

# Prevalence and Associated Factors of Depression Among Geriatric Population Residing in Old-Age Homes of Devghat, Bharatpur, Chitwan

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## ABSTRACT

**Introduction:** Depression is a common mental disorder characterized by persistent sadness, loss of interest, and reduced ability to perform daily activities. It significantly affects the quality of life among older adults. The burden of depression is increasing globally, particularly among the geriatric population due to factors such as chronic illness, financial dependency, and social neglect. **Aims:** To determine the prevalence of depression and its associated factors among elderly residents of old-age homes in Devghat, Bharatpur, Chitwan, and to assess its association with selected sociodemographic characteristics. **Methods:** An institution-based cross-sectional study was conducted among elderly residents of five old-age homes in Devghat, Bharatpur, Chitwan. A complete enumeration method was employed, and 206 eligible elderly residents were included in the study. Data was collected through face-to-face interviews using the 15-item Geriatric Depression Scale (GDS-15) and a structured sociodemographic questionnaire. Statistical analysis was performed using descriptive statistics and Pearson's chi-square test to assess associations between depression and selected variables. **Results:** Among 206 participants, 55.3% were male and 44.7% were female, with a mean age of 74.47 years. Depression was present in 72 participants (35.0%; 95% CI: 28.5%–41.9%). Among participants with depression, 41 (56.9%) had mild depression, 21 (29.2%) had moderate depression, and 10 (13.9%) had severe depression. Depression was significantly higher among females. Significant associations were found between depression and comorbidities, previous employment status, marital status, and educational level. No significant association was observed with age group, financial dependency, or contact with family members. **Conclusion:** Depression is highly prevalent among the geriatric population residing in old-age homes. Socio-demographic and clinical factors play a significant role in its occurrence. Early screening and targeted interventions are essential to reduce the burden of depression and improve the quality of life among older adults.

**Keywords:** Depression; Geriatric population; Prevalence; Risk factors; Sociodemographic factors

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## INTRODUCTION

Depression is one of the leading causes of disability worldwide and represents a major public health concern, particularly among the geriatric population.<sup>1,2</sup> Aging is associated with multiple biological, psychological, and social changes that increase vulnerability to mental health disorders.<sup>1</sup> Globally, the prevalence of depression among older adults varies widely, with recent meta-analyses reporting estimates ranging from approximately 19% to over 30%, and even higher in developing countries.<sup>3</sup> This high burden is often underdiagnosed and undertreated, contributing to poor quality of life, increased mor-

bidity, and higher mortality among the elderly.<sup>4</sup> Recent studies have identified several risk factors for geriatric depression, including chronic illnesses, financial dependency, social isolation, lack of family support, and lifestyle-related factors.<sup>5</sup> In low- and middle-income countries like Nepal, rapid demographic transition and increasing life expectancy are further amplifying the burden of mental health problems among older adults.<sup>6</sup> However, evidence from Nepal is limited, with few community-based studies on geriatric depression; a study<sup>7</sup> in Kavre district reported a high prevalence (53.1%) and identified key risk factors such as rural residence, illiteracy, poor family support, and abuse, underscoring the need for more representative

population-based research. Bharatpur, Chitwan, a rapidly urbanizing region with changing social dynamics, may influence mental health among the elderly; therefore, this study aims to assess the prevalence and associated factors of depression in this population to generate local evidence for targeted interventions and improved geriatric mental health services.

## METHODS

An institution-based cross-sectional study was conducted among elderly residents of five old-age homes in Devghat, Bharatpur, Chitwan, Nepal. The study was conducted as part of a 30-month postgraduate thesis program. The overall study period included protocol development, ethical approval, data collection, data entry, data analysis, thesis preparation, and thesis defense. Data collection was conducted over a three-month period in 2023. All five old-age homes in the Devghat area were included in the study: Devghat Area Development Committee Briddhashram, NRN Briddhashram, Rotary Karunalaya, Sri Galeshor Ashram Trust, and Matapita Ashram. These institutions housed 34, 58, 32, 90, and 50 residents, respectively, resulting in a total study population of 264 elderly residents. Individuals aged 60 years and above who met the eligibility criteria and provided written informed consent were included in the study, while those with severe communication difficulties or neurological impairments were excluded. Of the 264 residents, 206 fulfilled the eligibility criteria and consented to participate. These included 25 participants from Devghat Area Development Committee Briddhashram, 45 from NRN Briddhashram, 26 from Rotary Karunalaya, 70 from Sri Galeshor Ashram Trust, and 40 from Matapita Ashram. A complete enumeration (census) method was employed, whereby all eligible and consenting residents from the five selected old-age homes were included in the study. Data was collected through face-to-face interviews using a structured questionnaire comprising sociodemographic variables and the 15-item Geriatric Depression Scale (GDS).<sup>9</sup> Depression was assessed using the Nepali version of the 15-item Geriatric Depression Scale (GDS-15), a widely used screening tool for depression among older adults. The scale consists of 15 yes/no items with scores ranging from 0 to 15, and a score of  $\geq 5$  was considered indicative of depressive symptoms. The Nepali version has been validated among older adults in Nepal, demonstrating good validity and reliability (sensitivity 86.3%, specificity 74.5%, and Cronbach's alpha 0.79). Ethical approval was obtained from the Institutional Review Committee of the College of Medical Sciences Teaching Hospital (Ref. No. COMSTH-IRC/2022-095) in 2022, prior to the commencement of data collection. Written informed consent was obtained from all participants. Data was analyzed using SPSS version 22. Descriptive statistics (mean, standard deviation, and percentages) were used to summarize the data and Pearson's chi-square test was applied for bivariate analysis, with statistical significance set at  $p < 0.05$ .

## RESULTS

### Sociodemographic Characteristics of Respondents

Among 206 respondents, the mean age was  $74.47 \pm 4.02$  years.

Most participants belonged to the 70–79 years age group, accounting for 146 (70.9%) respondents. Males comprised 114 (55.3%) of the study population. Nearly half of the participants were married, 97 (47.1%), while 62 (30.1%) were widowed. Regarding educational status, 61 (29.6%) had primary-level education, whereas 37 (17.9%) were illiterate. More than half of the respondents were financially dependent, 113 (54.9%), and had one or more comorbid conditions, 134 (65.0%). Irregular contact with family members was reported by 125 (60.7%) participants. Additionally, 113 (54.9%) respondents reported a previous employment history (Table I).

|                             |                    |                  |
|-----------------------------|--------------------|------------------|
| Age group (years)           | 60–69              | 30<br>(14.6)     |
|                             | 70–79              | 146<br>(70.9)    |
|                             | 80–89              | 30<br>(14.6)     |
| Mean age (years)            | Mean $\pm$ SD      | 74.47 $\pm$ 4.02 |
| Gender                      | Male               | 114<br>(55.3)    |
|                             | Female             | 92<br>(44.7)     |
| Marital status              | Unmarried          | 21<br>(10.2)     |
|                             | Divorced           | 26<br>(12.6)     |
|                             | Married            | 97<br>(47.1)     |
|                             | Widowed            | 62<br>(30.1)     |
| Educational status          | Illiterate         | 37<br>(17.9)     |
|                             | Primary            | 61<br>(29.6)     |
|                             | Middle             | 41<br>(19.9)     |
|                             | Higher secondary   | 40<br>(19.4)     |
|                             | Bachelor and above | 27<br>(13.1)     |
| Financial status            | Dependent          | 113<br>(54.9)    |
|                             | Independent        | 93<br>(45.1)     |
| Comorbidity status          | Present            | 134<br>(65.0)    |
|                             | Absent             | 72<br>(35.0)     |
| Contact with family members | Regular            | 81<br>(39.3)     |
|                             | Irregular          | 125<br>(60.7)    |

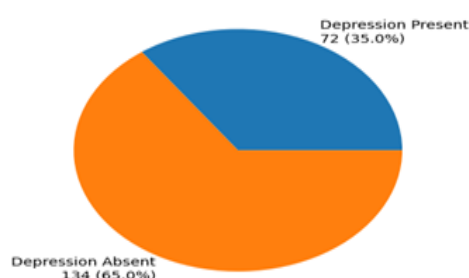
|                             |     |               |
|-----------------------------|-----|---------------|
| Previous employment history | Yes | 113<br>(54.9) |
|                             | No  | 93<br>(45.1)  |

SD = Standard deviation

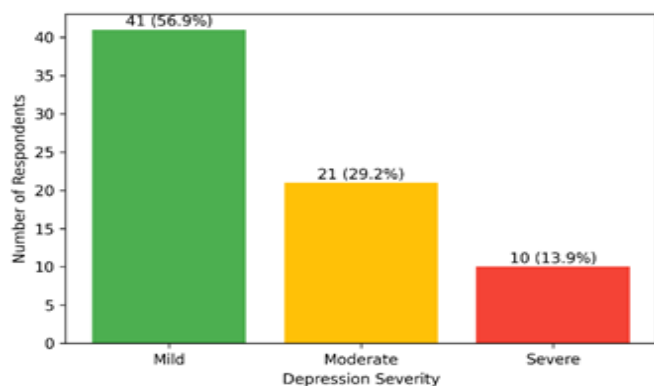
**Table I: Sociodemographic and Clinical Characteristics of Respondents (N = 206)**

### Prevalence and Severity of Depression

The prevalence of depression among the respondents was 72 (35.0%; 95% CI: 28.5%–41.9%), while 134 (65.0%) participants had no depression (Figure 1). Among the participants with depression, 41 (56.9%) had mild depression, 21 (29.2%) had moderate depression, and 10 (13.9%) had severe depression (Figure 2).



**Figure 1: Distribution of depression status among respondents (n = 206)**



**Figure 2: Severity of depression among participants with depression (n = 72)**

### Association of Depression with Sociodemographic and Clinical Characteristics

Depression was significantly associated with gender ( $p = 0.009$ ), comorbidity status ( $p < 0.001$ ), previous employment history ( $p = 0.001$ ), marital status ( $p < 0.001$ ), and educational status ( $p < 0.001$ ). Higher proportions of depression were observed among females, participants with comorbidities, those with a previous employment history, divorced and widowed respondents, and illiterate participants. No significant associations were found between depression and age group ( $p = 0.952$ ), financial status ( $p = 0.659$ ), or contact with family members ( $p = 0.613$ ) (Table II).

| Variable                    | Category           | n   | No depression<br>n (%) | Depression<br>n (%) | $\chi^2$ (df) | p value |
|-----------------------------|--------------------|-----|------------------------|---------------------|---------------|---------|
| Age group (years)           | 60–69              | 30  | 20<br>(66.7)           | 10<br>(33.3)        | 0.097<br>(2)  | 0.952   |
|                             | 70–79              | 146 | 94<br>(64.4)           | 52<br>(35.6)        |               |         |
|                             | 80–89              | 30  | 20<br>(66.7)           | 10<br>(33.3)        |               |         |
| Gender                      | Male               | 114 | 83<br>(72.8)           | 31<br>(27.2)        | 6.75<br>(1)   | 0.009*  |
|                             | Female             | 92  | 51<br>(55.4)           | 41<br>(44.6)        |               |         |
| Comorbidities               | Present            | 134 | 74<br>(55.2)           | 60<br>(44.8)        | 16.28<br>(1)  | <0.001* |
|                             | Absent             | 72  | 60<br>(83.3)           | 12<br>(16.7)        |               |         |
| Previous employment history | Yes                | 113 | 62<br>(54.9)           | 51<br>(45.1)        | 11.41<br>(1)  | <0.001* |
|                             | No                 | 93  | 72<br>(77.4)           | 21<br>(22.6)        |               |         |
| Marital status              | Married            | 97  | 81<br>(83.5)           | 16<br>(16.5)        | 29.02<br>(3)  | <0.001* |
|                             | Unmarried          | 21  | 11<br>(52.4)           | 10<br>(47.6)        |               |         |
|                             | Widow/<br>Widower  | 62  | 32<br>(51.6)           | 30<br>(48.4)        |               |         |
|                             | Divorced           | 26  | 10<br>(38.5)           | 16<br>(61.5)        |               |         |
| Educational status          | Primary            | 61  | 42<br>(68.9)           | 19<br>(31.1)        | 29.76<br>(4)  | <0.001* |
|                             | Middle             | 41  | 30<br>(73.2)           | 11<br>(26.8)        |               |         |
|                             | Higher secondary   | 40  | 31<br>(77.5)           | 9<br>(22.5)         |               |         |
|                             | Bachelor and above | 27  | 21<br>(77.8)           | 6<br>(22.2)         |               |         |
|                             | Illiterate         | 37  | 10<br>(27.0)           | 27<br>(73.0)        |               |         |
| Financial status            | Dependent          | 113 | 72<br>(63.7)           | 41<br>(36.3)        | 0.195<br>(1)  | 0.659   |
|                             | Independent        | 93  | 62<br>(66.7)           | 31<br>(33.3)        |               |         |
| Contact with family members | Regular            | 81  | 51<br>(63.0)           | 30<br>(37.0)        | 0.255<br>(1)  | 0.613   |
|                             | Irregular          | 125 | 83<br>(66.4)           | 42<br>(33.6)        |               |         |

\* Statistically significant at  $p < 0.05$  (Pearson chi-square test)

**Table II: Association of Sociodemographic and Clinical Characteristics with Depression Among Respondents (N = 206)**

### DISCUSSIONS

The present study found a depression prevalence of 35.0%

(95% CI: 28.5%–41.9%) among elderly residents of old-age homes, indicating that depression remains a significant mental health concern in this population. Lamichhane et al<sup>8</sup> reported a substantially higher prevalence (82.6%) among elderly residents of old-age homes in Devghat. Although both studies were conducted in the same geographical area and used the same screening tool (GDS-15) with the same cutoff score, important methodological differences should be considered. The previous study included residents from only three old-age homes and was conducted during the COVID-19 pandemic (January–February 2021), whereas the present study included participants from all five old-age homes in Devghat. Differences in study population, institutional environment, social support, and the potential impact of the pandemic on mental health may have contributed to the variation in prevalence. Nevertheless, as both studies used non-probability sampling methods, the possibility of selection bias cannot be completely excluded; therefore, direct comparison should be interpreted with caution. The prevalence observed in the present study is comparable to several studies conducted in Nepal and other countries, which have reported prevalence rates ranging from 28% to 45%.<sup>10-13</sup> However, lower prevalence rates of around 10%<sup>14</sup> and higher rates ranging from 49% to 80%<sup>7,15-18</sup> have also been reported. These variations may be related to differences in study populations, settings, and sociocultural contexts. Elderly individuals residing in old-age homes are often more vulnerable to depression because of loneliness, social isolation, and reduced family support. Despite the lower prevalence observed compared with some institutional studies, depression remains an important public health concern among elderly residents of old-age homes.

The present study demonstrated significant associations between depression and gender, comorbidity status, marital status, and educational status. Similar associations between depression and female gender, chronic illness, marital status, and lower educational attainment have been reported in previous studies.<sup>8,11,13,18</sup> Female respondents were significantly more likely to experience depression than males. Women may be more vulnerable to depression in later life because of greater caregiving responsibilities, economic dependency, widowhood, and longer life expectancy, which may increase exposure to psychosocial stressors. Depression was also significantly more common among participants with comorbidities. Chronic medical conditions can lead to physical limitations, functional dependency, increased healthcare needs, and reduced quality of life, thereby increasing the risk of depressive symptoms. Marital status was another significant factor associated with depression. Higher rates of depression were observed among widowed, unmarried, and divorced participants compared with married individuals. Marriage may provide emotional companionship, social support, and practical assistance, which can act as protective factors against depression. Conversely, the loss of a spouse or absence of a supportive partner may increase feelings of loneliness and psychological distress. Educational status was also significantly associated with depression, with the highest prevalence observed among illiterate participants. Education may enhance health literacy, problem-solving abilities, social engagement, and access to resources, thereby

contributing to better mental well-being. The study also found a higher prevalence of depression among participants with a previous employment history. A possible explanation is that previously employed individuals may experience psychological distress following retirement and institutionalization because of the loss of occupational role, social identity, daily routine, and perceived social status. However, given the cross-sectional nature of the study, causal relationships cannot be established, and this finding should be interpreted cautiously.

No significant associations were observed between depression and age group, financial status, or contact with family members in the present study. However, other studies have demonstrated significant associations between these variables and depression among older adults.<sup>7,12-13</sup> The differences may be due to variations in study populations, sociocultural contexts, and methodological approaches. Furthermore, the influence of social and economic factors on depression may vary across settings and may be modified by other factors such as family support, physical health status, and institutional environment.

## CONCLUSIONS

The study found that depression affected more than one-third of elderly residents of old-age homes, indicating that it remains an important public health concern among older adults. Depression was significantly associated with gender, comorbidity status, marital status, educational status, and previous employment history. The findings highlight the importance of routine mental health screening, early identification of depressive symptoms, and appropriate psychosocial support for elderly individuals residing in old-age homes. Further studies using larger samples and multivariable analytical approaches are recommended to better understand the factors associated with depression among older adults.

## LIMITATIONS

This study has several limitations. First, the cross-sectional design limits the ability to establish temporal or causal relationships between depression and the associated factors identified. Second, the study was conducted among elderly residents of old-age homes in Devghat using a non-probability purposive sampling technique. As a result, selection bias cannot be ruled out, and the findings may not be generalizable to all institutionalized or community-dwelling older adults in Nepal. Therefore, the prevalence estimate should be interpreted with caution. Third, the analysis was based on bivariate associations and did not include multivariable regression analysis; thus, the potential influence of confounding variables could not be fully controlled. Finally, data were collected through face-to-face interviews, which may have introduced recall bias and social desirability bias.

## REFERENCES

1. World Health Organization. Mental health of older adults [Internet]. Geneva: World Health Organization; 2025 Oct 8 [cited 2026 May 6]. Available from: <https://www.who.int/news-room/fact-sheets/detail/mental-health-of-older-adults>

2. GBD 2019 Diseases and Injuries Collaborators. Global burden of 369 diseases and injuries in 204 countries and territories, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019. *Lancet* [Internet]. 2020 Oct 17 [cited 2026 May 6];396(10258):1204–22 Available from: [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(20\)30925-9/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30925-9/fulltext)
3. Jalali A, Ziapour A, Karimi Z, Rezaei M, Emami B, Pourmirza Kalhori R, et al. Global prevalence of depression, anxiety, and stress in the elderly population: a systematic review and meta-analysis. *BMC Geriatr* [Internet]. 2024 Oct 4 [cited 2026 May 6]; 24:809. Available from: <https://doi.org/10.1186/s12877-024-05311-8>
4. Voros V, Fekete S, Tenyi T, Rihmer Z, Szili I, Osvath P, et al. Untreated depressive symptoms significantly worsen quality of life in old age and may lead to the misdiagnosis of dementia: a cross-sectional study. *Ann Gen Psychiatry* [Internet]. 2020 Sep 15 [cited 2026 May 6]; 19:52. Available from: <https://link.springer.com/article/10.1186/s12991-020-00302-6>
5. Abdoli N, Salari N, Darvishi N, Jafarpour S, Solaymani M, Mohammadi M, et al. The global prevalence of major depressive disorder (MDD) among the elderly: a systematic review and meta-analysis. *Neurosci Biobehav Rev* [Internet]. 2022 Jan [cited 2026 May 6]; 132:1067–73. Available from: <https://www.sciencedirect.com/science/article/abs/pii/S0149763421004838?via%3Dihub>
6. Adhikari M, Gautam P, Arjyal S, Adhikari B, Gyawali P, Yadav S, et al. Aging, mental health and ethnic disparities: understanding geriatric mental health in Western Nepal. *J Geriatr Psychiatry Neurol* [Internet]. 2025 Nov 28 [cited 2026 May 6];39(4). Available from: <https://doi.org/10.1177/08919887251403594>
7. Manandhar K, Risal A, Shrestha O, Manandhar N, Kunwar D, Koju R, et al. Prevalence of geriatric depression in the Kavre district, Nepal: findings from a cross-sectional community survey. *BMC Psychiatry* [Internet]. 2019 Sep 3 [cited 2026 May 6];19(1):271. Available from: <https://doi.org/10.1186/s12888-019-2258-5>
8. Lamichhane P, Nepal S, Dhakal K. Depression among elderly residing in old-age homes in Devghat, Nepal. *Nepal J Health Sci* [Internet]. 2022 Aug 3 [cited 2026 May 7];2(1):32-40. Available from: <https://doi.org/10.3126/njhs.v2i1.47161>
9. Risal A, Risal E, Giri O, Shrestha O, Manandhar S, Kunwar D, et al. Nepali version of Geriatric Depression Scale-15: a reliability and validation study. *J Nepal Health Res Counc* [Internet]. 2020 Jan 21 [cited 2026 May 6];17(4):506–11. Available from: 1984-Manuscript-13237-1-10-20200121.pdf
10. Kaphle M, Karki R, Thapa A, Bhatta R. Prevalence of depression among geriatric population in a rural municipality of Nepal: a descriptive cross-sectional study. *J Nepal Med Assoc* [Internet]. 2024 Oct 31 [cited 2026 May 7];62(278):633-8. Available from: <https://doi.org/10.31729/jnma.8781>
11. Zou C, Chen S, Shen J, Zheng X, Wang L, Guan L, et al. Prevalence and associated factors of depressive symptoms among elderly inpatients of a Chinese tertiary hospital. *Clin Interv Aging* [Internet]. 2018 Sep 13 [cited 2026 May 7]; 13:1755-62. Available from: <https://doi.org/10.2147/CIA.S170346>
12. Antony A, Parida SP, Behera P, Padhy SK. Geriatric depression: prevalence and its associated factors in rural Odisha. *Front Public Health* [Internet]. 2023 Jun 15 [cited 2026 May 7]; 11:1180446. Available from: <https://doi.org/10.3389/fpubh.2023.1180446>
13. Mulat N, Gutema H, Wassie GT. Prevalence of depression and associated factors among elderly people in Womberma District, North-West, Ethiopia. *BMC Psychiatry* [Internet]. 2021 Mar 8 [cited 2026 May 7];21(1):136. Available from: <https://doi.org/10.1186/s12888-021-03145-x>
14. Barua A, Ghosh MK, Kar N, Basilio MA. Prevalence of depressive disorders in the elderly. *Ann Saudi Med* [Internet]. 2011 Nov-Dec [cited 2026 May 7];31(6):620-4. Available from: <https://doi.org/10.4103/0256-4947.87100>
15. Subedi S, Shrestha P, Thapa DK. Study of depression in elderly: prevalence and factors associated. *J Psychiatr Assoc Nepal* [Internet]. 2018 Dec 31 [cited 2026 May 7];7(2):16-23. Available from: <https://doi.org/10.3126/jpan.v7i2.24609>
16. Rai N, Pokhrel P, Shakya DR, Sapkota N, Basnet M, Sharma PP. Prevalence of depression among elderly population: a cross-sectional study. *J Psychiatr Assoc Nepal* [Internet]. 2018 Nov 22 [cited 2026 May 7];6(2):50-53. Available from: <https://doi.org/10.3126/jpan.v6i2.21761>
17. Khanal G, Selvamani Y, Thapa S, Chinnaiyan S. Prevalence and covariates of depression among older adults in Nepal: a systematic review and meta-analysis. *PLOS Ment Health* [Internet]. 2024 Sep 4 [cited 2026 May 7];1(4):e0000112. Available from: <https://doi.org/10.1371/journal.pmen.0000112>
18. Ashe S, Routray D. Prevalence, associated risk factors of depression and mental health needs among geriatric population of an urban slum, Cuttack, Odisha. *Int J Geriatr Psychiatry* [Internet]. 2019 Dec [cited 2026 May 7];34(12):1799-807. Available from: <https://doi.org/10.1002/gps.5195>