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DEPRESSIVE SYMPTOMS AMONG RURAL ELDERLY WOMEN IN NILPHAMARI, BANGLADESH: A CROSS-SECTIONAL STUDY

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ABSTRACT

Background: Population ageing is an important demographic and public-health development, particularly in low- and middle-income countries where older adults may experience multiple social, economic, physical, and psychological challenges. Depression and depressive symptoms among older people can adversely affect quality of life, functional independence, social participation, treatment adherence, and overall well-being. Older rural women may be particularly vulnerable because of limited educational opportunities, economic dependence, widowhood or marital disruption, chronic health conditions, and restricted access to health and social services. This study assessed the level of depressive symptoms among elderly women living in rural areas of Nilphamari District, Bangladesh.

Methods: A descriptive cross-sectional study was conducted from March to June 2023 among 203 rural women aged 60 years and above in Nilphamari District. Participants were selected using a random sampling approach.

Results: The mean age was 67.00 ± 7.408 years, with a range of 60–90 years. More than half (57.63%) were aged 60–65 years. Most participants were Muslim (91.13%) and 95.57% were illiterate. Regarding marital status, 61.08% were divorced and 37.93% were married. Housewives constituted 47.78% and retired women 45.81%.

Conclusion: The study identified a substantial burden of GDS-classified depressive symptoms among the surveyed rural elderly women in Nilphamari. The findings support integrating mental-health screening into geriatric and primary healthcare services in rural Bangladesh. Because this was a cross-sectional study based on a screening instrument and a geographically limited sample, the findings should not be interpreted as establishing clinical diagnoses or causal relationships.

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1. Introduction

Population ageing is becoming an increasingly important public-health issue worldwide. Improvements in survival, declining fertility, and changing demographic structures have resulted in a growing number of older adults. The United Nations has emphasized that the number of older people is increasing particularly rapidly in low- and middle-income countries, creating new demands for health, social protection, and community-based care.

Ageing is accompanied by physiological changes and may also involve social, economic, and psychological transitions. Older adults may experience retirement, reduced income, loss of social roles, changes in family structure, chronic illness, reduced physical functioning, and bereavement. These circumstances can increase vulnerability to psychological problems, including depressive symptoms. Depression in later life is therefore an important component of healthy ageing and should not be considered an inevitable consequence of getting older.

Depression is a common mental-health condition characterized by persistent changes in mood, interest, cognition, motivation, and daily functioning. Among older adults, depressive symptoms may present alongside physical complaints and chronic illnesses and may consequently remain unrecognized. International systematic reviews have reported a substantial prevalence of depression or depressive symptoms among older populations, although estimates vary according to population characteristics, diagnostic definitions, sampling methods, and screening instruments (Hu et al., 2022; Cai et al., 2023).

Women may experience particular psychosocial vulnerabilities during later life. Social disadvantage, lower educational attainment, economic dependence, reduced autonomy, widowhood or marital disruption, caregiving responsibilities, and unequal access to healthcare may contribute to psychological distress. These circumstances may be especially important in rural communities where social and health resources can be limited.

Bangladesh is experiencing demographic ageing alongside continuing socioeconomic and health-system challenges. Rural older women may face additional difficulties related to poverty, limited education, reduced employment opportunities, dependence on family members, chronic diseases, and limited access to specialized mental-health services. Consequently, identifying depressive symptoms among rural elderly women is relevant to community health planning and geriatric care.

Previous Bangladeshi studies have documented substantial levels of depressive symptoms among older adults. Hossain et al. (2024), for example, examined 944 older adults in rural and urban Bangladesh and reported a high overall prevalence of depression, with several demographic and health-related factors associated with depression.

Despite the importance of the issue, district-specific evidence concerning rural elderly women in northern Bangladesh remains limited. Nilphamari is a predominantly rural district where older women may experience social and economic vulnerabilities that differ from those in large metropolitan settings. Local assessment can therefore contribute useful information for community health workers, primary healthcare providers, policymakers, and researchers.

The study was conducted to examine the severity of depressive symptoms among elderly women residing in rural communities of Nilphamari District, Bangladesh. It focused on identifying the distribution of depressive symptoms, outlining the participants' sociodemographic and socioeconomic profiles, and documenting relevant health characteristics, particularly the presence of chronic illnesses and availability of regular treatment facilities. The study also aimed to establish baseline information that could contribute to future investigations and research initiatives related to geriatric mental health in rural Bangladesh.

2. Literature Review

Depression is an important mental-health problem among older adults. Although sadness and emotional responses to life events can occur normally, persistent depressive symptoms can affect social functioning, physical health, independence, and quality of life. Depression in older people may also be difficult to recognize because symptoms can coexist with chronic disease, sleep disturbance, pain, functional limitations, and other age-related concerns. A systematic review and meta-analysis by Hu et al. (2022), including 48 eligible studies, estimated the global prevalence of depression among older adults at 28.4%. Cai et al. (2023) reported an overall pooled prevalence of 35.1% among older adults. These findings demonstrate that estimates of late-life depression vary substantially according to methodology and population.

Women may experience socioeconomic and social disadvantages over the life course that become particularly important in old age. Limited educational opportunities, economic dependence, loss of a spouse, social isolation, chronic illness, and restricted participation in income-generating activities may contribute to vulnerability. In Bangladesh, these issues may be particularly relevant among rural older women. Women who have had limited formal education may have fewer opportunities for independent income and may depend heavily on family members for financial and healthcare needs. Rural older adults may experience different risks from those living in urban environments. Rural communities may have fewer specialized healthcare facilities, longer distances to health services, fewer mental-health professionals, and limited transportation. Economic hardship and dependence on family support may also affect psychological well-being. Bangladeshi evidence supports the importance of rural context. Hossain et al. (2024), in a study of 944 older adults from rural and urban Bangladesh, reported a high overall prevalence of depression and identified demographic and health characteristics associated with depression.

Age may be associated with accumulation of chronic illness, functional limitations, social losses, and dependence. Education can influence health literacy, socioeconomic opportunities, access to information, and healthcare navigation. Marital relationships can provide emotional, social, and economic support, whereas marital disruption may reduce support. Retirement and reduced earning capacity may affect financial independence and social identity. Chronic diseases are common among older adults and may contribute to depressive symptoms through pain, disability, functional limitations, treatment burden, and reduced independence. Conversely,

depression may negatively affect treatment adherence and self-care. Bangladeshi research has identified chronic health conditions as important correlates of depression among older adults (Hossain et al., 2024). The Geriatric Depression Scale (GDS) was developed specifically to assess depressive symptoms in older adults. The GDS is widely used as a screening instrument. Krishnamoorthy et al. (2020) reported pooled sensitivity and specificity of 86% and 79%, respectively, for the GDS-15, with an area under the curve of approximately 0.90. A screening scale does not, however, replace clinical assessment and should not by itself be treated as a definitive psychiatric diagnosis.

Culturally appropriate screening is important when assessing mental health in different populations. Translation, cultural adaptation, and validation can influence instrument performance. Recent Bangladeshi work has contributed to assessment of Bengali-language versions of the GDS, supporting the relevance of culturally appropriate screening approaches.

Bangladeshi studies have reported substantial depressive symptom burdens among older adults and have examined relationships with nutritional status, socioeconomic characteristics, physical health, marital status, and living arrangements. Islam et al. (2021) highlighted the interaction between physical and psychological health in later life, while Hossain et al. (2024) demonstrated rural–urban differences and demographic and health correlates. Although previous studies have provided important information about geriatric depression in Bangladesh, evidence specifically concerning rural elderly women in Nilphamari remains limited. The present study addresses this gap by describing depressive-symptom levels among women aged 60 years and above living in rural areas of Nilphamari District.

The conceptual framework of the present study organizes the factors considered in relation to depressive symptoms among elderly women living in rural areas of Nilphamari District, Bangladesh. The framework includes demographic characteristics such as age, sex, and residence; social characteristics including marital status and family type; educational characteristics represented by literacy or educational level; economic characteristics including occupation, individual income, and family income; health-related characteristics, particularly the presence of chronic disease; and healthcare-access characteristics, including access to regular treatment facilities. GDS-classified depressive symptoms were considered the primary psychological outcome of the study. The framework is descriptive in nature and is intended to organize the variables examined in the study rather than to establish causal relationships among them.

3. Materials and Methods

3.1. Study design

A descriptive cross-sectional study was conducted among rural women aged 60 years and above in Nilphamari District, Bangladesh. The study was carried out over a four-month period, from March 2023 to June 2023. The study population comprised elderly women residing in rural areas of the district. Study sites were selected using a random sampling approach in accordance with the original study protocol.

3.2. Sample Size and Sampling Technique

The sample size was initially calculated based on a reported prevalence of 14.4%, using a 95% confidence level and a 5% margin of error. The calculated minimum sample size was 185 participants. However, a total of 203 eligible women were ultimately included in the study. The source manuscript did not document a specific reason for increasing the sample beyond the calculated minimum. Women aged 60 years or older who were residents of the rural study area and agreed to participate were eligible for inclusion. Women who were unwilling to participate or who had a reported mental disorder were excluded according to the original study protocol.

3.3. Data Collection Instrument

A structured questionnaire was prepared and pretested. Data were collected through face-to-face, interviewer-administered interviews. Depressive symptoms were assessed using the Geriatric Depression Scale.

3.4. Data Collection Procedure

The study purpose and researcher identity were explained before interviews. Interviews were conducted at participants' residences. Completed questionnaires were checked for completeness and consistency.

3.5. Data Processing and Analysis

Data were entered and analyzed using SPSS. Frequencies and percentages were calculated for categorical variables, while mean and standard deviation were used for continuous variables.

3.6. Ethical Considerations

Ethical clearance was obtained from the appropriate ethical committee according to the source manuscript. Participants were informed about the objectives and procedures and their right to participate voluntarily or refuse. Confidentiality was maintained and informed consent was obtained before interviews.

4. Results

A total of 203 rural elderly women participated in the study. The mean age of the participants was 67.00 ± 7.408 years, with ages ranging from 60 to 90 years. More than half of the participants (57.63%) were aged 60–65 years, followed by 23.15% aged 66–70 years, 10.84% aged 71–75 years, 6.90% aged 76–80 years, and 1.48% aged above 80 years (Graph 4.1).

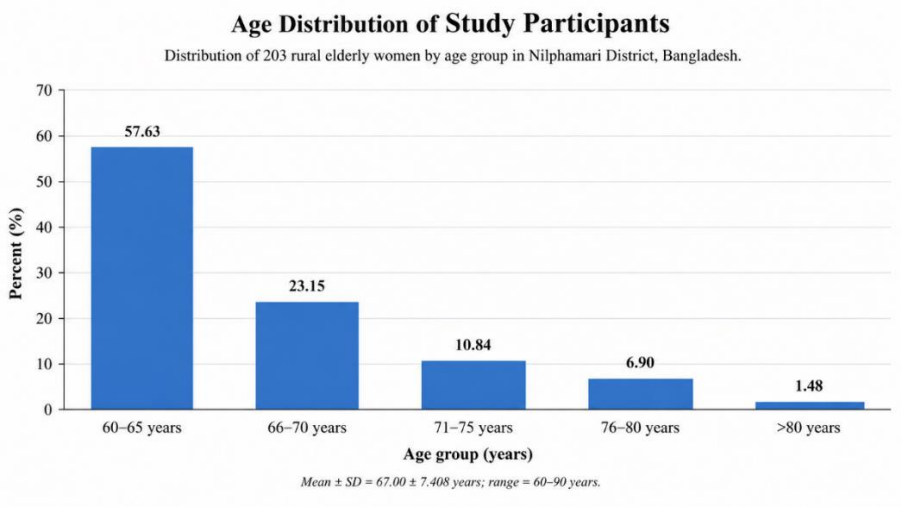


Figure 4.1. Age distribution of the study participants (n = 203)

Regarding religion, the majority of participants were Muslim (91.13%), while 8.87% were Hindu (Figure 4.2). Educational attainment was generally low, with 95.57% of participants being illiterate, 3.45% having primary-level education, and 0.99% having secondary-level education (Figure 4.3).

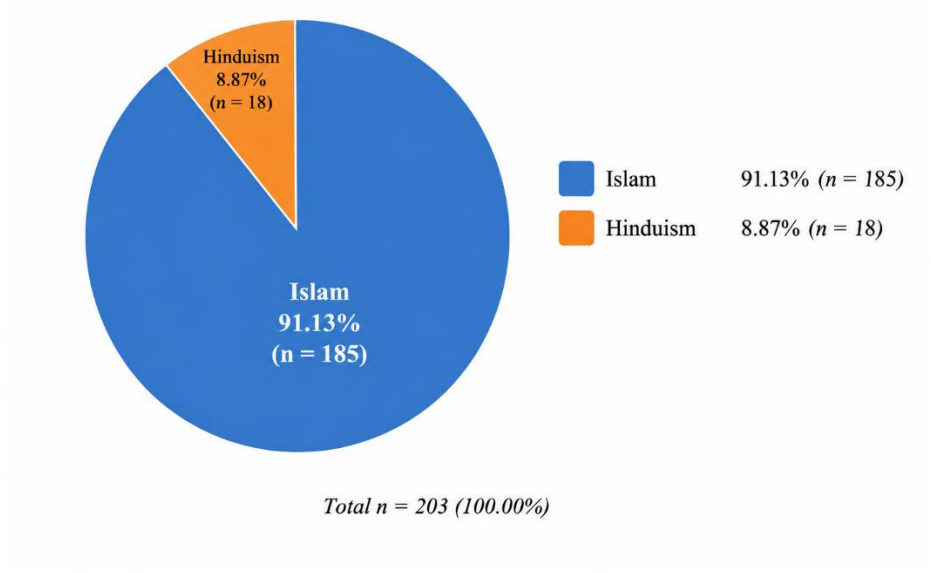


Figure 4.2. Religion Distribution of Rural Elderly Women

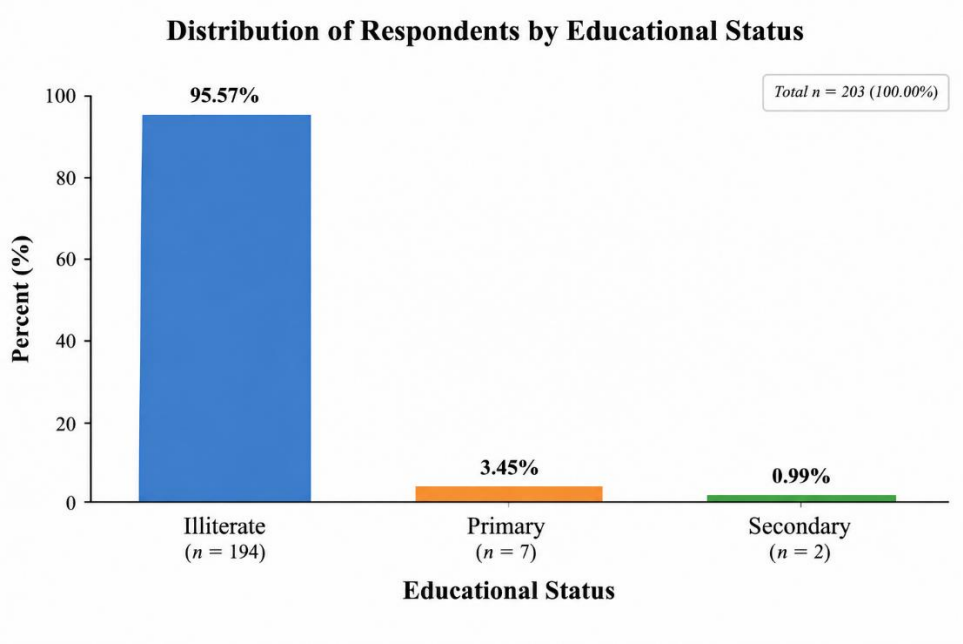


Figure 4.3. Distribution of respondents by educational status

In terms of marital status, 61.08% of participants were divorced, while 37.93% were married; single/unmarried and other marital-status categories each accounted for 0.49% (Figure 4.4). Regarding occupation, nearly half of the participants were housewives (47.78%), followed by retired women (45.81%), farmers (3.45%), and day labourers (2.96%) (Figure 4.5). More than half of the participants (54.68%) lived in joint families, whereas 45.32% lived in nuclear families (Figure 4.6). Concerning activity or income-generating ability, 88.18% were classified as not active or income-generating, while 11.82% were classified as active or income-generating based on the reported frequencies (Figure 4.7). These percentages were recalculated from the frequencies because the original reported percentages were inconsistent and should be verified against the source dataset.

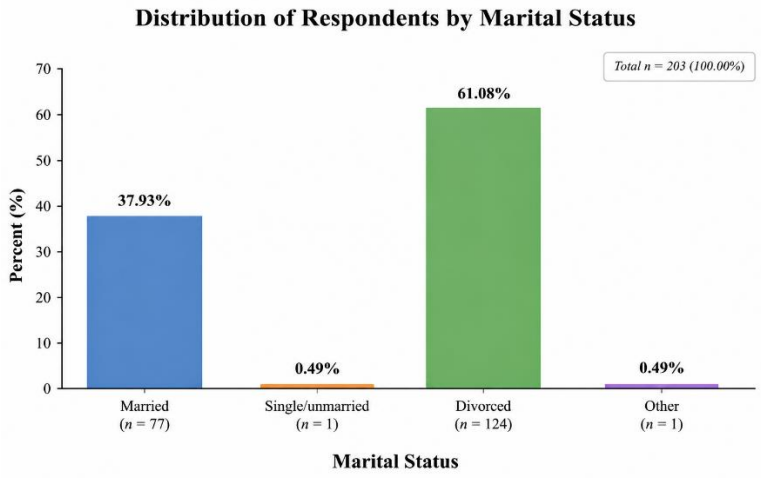


Figure 4.4. Distribution of respondents by marital status

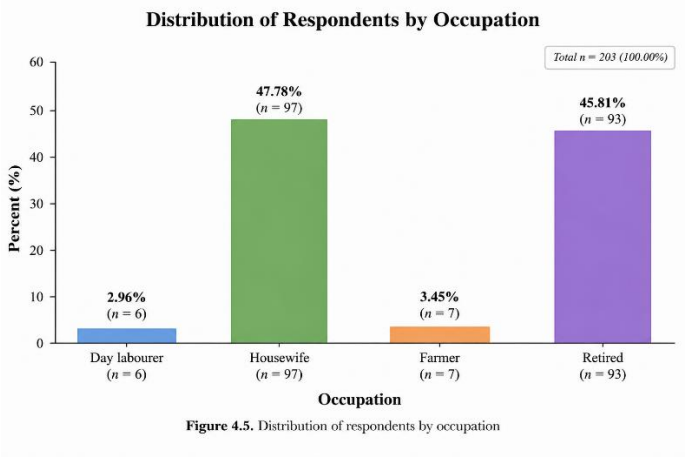


Figure 4.5. Distribution of respondents by occupation

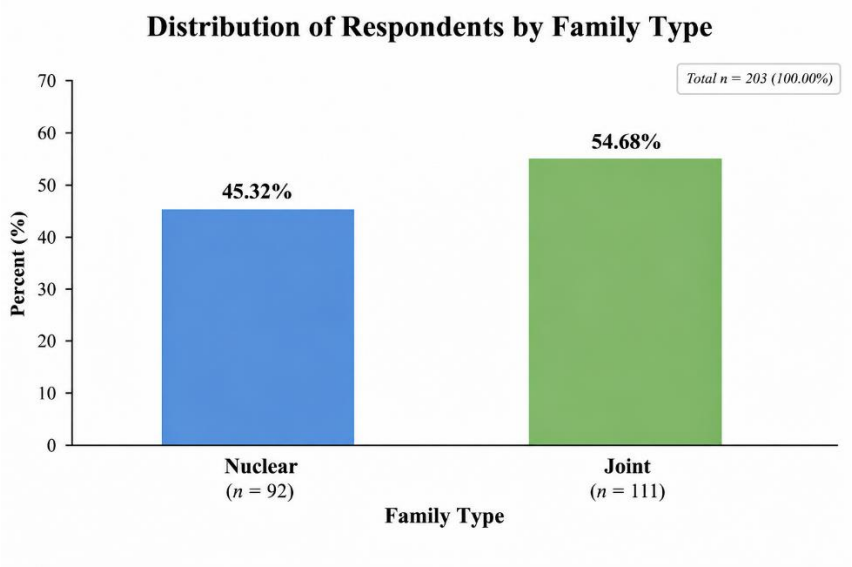


Figure 4.6. Distribution of respondents by family type

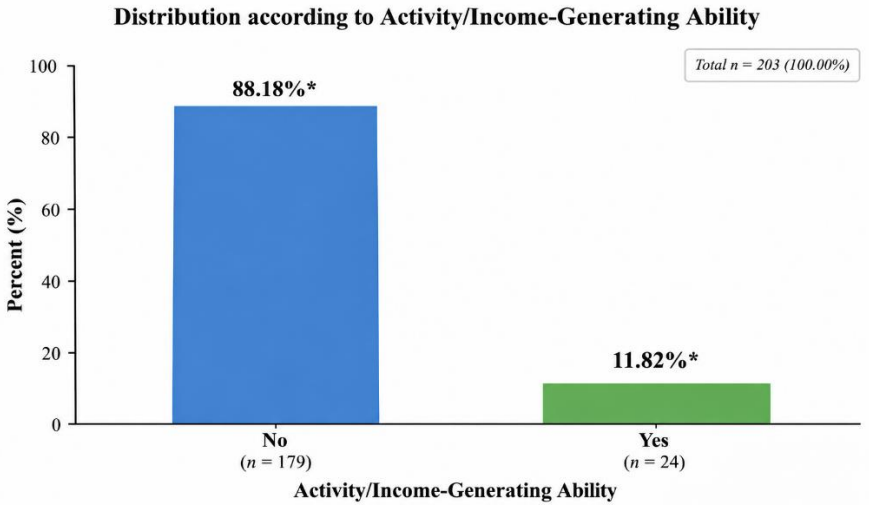


Figure 4.7. Distribution according to activity/income-generating ability

With respect to individual monthly income, 96.55% of participants reported an income of ≤ Tk 2,000, 2.96% reported Tk 2,001–10,000, and 0.49% reported more than Tk 10,000 per month (Figure 4.8). Monthly family income was ≤ Tk 2,000 for 6.90% of participants, Tk 2,001–10,000 for 63.05%, and greater than Tk 10,000 for 30.05%. The mean monthly family income was Tk 10,182.27, with a reported range of Tk 1,000–50,000 (Figure 4.9). Chronic disease was reported by 60.10% of participants, whereas 39.90% reported no chronic disease (Figure 4.10). Regarding access to regular treatment facilities, 95.57% reported having such facilities, while 4.43% reported no access (Figure 4.11).

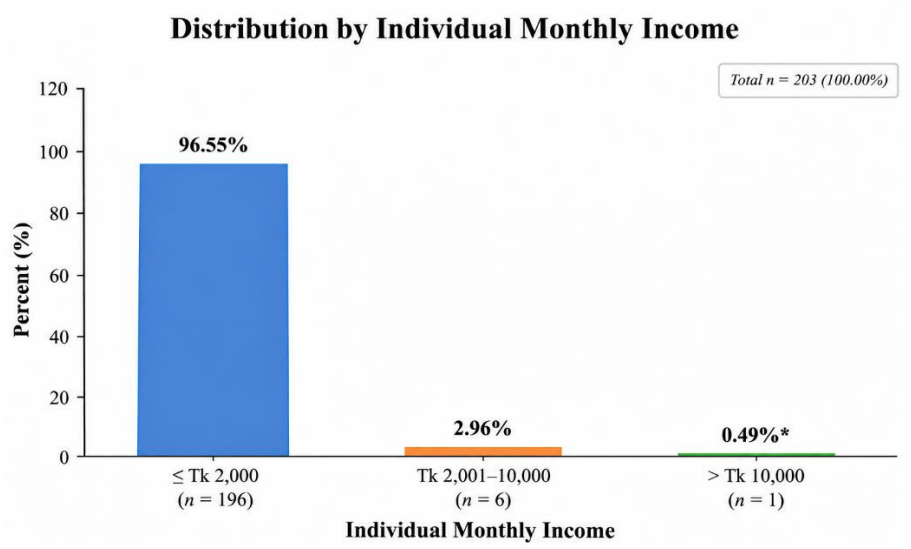


Figure 4.8. Distribution by individual monthly income

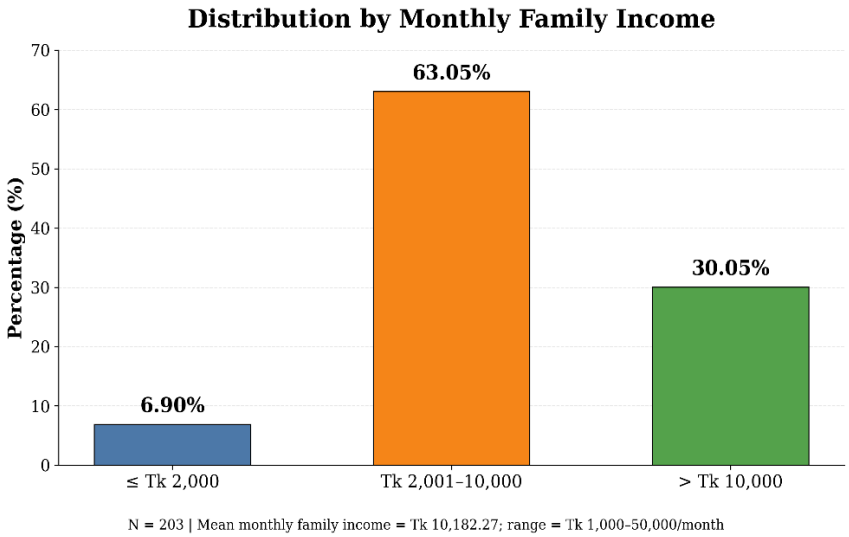


Figure 4.9. Distribution by monthly family income

The distribution of Geriatric Depression Scale (GDS)-classified depressive symptoms showed that 6 participants (2.96%) were categorized as having mild depressive symptoms, 33 (16.26%) as having moderate depressive symptoms, and 164 (80.79%) as having severe depressive symptoms (Figure 4.12). Thus, the severe depressive-symptom category represented the largest proportion of the study population, followed by the moderate and mild categories. These findings describe the distribution of GDS-classified depressive symptoms in the study population and should not be interpreted as confirmation of clinically diagnosed depression unless a formal diagnostic assessment was also performed.

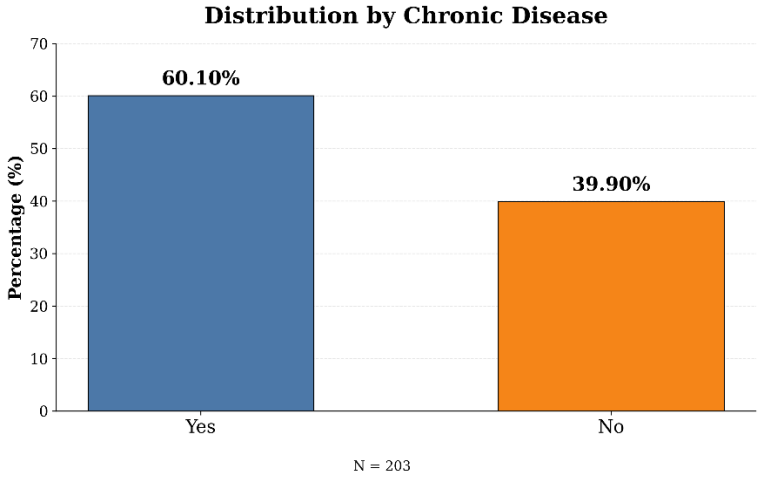


Figure 4.10. Distribution by chronic disease

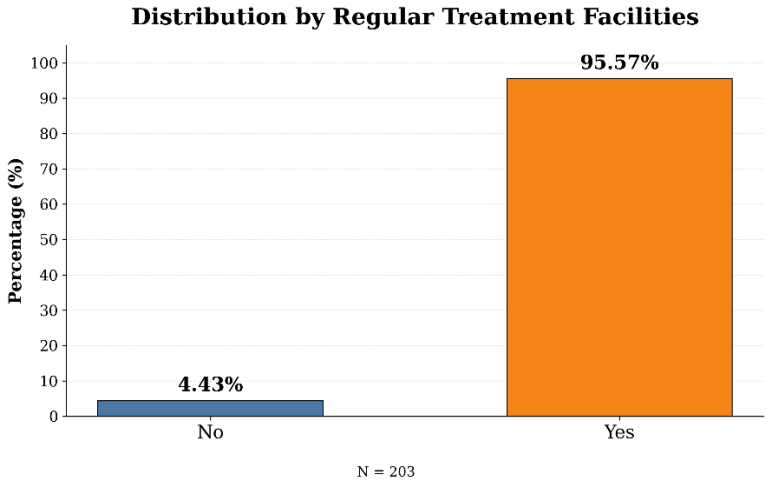


Figure 4.11. Distribution by regular treatment facilities

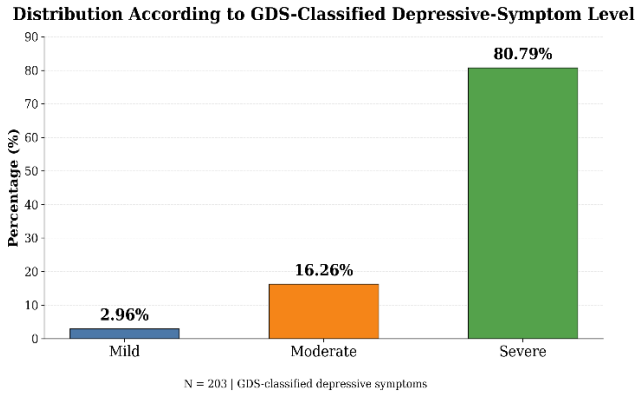


Figure 4.12. Distribution according to GDS-classified depressive-symptom level

5. Discussion

The present study assessed depressive symptoms among 203 rural elderly women aged 60 years and above in Nilphamari District, Bangladesh. The findings demonstrate a substantial burden of GDS-classified depressive symptoms within the surveyed population. The sample was characterized by a mean age of 67.00 ± 7.408 years, very low educational attainment, a high proportion of divorced women, substantial chronic disease burden, and limited reported income-generating activity.

The educational profile was particularly notable. Approximately 95.57% of respondents were illiterate. Low educational attainment may reflect historical disparities in educational access among rural women and can influence health literacy, socioeconomic opportunities, access to information, and healthcare navigation.

More than 61% of participants were divorced, while 37.93% were married. Marital disruption may reduce emotional and practical support. Previous Bangladeshi evidence has identified absence of a spouse as a factor associated with depression among rural older adults (Hossain et al., 2024).

Chronic disease was reported by 60.10% of participants. Chronic illness may contribute to depressive symptoms through pain, disability, functional limitations, treatment burden, and reduced independence. Conversely, depressive symptoms may affect self-care and treatment adherence. Bangladeshi evidence has similarly highlighted health conditions as important correlates of depression among older adults.

The principal finding was that 80.79% of respondents were classified in the severe depressive-symptom category, 16.26% moderate, and 2.96% mild. This distribution appears higher than pooled estimates reported in many international studies. Hu et al. (2022) estimated a global prevalence of 28.4%, while Cai et al. (2023) reported 35.1%. Direct comparison should be cautious because of differences in populations, instruments, cutoff points, sampling, and definitions.

The GDS is an established screening instrument, but screening categories do not substitute for clinical psychiatric diagnoses. Therefore, the present results should be interpreted as evidence of a high burden of GDS-classified depressive symptoms rather than confirmation that 80.79% of participants had clinically diagnosed severe depressive disorders.

The cross-sectional design also prevents causal inference. The present study cannot establish whether chronic disease, marital status, income, education, or other characteristics caused depressive symptoms. Larger analytical studies should assess potential determinants while controlling for confounding factors.

Overall, the findings support greater attention to mental health within geriatric and primary healthcare services in rural Bangladesh. Screening for depressive symptoms may be particularly relevant among older women with chronic illness, social vulnerability, or limited economic independence.

6. Conclusion

This cross-sectional study assessed GDS-classified depressive symptoms among 203 rural elderly women in Nilphamari District, Bangladesh. The participants had a mean age of 67.00 ± 7.408 years. Most were illiterate, a substantial proportion were divorced, and 60.10% reported chronic disease. The study identified a high proportion of respondents in the severe GDS-classified depressive-symptom category (80.79%), followed by moderate (16.26%) and mild (2.96%) categories. The findings provide useful baseline evidence and support greater attention to mental-health screening and geriatric care among rural elderly women in Bangladesh. The findings should be interpreted within the limitations of the cross-sectional design, geographically limited sample, and use of a screening instrument.

7. Recommendations

Routine screening for depressive symptoms should be considered within primary healthcare services for older adults, with particular attention to vulnerable rural women. Geriatric services should integrate physical and mental healthcare to facilitate comprehensive assessment and management. Community-based health education initiatives should be strengthened to improve awareness of depressive symptoms and promote appropriate help-seeking behavior. Families and community organizations should be encouraged to provide emotional and social support to older adults, particularly those experiencing marital disruption, economic dependence, social isolation, or chronic illness. Primary healthcare providers should also establish clear referral pathways for older adults who screen positive for clinically significant depressive symptoms. Future research should include larger and geographically diverse samples from multiple districts of Bangladesh and should examine socioeconomic, nutritional, physical-health, social-support, and functional determinants of depressive symptoms. Where feasible, clinical diagnostic assessments should be incorporated following positive screening results to distinguish depressive symptoms from clinically diagnosed depression. Longitudinal studies are also recommended to examine temporal relationships between health status, socioeconomic circumstances, social support, and depressive symptoms among older adults.

8. Limitations of the Study

This study has several limitations that should be considered when interpreting the findings. The study was conducted within a limited rural geographical area of Nilphamari District; therefore, the findings cannot automatically be generalized to all older women in Bangladesh. The study population consisted exclusively of older women, which limits the applicability of the findings to older men or mixed-sex populations. Furthermore, the cross-sectional study design does not allow the establishment of temporal or causal relationships between depressive symptoms and the factors examined. Depressive symptoms were assessed using the Geriatric Depression Scale (GDS), which is a screening instrument and does not substitute for a formal clinical psychiatric diagnosis. In addition, inconsistencies were identified in the original manuscript between reported frequencies, percentages, headings, and narrative descriptions for some variables, particularly activity or income-generating status and individual income, which may affect interpretation of these findings.

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