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Navigating Daily Life- Prevalence of Activities of Daily Living (ADL) among the Elderly in Urban Bengaluru - A Community-Based Cross-Sectional Study

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ABSTRACT

Background: The global elderly population is growing rapidly, and India is home to the world's second-largest elderly population. Understanding the activities of daily living (ADL) among the elderly is essential for providing effective healthcare and support. This study aimed to assess the prevalence of dependency with respect to ADL and its association with socio-demographic and comorbidities variables among elderly individuals residing in three wards of urban Bengaluru.

Methods: This community-based cross-sectional study was conducted between January and March 2023. A total of 132 elderly were selected using simple random sampling. Data were collected through semi-structured interviews. Data analysis was performed using EpiData 3.1 software, with the chi-square test and binary logistic regression used to study associations.

Results: The study found that 43% of the elderly population experienced activity limitations in ADL where 75 (57%) showed full function, 47 (36%) showed moderate impairment, and 10 (7%) showed severe functional impairment. Activity limitations were more prevalent among females, those over 80 years of age, illiterate individuals, homemakers, and those with hypertension and economic dependency. The adjusted odds ratio analysis showed a significant association between activity limitations and those aged above 80.

Conclusion: The study highlights the need for targeted healthcare interventions, regular health check-ups, and literacy programs for elderly population, particularly elderly feamles and those over 80 years of age. Policies should focus on addressing the determinants of activity limitations to improve the functional status and overall quality of life for the elderly.

Keywords: Activities of Daily Living (ADL), Elderly, Bengaluru, Community-Based, Independence, Proportion

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Introduction

Aging is a normal, natural, unavoidable, and widespread phenomenon (1). The global elderly population is growing rapidly. In 2019, there were 727 million people aged 65 or older worldwide, and this number is projected to reach 1.5 billion by 2050 (2). India is no exception to this trend, and the country is now home to the world's second-largest elderly population.

As of July 2022, there was an estimated 149 million people aged 60 and above in India, comprising around 10.5% of the country's total population (3). The increasing number of elderly people has a number of implications for societies around the world. One of the most important issues is the issue of dependency. The dependency rate is the proportion of the population that is elderly or disabled, and therefore, relies on others for economic support. In 2019, the global dependency rate for people aged 65 or above was 10.2% (2). In India, this rate for people aged 60 or above is 12.6% (4). As a result of this demographic transition, the current healthcare system is required to deal with the health challenges of the elderly who are more vulnerable to numerous comorbidity conditions (5, 6). As an outcome of aging, there is physical, functional, and structural changes taking place in various parts of the human body, so the elderly person is found to be more vulnerable (3, 7). The elderly population in India faces different types of challenges in their day-to-day life. The percentage of the elderly living in urban India was around 31.14%, and the old-age dependency ratio was 9.38% for the year 2018 (8).

Literature reveals that comorbidity conditions may lead to disabilities. Understanding the elderly person's functional status is an important aspect of health. Because of comorbidity conditions, studying the functional status information and activity limitations among the elderly is gaining major attention and has become the basic object of health system. By using the functional status details, healthcare providers can help the individual to maximize their abilities, thus providing the best health care to them (3).

Disability is a significant issue faced by older adults, leading to dependence on others for their daily activities. The ability to perform activities of daily living (ADLs) poses a significant challenge for elderly individuals living in communities, regardless of whether their needs are being met or not. In a study by Preeti Usha, more than ¼ of the elderly (28%) were dependent on others for their daily activities. Out of the dependent elderly, around 2/3rd had moderate to severe dependency, and 1/3rd were fully dependent on others for their daily activities (9). There are a number of factors that can impact the independence of elderly people. These include health status, socioeconomic status, social support networks, gender, and rural-urban residence. Studies have shown elderly people who are in good health, have a higher socioeconomic status, have strong social support networks, are of male gender, and live in urban areas are more likely to be independent (4). By understanding the factors that impact the independence of elderly people, policies and programs can be developed to promote independence and well-being in later life.

As the elderly population continues to grow, the challenges involved in addressing disability and unmet needs will also grow; all this together leads to poor quality of life among the elderly. Therefore, understanding the determinants that affect ADL is crucial in formulating the policy perspective. Hence, this study has been conducted on the elderly residing in three wards of urban Bengaluru to assess the prevalence of dependency with respect to their ADL and to determine the association of ADL with the socio-demographic factors and other co-morbidities.

Methods

Study design and setting

This community-based, cross-sectional study was conducted between January and March 2023. Ethical clearance was taken from the institutional ethics committee and carried out in the field practice area of Urban Health and Training Centre (UHTC), under the Department of Community Medicine of a Government medical college in Bengaluru, India which covers a population of around one lakh.

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Bengaluru district is in the southern Indian state of Karnataka. The UHTC provides preventive healthcare, health promotion, and curative services to the people.

Study population

The study was carried out among the elderly population (age ≥ 60 years) of both sexes residing in the 3 wards of Rajajinagar (ward no 99, 98, 100) area of the UHTC residing in that area for more than one year.

Sampling technique and sample size

The sample size for the present study is calculated using

$$n = \frac{\left(Z_{1-\alpha/2}\right)^2 * p * (1-p)}{d^2}$$

Where Z is the value of area under the two-tailed normal curve, and α, the level of significance, was taken as 0.05. The value of P, the estimated prevalence of dependency among the elderly, was taken as 4.1% as reported by Roshni Mary Peter et al. (10). The absolute precision (d) was set at 4%. Considering a non-response rate of 20%, the final calculated sample size was 118. A total of 132 elderly individuals were included in the study.

A house-wise list of elderly people in the study area was made, and participants were selected by simple random sampling from the registers and the records of the elderly maintained in the Anganwadi center list. The authors contacted the participants through house-to-house visits till the desired sample was reached. A total of 132 elderly from urban field practice areas participated in the study.

Inclusion and exclusion criteria

Geriatric people equal to or more than 60 years of age were recruited as study subjects. They consented to participate in the study. Those who are severely ill, bedridden, audio-visually impaired, elderly with intellectual, severe cognitive impairment, or individuals having gross communication difficulties such as speech problems, hearing abnormalities and those who could not be contacted even after 3 visits were excluded from the study.

Measurements Study Instruments

The following study tools were utilized for collecting data for screening depression and its associated sociodemographic parameters.

The study tool consists of a questionnaire.

a) Part I- Demographic details.

b) Part II - Reported comorbidities.

c)Part III - Katz index for measuring activities of daily living (ADL).

A Pilot Study was done on about twenty elderly individuals to determine the feasibility, identify potential problems, and rectify them. The entire questionnaire was converted to a local language and also was modified in order to meet the study objective.

Screening for morbidities and chronic diseases was conducted. It included questions on comorbidities to find if the participants were suffering from any chronic diseases or not. This was reported by participants during their interviews about their current health and drug histories. The comorbidities mostly included the presence of hypertension, diabetes, body aches, backaches, joint pain, respiratory distress, bladder, and bowel problems, eye and ear problems, cancer, etc. The questionnaire included other eye and ear problems other than visual and hearing impairment. Wherever medical records were available, the diagnosis was obtained from the written records. In the absence of records, history was taken, and a physical examination was performed to arrive at the diagnosis. The nutritional status was assessed from the body mass index (BMI) calculated from the weight of an individual measured in kilograms divided by the height vertex squared measured in meters. Height was measured using a measuring tape, and weight was recorded using a portable weighing machine. The weighing scale was regularly checked with known standard weights. The validated and calibrated height meters and weighing machines were used for this study.

Study tool: The material used was Katz dependency ADL index for the study after the pilot study had been done (11). Katz index of independence in Activities of Daily Living (ADL),

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commonly known as Katz ADL, helps to assess the level of ADL among the older population (12). Katz ADL has been validated in India (13).

A study of nursing home residents found that the sensitivity of the Katz ADL was 92%, meaning that 92% of the residents who were dependent on ADLs were correctly identified by the scale. The specificity of the Katz ADL was 67%, meaning that 67% of the residents who were independent in ADLs were correctly identified by the scale (14). The Katz ADL has six different variables which include toileting, bathing, continence, feeding, transferring, and dressing. It is a binary answer (Yes/No). If the elderly score 6, which shows full function, the score of 3-5 shows moderate impairment, and 2 or less than 2 shows severe functional impairment. In this study, the authors combined moderate impairment and severe functional impairment into one category to draw a meaningful conclusion and further inferential statistical analysis (15).

Data collection

The investigators contacted geriatric people via house-to-house visits. Conversation with the elderly was started with a general discussion to build rapport, after which informed written consent was obtained. Study subjects were interviewed and data was collected using a semi-structured questionnaire. Junior Residents conducted a physical examination. Questions were in the language that the study participants understood. The age of the study participants was verified via an Aadhaar card or any other government-issued identity card. Data collection was completed within 3 months. Approximately 3 to 4 interviews were conducted each day during the three-month data collection period.

The filled forms were checked for completeness and consistency. Later, they were coded. Data were entered using Microsoft Excel 2013 and analyzed using EpiData 3.1 Software. The magnitude was expressed in percentage along with its 95% confidence interval (CI). Normally distributed data were presented as means and standard deviations at a 95% confidence interval (CI). Categorical variables were presented as proportions (%), and variables with quantitative data were presented as mean and standard deviation (SD). The chi-square test was used to study the association of activity of daily living with various factors, and $P < 0.05$ was considered significant. Association and its strength with various socio-demographic determinants were studied using odds ratio with 95% CI derived. The adjusted odds ratio was calculated using binary logistic regression, adjusting with other confounding socio-demographic variables.

Results

The sociodemographic profiles of the participants are shown in Table 1.

The magnitude of activity limitations among the elderly population was found to be 57 (43%) in this study, where 75 (57%) showed full function, 47 (36%) showed moderate impairment, and 10 (7%) showed severe functional impairment (Figure The majority of the participants were females (69; 52.3%) and belonged to the 60–69 years age group (79; 59.8%). Most participants followed the Hindu religion (121; 91.7%) and a significant proportion lacked formal education, with 53 (40.2%) being illiterate. A large majority were married (121; 91.7%). About 61 participants (46.2%) belonged to the low-income group, as evidenced by possession of a Below Poverty Line (BPL) card. Additionally, 62 participants (47%) were fully economically dependent on others, and 68 (51.5%) were not engaged in any physical activity. Regarding their health conditions, 103 elderly participants (78%) reported having at least one chronic disease. Among them, 71 (53.8%) had diabetes and 68 (51.5%) had hypertension.

Coming to the elderly health condition, 103of them were suffering from chronic disease (78%), 71 (53.8%) from diabetes, and 68 (51.5%) from hypertension. Around 69.7% were found to be with normal BMI, and 51.5% were not engaged in physical activity (Table 2).

Among the elderly having activity limitations, 24.6% belong to the age group of > 80, and around 61.4% were found to be females, indicating that activity limitations were more common among

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them. As the age category went higher, a significant increase in the prevalence of activity limitations can be seen. Around 49.1% were illiterate and 40.4% were homemakers by occupation, and About 84% had BPL cards. Approximately 82.4% of the elderly with activity limitations were suffering from other chronic diseases, and about 56% were diabetic and 63% were hypertensive. 96% were economically dependent and 49% did not have any form of physical activity. These factors showed limitations in the activities of daily living among the elderly which could be due to a lack of physical activity, financial dependency on others, or suffering from chronic diseases like diabetes and hypertension. Moreover, it was found to be more among the below-poverty-line population.

Table 3 shows the results of both univariate and multivariate logistic regression between independence in activities of daily living and selected variables.

In univariate logistic regression analysis, several factors were significantly associated with dependency in ADL. Elderly individuals aged ≥ 80 years had significantly higher odds of ADL impairment compared to those aged 60–69 years (OR: 0.07, 95% CI: 0.02–0.26; $p < 0.001$). Female participants showed higher odds of dependency than males (OR: 0.52, 95% CI: 0.26–1.05; $p = 0.03$). Illiterate elderly had nearly twice the odds of dependency compared to literate individuals (OR: 1.93, 95% CI: 0.95–3.92; $p = 0.03$). Homemakers had lower odds of independence compared to those employed or not working (OR: 0.052, 95% CI: 0.01–0.43; $p = 0.00$). Similarly, hypertension was associated with increased odds of dependency (OR: 2.30, 95% CI: 1.14–4.67; $p = 0.009$), and those who were financially dependent had a significantly higher likelihood of ADL limitations compared to those who were financially independent (OR: 6.87, 95% CI: 1.50–31.43; $p < 0.001$).

After adjusting for potential confounders using multivariate logistic regression, only age ≥ 80 years remained significantly associated with ADL limitations (adjusted OR: 0.02, 95% CI: 0.002–0.16; $p < 0.001$). Associations with other variables did not remain statistically significant.

Discussion

The magnitude of activity limitations among the elderly population was found to be 43% in this study. In Shekhar Chauhan et al. a study noted that almost 22% of older adults were reported dependent for ADL. In a study by Patel et al. (2021), almost 8% of older adults were reported to be dependent on ADL. (16) In a study done by Gupta S et al. (17), of 265 participants, who assessed the ADL using the Barthel index among elderly of rural areas of district Jhansi, the overall prevalence of physical disability was 23.4%.

In another study by Abbasian M et al. (18), where 216 older people were evaluated for dependency by Katz index in Maku, 10.6% were dependent, 6% needed help or were partially dependent, and 82.9% were independent in their daily living activities.

In the study by Keshari P et al. (19), of 616 elderly subjects, 25.2% and 4.4% had moderate and severe dependency based on the Barthel Index score which was higher than the present study (36%) for moderate and almost same (7%) for severe dependency.

The variations may be due to the use of different index scores among the various studies and differences in socio-demographic characteristics.

In this study, a positive association was found between activity limitations and other factors like aging, being female, being literate, being homemaker, being single, belonging to BPL, being associated with hypertension, and being financially dependent compared to their counterparts.

In this study, activity limitations are seen among elderly females when compared to men. Similarly, in a study by Shekhar Chauhan et al., females were more likely to have the risk of ADL and IADL limitation than elderly males. Other studies were also in line with the findings of this study (20, 21, 22, 23). Studies worldwide have also shown that being female is one of the risk factors for disability in old age (24, 25). Elderly females are still neglected in terms of care with a minuscule focus on their health; it is due to gender-segregated behavioral activities in this society that females are more vulnerable than males (26). Gender discrimination in a male-dominated society like

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India makes females more vulnerable to the risk of disabilities (23). Furthermore, women in India are more likely to ignore their health and are less likely to seek appropriate healthcare (27), which may further aggravate their risk of ADL (27, 28). Also, gender inequalities in allocating resources like education, income, political voice, nutrition, and healthcare are strongly associated with poor health and reduced well-being (29, 30). The study found that the risk of severe ADL increases with age of the elderly. Almost all the literature review was in line with this finding (31, 32, 33).

The study noticed that the risk of disability was lower among the elderly with higher education than their uneducated counterparts. The association between functional disability and the education status of the elderly was also well established (34, 35). Hu et al. (2005) believe that increased resource availability linked to higher education may ameliorate self-perception and decrease limitations with various health conditions (34).

The elderly who did not have adequate physical activity had a higher risk of severe ADL disability compared with their counterparts. Studies have noted that physical activities improved ADL and IADL-related disabilities among the elderly (36). Physical activity is a preventive and therapeutic factor that reduces the risk of physical and mental disorders and affects the maintenance of independence in everyday life (37). The safeguarding effect of physical activity on ADL disability is an outcome of complex pathways and is likely to be multifactorial (38). It has been linked to reducing inflammation biomarkers which further averts chronic disease. Further physical activity may increase social interactions preventing depression; all these pathways combined may prevent disability among the elderly (38).

All these disparities might be due to the difference in cultural background, genetics, environmental factors or sampling methods, or the screening tools used. These variations in findings might be due to interaction with age, gender, or other lifestyle factors. Different study instruments among various studies could be one of the reasons for these variations.

Conclusion

The study found that 43% of the elderly population in urban Bengaluru experienced activity limitations, indicating a significant proportion of functional impairments in daily activities. The prevalence of activity limitations was higher among females, those over 80 years of age, illiterate individuals, homemakers, and those with hypertension and economic dependency. The study highlights the importance of addressing the determinants of activity limitations among the elderly population, such as age, gender, education, occupation, comorbidities, and economic dependency in order to formulate effective policies and interventions to improve their functional status and the overall quality of life.

Limitations

The findings of this study must be looked through two limitations. First, the small sample size affected the generalizability of the results. Second, the study's cross-sectional design prevented the inference of causal relationships and limited the generalizability of the findings. This study was limited by involving only homebound elderly people in the selected community areas, and excluding elders from institutions (hospitals) and those residing in old age homes.

Recommendations

Based on the study findings, the following recommendations can be made: We must develop and implement healthcare interventions targeted at the elderly population, especially among females and those over 80 years of age. These interventions should focus on improving their functional abilities and reducing activity limitations. Regular health check-ups, screenings, and early management of chronic diseases like hypertension should be emphasized. Also, we must implement literacy programs for the elderly to improve their education levels. Literacy has been found to be associated with lower activity limitations, so efforts should be made to enhance educational opportunities for older adults. We must establish support systems and social networks for the elderly population, especially for those who are economically

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dependent or living in poverty. These support systems can help address their physical, emotional, and financial needs and reduce the risk of activity limitations. We need to advocate for policy initiatives that prioritize the well-being and care of the elderly population. Policies should address the unique challenges faced by older adults, such as access to healthcare services, social protection, and financial support. Strengthening the healthcare system needs to be addressed regarding the elderly. National Program for Health Care for the Elderly was launched and the above-listed health issues can be solved by the program. If the program is properly implemented, this program can pave the way for the 'healthy aging' of our elderly population.

Figure 1 illustrates the extent of impairment in ADL among the study participants, indicating the prevalence and severity of limitations in various aspects of daily functioning.

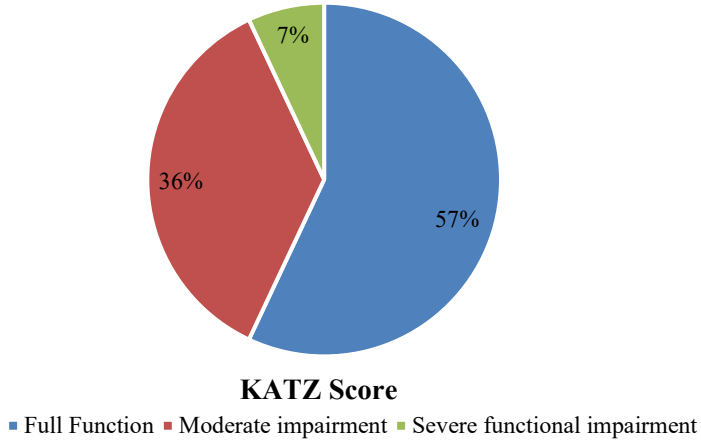

Figure 1. Magnitude of Impairment in Activities of Daily Living among study population (N = 132)

Table 1 displays the distribution of the elderly categorized as dependent (score 0) or independent (score 1) for different ADLs, such as bathing, toileting, feeding, dressing, continence, and transferring.

Table 2 outlines the demographic characteristics of the elderly participants, including age, gender, religion, educational status, occupation, marital status, family size, economic status (BPL/APL), income sources, and economic dependency.

Table 1. Proportion of elderly dependent and independent for their ADL

KATZ Score (N=132)	Dependent (Score 0)	Independent (Score 1)
Bathing	13(9.8)	119(90.2)
Toileting	23(17.4)	109(82.6)
Feeding	8(6)	124(94)
Dressing	9(6.8)	123(93.2)
Continence	41(31)	91(69)
Transferring	32(24.2)	100(75.8)

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Table 2. Distribution of sociodemographic variables among the elderly (N = 132)

Sociodemographic variables	Categories	N (%)
Age in years	60-69	79 (59.8)
	70-79	36 (27.3)
	≥ 80	17 (12.9)
Gender	Male	63 (27.7)
	female	69 (52.3)
Religion	Hindu	121 (91.7)
	Muslim	11 (8.3)
Educational status	Illiterate	53 (40.2)
	Primary	6 (4.5)
	Middle + High	59 (44.7)
	Secondary	7 (5.3)
	Undergraduate	7 (5.3)
Occupation	Working	16 (12.1)
	Not working	75 (56.8)
	Homemaker	41 (31.1)
Marital status	Married	121 (91.7)
	Single	11 (8.3)
Number of people in the family	1	6 (4.5)
	2	24 (18.2)
	3	25 (18.9)
	≥ 4	77 (58.4)
Below poverty line (BPL)/above poverty line (APL)	BPL	104 (78.8)
	APL	28 (21.2)
Income	Working	16 (12.1)
	Pension	54 (40.9)
	Property	1 (0.8)
	No income	61 (46.2)
Economic dependency	Independent	17 (12.8)
	Partially	53 (40.2)
	Fully	62 (47)

Table 3 outlines the prevalence of various health conditions among the elderly, such as DM, hypertension, other chronic diseases, BMI categories, and physical activity status.

Table 3. Distribution of health conditions among the elderly (N = 132)

Health conditions variables	Categories	N (%)
Diabetes mellitus (DM)	Yes	71 (53.8)
	No	61 (46.2)
Hypertension (HTN)	Yes	68 (51.5)
	No	64 (48.5)
Other chronic diseases	Yes	103 (78)
	No	29 (22)
Body Mass Index (BMI)	Underweight < 18.5	25 (18.9)
	Normal 18.5-24.9	92 (69.7)
	Overweight > 25	15 (11.3)
	Pre-obese 25-29.9	13 (9.8)
	Obese - 30-34.9	2 (1.6)
Physical activity	Yes	64 (48.5)
	No	68 (51.5)

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Table 4 elucidates the association between impairment in activities of daily living and sociodemographic variables such as age, gender, religion, education, occupation, marital status, economic status, chronic diseases, diabetes, hypertension, BMI, income, financial dependency, and physical activity. Odds ratios (OR) and adjusted odds ratios (adjusted OR) with their corresponding 95% (CI) are provided to demonstrate the strength and significance of these associations.

Economic Dependence/Independence: Elderly were considered 'economically independent' if their life is economically productive; 'Partially Dependent' means they had less income like old age pension or rent income; and 'Totally Dependent' means they were not having any income.

Table 4. Association of ADL among elderly with socio-demographic variables

Variables	Categories	Impairment in ADL (KATZ INDEX)		OR (95% CI)	Adjusted OR (95% CI)
		Dependent (Score 0-5)	Independent (Score 6)		
Age in years	60-69	19 (33.3)	60 (80)	Reference	Reference
	70-79	24 (42.1)	12 (16)	0.16 (0.06, 0.37)*	0.14 (0.04,0.45)*
	≥80	14 (24.6)	3 (4)	0.07 (0.02, 0.26)*	0.02 (0.002,0.16)*
Gender	Male	22 (38.6)	41 (54.7)	0.52 (0.26, 1.05)	0.70 (0.16,3.13)
	Female	35 (61.4)	34 (45.3)		
Religion	Hindu	55 (96.5)	66 (88)	3.75 (0.78,18.08)	12.5 (1.53,101.46)
	Muslim	2 (3.5)	9 (12)		
Education	Illiterate	28 (49.1)	25 (33.3)	1.93 (0.95, 3.92)	0.86 (0.27,2.72)
	Literate	29 (50.9)	50 (66.7)		
Occupation	Working	01 (1.7)	15 (20)	Reference	Reference
	Not working	33 (57.9)	42 (56)	0.08 (0.011,0.68)*	0.25 (0.02,3.06)
	Homemaker	23 (40.4)	18 (24)	0.052 (0.01,0.43)*	0.12 (0.01,1.95)
Marital status	Single	5 (8.7)	6 (8)	1.11(0.32, 3.82)	4.57 (0.68,30.45)
	Married	52 (91.3)	69 (92)		
	BPL	48 (84.2)	56 (74.7)	1.81 (0.75, 4.37)	1.79 (0.53,6.02)
	APL	9 (15.8)	19 ((25.3)		
Chronic diseases	Yes	47 (82.5)	56 (74.7)	1.59 (0.67, 3.76)	0.49 (0.06,3.93)
	No	10 (17.5)	19 (25.3)		
Diabetes	Yes	32 (56.1)	39 (52)	1.18 (0.59, 2.36)	1.25 (0.32,4.87)
	No	25 (43.9)	36 (48)		
Hypertension	Yes	36 (63.2)	32 (42.7)	2.30 (1.14, 4.67)*	3.63 (0.89,14.75)
	No	21 (36.8)	43 (57.3)		
Body Mass Index (BMI)	Underweight	13 (22.8)	13 (17.3)	Reference	Reference
	Normal	40 (70.2)	51 (68)	1.27 (0.53, 3.05)	0.76 (0.23,2.54)
	Overweight	4 (7)	11 (14.7)	2.75 (0.69, 10.91)	4.08 (0.59,28.09)
Income	Yes	29 (50.9)	42 (56)	0.81 (0.41, 1.62)	1.18 (0.40,3.49)
	No	28 (49.1)	33 (44)		
Financial dependency	Dependent	55 (96.5)	60 (80)	6.87 (1.50,31.43)*	0.19 (0.03,1.35)
	Independent	2 (3.5)	15 (20)		
Physical activity	Yes	29 (50.9)	39 (52)	0.95 (0.48, 1.90)	2.68 (0.96,7.50)
	No	28 (49.1)	36 (48)		

Significant ($p < 0.05$); OR: Odds ratio; CI: Confidence interval

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Conflicts of interest

None

Funding

None

Ethical considerations

All participants received written informed consent and verbally explained the details in their local language, with explicit assurance that their data would remain confidential and unaffected by their participation or the study protocols. Ethics approval is taken from the Institutional Ethical Committee (No.532/L/11/12) on 18/4/2023.

Code of ethics

No.532/L/11/12

Authors' contributions

Conceptualization was done by Dr. Sreenath Menon P.K. and Dr. Sangeetha M.D.

Methodology was conducted by Dr. Deepthi R. and Dr. Sreenath Menon P K. The initial draft of the manuscript was prepared by Dr. Sreenath Menon P K and Dr. Sangeetha M D, and Dr. Deepthi R provided critical review, editing, and supervision of the manuscript.

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References

1 World Health Organisation (WHO). Report of the World Health Organization. Active ageing: a policy framework. Aging Male. WHO: 2002; 5(1): 1–37. Available at: URL: https://apps.who.int/iris/handle/10665/67215.

2 United Nations Department of Economic and Social Affairs. World Population Ageing 2019: Highlights. New York: United Nations; 2019. Available at: URL: https://digitallibrary.un.org/record/3846855/files/ WorldPopulation Ageing2019-Highlights.pdf.

3 United Nations Fund for Population Activities (UNFPA). India Ageing Report 2023. Caring for Our Elders [Internet]. India: UNFPA; 2023. Available from: https://india.unfpa.org/sites/default/files/pub-pdf/20230926_india_ageing_report_2023_web_version_.pdf. Accessed January 08, 2024.

4 Pinquart M, Sörensen S. Influences of socioeconomic status, social support, and health on subjective well-being in later life: a meta-analysis. Psychol Aging. 2001; 16(2): 187-224. Available at: URL: https://pubmed.ncbi.nlm.nih.gov/10879576/.

5 Figueiredo Neto JA, Reis LM, Veras MR, et al. Impact of cardiovascular interventions on the quality of life in the elderly. Braz J Cardiovasc Surg. 2015; 30(6): 626–630. Available at: URL: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4762554/.

6 National Research Council. Preparing for an Aging World: The Case for Cross-National Research. National Academies Press (US); 2001.

7 Meunier D, Stamatakis EA, Tyler LK. Age-related functional reorganization, structural changes, and preserved cognition. Neurobiol Aging. 2014; 35(1): 42–54.

8 India demographic profile. Available at: URL: https://www.indexmundi.com/in dia/demographics_profile. Html; 2018. Accessed July 4, 2020.

9 Usha P, Kishore S, Singh M, et al. Assessment of Activities of Daily Living (ADL) in elderly population. Indian J Community Health (Internet). 2020; 32(2): 447–9. Available at: URL: http://dx.doi.org/10.47203/ijch.2020.v32i02.026.

10 Peter RM, Logaraj M, Ramraj B. Association of comorbidities with Activity of Daily Living (ADL) in a community-based sample of older adults in Tamil Nadu, India. Clin Epidemiol Glob Health (Internet). 2022; 15(101068): 101068. Available at: URL: http://dx.doi.org/10.1016/j.cegh.2022.101068.

[DOI: 10.18502/jchr.v14i20.19387]

11 Rnt KD, Md CG. Activities of daily living ratings of elderly people using Katz 'ADL index and the GBS-M scale. Scand J Caring Sci. 1995; 9(1): 35–40.
12 Shelkey M, Wallace M. Katz index of independence in activities of daily living (ADL). Int J Older People Nurs. 2012; 2(3): 204–212. Available at: URL: https://pubmed.ncbi.nlm.nih.gov/11081028/.
13 Arik G, Varan HD, Yavuz BB, et al. Validation of Katz index of independence in activities of daily living in Turkish older adults. Arch Gerontol Geriatr. 2015; 61(3): 344–350. Available at: URL: https://pubmed.ncbi.nlm.nih.gov/26328478/.
14 Katz index of independence in activities of daily living activities (Internet). Alz.org. Available at: URL: https://www.alz.org/careplanning/downloads/katz-adl.pdf. Accessed Aug 6, 2023.
15 Katz S, Downs TD, Cash HR, et al. Progress in development of the index of ADL. Gerontol. 1970; 10(1_Part_1): 20–30.
16 Chauhan S, Kumar S, Bharti R, et al. Prevalence and determinants of activity of daily living and instrumental activity of daily living among elderly in India. BMC Geriatr (Internet). 2022; 22(1): 64. Available at: URL: https://pubmed.ncbi.nlm.nih.gov/35045809/. Accessed Aug 6, 2023.
17 Gupta S, Yadav R, Malhotra AK. Assessment of physical disability using Barthel index among elderly of rural areas of district Jhansi (U.P), India. J Family Med Prim Care. 2016; 5(4): 853-857. doi: 10.4103/2249-4863.201178
18 Abbasian M, Ghalichi F, Ahmadi B, et al. Status of Daily Living Activities among Older People in Maku. Elderly Health Journal. 2016; 2(2): 73-7.
19 Keshari P, Shankar H. Prevalence and spectrum of functional disability of urban elderly subjects: A community-based study from Central India. J Family Community Med. 2017; 24(2): 86-90. doi: 10.4103/jfcm.JFCM_80_16.
20 Patel R, Chauhan S, Chaurasiya D, et al. Role and impact of social capital on health of older adult in India. Indian J Soc Res. 2019; 60(2): 279–305.
21 Gupta S, Yadav R, Malhotra AK. Assessment of physical disability using Barthel index among elderly of rural areas of district Jhansi (UP), India. J Fam Med Prim Care. 2016; 5(4): 853.
22 Veerapu N, Praveenkumar BA, Subramaniyan P, et al. Functional dependence among elderly people in a rural community of Andhra Pradesh, South India. Int J Community Med Public Health. 2016; 3(7): 1835–40.
23 Nagarkar A, Kashikar Y. Predictors of functional disability with focus on activities of daily living: a community based follow-up study in older adults in India. Arch Gerontol Geriatr. 2017; 69: 151–5.
24 Beydoun MA, Popkin BM. The impact of socio-economic factors on functional status decline among community-dwelling older adults in China. Soc Sci Med. 2005; 60(9): 2045-57.
25 Fuller-Thomson E, Yu B, Nuru-Jeter A, et al. Basic ADL disability and functional limitation rates among older Americans from 2000–2005: the end of the decline? J Gerontol Ser A Biomed Sci Med Sci. 2009; 64(12): 1333-6.
26 Burman J, Sembiah S, Dasgupta A, et al. Assessment of poor functional status and its predictors among the elderly in a rural area of West Bengal. J Mid Life Health. 2019; 10(3): 123.
27 Vlassoff C. Gender differences in determinants and consequences of health and illness. J Health Popul Nutr. 2007; 25(1): 47.
28 Patel R, Chauhan S. Gender differential in health care utilisation in India. Clin Epidemiol Glob Health. 2020; 8(2): 526-30.
29 Lawton MP, Brody EM. Instrumental activities of daily living scale (IADL). Gerontologist. 1969; 9: 179-86.
30 Srivastava S, Chauhan S, Patel R. Socio-economic inequalities in the prevalence of poor self-rated health among older adults in India from 2004 to 2014: a decomposition analysis. Ageing Int. 2020: 1-18.
31 Ran L, Jiang X, Li B, et al. Association among activities of daily living, instrumental activities of daily living and health-related quality of life in elderly Yi ethnic minority. BMC Geriatr. 2017; 17(1): 74.
32 Tomioka K, Kurumatani N, Hosoi H. Age and gender differences in the association between social participation and instrumental activities of daily living among community-dwelling elderly. BMC Geriatr. 2017; 17(1): 99.
33 Wisniowska-Szurlej A, Wilmowska-Pietruszynska A. An assessment of factors related to disability in ADL and IADL in elderly inhabitants of rural areas of South-Eastern Poland. Ann Agric Environ Med. 2018; 25(3): 504–11.
34 Hu P, Adler NE, Goldman N, et al. Relationship between subjective social status and measures of health in older Taiwanese persons. J Am Geriatr Soc. 2005; 53(3): 483-8.
35 Vaish K, Patra S, Chhabra P. Functional disability among elderly: a community-based cross-sectional study. J Fam

[DOI: 10.18502/jchr.v14i20.19387]

Med Prim Care. 2020; 9(1): 253.
36 Lestari SK, Ng N, Kowal P, et al. Diversity in the factors associated with ADL-related disability among older people in six middle-income countries: a cross-country comparison. Int J Environ Res Public Health. 2019; 16(8): 1341.
37 Molanorouzi K, Khoo S, Morris T. Validating the physical activity and leisure motivation scale (PALMS). BMC Public Health. 2014; 14(1): 1–12.
38 Balzi D, Lauretani F, Barchielli A, et al. Risk factors for disability in older persons over 3-year follow-up. Age Ageing. 2010; 39(1): 92–8.

[DOI: 10.18502/jchr.v14i20.19387]