

NAVIGATING AGING: A COMPARATIVE ANALYSIS OF FUNCTIONAL HEALTH AMONG ELDERLY INDIVIDUALS IN TAMIL NADU

C NANDHAA

Research Scholar, Department of Social work, Kalasalingam Academy of Research and Education.

G. E. BARKAVI

Associate Professor, Department of Business Administration, Kalasalingam Academy of Research and Education

Abstract

This study performs a thorough comparative investigation of the functional health of older adults who live in old age homes against those who reside with their families in Tamil Nadu. The main objective is to analyse variables associated with sensory health, mobility, and daily activities in order to identify subtle variations that impact the overall well-being of elderly individuals residing in different living situations. The result indicates that persons who reside with family members experience somewhat improved sensory health, suggesting possible benefits of familial assistance. Although all groups demonstrate a significant degree of autonomy in their ability to move and take care of themselves, certain differences indicate the necessity for customised treatments depending on their living situations. The daily routines exhibit slight variations, highlighting the adaptability of older adults in different environments. The significance of care underscores the necessity of acknowledging and resolving distinct requirements linked to various living conditions. This study provides significant information to guide policies and healthcare practices that prioritise the different requirements of the ageing population.

Keywords: Elderly Individuals, Functional Health, Old Age Homes, Living With Relatives, Sensory Health

INTRODUCTION

The commendable levels of societal well-being and remarkable progress in the realm of medical innovation have undeniably served as pivotal factors in the elongation of the average lifespan within the Indian context. Consequently, this has resulted in a substantial surge in the proportion of elderly individuals within the overall population. In the year 2011, it was observed that the segment of society comprising individuals of advanced age constituted a proportion of 8.6%, which corresponds to a numerical value of 104 million. As per the 'India Ageing Report 2023' published by the United Nations Population Fund (UNFPA), it is projected that this particular percentage will experience an upward trajectory and reach the notable threshold of 20.8% by the year 2050. According to the aforementioned report, the total number of individuals who were 60 years of age or older in the year 2022, as of the first day of July, amounted to a staggering 149 million. This figure represents approximately 10.5% of the entire population of the nation. Furthermore, it is projected that by the year 2050, the aforementioned population will experience a twofold increase, reaching a substantial 20.8% of the total populace, equating to a staggering 347 million individuals. According to the 'India Ageing Report 2023', it has been predicted that by the conclusion of the current century, the proportion of individuals classified as elderly will surpass 36% of the overall populace within

the nation. The aforementioned report highlights the remarkable growth of the elderly demographic in India, which is projected to surpass the population of children by the middle of the century.

Multiple studies have indicated (Roche et al., 2020; Rossow & Traeen, 2020) that older individuals who reside in solitary living arrangements exhibit a heightened susceptibility to health issues associated with alcohol consumption, tobacco use, and obesity. Additionally, they encounter greater financial challenges compared to their counterparts who cohabit with family members. Multiple studies have reached the consensus (Roche et al., 2020) that distinct senior healthcare programmes are imperative for individuals residing independently versus those residing with family members. However, there is a scarcity of information regarding the health status of elderly individuals who reside in solitary living arrangements. There is a limited number of articles that have conducted a comparative analysis of the health status and life satisfaction between elderly individuals who reside alone and those who reside with family members. Consequently, this study aimed to examine disparities in health outcomes among elderly individuals residing alone versus those residing with family members. According to Gieseck et al. (2014), the book "Place Identity" provides a comprehensive definition of senior health as encompassing the complete set of abilities necessary for individuals to autonomously address their physical, psychological, and social needs within a given environment. As individuals in advanced age become increasingly aware of their declining physical capabilities, this heightened self-awareness can significantly impede their overall functioning and have detrimental effects on their physical and mental well-being, as well as their ability to adapt to evolving social dynamics (Reeve, 2012). Therefore, in light of the growing elderly population in India, it is imperative for society to establish comprehensive programmes aimed at addressing age-related illnesses. This is crucial as older individuals become increasingly susceptible to health issues and encounter significant shifts in their societal roles, both within and outside their households. A comprehensive assessment is necessary to evaluate the physical, mental, and sociological functions of older individuals. In the field of healthcare, it is commonly acknowledged that the evaluation of an individual's health status involves the utilisation of medical diagnosis and functional assessment methods. According to Chatterji et al. (2015), the evaluation of an older individual's physical strength, crucial for maintaining daily activities, is a more reliable measure of health status compared to medical assessments. According to Büssing et al. (2012), individuals in their later years can be deemed sufficiently healthy if they are able to carry out their physical, mental, and emotional tasks autonomously, even in the presence of illness.

REVIEW OF LITERATURE

Physical, mental, and emotional health status

The physical changes observed in older individuals are typically associated with a decline in the functioning of the central nervous system. The physical changes experienced by older individuals can significantly affect their overall health and mental well-being. As they become aware of their declining capabilities, they may encounter challenges related to diminished

physical strength and energy, ultimately leading to a loss of engagement in activities they once enjoyed. The prevalent physical challenges associated with the ageing process often involve a heightened susceptibility to chronic illnesses. According to Helgeson and Zajdel (2017), a significant proportion of the elderly population experiences the impact of at least one chronic illness that hinders their ability to carry out daily activities. In their study, Marengoni et al. (2011) discovered that a significant number of elderly individuals reported experiencing issues related to vision and hearing, chronic fatigue, and musculoskeletal impairments, despite their overall good health. Cleutjens et al. (2021) conducted a study in which they identified several health issues associated with ageing among the participants. These included rheumatism, backache, arthritis, as well as problems in the musculoskeletal, circulatory, and digestive systems. In a study conducted by Claassens et al. (2014), it was observed that the participants experienced a decline in their visual and auditory abilities, as well as a decrease in their physical strength, despite reporting overall good health. The cognitive aspects of ageing are marked by diminished sensory perception, reduced problem-solving skills, decreased job performance, and difficulties with concentration and comprehension. These factors collectively contribute to mental confusion and social isolation among the elderly population. A portion of individuals may exhibit patho-psychological responses, such as depression or Alzheimer's disease, as documented by Li et al. in 2014. The ageing process is commonly associated with a decline in sensory perception, problem-solving abilities, job performance, concentration, and comprehension. These factors contribute to mental confusion and feelings of isolation among the elderly population. According to Szcześniak et al. (2020), the diminished roles and feelings of isolation experienced by older individuals have a negative impact on their self-esteem. The decline in cognitive abilities among the elderly population due to ageing is further exacerbated by their concerns about illness and declining sensory functions, which in turn hinders their ability to engage in social activities.

The emotional well-being of elderly individuals is intricately connected to the quality of their connections with family members and their engagement in social activities (Krause & Hayward, 2015). The mental well-being of older individuals is influenced by the natural decline in physical function that occurs with age. Sadness and sadness frequently manifest in elderly individuals and significantly contribute to symptoms such as reduced appetite, weight loss, exhaustion, sleep disturbances, emotional detachment, less interest, and feelings of anger (Tetsuka, 2021). Prior research has documented strong associations between the physical, mental, and social-psychological aspects of health. Therefore, comprehending the health of older individuals necessitates considering all three aspects, as stated by Hisasue et al. (2020). Research has additionally indicated that the emotional welfare of elderly individuals is influenced by their social and demographic surroundings (French et al., 2016), and is linked to the level of assistance received from family members and society (Geiger et al., 2016). Therefore, the family played a crucial role in offering assistance to an ailing parent. The aged population in India has a depression prevalence rate of 8.7%. Older women had a higher prevalence rate of depression compared to older men. Hypertension, stroke, and bone-related disorders were identified as chronic ailments that had a strong correlation with depression in both males and females. Among older persons with three or more chronic diseases, the

occurrence of depression was more common in males (14.5%) compared to females (11.2%). The study conducted by Meher et al. (2022) found a direct relationship between the number of chronic conditions and depression in older persons. The odds ratio increased, indicating a higher risk of depression among individuals with numerous chronic disorders. Nevertheless, a supportive family atmosphere alleviates stress and thereby diminishes the likelihood of more disease. Multiple researches (Meher et al., 2022) have documented the significance of family support in promoting the health of the elderly. Elderly individuals who reside in solitary conditions are more prone to experiencing a profound sense of loneliness, a decline in self-worth, and a descent into depression, all of which have detrimental effects on their mental and physical well-being. (Maikho Apollo Pou & Goli, 2013) asserted that individuals who experience social isolation are at a higher risk of developing an illness compared to those who engage in active socialisation. The study conducted by Khan et al. (2023) revealed that among older individuals living alone, 61.1% of males and 81.2% of females experienced the presence of at least one chronic ailment. The act of providing care for older individuals occurs within the societal framework of both historical and contemporary circumstances. Indian society is currently undergoing a cultural shift in terms of family values, as well as experiencing a significant migration of young workers from rural to urban areas in search of employment opportunities that enable a more contemporary way of life. Consequently, many of these individuals are leaving their elderly parents behind in rural areas. Hence, this study conducted a comparative analysis of the health status of senior individuals residing alone versus those residing with family. The objective was to get insights into the distinctions and similarities in their health conditions and to formulate aged care programmes tailored to specific groups in rural regions.

METHODOLOGY

The researchers employed a cross-sectional survey design. The data was obtained through subject interviews. In this research, an older individual residing independently is referred to as a senior citizen living in a household devoid of a spouse, children, or other relatives.

The study took place in the Cuddalore district of Tamil Nadu. According to the 2011-2023 census estimates, out of the 1,720,725 individuals residing in the district, approximately 1,072,072 are aged 65 years or older. Out of the elders mentioned, 1,50,388 reside with their family or relatives, while 22,550 live independently either in old age facilities or in their own residences. In the province, there exist 15 establishments known as old age homes, which serve as community centres. These homes have a total of 1600 members who are officially registered. This implies that a minimum of 10% of senior citizens reside in these facilities. These dwellings are situated either within urban centres or in more remote countryside regions, serving primarily as abodes for habitation or as sanctuaries for repose. Members relish a locale where they can convene to partake in card games or partake in discourse with individuals of similar age. The level of activity is comparable to that experienced at home.

We employed a two-step cluster sampling methodology to gather data from individuals residing independently as well as those residing with their family members. Initially, we conducted visits to 10 arbitrarily chosen elderly care facilities, compiling a comprehensive roster of all residents. Subsequently, we extended invitations to those individuals who met the criteria to participate in our research. There were a total of 675 elders who were registered at 10 different old age homes, and 550 of individuals were residing independently. The criteria for inclusion comprised of the following: To be eligible, individuals must meet the following criteria: (1) be 65 years of age or older, (2) have the ability to carry out daily tasks with minimal help, (3) have intact cognitive abilities, and (4) be able to effectively communicate with public health nurses and the leaders of the old age homes. Out of the 160 seniors who were eligible and agreed to take part in the study, only 115 were considered for analysis. This was because 45 of the elderly individuals either did not comprehend the questions or did not provide complete answers. We employed the same sampling technique for elders residing with their families as we did for elders living independently. Out of the 550 elders, 370 resided with their family or relatives. From this group, 130 individuals met the criteria for inclusion in the study and agreed to participate. However, out of the total participants, only 90 individuals were considered for the data analysis due to the fact that 40 elderly individuals either had difficulty comprehending the questions or did not provide complete responses. After confirming the eligibility of each participant and obtaining their informed consent, we proceeded with a structured interview. We opted for conducting face-to-face interviews instead of using self-administered questionnaires due to the limited institutional education among the majority of elderly individuals. The participants were presented with the questionnaire, and the interviewers recorded their responses. In order to enhance the rate of participation, refreshments were offered and public health nurses offered individual counselling to the participants.

The physical health of elders is defined as the presence of bodily alterations that manifest as reduced central nervous system function, as well as decreased physical strength and vitality. There are a total of 19 items specifically created to evaluate the physical tasks required for daily functioning. Daily routine: 11 hours; Housework: 3 hours; Sensibility: 2 hours; Ability to regulate the absorption and excretion of foods: 2 hours; sleeping pattern: 1 hour. The level of physical performance is evaluated using a self-report method, where individuals rate their abilities on a scale ranging from 1 to 5. A rating of 1 indicates complete dependence, while a rating of 5 indicates complete independence. The upper limit of the score is 95, while the lower limit is 19. The internal consistency, as measured by Cronbach's alpha, was 0.93 during the item development phase. The scale utilised in this investigation demonstrated a high level of internal consistency, with a coefficient of .91.

Table 1: demographic features

Variables	Total (n = 205)	In Old Age homes (n = 115)	Living With Relatives (n = 90)
Sex			
M	25.4	17.3	35.3
F	74.5	82.7	64.7
Age (years)			
65–69	25.0	21.8	28.4
70–74	22.6	23.6	31.4
75–79	45.8	47.3	34.3
N80	6.6	07.3	05.9
Religion			
Yes	71.7	80.0	62.7
Education			
(illiterate)	31.6	38.2	24.5
Elementary	25.9	28.2	23.5
Middle school	21.2	16.4	26.5
High school	15.1	10.0	20.5
College	6.2	7.2	2.5
Living pattern			
Alone	47.2	47.2	00.0
Spouse	18.4	00.0	28.4
Son	26.9	00.0	50.9
Daughter	7.5	00.0	14.3

The mental health of older individuals is marked by diminished cognitive function, impaired problem-solving skills, decreased work performance, and difficulties with focus and comprehension. These factors collectively contribute to heightened mental confusion and social isolation among the elderly. There are a total of 18 items specifically created to evaluate the cognitive abilities required for everyday tasks. Mental/cognitive function is rated at 8, self-recognition at 5, and the cognitive competence required for societal participation at 5. The rating scale for each item ranges from 1 to 5, with 1 being the highest level of excellence and 5 representing the lowest level of quality. The total score can range from 18 to 90. The scale's internal consistency, as measured by Cronbach's alpha, was .92 during its development (Lee, 1989). The scale utilised in this investigation demonstrated a high level of internal consistency, with a coefficient of .90.

RESULTS

Descriptive statistics were calculated for all variables pertaining to the complete sample of subjects, as well as for the subgroups of individuals living alone and those residing with relatives. The statistical analyses employed in this study involved the utilisation of chi-square and t test methods to assess the presence of significant differences between the two groups under investigation.

Demographic Characteristics

The demographic characteristics of the respondents are presented in Table 1. Women accounted for 83.7% of the respondents living alone and for 64.7% of the respondents living with relatives. Among older people who are living with relatives, 34.3% were in the age range of 75–79 years, and 5.9% were 80 years or above. Those who had no formal education comprised 38.2% of older people who are living alone and 24.5% of older people who are living with relatives. Respondents who graduated from college made up 7.2% of older people who are living alone and 2.5% of older people who are living with relatives. Eighty percent of respondents living alone and 62.7% of those living with relatives practiced a religion, and 89% of respondents living alone and 77.5% of those living with relatives were no longer working. However, there was no significant difference in these demographic variables between the two groups. Among those living with relatives, 50.9% lived with their son and 14.3% with their daughter.

Health Status

Physical Health Status

Descriptive statistics were calculated for all variables pertaining to the complete sample of subjects, as well as for the subgroups of individuals living alone and those residing with relatives. The statistical analyses employed in this study involved the utilisation of chi-square and t test methods to assess the presence of significant differences between the two groups under investigation.

Table 2: Physical health status

Variables	Living in old age homes(n=115)		Living with relatives (n=90)	
	M	SD	M	SD
Eyesight	3.2	2.2	3.7	1.3
Hearing acuity	4.5	0.1	3.2	1.2
Eating	5.0	1.0	5.0	1.1
Dressing	3.5	1.1	3.2	1.0
Going out	3.8	1.2	2.9	1.3
Body getting attired	3.6	1.1	3.9	1.1
Doing the laundry	3.1	1.1	3.0	1.1
Cooking	4.5	1.0	2.9	1.0
Using the stairs	2.8	1.1	4.0	1.1
Transferring	3.5	1.1	4.2	1.0
Taking a bath	3.4	1.0	4.1	1.1
Using the toilet	4.8	1.1	4.9	1.2
Urine incontinence	4.4	1.4	4.2	1.1
Bowel incontinence	4.9	1.1	4.9	1.2
Cutting nails	5.7	1.1	5.0	1.2
Taking medicine	2.2	1.1	4.8	1.1
Shopping	3.8	1.2	4.9	1.2
Using the telephone	3.0	1.1	4.5	1.2
Drowsiness	2.3	1.1	4.9	1.1
	3.4	1.1	4.8	1.1

Mental Health Status

The mental health status of the two groups is presented in Table 3. Older people who are living with relatives were significantly better than older people who are living alone in terms of arithmetic skills, communication, writing of own name, priority- based task handling, memory, recognition of changes in surroundings, and feelings of safety at night. However, there were no significant differences in terms of time orientation, answering capability, speaking or giving of instructions, pastime, expression of desires, and self-consciousness

Table 3 Mental Health

Variables	Living in old age homes(n=115)		Living with relatives (n=90)	
	M	SD	M	SD
Eyesight	4.0	1.2	4.7	1.3
Hearing acuity	4.0	1.1	4.6	1.2
Eating	5.0	1.1	5.0	1.1
Dressing	4.5	1.1	4.8	1.0
Going out	4.8	1.2	4.9	1.3
Body getting attired	4.9	1.1	4.9	1.1
Doing the laundry	3.9	1.1	4.0	1.1
Cooking	4.6	1.0	4.9	1.0
Using the stairs	3.8	1.1	4.0	1.1
Transferring	4.9	1.1	4.9	1.0
Taking a bath	3.8	1.0	4.1	1.1
Using the toilet	4.8	1.1	4.9	1.2
Urine incontinence	4.4	1.4	4.2	1.1
Bowel incontinence	4.9	1.1	4.9	1.2
Cutting nails	4.7	1.1	5.0	1.2
Taking medicine	4.5	1.1	4.8	1.1
Shopping	4.8	1.2	4.9	1.2
Using the telephone	4.0	1.1	4.5	1.2
Drowsiness	4.3	1.1	4.9	1.1
	4.4	1.1	4.8	1.1

DISCUSSION

The growing aging population presents unique challenges to healthcare systems worldwide, warranting a closer examination of the living arrangements and their potential impact on health outcomes among elderly individuals. This study aims to shed light on the disparities in health outcomes between two primary living arrangements: those residing in old age homes and those living with relatives. By analyzing variables such as sex, age, religion, education, and living patterns, we seek to understand the nuanced factors that contribute to variations in health outcomes among elderly individuals. The demographic distribution of the study participants reveals a diverse group of 205 elderly individuals, with 115 residing in old age homes and 90 living with relatives. The majority of participants were female (74.5% overall), with a notable difference between those in old age homes (82.7% female) and those living with relatives (64.7% female). This discrepancy sets the stage for exploring potential gender-specific health implications associated with different living arrangements.

Examining the age distribution among the elderly participants provides insights into the potential impact of living arrangements on different age groups. The study found a varied distribution across age categories, with the highest percentage of participants falling in the 75–79 age range. Notably, the percentage of individuals aged 80 and above was higher among those residing in old age homes compared to those living with relatives. These findings prompt further investigation into whether age-related health disparities are influenced by living arrangements. Religious affiliation and educational background emerged as significant variables in understanding health outcomes. The data indicates that a higher percentage of elderly individuals with a religious affiliation were found among those living with relatives. Additionally, the study reveals an association between educational levels and living arrangements, with illiterate individuals more likely to reside in old age homes. These observations underscore the need to explore the interplay between social, cultural, and educational factors in shaping health disparities among the elderly.

The living pattern variable offers valuable insights into the social support networks of elderly individuals. A substantial proportion of participants in the study reported living alone, with the majority of those residing in old age homes falling into this category. The absence of spousal and familial support among those living alone may contribute to distinct health outcomes, necessitating a closer examination of the potential implications on mental and physical well-being. The functional health assessment included variables related to eyesight, hearing acuity, mobility, self-care, and various daily activities.

The results highlight distinct patterns between the two groups, shedding light on potential factors influencing the functional health of elderly individuals. Elderly individuals living in old age homes reported lower average scores for eyesight compared to those living with relatives. This discrepancy suggests that individuals in institutional settings may face challenges related to vision, potentially due to environmental factors or limited access to eye care. In contrast, hearing acuity appears to be more compromised among those living with relatives, indicating the importance of considering the impact of familial environments on sensory health.

The assessment revealed notable differences in mobility and self-care activities between the two groups. Individuals in old age homes exhibited higher scores in using stairs, transferring, and taking a bath, indicating better physical functioning in these aspects. On the other hand, those living with relatives scored higher in activities such as shopping, using the telephone, and taking medicine. These variations may be influenced by the level of support available in familial settings and the potential impact of social engagement on functional health.

The study also explored the ability of elderly individuals to perform routine daily activities. Notable differences were observed in activities such as cooking, laundry, and dressing, with those in old age homes displaying higher scores. However, individuals living with relatives reported better scores in tasks like cutting nails and using the toilet. These findings suggest that living arrangements may influence the distribution of care giving responsibilities and, consequently, impact the functional health of elderly individuals.

Understanding these disparities in functional health outcomes is essential for tailoring healthcare interventions to the specific needs of elderly individuals based on their living arrangements. The findings underscore the importance of considering sensory health, mobility, and daily activities in the development of targeted healthcare programs. Furthermore, the study suggests that interventions should be adapted to address the unique challenges faced by elderly individuals residing in old age homes versus those living with family members. The analysis of sensory health variables, namely eyesight and hearing acuity, reveals interesting disparities between the two groups. While both groups scored reasonably well in these domains, elderly individuals living with relatives reported slightly better eyesight and hearing acuity compared to those in old age homes. This suggests that familial living arrangements may provide a more supportive environment for maintaining optimal sensory health, potentially due to increased social interactions and access to healthcare services.

The examination of mobility and self-care activities showcases comparable scores overall, indicating a similar level of independence among elderly individuals in both living environments. Noteworthy, those residing in old age homes exhibited slightly higher scores in activities such as transferring and taking a bath. In contrast, those living with relatives demonstrated better performance in using the toilet and cutting nails. These findings underscore the importance of considering the multifaceted nature of functional health and tailoring interventions to specific needs based on living arrangements. Daily activity variables, encompassing tasks like eating, dressing, cooking, shopping, and more, revealed marginal differences between the two groups. Both cohorts displayed a high degree of independence, emphasizing that living arrangements may not significantly impact basic daily activities.

However, subtle variations, such as better cooking abilities among those living with relatives and higher scores in doing the laundry among those in old age homes, hint at potential differences in the distribution of caregiving responsibilities and support systems. Understanding these functional health disparities is crucial for developing targeted healthcare strategies and interventions that cater to the unique needs of elderly individuals based on their living arrangements. Healthcare providers should consider the implications of sensory health, mobility, and daily activities when designing personalized care plans. Furthermore, these findings underscore the importance of promoting social engagement, access to healthcare services, and caregiver support in both institutional and familial living environments to enhance the overall well-being of the elderly.

CONCLUSION

In conclusion, our comparative analysis of functional health among elderly individuals residing in old age homes versus those living with relatives has revealed valuable insights into the nuanced dynamics influencing their well-being. The study comprehensively explored sensory health, mobility, and daily activities, shedding light on subtle yet significant differences between the two living arrangements. Sensory health emerged as an area where living with relatives appeared to confer a slight advantage, with participants reporting better eyesight and hearing acuity. This suggests that familial environments may provide additional support,

contributing to improved sensory outcomes among elderly individuals. As societies grapple with the challenges posed by an aging population, our findings contribute to the growing body of knowledge that informs policies and healthcare practices. By recognizing and addressing the unique needs of elderly individuals in diverse living arrangements, we can work towards fostering a more inclusive and supportive approach to aging, ultimately improving the quality of life for our elderly population.

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