STUDY PROTOCOL

The prevalence of depression and its associated factors among the geriatric age group living in the rural area of Wardha District Maharashtra: A cross-sectional study [version 1; peer review: awaiting peer review]

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Abstract

Background: In India, the percentage of adults over 60 years is rising. Depression is the most prevalent neuropsychiatric condition. People live longer, and households are smaller and crowded, creating stress. These issues influence the mental health of elderly persons and can cause depression. Depression poses a serious threat to public health, especially for senior citizens and inhibits cognitive function and decreases the quality of life. The objective of this study is to determine the prevalence of depression and evaluate its relationship with sociodemographic factors among older people.

Methods: Cross-sectional community research will be conducted in the Wardha district. The whole sample of elderly age groups will be examined using a semi-structured survey to identify the sociodemographic features and related risk factors for depression. Using a pre-tested survey called the short version of the Geriatric depression scale (GDS-15), the prevalence of depression in the geriatric age groups of both sexes will be assessed.

Conclusions: Older people (those 60 years and older) play important roles in families and the workplace as volunteers. This study will help formulate policies that will inculcate old people to get an insight into how much mental health implications impact everyone, be it adolescents, middle-aged people, or old people. Its significance in public health will pave the road to include mental health screening of old people in non-governmental bodies like NGOs and other organizations like old age homes. Furthermore, the government should pay more attention to old-age depression in the current mental health program so that the burden of the disease can be overcome.
Keywords
Geriatric Age Group, Depression, Rural, Associated Factors, Socio-Demographic, Prevalence, senior citizen, co-morbidities

This article is included in the Datta Meghe Institute of Higher Education and Research collection.
Study registration
The registration of the study is in process in the clinical trial registration of India with this reference no. REF/2023/06/068387.

Introduction
Depression is a severe mental health issue yet to be recognized as a significant public health threat. In India, the geriatric population comprises 10.1% of the total population. And if they go undetected, depression in the senior population can be projected to contribute significantly to the disease burden. The world’s population is aging quickly. Between 2015 and 2050, the global old population is expected to nearly double, rising from 12% to 22%. According to projections, there will be 2 billion more individuals over the age of 60 than there are now, or more than 900 million. Age-related problems with both mental and physical health that older adults experience must be acknowledged. A psychiatric or neurological disorder affects more than 20% of adults aged 60 and older (headache disorders excluded), and 6.6% of all impairments (disability-adjusted life years, or DALYs) in people over 60 are caused by mental or neurological disorders. According to the Indian government's National Policy on Older Persons, a senior citizen is 60 years of age or older. In 2011, India had 98 million senior persons, predicted to rise to 143 million by 2021, with females accounting for 51%. The typical Indian’s life expectancy has increased from 64.6 years in 2002 to 70.19 years in 2022. By 2050, the proportion of Indians aged 60 or over will reach 19.5% of the country’s total population, which is concerning and warrants prompt intervention. The loss of a hobby, a lack of family support, the death of a loved one, loneliness in the community due to poor physical health, and the generational and communication gaps within the family, even when they live under the same roof. All these issues influence the mental health of elderly persons and may occasionally result in depression.

The high occurrence of depression in seniors acts as an indicator of the need for improved community assistance and access to healthcare facilities in order to provide better treatment for the elderly. In addition, it is critical to educate people about depression, both in the general public and among family members. In primary care settings (PHCs), older outpatient departments (OPDs) are envisioned by the National Elderly Care Programme. Older people must be evaluated for depression during this OPD since early detection and treatment improves their standard of living. In contrast to the burden of psychiatric morbidity, the nation does not have enough doctors. The nation has between 0.05 and 1.2 psychiatrists per person which is low compared to high-income countries, and 6.6% of all impairments (disability-adjusted life years, or DALYs) in people over 60 are caused by mental or neurological disorders. According to the Indian government’s National Policy on Older Persons, a senior citizen is 60 years of age or older. In 2011, India had 98 million senior persons, predicted to rise to 143 million by 2021, with females accounting for 51%. The typical Indian’s life expectancy has increased from 64.6 years in 2002 to 70.19 years in 2022. By 2050, the proportion of Indians aged 60 or over will reach 19.5% of the country’s total population, which is concerning and warrants prompt intervention. The loss of a hobby, a lack of family support, the death of a loved one, loneliness in the community due to poor physical health, and the generational and communication gaps within the family, even when they live under the same roof. All these issues influence the mental health of elderly persons and may occasionally result in depression.

Rationale
India is a diverse country with distinct cultures, beliefs, languages, and socioeconomic classes. Mental health concerns all sections of society—poor, rich, young, old, men, women, etc. India’s health policies and programmes have prioritised illness prevention, maternal and child healthcare, and population stabilizing throughout the last few decades. On the other hand, current figures for India’s senior population hint at a fresh a group of economic, social, and health problems. It is necessary to draw attention to the health and social issues that the elderly population faces. Additionally, rehabilitation methods and raising their living standard are urgently needed. Despite being the most prevalent psychiatric condition, Depression is often neglected and untreated when it comes to the geriatric population. This may be a result of the misunderstanding that depression is a treatable ailment rather than a consequence of ageing.

Elderly people contribute substantially to society as family members, volunteers, and advisors. The main factors that make individuals more susceptible to developing depression include increased age, economic dependency, co-morbid conditions, and dependence on everyday activities. This can be treated by offering them financial assistance in the form of pensions, which will improve their mental health and lessen their sense of helplessness. In order to enhance overall health conditions, health policies and other awareness campaigns need also be put into practice. Because of this, they can conduct daily tasks independently.

The information obtained through this study about the prevalence of depression among the geriatric age group of both males and females will enable the government to prioritize and plan health care services for early identification of depression and its management. This will fill the gap between healthcare providers and elderly people in the community.

Aims
This study aims to identify the prevalence of depression and its associated risks among senior citizens living in rural areas.
Objectives
Primary objective:

To determine the prevalence of depression among the geriatric age groups

Secondary objective:

- To determine how sociodemographic factors affect the rate of depression
- To find out associated co-morbidities relate to depression

Methodology
Study design

A cross-sectional study based in the community will be carried out to look into the prevalence of depression among senior populations.

DMIHER (Datta Meghe Institute of Higher Education and research) The present study will be conducted in the field practice area of the community department. Under the Datta Meghe institute of higher education and research.

Study population

The present study will include the geriatric age group population of males and females in the study village.

Inclusion criteria

The study will include men and women aged 60 and above who are willing to participate. And elderly people who have not moved out of the village in the last year.

Exclusion criteria

- Those who were elderly and had previous episodes of depressive symptoms within the preceding six months, as well as recognised neuropsychiatric conditions, were excluded.
- Those who were younger than 60 were excluded.
- If a particular home was found to be locked after the initial visit and the study’s eligible participants could not be reached, despite two additional attempts, they were all excluded from participation.

Variables

1. Sociodemographic variable
   - e.g. Name, age, sex, education, type of family, religion, occupation, economic status of the participants.
   - Any other co-morbidities.

2. Geriatric Depression Scale (GDS-SF)
   - The percentage of depression among the old age people living in the rural area.

Data sources

- The instrument comprises a semi-structured interview questionnaire that will be pretested and open-ended, using questions in both English and the local tongue (Marathi/Hindi), to ascertain the prevalence of depression and its related risk factors among the geriatric age groups with a focus on the participant’s moral concerns.

- Section A: A semi-structured questionnaire which will be pre-tested, will be used to bring out independent variables like age, sex, education, occupation, marital status, and any related co-morbidities.

- Section B: The previously validated traditional geriatric depression scale’s short variant (GDS-SF). Will be used to screen for depression. GDS-SF was later designed to detect depression in the senior population in a
community setting after the original GDS was created in 1986. The GDS-SF has in-total 15 questions with dichotomous responses such as “Yes” or “No” based on how the participant feels. Normal is defined as an overall score of 0–4, mild depression as 5–8, moderate depression as 9–11, and severe depression as 12–15; each question will receive a single number. In this method, exact data will also require statistical analysis and result detection.

➢ The demographic questionnaire and the GDS scale questions set in the kobo toolbox app on the mobile phone will be used to collect data.

**Measurement**
**Analysis plan**

Data will be transferred to an MS Excel spreadsheet and analysed with statistical product and service solutions (SSPS) 24.0 statistics software. Numerous frequencies, including age, gender, and so forth, will be computed. We will analyse the data by using the chi-square test.

**Bias**

*Prejudice bias* Because most elderly persons do not know their exact birth date, they may be confused about their actual age, which can lead to prejudice bias.

*Information bias* When describing the study variable, information bias may emerge when they get it wrong or do not explain it well enough.

**Study size**

According to the previous study, which was used as a mother article, the prevalence of depression was found to be 47.4%, and the sample size was determined using the following article.\(^{21}\)

Sample size was calculated by using this formula

\[ n \geq \frac{Z^2_{1-\alpha/2} \times P (1 - P)}{d^2} \]

**Alpha (α)** 0.05

**Estimated proportion (p)** 0.41

**Estimated error (d)** 0.05

Sample size = 372

As a result, a sample size of 372 senior individuals will be employed to collect data and to then discuss the prevalence of depression in elderly people living in rural locations.

**Statistical methods**

Association of geriatric depression scale with the sociodemographic variable will be tested by using a chi- square test and the associated co-morbidities will be tested by using chi-square test.

**Expected outcomes/Results:** The significant correlation between the sociodemographic parameters that influence the prevalence of depression in seniors and the numerous co-morbidities that are linked to depression is the study’s anticipated outcome.

**Discussion**

**Literature review:** The following research studies conducted on this subject by recognised researchers are cited in this study. Goswami S *et al.* (2017) has done a cross-sectional study on the magnitude of depression and its correlates among the elderly population in the rural area of Maharashtra. According to this study, 47.4% of older people had depression, and there was a strong positive link with being female, not having a husband, being unable to make decisions, having experienced neglect or abuse, or having a chronic condition.\(^{21}\)
Chauhan et al. (2016) also conducted a cross-sectional study on the prevalence and correlates of depression in the senior population of rural South India. In this study, it was discovered that 9.3% of senior people suffer from depression. Age, other co-morbid diseases, economic dependency, and physical dependence on daily activities are all highly connected with geriatric depression.

Radhakrishnan and Nayeem (2013) has done a cross-sectional study on the prevalence of depression in the elderly population of rural Tamilnadu. According to this study’s findings, 21% of elderly persons experience serious depression due to characteristics including education, age, sex, partner living situation, economic condition, smoking, and chronic sickness.

A. Thilak et al. (2016) conducted a cross-sectional study on the prevalence and risk factors of depression in older people in rural Kannur, North Kerala, India. Geriatric Depression Scale (GDS) data from this study indicate 72.4% of participants had depression. The presence of additional morbidities, education, marital status, sex, gender, age, economic status, and a wide variety of sociodemographic factors were all found to be associated with this high frequency.

Goyal and Kajal (2014) conducted a cross-sectional study on the prevalence of depression in the elderly population in the Southern Part of Punjab. This study indicated that 17% of older persons had severe depressive symptoms, which are linked to a variety of demographic characteristics including age, sex, income, and illiteracy, which is the main cause of depression in people.

**Key result:** To find out the prevalence of depression in older populations.

**Limitations:** This study’s weakness is the use of a screening tool to identify depression rather than a psychiatrist’s confirmation. Suicidality is not a factor in GDS analysis. Participants self-reported their comorbidities, and it is possible that undetected morbidity resulted in underreporting of the participants’ chronic illnesses.

**Implication/generalizability:** Older people (those 60 and older) play important roles in families and the workplace as volunteers. This study will help formulate policies that will inculcate old people to get an insight into how much mental health implications impact everyone, be it adolescents, middle-aged people, or old people. Its significance in public health will pave the road to include mental health screening and testing of old people in non-governmental bodies like NGOs and other organizations like old age homes. Furthermore, if we are serious about achieving “health for all,” government organizations like district health programs and mental health services ought to be accessible to individuals of all ages equally.

**Ethical considerations**
The Datta Meghe Institute of Higher Education and Research (DU) Institutional Ethics Committee has given its approval to the study protocol. Additionally, before to starting our study, we will get written informed consent that will contain the objective of study we will explain them in detail that this study is conducting for research purpose and this will give an idea that how much the percentage of depression among old age so that appropriate action can be taken and your responses to this survey remain anonymous we will use numbers for participants on all research note and documents. Participant data will kept confidential. We will ensure that the interviewee has privacy and feels comfortable throughout the interview. Ref. No. DMIHER (DU)/IEC/2023/634 Date 11/Feb/2023.

**Dissemination**
This study protocol will be published in an indexed journal.

**Study status**
The study has not yet started.

**Data availability**
**Underlying data**
No data are associated with this article.

**Extended data**
This project contains the following extended data:
- prevalence of depression data collection tool.docx

**Reporting guidelines**

Zenodo: STROBE checklist for prevalence of depression. DOI: 10.5281/zenodo.8005082

Data are available under the terms of the Creative Commons Attribution 4.0 International license (CC-BY 4.0).

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