesh. All analyses were weighted using individual sampling weights to account for the complex survey design of the BDHS, including stratification, clustering, and unequal selection probabilities. This approach ensures nationally representative and unbiased estimates of the associations examined [32]. Descriptive statistics summarized the background characteristics of respondents, including frequencies and percentages for all categorical variables. The percentage of working women suffering from anxiety, depression, and at least one of them was presented across the selected explanatory variables. Chi-

square test was conducted to evaluate the association of selected explanatory variables with anxiety, depression, and both.

To examine the association between selected covariates and binary outcome variables, we employed three multiple logistic regression models [31]. In this model, the outcome variable Y_i represents the probability that an individual i experienced the event of interest (presence of anxiety, depression, or at least one of them), where

$$Y_i = \begin{cases} 1, & \text{if event has occurred} \\ 0, & \text{otherwise.} \end{cases}$$

The general form of the model is expressed as

$$\text{Logit}(P_i) = \ln \left(\frac{P_i}{1 - P_i} \right) = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \dots + \beta_k X_{ki}$$

where $P_i = \Pr(Y_i = 1)$ is the probability of the event for the i^{th} individual, β_0 is the intercept, and $\beta_1, \beta_2, \dots, \beta_k$ are the estimated regression coefficients for considered correlates $X_1, X_2, \dots, X_k$.

The model parameters were estimated using survey-weighted maximum likelihood estimation, where each observation i was assigned a sampling weight (ω_i) provided for Woman's individual sample weight variable in the BDHS dataset.

Mathematically, the weighted log-likelihood function can be expressed as

$$l(\beta) = \sum_{i=1}^n \omega_i [Y_i \ln(P_i) + (1 - Y_i) \ln(1 - P_i)]$$

In the analysis, the coefficients were exponentiated and presented as adjusted odds ratios (AORs) with corresponding p-values, representing the odds of the outcomes associated with each covariate, keeping all other variables constant.

3. Results

Prevalence of Depression and Anxiety

Table 1 presents the prevalence of depression, anxiety, and the presence of either condition among working women in Bangladesh. Among the 6,412 working women, 5.1% exhibited symptoms of depression, 20.1% showed symptoms of anxiety, and 21.4% reported at least one of these conditions. The prevalence of these symptoms varied across sociodemographic and reproductive characteristics. Overall, either of the conditions was higher among women aged 35–49 years, those residing in Khulna division and Chattogram division, having no formal education (6.7%) and from poor households (5.8%),

followers of Islam (5.2%) religion, neither pregnant (21.4%) nor breastfeeding (22%), having three or more living children (25.5%), living in female-headed households (27.8%), having worked before marriage (22.1%), justifying wife-beating (29%), and not using any contraceptive method (25.9%).

Depression and anxiety were most prevalent among comparatively older women aged 35–49 years (5.6% and 23.8%, respectively), while younger women aged 15–24 years reported the fewest symptoms (3.2% and 14.8%, respectively). Regional variations were also observed, with the highest prevalence of depression in Khulna (8.2%) and anxiety in Chattogram (25.4%). Whereas the women in Mymensingh reported the lowest proportion of symptoms of depression (3.1%) and anxiety (16.2%). Although the rural working women reported a lower proportion of symptoms of depression and anxiety compared to the urban, the differences were not significant. The prevalence of both conditions was found to be higher in those having no formal education (Depression: 6.7% and Anxiety: 26.8%), while the conditions were lower among those with higher education (Depression: 3.2%; Anxiety: 12.9%).

Women from households in the lower wealth quintile had the highest prevalence of depression (5.8%) and anxiety (22.9%) compared to others. Depression and anxiety were found to be higher among women following the Islamic religion (Depression: 5.2%, Anxiety: 21.2%), though the difference with other religions was not significant for depression. Those who are currently pregnant and breastfeeding had lower depression (5.1%, 5.3% respectively) and anxiety (14.3% and 15.9%, respectively) symptoms compared to those who were not. Women from female-headed households had a higher prevalence of depression (7.4%) and anxiety (27%). Women who worked prior to marriage had a greater prevalence of depression (6.7%) and anxiety (21%) than those who did not. Moreover, women for whom beating was justified (Depression: 7.5%, Anxiety: 28.9%) and those using no contraceptive method (Depression: 6.9%, Anxiety: 25%) reported a higher proportion of depression and anxiety symptoms.

Table 1
Prevalence of anxiety - depression among working women in Bangladesh

Category	Sample size	Depression		Anxiety		Anxiety or Depression	
		Percentage	p-value	Percentage	p-value	Percentage	p-value
Age in years							
15–24	869	3.2%	0.03	14.8%	0.00	15.5%	0.00
25–34	2419	5.1%		18.5%		19.0%	
35–49	3124	5.6%		23.8%		24.6%	
Division							
Dhaka	1569	4.2%	0.00	17.3%	0.01	18.0%	0.01
Chattogram	849	4.6%		25.4%		26.0%	
Barishal	288	4.4%		21.4%		21.9%	
Khulna	912	8.2%		21.2%		21.9%	
Mymensingh	501	3.1%		16.2%		16.7%	
Rajshahi	1152	3.6%		19.5%		19.9%	
Rangpur	920	6.9%		24.3%		25.5%	
Sylhet	220	6.2%		22.3%		22.3%	
Residence							
Urban	1644	5.2%	0.91	20.7%	0.94	21.5%	0.85
Rural	4768	5.1%		20.6%		21.2%	
Women's education							
No education	1145	6.7%	0.02	26.8%	0.00	27.7%	0.00
Primary	1916	4.7%		21.6%		22.2%	
Secondary	2555	5.2%		19.5%		20.1%	
Higher	796	3.2%		12.9%		13.5%	
Wealth quintile							
Poor	2768	5.8%	0.14	22.9%	0.01	23.6%	0.01
Correlates of Depression and Anxiety							

Category	Sample size	Depression		Anxiety		Anxiety or Depression	
		Percentage	p-value	Percentage	p-value	Percentage	p-value
Age in years							
Middle	1421	5.1%		18.9%		19.6%	
Rich	2223	4.2%		18.9%		19.4%	
Frequency of TV watch							
Not at all	2849	5.0%	0.49	21.5%	0.39	22.1%	0.42
Once in a week	488	4.0%		19.5%		19.8%	
Daily	3075	5.4%		19.9%		20.7%	
Religion							
Islam	5733	5.2%	0.31	21.2%	0.01	21.8%	0.02
Other	679	4.1%		15.9%		17.0%	
Currently pregnant							
No	6202	5.1%	0.80	20.8%	0.03	21.4%	0.06
Yes	210	4.7%		14.3%		15.8%	
Currently breastfeeding							
No	5544	5.3%	0.08	21.3%	0.00	22.0%	0.00
Yes	868	3.7%		15.9%		16.3%	
Number of living children							
0	395	6.3%	0.07	20.1%	0.00	21.0%	0.00
1–2	3803	4.5%		18.1%		18.8%	
3+	2214	5.9%		25.0%		25.5%	
Sex of household head							
Male	5488	4.7%	0.00	19.5%	0.00	20.2%	0.00
Correlates of Depression and Anxiety							

Category	Sample size	Depression		Anxiety		Anxiety or Depression	
		Percentage	p-value	Percentage	p-value	Percentage	p-value
Age in years							
Female	924	7.4%		27.0%		27.8%	
Worked before marriage							
No	5590	4.8%		20.5%		21.1%	
Yes	822	6.7%	0.06	21.0%	0.82	22.1%	0.59
Beating justified							
No	5932	4.8%	0.02	19.9%	0.00	20.6%	0.00
Yes	440	7.5%		28.9%		29.0%	
Contraceptive							
No method	2143	6.9%	0.00	25.0%	0.00	25.9%	0.00
Female method	3578	4.3%		18.7%		19.3%	
Others	691	3.5%		17.0%		17.2%	
Total	6412	5.12%		20.45%		21.11%	
Correlates of Depression and Anxiety							

Table 2 demonstrates the results from the weighted multiple logistic regression analyses. The model identified key factors associated with depression, anxiety, and conditions among working women.

A significantly higher likelihood of having depression symptoms were observed among women aged 25–34 (AOR = 1.73, $p < 0.05$) and 35–49 (AOR = 1.70, $p < 0.05$) years, whereas the likelihood of experiencing anxiety or either of the symptoms were 41% higher among women aged 35–49 years ($p < 0.05$) compared to those aged 15–24 years.

Regional differences were also noticed as compared to Barishal women, and in Khulna had higher odds of depression (AOR = 2.12, $p < 0.05$), and women in Rangpur had higher odds of anxiety (AOR = 1.22, $p > 0.05$) or either of the conditions (AOR = 1.25, $p > 0.05$). However, women living in Mymensingh division showed lower odds of depression (AOR = 0.63, $p = 0.17$) and anxiety (AOR = 0.66, $p < 0.05$) or either of the conditions (AOR = 0.66, $p < 0.05$).

Although women in rural and urban areas did not have any significant differences in terms of depression, anxiety, or either of the conditions, their educational attainment showed a significant association. Higher educated women were 44%, 49%, and 49% less likely to have depression, anxiety, and either condition compared to those without education ($p < 0.05$).

Women from middle or rich wealth quintiles had lower odds of depression (Middle: 19%, Rich: 39%*), anxiety (Middle: 19%*, Rich: 16%), and either condition (Middle: 18%*, Rich: 17%) compared to those from the poor wealth quintile. Those following Islam had higher odds of depression (46%), anxiety (60%*), and either condition (53%*) compared to others ($p < 0.05$).

Women who are currently pregnant were 43% and 39% less likely to have anxiety or either condition compared to non-pregnant women, whereas breastfeeding status had no significant association. Women in female-headed households had higher odds of depression (35%), anxiety (26%*), and either condition (25%*) compared to those in male-headed households.

Furthermore, women who had worked before marriage and those who justified wife-beating were significantly more likely to report depression (47%) and anxiety (48%*) symptoms or either of the conditions (43%*). Contraceptive usage showed a statistical significance ($p < 0.05$) with the outcomes. Women using any female method were 35% less likely to experience depression and 31% less likely to experience anxiety, or 31% either of either condition, compared to those using no contraceptive method.

Table 2
Correlates of anxiety - depression among working women in Bangladesh

Category	Depression		Anxiety		Anxiety or Depression	
	AOR	p-value	AOR	p-value	AOR	p-value
Age in years						
15–24 (ref)						
25–34	1.73	0.03*	1.23	0.11	1.21	0.13
35–49	1.70	0.03*	1.41	0.02*	1.41	0.02*
Division						
Barishal (ref)						
Chattogram	0.94	0.86	1.21	0.34	1.20	0.36
Dhaka	0.90	0.76	0.72	0.07	0.73	0.08
Khulna	2.12	0.02*	1.03	0.89	1.04	0.84
Mymensingh	0.63	0.17	0.66	0.03*	0.66	0.03*
Rajshahi	0.81	0.52	0.89	0.55	0.88	0.51
Rangpur	1.55	0.24	1.22	0.34	1.25	0.27
Sylhet	1.22	0.62	0.93	0.74	0.90	0.63
Residence						
Rural (ref)						
Urban	1.25	0.21	1.14	0.23	1.15	0.19
Women's education						
No education (ref)						
Primary	0.78	0.19	0.85	0.11	0.85	0.10
Secondary	1.03	0.88	0.86	0.15	0.85	0.14
Higher	0.56	0.04*	0.51	0.00*	0.51	0.00*
Wealth quintile						
Poor (ref)						
Middle	0.81	0.24	0.81	0.03*	0.82	0.03*
(* represents the statistical significance)						

Category	Depression		Anxiety		Anxiety or Depression	
	AOR	p-value	AOR	p-value	AOR	p-value
Age in years						
Rich	0.61	0.01*	0.84	0.09	0.83	0.06
Frequency of TV watch						
Not at all (ref)						
Less than once in a week	0.92	0.74	1.02	0.92	1.00	0.98
Once in a week	1.35	0.06	1.12	0.20	1.13	0.15
Religion						
Other (ref)						
Islam	1.46	0.17	1.60	0.00*	1.53	0.00*
Currently pregnant						
No (ref)						
Yes	0.70	0.32	0.57	0.02*	0.61	0.03*
Currently breastfeeding						
No (ref)						
Yes	0.82	0.39	0.82	0.10	0.82	0.10
Number of living children						
0 (ref)						
1–2	0.67	0.16	0.88	0.46	0.88	0.45
3+	0.86	0.64	1.11	0.60	1.08	0.68
Sex of household head						
Male (ref)						
Female	1.35	0.07	1.26	0.02*	1.25	0.02*
Worked before marriage						
No (ref)						
Yes	1.82	0.00*	1.28	0.03*	1.32	0.02*
Beating justified						
(* represents the statistical significance)						

Category	Depression		Anxiety		Anxiety or Depression	
	AOR	p-value	AOR	p-value	AOR	p-value
Age in years						
No (ref)						
Yes	1.47	0.07	1.48	0.00*	1.43	0.00*
Contraceptive						
No method (ref)						
Female method	0.65	0.01*	0.69	0.00*	0.69	0.00*
Others	0.55	0.02*	0.70	0.01*	0.67	0.00*
(* represents the statistical significance)						

4. Discussion

This study examined one of the first nationally representative assessments of the prevalence, correlates, and disparities of anxiety and depression among working women aged 15 to 49 years in Bangladesh, using data from the BDHS 2022. By concentrating on women who work for a living, the findings fill a crucial evidence gap in the literature, which has primarily addressed mental health effects among women of reproductive age or ever-married women without considering job status. The findings revealed that overall, 5.14% working women suffer from depression, 20.45% had anxiety symptoms, and 21.11% had either of the conditions (See Table 1). The findings indicate that anxiety is significantly more widespread than depression among working women. The correlates of anxiety and depression among working women that we found in this study. include age, education, religion, socioeconomic status, early work exposure, beating justifications, and administrative division, which is consistent with national BDHS-based studies and previous research in Bangladesh [20, 25].

Age-Related Patterns

Regarding factors associated with depression and/or anxiety, being aged was one factor. Elder women over thirty years were more likely to experience depression and anxiety. This pattern mirrors findings from earlier studies, such as [20, 25]. It may reflect cumulative stress exposure over the life course, including prolonged economic hardship, caregiving responsibilities, marital strain, and declining physical health. On the other hand, younger working women (15–25 years) reported a lower prevalence of symptoms, possibly due to fewer family and other responsibilities or greater adaptability to labor-market demands.

Religion and Household Context

In addition, working women identifying as Muslim were seen as more likely to experience anxiety and depression than non-Muslims. Similar findings were seen in other studies, such as [25]. While religion itself is unlikely to be causal, this finding may reflect broader social and cultural factors, such as gender norms, mobility restrictions, or differential access to resources. Further qualitative research is needed to unpack these pathways. Household structure also played a significant role. Working women who lived with a female-headed family experienced higher levels of anxiety and depression. This is consistent with a previous study [25]. Female household heads may experience increased economic pressure, social vulnerability, and caregiving responsibilities, especially in the absence of male financial support, which can worsen stress and mental health risks.

Regional and Geographical Disparities

Regional variations were also observed in this study. Working women from Khulna division had significantly higher odds of depression, while those in Rangpur and Chattogram divisions had greater odds of anxiety or either of the conditions. Conversely, women in Mymensingh consistently showed lower odds of mental health symptoms. These findings are consistent with national patterns reported in previous BDHS studies [20, 25] and indicate that structural regional inequalities, such as economic vulnerability, exposure to climate-related shocks, employment opportunities, and access to health services, may have a differential impact on working women's mental health. Interestingly, no significant rural-urban differences were detected after adjustments.

Education and Socioeconomic status

Educational attainment was revealed as one of the most powerful protective factors. Higher-educated working women were significantly less likely to suffer from depression, anxiety, or both conditions than women with no formal education. Similar results were found in [19, 25]. Education most certainly improves economic stability, work quality, health literacy, coping methods, and autonomy, therefore minimizing vulnerability to mental distress. Recent studies from Australia and Syria showed similar results between mental health outcomes and educational attainment of women [30, 33].

Similarly, wealth status indicated a strong gradient, with women from middle and upper-income households suffering much decreased risks of mental health symptoms. Financial security may protect against stressors such as employment insecurity, healthcare bills, and home responsibilities. These findings highlight the connection among employment, socioeconomic status, and mental health, demonstrating that paid jobs do not guarantee psychological well-being when economic conditions remain poor [35, 36].

Reproductive status and Contraceptive use

Pregnancy was associated with lower odds of anxiety and condition, which is in line with earlier research [37] that suggested greater social and familial support during pregnancy. However, there was no significant connection between breastfeeding status and outcomes. These findings imply that social

safety and support mechanisms during pregnancy may temporarily mitigate mental health concerns among working women. In terms of contraceptive use, particularly female-controlled methods were associated with lower odds of depression, anxiety, or either condition. These results may indicate increased control over life planning, decreased fear of unwanted pregnancy, and increased reproductive autonomy- all of which are significant factors in determining women's mental health.

Gender Norms, Violence Justification and Early Work Exposure

Two variables reflecting deeply rooted gender norms- working before marriage and justification of wife beating- were strongly associated with poorer mental health outcomes. Women who started working before marriage had higher odds of depression and anxiety, possibly reflecting early exposure to labor market stress, economic necessity, or disrupted education. Another plausible rationale for the association could be explained by people's occupational demands exceeding their capacity for coping, which could lead to higher stress and the risk of developing depression symptoms, and similar findings were portrayed in former studies in Ethiopia [35]. The other factor- beating justification by partner- was found to be linked to psychological distress, which is similar to other studies such as [38, 39]. The justification for wife beating certainly reflects internalized gender imbalance and acceptance of violence. These findings emphasize the significance of addressing gender discrimination and social norms as part of mental health interventions.

Suggested Implications for Policy and Practice

Depression and anxiety are the most common disorders with significant consequences for public health. This national result could help policymakers address depression and anxiety problems. First, we need to emphasize the significance of incorporating mental health services into workplace and community-based programs, especially for older, less educated, and economically disadvantaged working women. Second, regional targeting is essential, with divisions like Khulna and Rangpur requiring specific attention. Third, interventions must go beyond clinical treatment and address structural variables such as education, poverty reduction, gender equity, and violence prevention. Furthermore, given the low levels of care-seeking documented in national studies, workplace-based screening, flexible service hours, and stigma-reduction measures may be especially important for working women who face time constraints and social barriers to receiving care.

5. Conclusions

Overall, this study shows that anxiety and depression are major public health issues among Bangladeshi working women and are influenced by a complex interplay of factors such as age, education, wealth, area, home structure, reproductive factors, and gender norms. Globally, the WHO estimates prevalence around 5.1% for depression and 4.6% for anxiety among women, indicating that mental health disorders among Bangladeshi women are comparatively high. Some similar studies show similar findings that prevalence (around 6–7%) of anxiety and depressive disorders among women, which is slightly higher than global estimates for similar age groups compared with women in India and Nepal, although slightly

lower than in Pakistan. largely due to socio-economic inequality, gender norms, work-family conflict, and limited mental health care access. The report highlights the crucial need for Bangladesh to have a focused mental health policy to achieve Sustainable Development Goal 3 (SDG 3). The study also emphasizes the critical need to prioritize working women's mental health as part of Bangladesh's broader development goals and uses nationally representative data to provide solid evidence for a focused, gender-sensitive mental health policy to improve the mental well-being of working women and promote overall public health.

Declarations

Ethics approval and consent to participate: As this study used secondary data from Bangladesh Demographic Health Survey (BDHS), no additional Ethics Committee or Institutional review board approval was required. The original BDHS data collection was conducted in accordance with the declaration of Helsinki and approved by relevant ethics committees and informed consent was obtained from all participants.

Consent for publication: Not Applicable.

Availability of data and materials: The data are available on the website, and the link is provided in Section 2. It will be provided if anyone requires this.

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References

1. Global Burden of Disease Collaborative Network. (2019). *Global burden of disease study 2019 (GBD 2019) results*. Institute for Health Metrics and Evaluation (IHME). <https://www.healthdata.org/gbd>
2. World Health Organization (WHO). Depression and other common mental disorders: Global health estimates. World Health Organization; 2025. <https://www.who.int/news-room/fact-sheets/detail/depression>.

3. World Health Organization. (2021). World mental health report: Transforming mental health for all. WHO. <https://www.who.int/publications/i/item/9789240060268>
4. Patel V, Saxena S, Lund C, Thornicroft G, Baingana F, Bolton P, Unützer J. The Lancet Commission on global mental health and sustainable development. *Lancet*. 2018;392(10157):1553–98. [https://doi.org/10.1016/S0140-6736\(18\)31612-X](https://doi.org/10.1016/S0140-6736(18)31612-X).
5. International Labour Organization (ILO). Care at work: Investing in care leave and services for a more gender equal world of work. International Labour Office; 2021.
6. UN Women. The impact of COVID-19 on women. United Nations Entity for Gender Equality and the Empowerment of Women; 2020.
7. World Health Organization. (2017, February 28). *Number of people with depression increases*. https://www.who.int/bangladesh/news/detail/28-02-2017-number-of-people-with-depression-increases?utm_source=chatgpt.com
8. Melkam, M., Fentahun, S., Takelle, G. M., Rtbey, G., Andualem, F., Nakie, G., ... Wassie, Y. A. (2025). Prevalence and determinants of depression and/or anxiety among adults using Kenya Demographic and Health Survey of 2022: Multilevel logistic regression analysis. *PloS one*, 20(3), e0319571..
9. González-Mesa E, Kabukcuoglu K, Blasco M, Körükcü O, Ibrahim N, González-Cazorla A, Cazorla O. Comorbid anxiety and depression (CAD) at early stages of the pregnancy. A multicultural cross-sectional study. *J Affect Disord*. 2020;270:85–9.
10. Liu, X., Zhao, W., Hu, F., Hao, Q., Hou, L., Sun, X., ... Dong, B. (2022). Comorbid anxiety and depression, depression, and anxiety in comparison in multi-ethnic community of west China: prevalence, metabolic profile, and related factors. *Journal of affective disorders*, 298, 381–387..
11. Lugova, H., Andoy-Galvan, J. A., Patil, S. S., Wong, Y. H., Baloch, G. M., Suleiman, A., ... Chinna, K. (2021). Prevalence and associated factors of the severity of depression, anxiety and stress among low-income community-dwelling adults in Kuala Lumpur, Malaysia. *Community mental health journal*, 57(8), 1489–1498..
12. Mirza I, Jenkins R. Risk factors, prevalence, and treatment of anxiety and depressive disorders in Pakistan: systematic review. *BMJ*. 2004;328(7443):794.
13. Amu, H., Osei, E., Kofie, P., Owusu, R., Bosoka, S. A., Konlan, K. D., ... Gyapong, J. O. (2021). Prevalence and predictors of depression, anxiety, and stress among adults in Ghana: a community-based cross-sectional study. *PloS one*, 16(10), e0258105..
14. Bante A, Mersha A, Zerdo Z, Wassihun B, Yeheyis T. (2021). Comorbid anxiety and depression: Prevalence and associated factors among pregnant women in Arba Minch zuria district, Gamo zone, southern Ethiopia. *PLoS ONE*, 16(3), e0248331.
15. Im H, Swan LE, Warsame AH, Isse MM. Risk and protective factors for comorbidity of PTSD, depression, and anxiety among Somali refugees in Kenya. *Int J Soc Psychiatry*. 2022;68(1):134–46.
16. Gwynn RC, McQuistion HL, McVeigh KH, Garg RK, Frieden TR, Thorpe LE. Prevalence, diagnosis, and treatment of depression and generalized anxiety disorder in a diverse urban community. *Psychiatric Serv*. 2008;59(6):641–7.

17. Kilkkinen A, Kao-Philpot A, O'Neil A, Philpot B, Reddy P, Bunker S, Dunbar J. Prevalence of psychological distress, anxiety and depression in rural communities in Australia. *Aust J Rural Health*. 2007;15(2):114–9.
18. Akhter S, Rutherford S, Akhter Kumkum F, Bromwich D, Anwar I, Rahman A, Chu C. (2017). Work, gender roles, and health: neglected mental health issues among female workers in the ready-made garment industry in Bangladesh. *Int J women's health*, 571–9.
19. Rafi MA, Anika US, Hasan MT, Hossain MG. (2025). Association between women's empowerment and mental health help-seeking behaviour in Bangladesh: findings from a nationally representative survey. *BMJ open*, 15(9), e099770.
20. Raza, S., Banik, R., Noor, S. T. A., Sayeed, A., Saha, A., Jahan, E., ... Rahman, A.E. (2025). Anxiety and depression among reproductive-aged women in Bangladesh: burden, determinants, and care-seeking practices based on a nationally representative demographic and health survey. *Archives of Women's Mental Health*, 1–17..
21. Duty FA, Rahman MH, Salma N. Prevalence of anxiety disorder and its association with BMI: an analysis of women's experiences in Bangladesh using BDHS-2022 data. *BMC Public Health*. 2025;25(1):1144.
22. (2024). *Bangladesh Demographic and Health Survey 2022: Final report* (FR386). National Institute of Population Research and Training (NIPORT), Mitra and Associates, & ICF, Dhaka. Bangladesh and Rockville, MD, USA: NIPORT & ICF. <https://dhsprogram.com/pubs/pdf/FR386/FR386.pdf>. DHS Program.
23. Alam MF, Ahmed HU, Alam MT, Sarkar M, Khan NM, Uddin MJ, Sarkar AA. Community prevalence of psychiatric disorders: Findings from a nationwide survey in Bangladesh. *Asian J Psychiatry*. 2024;92:103897.
24. Nations U. Transforming our world: The 2030 agenda for sustainable development. *N Y U N Dep Econ Soc Aff*. 2015;1:41.
25. Amin MT, Ara T, Pal B, Ferdous Z, Esha SN, Patwary H, Rahman MM. Prevalence and correlates of anxiety and depression among ever-married reproductive-aged women in Bangladesh: national-level insights from the 2022 Bangladesh Demographic and Health Survey. *BMC Public Health*. 2025;25(1):1143.
26. Spitzer RL, Kroenke K, Williams JBW, Löwe B. A brief measure for assessing generalized anxiety disorder: the GAD-7. *Arch Intern Med*. 2006;166(10):1092–7. <https://doi.org/10.1001/archinte.166.10.1092>.
27. Kroenke K, Spitzer RL, Williams JBW. The PHQ-9: validity of a brief depression severity measure. *J Gen Intern Med*. 2001;16(9):606–13.
28. Supti SS, Sultana S, Akib MMH, Saha P, Yesmin M, Pal B. Socioeconomic and regional disparities in postnatal care utilization in Bangladesh: Evidence from the Bangladesh Demographic and Health Survey 2022. *PLOS Global Public Health*. 2026;6(2):e0005353.

29. Afroz F, Akib MMH, Pal B, Asha AS. (2025). Impact of parental education on number of under five children death per mother in Bangladesh. PLoS ONE, 20(2), e0318787.
30. Mahfoud, A., Jalal Eldin, A., Hmidoush, A., Abou Kheir, F., Almansour, S., Zakarya Marzouk, Z., ... Zakkar, M. (2025). Investigating The Impact of Syrian Conflict On Women's Education, Mental Health, and Rights: a Cross-Sectional Study. BMC Women's Health, 25(1), 551..
31. Manski CF, Lerman SR. The Estimation of Choice Probabilities from Choice Based Samples. Econometrica. 1977;45(8):1977–88. <https://doi.org/10.2307/1914121>.
32. Skinner C, Mason B. Weighting in the regression analysis of survey data with a cross-national application. Can J Stat. 2012;40(4):697–711.
33. Tran DB, Pham TDN, Nguyen TT. (2021). The influence of education on women's well-being: Evidence from Australia. PLoS ONE, 16(3), e0247765.
34. UN Women. (2025). *Rapid gender analysis: July–December 2024*. United Nations Women. <https://asiapacific.unwomen.org/sites/default/files/2025-03/np-c1521-rapid-gender-analysis-juldec24.pdf>
35. Dziak E, Janzen BL, Muhajarine N. Inequalities in the psychological well-being of employed, single and partnered mothers: the role of psychosocial work quality and work-family conflict. Int J Equity Health. 2010;9(1):6.
36. Mead H, Witkowski K, Gault B, Hartmann H. The influence of income, education, and work status on women's wellbeing. Women's Health Issues. 2001;11(3):160–72.
37. Vacaru S, Beijers R, Browne PD, Cloin M, van Bakel H, van den Heuvel MI, de Weerth C. (2021). *The risk and protective factors of heightened prenatal anxiety and depression during the COVID-19 lockdown*. Sci. Rep. 11 (1), 1–11.
38. Zoie TA, Digal G. Impact of Domestic Violence on the Mental Health of Women and the Response Thereof: A Systematic Review. *Violence and victims*, VV-2023.
39. Tohan MM, Zaman S, Saha BR, Juhi NJ, Mahbub SB, Howlader MH. Marital control, domestic violence justification, and mental health: a study of married women in Bangladesh. BMC Psychiatry. 2025;25(1):886.