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Prevalence Of Depression, Stress And Associated Risk Factors Among The Elderly Population In Kanchipuram District – A Cross-Sectional Study

Dr Gokul Gopakumar[1], Dr Hariharan S[2], Dr Malavika Muraly[3], Dr Subhashini Vishwanath[4], Dr Jeffrey Joseph[5], Dr Gladston Varghese[6], Dr Arya Suresh[7], Dr Nithis Kumar Sridhar[8]

[1]Postgraduate, Department of Community Medicine, Sree Balaji Medical College & Hospital, Bharath Institute of Higher Education and Research. Orchid id - 0009-0006-4329-3677 Email id- gokulgopakumar47@gmail.com Contact no- 8220846886

[2]Associate Professor, Department of Community Medicine, Sree Balaji Medical College and Hospital, ORCID ID: 0000-0002-0774-6847, Email: harikumarcool23@gmail.com

[3]Tutor, Department of Pathology, Sree Balaji Medical College & Hospital, Bharath Institute of Higher Education and Research. Orchid id 0009-0008-4451-6021 . Email id – malavikamuraly06@gmail.com

[4]Senior resident, Community Medicine, Meenakshi Medical College Hospital and Research Institute, Meenakshi Academy of Higher Education and Research (Deemed to be University), Kanchipuram, IND Email id-subha.vishwa29@gmail.com

[5]Postgraduate, Department of Community Medicine, Sree Balaji Medical College & Hospital, Bharath Institute of Higher Education and Research. Email id – jeffjos1997@gmail.com

[6]ICU Consultant, SRM Prime Hospital, Ramapuram, Chennai. Email id- gladston7500@gmail.com

[7]Postgraduate, Department of Forensic Medicine, Govt Gondia Medical College, Maharastra, Maharastra University of Health Sciences. Email id – aryasuresh94.tvm@gmail.com

[8]Postgraduate, Department of General Surgery, Mahaveer Institute of Medical Sciences, Vikarabad, Telangana, Kaloji Narayan Rao University of Health Sciences, Warangal. nithis.96@gmail.com

ABSTRACT

BACKGROUND

India is undergoing a major demographic transition with a rapidly growing elderly population, projected to exceed 300 million by 2050. This shift brings with it significant public health challenges, especially in rural areas where healthcare access, social support systems, and mental health infrastructure remain limited. One of the most under-recognized issues is psychosocial morbidity among the elderly, encompassing depression and stress. These conditions are frequently underdiagnosed and undertreated due to cultural stigma, poor awareness, and limited mental health resources in rural communities. This research aimed to evaluate the prevalence of depression, stress and identify its related risk factors among older adults in the rural field practice area of a private medical college in Kanchipuram district, Tamil Nadu.

METHODOLOGY

A cross-sectional, community-based study design was employed, including 550 participants aged 60 and older, chosen through simple random sampling from 11 villages in Padappai Panchayat. Data were gathered using a semi-structured questionnaire, the Geriatric Depression Scale (GDS), and the Psychosocial Index Scale. Statistical analysis was conducted with SPSS version 26, and logistic regression models were used to explore associations.

RESULTS

The results revealed that 51.6% of the elderly participants experienced depression, while 91.3% reported stress. These findings indicate a substantial burden of psychological morbidity among the elderly in this rural setting.

Sociodemographic factors such as marital status and income were significantly associated with these outcomes. Divorced and widowed individuals showed higher odds of depression. Montly income < Rs 1365 was found to be significantly associated with Depression.

CONCLUSION

This study provides vital evidence for the development of comprehensive geriatric mental health strategies in rural India. Strengthening rural mental health services, integrating psychosocial screening into routine geriatric care, and addressing social determinants such as income and marital status can significantly improve the quality of life and emotional well-being of elderly individuals. The findings also highlight the need for policy-level attention to support aging populations in underserved areas through sustainable health, social, and economic interventions.

KEYWORDS: *Environmental Stress , Social Factors , Mental Health , Geriatrics, Health Care*

INTRODUCTION

The world's aging population will increase by fourfold by 2050, posing serious public health issues, particularly in emerging countries like India.. This demographic change raises concerns about the physical, emotional, and social well-being of older adults, particularly in rural areas where medical services and social support are often scarce (1). Psychosocial problems, including mental health issues like depression and stress are prevalent among the elderly. Factors contributing to these issues include chronic health conditions, financial reliance, social disconnection, loss of loved ones, and limited family or community support. Older adults in rural regions are at greater risk due to insufficient healthcare infrastructure, lack of awareness, and socioeconomic barriers (2).

The National Policy on Older Persons, enacted by the Indian Government in 1999, seeks to address the growing elderly population resulting from enhanced healthcare, treatment advancements, and improved nutrition. Yet, approximately one-quarter of older adults experience mental health conditions such as depression, anxiety, and dementia. In India, around 17.13 million elderly individuals face mental health challenges, with prevalent psychosocial issues including memory decline, diminished cognitive capacity, anxiety, depression, rigid mindsets, substance dependency, social isolation, family dissatisfaction, loss of loved ones, financial strain, and persistent negative thoughts (3).

Mental health disorders are 4.66% more frequent among the geriatric population compared to younger groups. Depression is the most widespread issue, affecting over 20% of individuals aged 60 and above, contributing to 6.6% of total disabilities in this demographic. Urbanization and modern lifestyles have significantly altered family dynamics and traditional values, impacting the care and support provided to older adults (4). While advanced healthcare extends life expectancy, socioeconomic challenges such as poverty, fragmented families, and inadequate services create significant social risks for the elderly.

In India, dementia prevalence varies from 2 to 35 per 1,000 individuals. Older adults are more susceptible to events like bereavement or physical disabilities, which can adversely affect emotional health and contribute to mental health decline. Social exclusion has profound effects on psychosocial well-being, extending beyond limitations in daily activities, resource access, and knowledge. Early identification and treatment of psychological issues reduce suffering and enhance quality of life (5).

Depression and stress in the elderly is influenced by a combination of biological, social, economic, and environmental factors. Key risk factors include financial dependence, low educational level, unemployment/retirement, poverty, and economic insecurity. Health-related factors include chronic diseases, physical disability, cognitive impairment, and polypharmacy. Social and family-related factors include social isolation, loneliness, and lack of family support (6). Psychological factors include a history of depression or anxiety, negative coping mechanisms like alcohol consumption, smoking, and substance abuse, low self-esteem, and fear of death and uncertainty.

Environmental and community-related factors include lack of access to healthcare services, poor social infrastructure, cultural and religious beliefs, and limited engagement in recreational activities. Inadequate geriatric mental health services in rural areas delay early diagnosis and treatment, and lack of community engagement programs and elderly-friendly spaces increase isolation (7). Cultural and religious beliefs discourage seeking professional help due to stigma associated with mental health conditions.

Hence, addressing the interplay of these risk factors significantly impacts the mental health and quality of life of elderly individuals. A multidisciplinary approach, including healthcare interventions, social support programs, and policy-level changes, is needed to enhance geriatric mental health services, especially in rural areas like Kanchipuram district.

This research seeks to evaluate the prevalence of depression, stress and its related risk factors among older adults in Kanchipuram district. The results will offer important insights for policymakers, healthcare providers, and community organizations to formulate targeted approaches for improving mental health care and social support systems for the elderly in rural environments.

AIM

To find out the Prevalence of depression, stress & its associated risk factors among elderly population in Kanchipuram district

OBJECTIVES

1. To access the prevalence of depression and stress among elderly living in kanchipuram district
2. To determine the association between sociodemographic characteristics with depression among elderly living in Kanchipuram district

METHODOLOGY

The present study was conducted in Padappai, a panchayat located in Kanchipuram district, Tamil Nadu. A community-based cross-sectional study design was adopted, and the study was carried out over a period of 4 months, from August 2024 to December 2024. To ensure adequate representation, a simple random sampling technique was employed. Out of the 27 villages in the panchayat, 11 villages were selected randomly. From each of the selected villages, 50 elderly individuals were chosen using random sampling, yielding a total sample size of 550.

The sample size was calculated based on findings from a previous cross-sectional study conducted in Raichur district, Karnataka (8), which reported a prevalence of depression of 71% among the elderly. Using this prevalence, the minimum required sample size was estimated to be 494. After accounting for a possible 10% non-response rate, the sample size was adjusted to 544 and rounded off to 550 for operational convenience. Inclusion criteria were elderly individuals aged 60 years and above, residing in the study area for a minimum period of six months, and those present and willing to participate during the data collection period. Exclusion criteria included bedridden individuals and those with cognitive impairment, as they could not provide reliable responses.

Data collection was carried out using validated and standardized tools. A semi-structured questionnaire was used to capture demographic characteristics, socioeconomic status, and relevant past medical history. The Geriatric Depression Scale (GDS) (9) was employed to assess depression, while the Psychosocial Index Scale (PIS) (10) was utilized to evaluate stress among the participants. All data were coded, entered, and compiled using Microsoft Excel, and subsequently analyzed using SPSS version 26. Ethical approval was obtained from Institutional ethical committee of Sree Balaji Medical College and Hospital. Descriptive statistics were used to summarize sociodemographic and appropriate inferential statistical tests were applied to identify associations between variables and to assess the prevalence of depression and stress among the study population.

RESULTS

A total of 550 participants meeting the inclusion criteria were enrolled in the study. The findings are presented in the following tables and figures, covering prevalence and demographic characteristics.

Table 1 Socio-Demographic Characteristics among study participants(n=550)

SOCIODEMOGRAPHIC VARIABLES	FREQUENCY (n=550)	PERCENTAGE (%)
Age		
60-65 Years	173	31.5
65-70 Years	311	56.5
71 and above Years	66	12.0
Gender		
Males	264	48.0
Females	286	52.0
Marital Status		
Single	20	3.6
Married	392	71.2
Divorced	25	4.54
Widowed	113	20.5
Occupation		
Unemployed	137	24.9
Unskilled Woker	82	14.9
Skilled Worker	147	26.7
Professional	115	20.9
Clerical/Shop/Farm	69	12.5
Education		
Illiterate	117	21.3
School Education	202	36.7
Graduate	77	14.0
Intermediate / Diploma	105	19.1

Professional Degree	49	8.9
Monthly Income (BG Prasad)		
Below Rs 1365	138	25.1
Rs 1365 - 2728	69	12.5
Rs 2729 - 4550	130	23.6
Rs 4551 -9097	137	24.9
Rs 9098 and above	76	13.8

Table 1 shows the socio demographic characteristics among study participants. The study included 550 elderly individuals aged 60 years and above, with 56.5% in the 65–70 years age group, 31.5% aged 60–65 years, and 12.0% aged 71 years and above. Females comprised 52.0% and males 48.0%. Most participants were married 71.2%, while 20.5% were widowed, 4.5% divorced, and 3.6% single. Regarding occupation, 26.7% were skilled workers, 24.9% unemployed, 20.9% professionals, 14.9% unskilled, and 12.5% engaged in clerical, shopkeeping, or agricultural work. Educationally, 36.7% had school-level education, 21.3% were illiterate, 19.1% held diplomas, 14.0% graduates, and 8.9% professionals. Income distribution showed a predominantly low to middle socioeconomic background.

Fig 1 - Prevalence of depression among study participants(n=550)

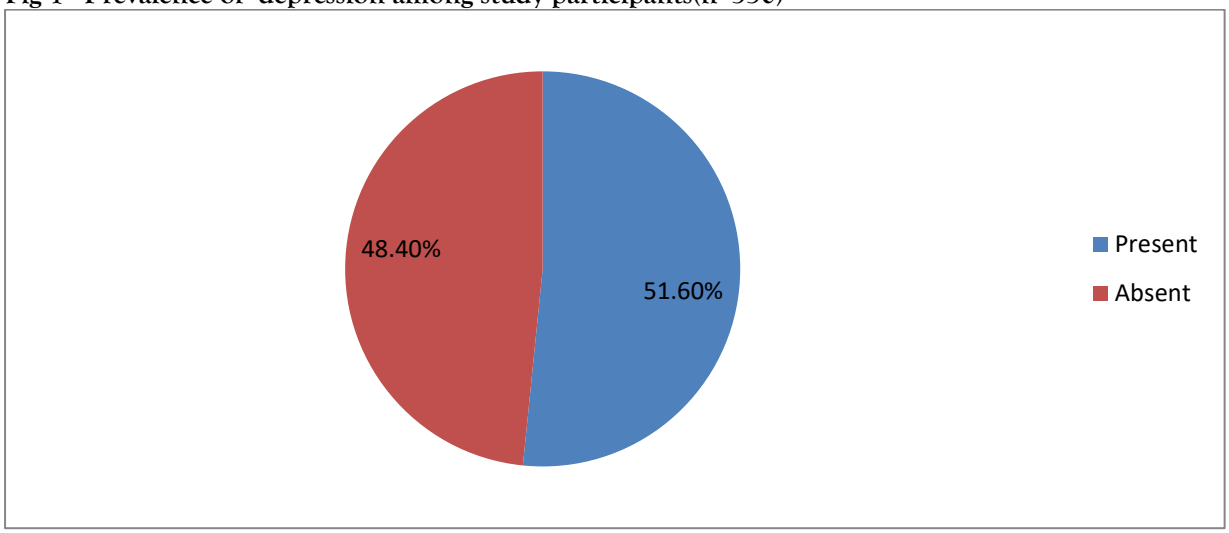

Fig 1 shows among 550 participants in the study 52% was found to be having depression and around 48% was not having depression

Fig 2 shows the prevalence of stress among study participants (n=550)

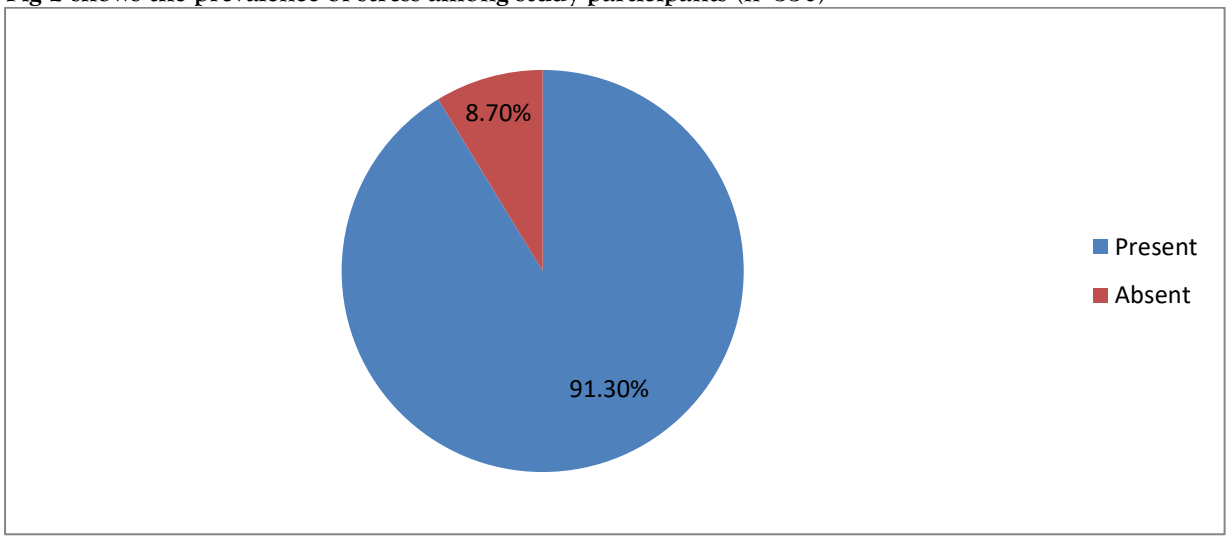

Fig 2 shows among 550 participants in the study 91% was found to be having stress and around 9% was not having stress.

Table 2 - Association between Demographic Characteristics and Depression among Elderly study Participants (n=550)

Demographics	Levels	Depression – Yes	Depression – No	Row Total (N)	OR (95% CI)	P Value	AOR (95% CI)	P Value
Age	60–65 Years (Ref)	149	153	302	Ref	-	-	
	65–70 Years	84	62	146	1.58 (0.88–2.8)		1.45 [0.95, 2.22]	.082
	≥ 71 Years	51	51	102	0.85 (0.59–1.23)	.393	1.01 [0.64, 1.61]	.956
Sex	Male (Ref)	148	116	264	Ref	-	-	
	Female	136	150	286	0.73 (0.52–1.01)	.061	0.77 [0.54, 1.11]	.160
Marital Status	Married (Ref)	191	201	392	Ref	-		
	Single	22	9	31	2.57(1.16,5.73)	.239	1.85 (0.78–4.41)	.161
	Divorced	22	26	48	1.49 [0.60, 3.67]	.034*	1.24 [0.20, 1.58]	.276
	Widowed	67	61	128	1.03 [0.48, 2.22]	.024*	1.68 [0.99-1.88]	.02*
Education	Diploma/Professional (Ref)	84	75	159	Ref	-	-	
	Illiterate	66	51	117	1.45 [0.79, 2.65]	.441	1.45[.70-2.65]	.441
	School Education	96	106	202	1.17 [0.70, 1.96]	.161	0.73 [0.43, 1.23]	.241
	Graduate	38	39	77	1.09 [0.57, 2.07]	.756	0.87 [0.42, 1.79]	.707
	Intermediate/Diploma	56	49	105	0.88 [0.52, 1.50]	.780	0.97 [0.51, 1.84]	.933
	Professional Degree	28	21	49	1.03 [0.53, 2.02]	.510	1.11 [0.46, 2.67]	.841
Occupation	Skilled/Professional (Ref)	134	132	266	Ref	-	-	
	Unemployed	63	74	137	0.85 [0.50, 1.45]	.547	1.57 [0.87, 2.85]	.134
	Unskilled Worker	48	34	82	1.03 [0.55, 1.92]	.073	1.08 [0.38, 3.02]	.888

Demographics	Levels	Depression – Yes	Depression – No	Row Total (N)	OR (95% CI)	P Value	AOR (95% CI)	P Value
	Clerical/Shop/Farm	39	30	69	1.12 [0.52, 2.41]	.154	1.68 [0.87, 3.23]	.120
Monthly Income	≥ Rs 9098 (Ref)	34	42	76	Ref	-	-	
	< Rs 1365	80	58	138	2.14 [1.03, 4.45]	.041*	2.46 [1.23, 2.92]	.029*
	Rs 1365 - 2728	38	31	69	2.30 [0.83, 6.38]	.691	1.12 [0.60, 2.09]	.712
	Rs 2729 - 4550	68	62	130	4.49 [1.64, 12.29]	.352	0.91 [0.53, 1.55]	.726
	Rs 4551 - 9097	64	73	137	2.89 [1.23, 6.78]	.062	0.58 [0.33, 1.01]	.053

*p value <0.05 is statistically significant at 95% confidence interval (CI)

Table 2 shows the Association between Demographic Characteristics and Depression among Elderly study Participants (n=550).The present analysis revealed that certain socio-demographic factors were significantly associated with depression among the study population. Notably, widowed individuals demonstrated a higher likelihood of experiencing depression compared to their married counterparts, with an adjusted odds ratio (AOR) of 1.68 (95% CI: 0.99–1.88; p = 0.024), indicating that widowhood may be an independent risk factor for depression. Furthermore, individuals with a monthly income of less than ₹1365 exhibited significantly higher odds of depression when compared to those earning ₹9098 or more, with an AOR of 2.46 (95% CI: 1.23–2.92; p = 0.029).

DISCUSSION

The present community-based cross-sectional study aimed to estimate the prevalence of depression, stress and its associated risk factors among the elderly in rural Kanchipuram district, Tamil Nadu. The study revealed alarmingly high levels of morbidity, with depression (51.6%), stress (91.3%) prevalent among the participants. These findings are consistent with earlier studies in India, which have reported a high psychosocial disease burden among older adults, especially in rural settings with limited healthcare access (11 12 13).

Global estimates suggest that approximately 15% of individuals aged 60 and above suffer from mental health disorders, with depression and anxiety being the most common (14). Indian studies report even higher prevalence rates, particularly among rural and socioeconomically disadvantaged elderly populations (15,11). This study reinforces the critical need for prioritizing geriatric mental health services in rural India, as highlighted by several national and international reports (3, 12, 16).

Depression was identified in 51.6% of the participants, which aligns with the findings of Kumar et al. in Rajasthan (17) and studies from rural Tamil Nadu reporting similar prevalence figures (18, 19). Globally, depression affects 13.9–28.3% of older adults, but rates vary widely based on regional, cultural, and socioeconomic contexts (11, 20).

The study observed that age and sex were not significant predictors of depression, contradicting certain previous studies that indicated increasing age and female gender as key determinants (11, 21). However, marital status significantly influenced depression risk, with widowed and divorced individuals showing higher odds compared to married participants, consistent with findings by Poudyal et al. and Rajan et al. highlighting the protective role of spousal support against psychological morbidity (11, 13, 22).

Interestingly, widowed participants exhibited higher odds of depression after adjusting for confounders, which align with the findings from other articles identifies widowhood as a major risk factor for depression (11, 12, 19). This unexpected finding may reflect unique socio-cultural factors within the study population, such as robust extended family support or adaptive coping mechanisms among widowed individuals in rural Tamil Nadu.

Furthermore, lower-income groups earning less than ₹1365 per month exhibited significantly higher odds of depression in the adjusted analysis, reinforcing the established understanding that economic disadvantage is a critical risk factor for poor mental health outcomes (11, 12, 23). Financial insecurity likely contributes to chronic stress, reduced access to healthcare, and unmet basic needs, all of which increase vulnerability to depression, as highlighted in earlier studies (23, 24).

CONCLUSION

Addressing depression, stress among rural elderly requires coordinated policy reforms and sustained research efforts. Mental health should be integrated into geriatric care within existing public health programs, with primary healthcare centres equipped to detect depression and stress behaviour using validated tools such as the Geriatric Depression Scale and Psychosocial Index. Expanding social protection through enhanced pension coverage, elderly-friendly livelihood opportunities, and financial literacy is essential, as economic vulnerability is a major risk factor for poor mental health. Targeted psychoeducation campaigns using culturally appropriate messages in regional languages can reduce stigma and improve mental health literacy among older adults and families. Strengthening community-based mental health services through mobile counselling, teleconsultations, and frontline workers (ASHAs, Anganwadi workers) can improve rural access, especially for widowed, divorced, or economically disadvantaged elderly. Further research, including longitudinal and qualitative studies, is needed to generate context-specific evidence and inform interventions. Incorporating geriatric mental health indicators into national health systems will enable monitoring and guide comprehensive, sustainable policies for healthy aging.

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