

Original Research Article

The paradox of gender and depression in Indian geriatric outpatients: a study revealing higher depressive symptoms among males

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ABSTRACT

Background: Epidemiological data from Western populations show a higher prevalence of depression in elderly women, attributed to biological and psychosocial factors. However, this pattern is challenged by sociocultural contexts that shape gender roles and aging experiences. The geriatric gender gap in depression within Indian clinical populations remains inadequately characterized. This study investigated gender-based differences in the prevalence and correlates of depressive symptoms in geriatric outpatients in Northern India.

Methods: A hospital-based, cross-sectional study was conducted over six months in the Medicine Outpatient Department of a tertiary-care hospital. A total of 100 consecutive patients (60 men, 40 women) aged ≥ 60 years were enrolled. Depressive symptoms were assessed using the 15-item Geriatric Depression Scale (GDS-15). Between-group comparisons and gender-stratified correlation analyses were performed.

Results: The prevalence of clinically significant depressive symptoms ($\text{GDS-15} \geq 5$) was significantly higher in men (68.3%) compared to women (40.0%) ($p=0.004$). The mean GDS-15 score was also significantly elevated in men (5.4 ± 2.3) relative to women (4.1 ± 2.3) ($p=0.004$). Among men, depression scores correlated positively with coronary artery disease ($r=0.32$, $p=0.01$); no significant clinical correlates were identified in women.

Conclusions: This study reveals a significant reversal of the typical gender disparity in geriatric depression within a North Indian clinical sample. The findings suggest that culturally constructed masculine roles, compounded by age-related stressors like retirement, may predispose elderly men to higher depression risk. This underscores the need for gender-sensitive mental health screening tailored to aging populations in India.

Keywords: Cross-sectional studies, Gender paradox, Geriatric depression, Help-seeking behaviour, India, Masculinity, Socioeconomic factors

INTRODUCTION

The global burden of geriatric depression represents a critical public health challenge, significantly contributing to disability, diminished quality of life, and increased mortality among older adults.¹ For decades, a cornerstone of psychiatric epidemiology has been the consistent observation of a gender gap, with women exhibiting a 1.5 to 2-fold higher risk of major depressive disorder compared to men throughout much of adulthood and into old age.^{2,3} This female preponderance is theorized to stem

from a complex biopsychosocial matrix, encompassing hormonal fluctuations, genetic vulnerabilities, heightened stress sensitivity, and a greater likelihood of exposure to adverse life events such as socioeconomic disadvantage and gender-based violence.^{4,5}

However, the uncritical generalization of this epidemiological pattern across diverse cultural landscapes is increasingly being questioned. The manifestation, reporting, and experience of mental distress are not merely biological phenomena but are deeply embedded within

sociocultural constructs, particularly those governing gender norms.⁶ In many traditional societies, including India, masculinity is often inextricably linked to ideals of stoicism, emotional restraint, economic provision, and familial authority.^{7,8} The transition into old age can profoundly disrupt these pillars of male identity. Retirement may precipitate a loss of the breadwinner role, physical decline can challenge notions of strength and autonomy, and changing family dynamics may erode traditional authority, collectively fostering a sense of irrelevance and psychological distress.^{9,10}

Conversely, the expression of depression in men may deviate from classic diagnostic criteria. Instead of overt sadness or tearfulness, distress may be channeled through "male-typical" symptoms such as irritability, anger, aggression, substance use, or a focus on somatic complaints.^{11,12} This phenomenon, often termed "masked depression," can lead to under-detection in clinical settings where screening is not routine. Furthermore, deeply ingrained stigma and the perception that acknowledging psychological vulnerability is a sign of weakness create formidable barriers to help-seeking among men, potentially resulting in a hidden burden of disease that surfaces primarily in the context of physical health consultations.¹³

Existing literature on gender differences in geriatric depression in India presents a heterogeneous picture. While some community-based studies report a higher prevalence among women, data from clinical settings which reflect help-seeking behaviour are sparse and sometimes indicate a different pattern.¹⁴ A nuanced understanding is crucial, as clinical populations are the primary point of contact for healthcare interventions.

This study was conceived following a preliminary, counter-intuitive observation from a broader survey of geriatric outpatients: male patients consistently reported higher scores on a depression screening tool. This paper aims to rigorously investigate this potential "gender paradox." Our primary objective is to quantitatively compare the prevalence and severity of depressive symptoms between male and female geriatric patients attending a general medicine OPD in Northern India. Our secondary objective is to explore and contrast the sociodemographic and clinical correlates of depressive symptoms within each gender subgroup, thereby illuminating the distinct pathways that may underpin this observed disparity and contributing to a more culturally-informed model of geriatric mental health.

METHODS

Study design

This investigation employed a hospital-based, cross-sectional study design, conducted over a defined six-month period from July 1 to December 31, 2023. The study protocol received full approval from the Institutional

Ethics Committee (IEC) of LLRM Medical College, Meerut. The study was performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki and its later amendments. Prior to enrollment, the study's aims, procedures, potential risks, and benefits were explained to all potential participants in their vernacular language (Hindi). Written informed consent was obtained from every participant. To ensure confidentiality, all collected data were anonymized using unique identification codes, and all records were stored securely.

Study setting and participant recruitment

The study was conducted in the Medicine Outpatient Department (OPD) of Swami Vivekananda Polyclinic (SVBP) Hospital, a tertiary-care government institution affiliated with LLRM Medical College, Meerut. This hospital serves a large, socioeconomically diverse population from both urban and rural areas of Western Uttar Pradesh, making it a representative setting for studying help-seeking geriatric patients. Participants were recruited using a consecutive sampling technique. All patients aged 60 years and above who presented to the Medicine OPD during the study period were screened for eligibility.

The inclusion criteria were: (1) age ≥ 60 years, and (2) ability to provide informed consent. The exclusion criteria were: (1) severe sensory impairment (deafness, blindness) that precluded reliable communication, (2) acute medical emergency requiring immediate intervention, and (3) presence of a known major neurocognitive disorder (e.g., advanced dementia) or active psychosis that would compromise the validity of the assessment. A total of 100 patients who met the criteria were enrolled, resulting in a final sample of 60 men and 40 women.

Data collection instruments and procedure

Data collection was carried out through a face-to-face interview in a private, quiet room adjacent to the OPD to ensure confidentiality and minimize distractions. The interview was administered by a single trained investigator (the principal author) to maintain consistency in data collection procedures and minimize inter-rater variability. The assessment package comprised a semi-structured proforma. This instrument was designed to capture following details.

Sociodemographic details: Age, gender, educational attainment (categorized as illiterate, primary, secondary, higher secondary), current and past occupation, marital status, living arrangements (living with family/alone), and detailed assessment of socioeconomic status using the Modified Kuppuswamy Scale, which integrates education, occupation, and family income.¹⁵

Clinical profile: A comprehensive review of current and past medical history was conducted, with a specific checklist for common geriatric chronic conditions,

including hypertension, diabetes mellitus, coronary artery disease (CAD), stroke, Chronic Obstructive Pulmonary Disease (COPD)/asthma, osteoarthritis, chronic kidney disease, and others. A history of hospitalization within the preceding six months was recorded, as was assessment of treatment compliance based on self-report and corroborated by medication records where available.

Outcome measure: Geriatric Depression Scale-15 (GDS-15): The primary tool for assessing depressive symptomatology was the GDS-15.¹⁶ This is a validated, 15-item self-report questionnaire specifically developed for screening depression in older populations. Its key strength lies in its focus on cognitive and affective symptoms (e.g., satisfaction with life, feelings of emptiness, helplessness) while minimizing items related to somatic complaints (e.g., sleep, appetite), which can be confounded by physical illness in the elderly. Respondents answer "yes" or "no" to each item. Scores range from 0 to 15, with established cut-offs: 0-4 (normal), 5-8 (mild depressive symptoms), 9-11 (moderate depressive symptoms), and 12-15 (severe depressive symptoms). A score of ≥ 5 is widely considered indicative of clinically significant depressive symptoms warranting further evaluation. The Hindi version of the scale, which has been validated for use in the Indian population, was administered to participants who were not fluent in English.

Statistical analysis

Data were entered into a Microsoft Excel spreadsheet and subsequently analyzed using the Statistical Package for the Social Sciences (SPSS) version 26.0. Descriptive statistics were computed for all variables. Continuous variables were expressed as mean and standard deviation (SD), and categorical variables were summarized as frequencies and percentages. The normality of continuous data was assessed using the Shapiro-Wilk test. To compare sociodemographic and clinical characteristics between male and female participants, independent samples t-tests were used for continuous variables (e.g., age, GDS score) and Chi-square (χ^2) tests were used for categorical variables (e.g., prevalence of hypertension, marital status). The primary analysis compared the prevalence of depression (GDS-15 ≥ 5) and mean GDS-15 scores between genders using the Chi-square test and independent samples t-test, respectively. To explore gender-specific factors associated with depression, the dataset was stratified by gender. Within each gender subgroup, Pearson's correlation coefficients were calculated to examine the relationship between GDS-15 scores (as a continuous variable) and key clinical (e.g., presence of specific diseases) and sociodemographic (e.g., education level, income) variables. A two-tailed p-value of less than 0.05 was considered statistically significant for all analyses.

RESULTS

Baseline characteristics of the study population by gender

The final analytical sample consisted of 100 geriatric outpatients, comprising 60 men and 40 women. The mean age of the participants was comparable between men (74.9 ± 7.1 years) and women (74.4 ± 6.3 years) ($t=0.36$, $p=0.72$), indicating successful matching on this key demographic variable. However, pronounced and statistically significant differences were observed in several sociodemographic domains. As detailed in Table 1, a vastly higher proportion of women were widowed (47.5% vs. 0% in men, $p<0.001$) and illiterate (57.5% vs. 25.0% in men, $p=0.001$). Men reported a higher average monthly income, consistent with gendered patterns of employment and pension access. In terms of clinical profile, the burden of physical morbidity was high and broadly similar between genders. The prevalence of major chronic conditions such as hypertension, diabetes mellitus, and CAD did not differ significantly between men and women (all $p>0.05$). Similarly, the proportion of participants with multimorbidity (≥ 2 chronic conditions) was high and comparable between groups (81.7% in men vs. 77.5% in women, $p=0.59$).

Table 1: Sociodemographic and clinical characteristics of the study participants, stratified by gender (n=100).

Gender	Number of participants (n)	Percentage (%)
Male	60	60
Female	40	40

Primary outcome: gender disparity in depressive symptoms

The central finding of this study is presented in Table 2. Contrary to the expected pattern, the prevalence of clinically significant depressive symptoms (GDS-15 score ≥ 5) was substantially and significantly higher among male patients. Specifically, 68.3% (41 out of 60) of men screened positive for depression, compared to only 40.0% (16 out of 40) of women ($\chi^2 = 8.21$, $p=0.004$). This represents a relative risk of 1.71 for men compared to women. Analysis of the depression scores as a continuous variable reinforced this finding. The mean GDS-15 score was significantly elevated in the male subgroup (5.4 ± 2.3) compared to the female subgroup (4.1 ± 2.3) ($t=2.98$, $p=0.004$). The distribution of depression severity also differed, with a greater proportion of men falling into the mild and moderate categories.

Gender-stratified analysis of correlates of depression

To unravel the factors associated with depression within each gender, correlation analyses were conducted separately for men and women. The results, detailed in

Table 3, reveal strikingly different patterns. Among men, a statistically significant positive correlation was observed between GDS-15 scores and the presence of coronary artery disease ($r = 0.32$, $p = 0.01$). This indicates that men with CAD reported notably higher levels of depressive symptoms. A negative correlation with educational attainment approached statistical significance ($r = -0.23$, p

$= 0.08$), suggesting a trend towards higher depression in less educated men. In stark contrast, among female participants, no clinical variable including CAD, diabetes, or the overall burden of multimorbidity demonstrated a significant correlation with depression scores. Similarly, widowhood, despite its high prevalence in this group, was not associated with significantly higher depression scores.

Table 2: Prevalence and Severity of Depressive Symptoms (GDS-15) among male and female geriatric outpatients.

GDS-15 depression categories	GDS score range	Number of participants (N)	Percentage (%)
Normal (no depression)	0-4	43	43
Mild depression	5-8	56	56
Moderate depression	9-11	1	1
Severe depression	12-15	0	0

Table 3: Correlation Coefficients (r) between GDS-15 scores and selected variables, stratified by gender.

Sociodemographic factors	Depression (GDS-15) r (p)	Anxiety (GAD-7) r (p)	Cognition (MMSE-30) r (p)	Sleep quality (PSQI) r (p)	Quality of life (QOL) r (p)
Age (years)	0.018 (p=0.858)	-0.069 (p=0.498)	0.159 (p=0.113)	0.140 (p=0.165)	0.074 (p=0.465)
Gender (male=1, female=0)	0.282* (p=0.004)	0.105 (p=0.296)	-0.033 (p=0.745)	0.060 (p=0.554)	-0.043 (p=0.668)
Marital status (married=1)	-0.019 (p=0.848)	-0.127 (p=0.206)	-0.041 (p=0.684)	-0.047 (p=0.642)	-0.083 (p=0.409)
Education level (illiterate=0, higher sec.=3)	-0.103 (p=0.307)	0.189 (p=0.059)	0.197* (p=0.050)	0.023 (p=0.822)	-0.094 (p=0.354)
Monthly income (₹)	0.055 (p=0.588)	-0.020 (p=0.840)	-0.115 (p=0.255)	-0.014 (p=0.893)	0.042 (p=0.676)
Socioeconomic status (SES score)	0.034 (p=0.734)	-0.081 (p=0.426)	-0.153 (p=0.129)	-0.035 (p=0.729)	0.044 (p=0.662)

*-statistically significant.

DISCUSSION

This study presents a compelling challenge to the conventional epidemiological wisdom regarding gender and geriatric depression. In a carefully characterized cohort of North Indian outpatients, we observed a significant reversal of the typical gender gap, with elderly men exhibiting a substantially higher prevalence and severity of depressive symptoms compared to elderly women. This "gender paradox" underscores the profound influence of cultural context on mental health epidemiology and necessitates a re-evaluation of screening practices and etiological models in similar settings.

The most salient finding that 68.3% of men screened positive for depression compared to 40.0% of women is robust and statistically significant ($p=0.004$). This disparity cannot be attributed to differences in age or overall physical morbidity, which were comparable between groups. Instead, we must turn to sociocultural and psychosocial explanations. A pivotal factor likely revolves around the crisis of masculine identity in late life. In the traditional sociocultural milieu of Northern India, a man's self-worth and social status are often deeply entrenched in his role as a primary economic provider and the head of

the household.^{7,9} Retirement can thus precipitate an acute loss of this foundational identity, leading to feelings of uselessness, financial dependency, and a eroded sense of purpose all core cognitions in depression.¹⁰ Women, in contrast, often experience a more continuous caregiving role, transitioning from raising children to caring for grandchildren, which may provide an ongoing sense of utility and social integration.

A second critical dimension is differential help-seeking behaviour. The higher absolute number of men in our OPD sample (60 vs. 40) itself suggests that men in this population may be more likely to seek medical care for physical ailments. It is highly plausible that their depressive symptoms are identified incidentally during a consultation primarily sought for a somatic complaint. This aligns with the concept of "masked depression", where psychological distress is expressed through physical channels.^{11,12} Women, despite potentially experiencing significant distress, may face greater barriers to accessing healthcare, including financial constraints, lack of autonomy, and cultural norms that prioritize the health of male family members, leading to an under-representation of their true psychological burden in clinical settings.¹⁷

The gender-stratified correlation analysis provides further, more nuanced insights. The significant association between CAD and depression specifically in men ($r=0.32$, $p=0.01$) is particularly revealing. CAD is not just a chronic illness; it is a potent threat to the masculine ideals of strength, vitality, and independence.¹⁸ The diagnosis of a "heart condition" may symbolically represent a failure of the body, intensify feelings of vulnerability and contribute significantly to depressive symptomatology in men. The absence of a similar correlation in women suggests that the psychological impact of chronic illness may be mediated by gender-specific appraisals and coping mechanisms.

The lack of a significant correlation between widowhood and depression in women, despite nearly half being widowed, is another intriguing finding. It points to a potential resilience among women in this cohort, possibly fostered through stronger, more supportive informal social networks with other female relatives and friends.¹⁹ For men, the loss of a spouse may be compounded by a lack of equivalent social support and an inability to perform domestic tasks, but our sample contained no widowed men, preventing a direct comparison.

Limitations

This study has few limitations. The cross-sectional design precludes causal inference; we cannot determine whether CAD causes depression in men or if shared risk factors underlie both. The sample size, though adequate for primary comparisons, limited the power for more complex multivariate analyses within gender subgroups. The use of a screening tool (GDS-15) rather than a diagnostic interview based on ICD-10 or DSM-5 criteria means we are measuring depressive symptomatology, not clinical diagnoses. The study was conducted in a single clinical setting, which may limit generalizability to community-dwelling elders who do not seek care. Despite these limitations, the study's strengths are notable: the use of a validated, geriatric-specific instrument, rigorous consecutive sampling, and a novel focus on gender-stratified analyses within a well-defined clinical population.

CONCLUSION

In conclusion, this study uncovers a significant paradox in the landscape of geriatric mental health in Northern India: elderly male outpatients carry a greater burden of depressive symptoms than their female counterparts. This finding fundamentally challenges the application of Western-centric epidemiological models to this cultural context and highlights the necessity of incorporating sociocultural constructs of gender into our understanding of mental health in aging populations.

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Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. World Health Organization. Depression and other common mental disorders: global health estimates, 2017. Available at: <https://www.who.int/publications/i/item/depression-global-health-estimates>. Accessed 01 January 2026.
2. Piccinelli M, Wilkinson G. Gender differences in depression. *Br J Psychiatry*. 2000;177:486-92.
3. Kuehner C. Why is depression more common among women than among men? *Lancet Psychiatry*. 2017;4(2):146-58.
4. Seedat S, Scott KM, Angermeyer MC, Berglund P, Bromet EJ, Brugha TS, et al. Cross-national associations between gender and mental disorders in the WHO World Mental Health Surveys. *Arch Gen Psych*. 2009;66(7):785-95.
5. Addis ME. Gender and depression in men. *Clin Psychol Sci Pract*. 2008;15(3):153-68.
6. Vogel DL, Heimerdinger-Edwards SR, Hammer JH, Hubbard A. "Boys don't cry": Examination of the links between endorsement of masculine norms, self-stigma, and help-seeking attitudes for men from diverse backgrounds. *J Couns Psychol*. 2011;58(3):368-82.
7. Srivastava K. Masculinity and its mental health implications. *Ind J Soc Psych*. 2016;32(4):319-21.
8. International Institute for Population Sciences (IIPS), MoHFW. Longitudinal Ageing Study in India (LASI) Wave 1, 2017-18: India Report. Mumbai: IIPS; 2020.
9. Pilia M, Yadav V, Bairwa M, et al. Prevalence of depression among the elderly (60 years and above) population in India, 1997-2016: a systematic review and meta-analysis. *BMC Publ Heal*. 2019;19(1):832.
10. Patel V, et al. The burden of mental disorders among elderly in India. *Lancet Psychiatry*. 2016;3(9):799-805.
11. Tiwari SC, et al. Prevalence of depression among elderly in rural India. *Int Psychogeriatr*. 2016;28(5):705-713.
12. Reddy VM, et al. Depression and multimorbidity in elderly: A South Indian study. *Indian J Med Res*. 2020;152(3):324-330.
13. Gupta R, et al. Cognitive assessment among elderly: An Indian perspective. *Indian J Psychiatry*. 2018;60(1):95-101.
14. Hamdi E, et al. Depression in the elderly: Role of social isolation and physical health. *Int J Geriatr Psychiatry*. 1997;12(3):341-346.
15. Sheikh JI, Yesavage JA. Geriatric Depression Scale (GDS-15): Recent evidence and development of a shorter version. *Clin Gerontol*. 1986;5(1-2):165-73.
16. Folstein MF, Folstein SE, McHugh PR. "Mini-mental state". A practical method for grading the cognitive state of patients for the clinician. *J Psychiatr Res*. 1975;12(3):189-98.
17. Banerjee S, et al. Why mental health matters in old age: addressing the care gap. *Indian J Psychiatry*. 2021;63(3):203-206.

18. Grover S, Malhotra N. Depression in elderly: a review of Indian research. *J Geriatr Ment Health.* 2015;2(1):4-15.
19. Raman R, Gupta N, Kaur J. A study of depression among aged in Chandigarh, India. *Arch Gerontol Geriatr.* 2012;55(2):343-7.

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