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Original Research Article

Psychological distress and socio-demographic correlates among old-age home residents in Bengaluru, Karnataka: a cross-sectional study

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ABSTRACT

Background: The shifting family structure from joint to nuclear families, migration of young people leaving the elderly behind and increased life expectancy have contributed to the rise of old-age homes. Delivering high-quality care in these settings is challenging, as social isolation can increase the risk of depression, anxiety and stress. Sociodemographic factors such as age, gender, education, previous employment, past living arrangements, having living children and previous locality may impact the mental health of elderly residents in these facilities.
Methods: A cross-sectional research design using systematic random sampling included 125 residents from the old age homes. The DASS-21 was used to assess psychological distress, alongside the collection of sociodemographic information. To investigate associations and differences between groups, chi-square tests, t-tests and ANOVA were employed.
Results: The participants demonstrated levels of depression ranging from moderate to extremely severe, with 57.6% affected, as well as anxiety at 62.4% and stress at 36.8%. Independent t-tests and one-way ANOVA accompanied by post hoc tests revealed that females, individuals aged 80 and older, those with living children and those who have previously cohabited with their children exhibited notably higher scores of psychological distress.
Conclusions: This study highlights high rates of depression, anxiety and stress among elderly individuals in old age homes. Sociodemographic factors such as age, gender and living arrangements significantly influence their mental health. Implementing targeted interventions like regular counselling, recreational activities and guided meditation is essential to address their needs.

Keywords: Anxiety, Depression, Old age homes, Psychological distress, Stress

INTRODUCTION

Psychological distress is termed as emotional suffering that is characterized by the symptoms of depression and anxiety, sometimes associated with somatic symptoms.[1] This distress significantly impacts an individual's quality of life, affecting their ability to function socially. It can also take a toll on physical health, contributing to conditions such as hypertension, cardiovascular diseases and weakened immune function.[2] Old age homes in India provide support for elderly individuals needing assistance with daily activities. As of 2016, 728 such homes were registered, with only 325 offering free services. Their number is projected to grow by 25% annually.[3]

Senior citizens (60+ years) currently make up over 10% of the population (~104 million), expected to rise to 319 million (19.5%) by 2050, according to UNFPA.[4] In 2019, around 1.3 lakh elderly people lived in 24,000 old-age homes.[5] This underscores the requirement for improved mental health services, given that depression and anxiety

are prevalent among older adults. As people age, increased morbidity, reduced function and limited support can lead to loneliness, especially during difficult life events, raising the risk of psychological distress.[6] Sociodemographic factors like age, gender, education, prior employment, past living arrangements, living children and former locality significantly affect mental health in old-age homes.[7] Aging-related physical and cognitive decline, along with social isolation, further increases the risk of depression, anxiety and other disorders.[8] Women are more prone to depression and anxiety, often due to caregiving roles and widowhood. Limited education may lower self-esteem and increase mental health risks. Shifts in family structure, living arrangements and migration, influenced by urban growth, modernization and global interconnectedness, have led to an increasing number of senior citizens living in old-age homes.[9,10]

While old-age homes aim to provide a supportive environment, separation from family can affect the elderly's mental health. To strengthen care and address emotional gaps, it is important to understand how sociodemographic factors relate to psychological distress. Identifying vulnerable individuals enables the development of targeted interventions to improve mental well-being. This research employs the DASS-21 instrument to evaluate psychological distress in elderly individuals living in old-age homes.

Objectives

To assess the levels of depression, anxiety and stress among residents of old-age homes. To identify the sociodemographic factors that are associated with higher levels of depression, anxiety and stress, based on chi-square analysis. To determine the differences in depression, anxiety and stress levels across various sociodemographic categories using t-test and ANOVA.

METHODS

Study design and setting

This is a cross-sectional study on the elderly population living in old-age homes in Bengaluru. Bengaluru serves as the capital of Karnataka, a state in South India. The research was carried out between January and April 2023 among older adults residing in both urban and rural old-age facilities.

Sampling method

Systematic random sampling was used to select old-age homes in Bengaluru. According to district-wise senior citizen schemes information (2022), there were 120 old-age homes and every 28th was selected from a randomly ordered list to reach the required sample size.[11] The sample size of 125 was determined using the formula $n=Z^2P(1-P)/d^2$, based on a 43% prevalence of psychological distress, relative precision of 20% and 95% confidence level.[10] A total of five old-age homes was approached and all agreed to participate, resulting in 125 respondents.

Inclusion and exclusion criteria

Individuals who had spent at least six months living in old-age homes and were above the age of 60 years were included. Elderly individuals who were ill and unable to answer the questions were excluded from this study.

Study tool and data collection

A socio-demographic profile sheet with seven questions was used to assess factors like age, gender, education, previous occupation, location, living arrangements and living children.

The 21-item DASS by Lovibond was used to assess depression, anxiety and stress.[12] Both English and expert-translated and back-translated Kannada versions were used. Each subscale has seven items, making it a suitable screening tool for healthy adults and adolescents. Participants reported symptoms experienced in the past week.[10]

Statistical analysis

Using IBM SPSS version 27, descriptive statistics were employed to summarize the sociodemographic characteristics and scores from the DASS-21 scale. The relationship between sociodemographic characteristics and DASS-21 scores was evaluated using a chi-square test, while differences between groups were investigated through independent t-tests and one-way ANOVA, followed by Tukey's post hoc tests.

Ethical considerations

The study was approved by the M.S. Ramaiah University ethics committee (EC-22/20-PG-FLAHS). Participants were informed about the study and consent was obtained. Participation was voluntary, with the option to withdraw at any time. All data were anonymized and securely stored to ensure participant confidentiality. No financial compensation was offered; however, those in need of care were referred to healthcare services.

RESULTS

Socio-demographic characteristics

The study included 125 participants, with the majority, 54 (43.2%), aged between 60-69 years. Regarding gender distribution, 46 (36.8%) were male, while 79 (63.2%) were female. Most participants (75.2%) had previously lived in urban areas. Half of them (63, 50.4%) had children who were still living. Educational background revealed that 45 (36.0%) were illiterate. In terms of past

occupations, 74 (59.2%) had been engaged in household work. When looking at previous living arrangements, 47 (39.2%) had lived with individuals other than their spouse or children (Table 1).

DASS-21 scores

Evaluating the depression component from DASS 21, 27 (21.6%) had moderate levels of depression, 18 (14.4%) had severe levels of depression and 27 (21.6%) had extremely severe depression levels. In the Anxiety component, scores indicated that, 20 (16.0%) had moderate anxiety, 15 (12.0%) had severe anxiety and 43 (34.4%) had extremely severe anxiety. In the Stress component, 20 (16.0%) had moderate levels of stress, 16 (12.8%) had severe stress and 10 (8.0%) had extremely severe levels of stress (Table 2).

Association between depression, anxiety and stress and sociodemographic variables

A significant association was observed between age and depression (p=0.014), between gender and depression (p=0.012), between living children and depression (p<0.000) and between previous living arrangements and depression (p<0.000). A significant association was found between age and anxiety (p=0.012), gender and anxiety (p=0.002), living children and anxiety (p<0.000) and previous living arrangements and anxiety (p<0.000).

A significant association was observed between age and stress (p=0.003), between gender and stress (p=0.002), between living children and stress (p=0.000) and between previous living arrangements and stress (p=0.000) (Table 3).

Group differences in depression, anxiety and stress

Independent sample t-tests were conducted to investigate differences in depression, anxiety and stress scores based on gender, locality and the living status of the participants' children. Significant differences were found related to gender and the status of living children. Females had higher mean scores than males across all outcomes (p≤0.006, d=0.52-0.70). Similarly, participants with living children reported significantly greater psychological distress compared to those without (p<0.001, d=0.90-1.15). No significant differences were found based on previous locality (p>0.3) (Table 4).

A one-way ANOVA followed by post hoc results showed a significant effect of age on depression (F (2, 122) =8.15, p<0.001), anxiety, (F (2, 122) =8.34, p<0.001) and stress, (F (2, 122) =9.64, p<0.001). Post hoc tests revealed that participants aged 80 and above reported significantly higher depression (M=2.81, SD=1.33), anxiety (M=3.15, SD=1.35) and stress (M=2.08, SD=1.47) compared to those aged 60-69 and 70-79. Additionally, living arrangements also had a significant effect on outcomes, with depression (F (4, 120) =9.37, p<0.001), anxiety (F (4, 120) =7.14, p<0.001) and stress (F (4, 120) =8.78, p<0.001) Individuals living with children reported the highest scores across all outcomes, while those living with others had the lowest. No significant differences were found by education level or previously involved occupation (p>0.05) (Table 5).

Table 1: Sociodemographic characteristics of study participants (n=125).

Variables	Category	Frequency	%
Age (in years)	60-69	54	43.2
	70-79	45	36
	80 and above	26	20.8
Gender	Male	46	36.8
	Female	79	63.2
Type of locality	Rural	31	24.8
	Urban	94	75.2
Living children	Yes	63	50.4
	No	62	49.6
Educational level	Illiterate	45	36
	Primary	23	18.4
	Middle school	17	13.6
	Matriculate	21	16.8
	Secondary level	6	4.8
	Graduation and above	13	10.4
Previous occupation	Government job	1	0.8
	Private work	50	40
	Household work	74	59.2
	Farmer	0	0
	Farm labourer	0	0

Continued.

Variables	Category	Frequency	%
Previous living arrangements	Alone	19	15.2
	With spouse and children	19	15.2
	With spouse	16	12.8
	With children	22	17.6
	Others	47	39.2

Table 2: Levels of depression, anxiety and stress among study participants.

Component	Severity level	Frequency (N=125)	%
Depression	Normal	39	31.2
	Mild	14	11.2
	Moderate	27	21.6
	Severe	18	14.4
	Extremely severe	27	21.6
Anxiety	Normal	41	32.8
	Mild	6	4.8
	Moderate	20	16.0
	Severe	15	12.0
	Extremely severe	43	34.4
Stress	Normal	66	52.8
	Mild	13	10.4
	Moderate	20	16.0
	Severe	16	12.8
	Extremely severe	10	8.0

Table 3: Association between sociodemographic variables and depression, anxiety and stress (Chi-square test).

Variable	χ^2 (Depression)	P	χ^2 (Anxiety)	P	χ^2 (Stress)	P
Age	19.249	0.014*	19.672	0.012*	23.049	0.003*
Gender	12.848	0.012*	17.408	0.002*	16.992	0.002*
Type of locality	5.634	0.228	3.332	0.504	1.949	0.745
Living children	34.637	<0.001*	35.891	<0.001*	33.444	<0.001*
Education level	16.658	0.675	19.401	0.496	23.787	0.252
Previous occupation	7.546	0.479	11.234	0.189	6.350	0.608
Previous living arrangements	43.353	<0.001*	48.252	<0.001*	42.076	<0.001*

p values marked with * are statistically significant.

Table 4: Group differences in depression, anxiety and stress by sociodemographic factors (independent samples t-test).

Factor	Outcome	Group	N	Mean± SD	t(df)	P value	Mean Diff	95%	Cohen's d
Gender	Depression	Male	46	1.35±1.29	-2.81 (123)	0.006	-0.78	(-1.33, -0.23)	0.52
		Female	79	2.13±1.60					
	Anxiety	Male	46	1.43±1.53	-3.52 (123)	<0.001	-1.06	(-1.65, -0.46)	0.65
		Female	79	2.49±1.67					
	Stress	Male	46	0.54±0.91	-3.79 (123)	<0.001	-0.92	(-1.41, -0.44)	0.70
		Female	79	1.47±1.50					
Locality	Depression	Rural	31	1.61±1.48	-0.95 (123)	0.345	-0.30	(-0.93, 0.33)	0.20
		Urban	94	1.91±1.56					
	Anxiety	Rural	31	1.90±1.78	-0.76 (123)	0.449	-0.27	(-0.96, 0.43)	0.16
		Urban	94	2.17±1.67					
	Stress	Rural	31	0.94±1.29	-0.89 (123)	0.374	-0.26	(-0.82, 0.31)	0.18
		Urban	94	1.19±1.42					

Continued.

Factor	Outcome	Group	N	Mean± SD	t(df)	P value	Mean Diff	95%	Cohen's d
Living children	Depression anxiety stress	No	62	1.06±1.20	6.45 (119.4)	<0.001	1.54	(1.07, 2.01)	1.15
		Yes	63	2.60±1.45					
		No	62	1.40±1.50	5.02 (122.7)	<0.001	1.39	(0.84, 1.94)	0.90
		Yes	63	2.79±1.60					
		No	62	0.47±0.92	6.00 (104.5)	<0.001	1.31	(0.88, 1.74)	1.07
		Yes	63	1.78±1.46					

Note: Cohen's d values indicate effect size (0.2=small, 0.5=medium, 0.8=large).

Table 5: One-way ANOVA with Tukey post hoc comparisons of depression, anxiety and stress scores by sociodemographic factors.

Factor	DV	F(df)	P	Significant post Hoc comparisons (Tukey HSD)	Mean Diff (p)
Age	Depression	8.15 (2,122)	<0.001	60–69 vs 80 and above 70–79 vs 80 and above	-1.40 (p=0.000) -1.01 (p=0.016)
	Anxiety	8.34 (2,122)	<0.001	60–69 vs 80 and above 70–79 vs 80 and above	-1.56 (p=0.000) -1.04 (p=0.025)
	Stress	9.64 (2,122)	<0.001	60–69 vs 80 and above 70–79 vs 80 and above	-1.35 (p=0.000) -1.01 (p=0.006)
Education	All	Not significant	>0.05	–	–
Occupation	All	Not significant	>0.05	–	–
Living arrangement	Depression	9.37 (4,120)	<0.001	Alone vs children spouse and children vs children	-1.83 (p=0.000) -1.32 (p=0.004)
	Anxiety	7.14 (4,120)	<0.001	Alone vs children spouse and children vs children	-1.78 (p=0.003) -1.18 (p=0.043)
	Stress	8.78 (4,120)	<0.001	Alone vs children spouse and children vs children	-1.81 (p=0.000) -1.12 (p=0.010)

DISCUSSION

This study investigated the psychological distress faced by older adults residing in old-age homes in Bengaluru, Karnataka, revealing a notable occurrence of depression, anxiety and stress. More than half of the respondents reported experiencing depression (57.6%) and anxiety (62.4%) at levels ranging from moderate to extremely severe, while more than one-third indicated feelings of moderate to extremely severe stress (36.8%). These results emphasize the considerable impact of mental health issues among seniors in institutions and point to the critical need for targeted interventions in these care settings. The prevalence observed in this study is significantly greater than the estimates for older adults living in the community in India, where depression is typically reported to range from 13% to 25%.[13,14] In contrast, populations within institutions frequently indicate significantly elevated rates, with certain research in North India revealing that the prevalence of depression can reach as high as 70% among residents of old-age homes.[15] A similar comparative study conducted in Bhilai showed that elderly residents of old-age homes experienced considerably higher levels of depression, anxiety and stress compared to those living with their families.[16] These comparisons indicate that institutionalization and the resulting social isolation could heighten psychological susceptibility. The sociodemographic factors identified in this study provide further insights into patterns of risk. Female participants consistently reported higher levels of depression, anxiety and stress compared to their male counterparts. This observation is consistent with research indicating that older women are especially at risk due to factors such as widowhood, decreased financial stability and weaker social connections.[14,17] Age emerged as another significant factor, with individuals aged 80 and older showing notably higher levels of distress. This aligns with previous studies from Eastern India that associate advanced age with increased dependency, health issues and mobility limitations.[18]

Notably, having living children was linked to poorer psychological outcomes, potentially indicative of strained family relationships, feelings of neglect or a sense of abandonment, even in the presence of offspring. Earlier living situations significantly influenced psychological well-being. Participants who had resided with their children before moving to institutions reported noticeably higher levels of distress compared to those who lived with a spouse or other individuals. This aligns with findings from Punjab, where the loss of spousal companionship and the disruption of multigenerational family arrangements were associated with increased depression and anxiety in institutionalized elderly individuals.[19] Collectively, these findings suggest that transitioning into

an old-age home can be particularly challenging for those who were previously part of close-knit family structures.

Policy implications

The high rate of depression, anxiety and stress among old-age home residents highlights the need for targeted policy interventions to improve mental well-being. This includes implementing routine mental health screenings, providing access to counselling services, guided meditation sessions and integrating recreational and social engagement programs to enhance emotional support. To provide emotional support, training the caregivers with skills and competencies will help them identify the signs of depression, anxiety and stress.

Strengths

This study gave valuable insights into understanding the extent of depression, anxiety and stress among the residents of old-age homes in different demographic groups by measuring them with a standardized tool.

Limitations

This study provides structured insights using a standardized tool to assess depression, anxiety and stress. While qualitative studies can offer deeper contextual understanding, self-reporting may affect response accuracy. Further research is needed to explore how sociodemographic factors impact mental health over time. Addressing depression, anxiety and stress in the elderly requires coordinated efforts from policymakers, communities and healthcare providers to ensure accessible, culturally appropriate mental health support.

CONCLUSION

Socio-demographic variables such as age, gender, previous living arrangements and having children living showed significant associations with these mental health conditions. These findings highlight the need for targeted interventions like regular counselling, guided meditation sessions, recreational activities and support services tailored to different demographic groups in old-age homes. To effectively reduce psychological distress, holistic mental health care approaches that consider both contextual and individual factors must be implemented.

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