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Research Article

Assessment of Level of Functional Independence among Elderly Population in an Urban Community

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Abstract

Introduction: Aging is the process of becoming older. Activities of daily living (ADLs) are basic tasks that must be accomplished every day for an individual to thrive. Independence in performing ADLs is a central aspect of functioning. Older adults with or without musculoskeletal complaints frequently experience impairments and limitations in functioning in various life areas. Objectives of the current study are to assess the functional independence among the elderly population and to identify the factors affecting the activity of daily living (ADL) of elderly population.

Methodology: The study was a community-based descriptive study. It was carried out to assess the functional independence and factors affecting on ADL among the elderly population of urban community. The sample size was estimated to be 60 and random sampling was used to choose the study subjects.

Result: The common finding of the study was 43.35%. Majority of elderly population were slightly dependent. 40% were moderately dependent. 16.66% were severely dependent. Moreover, the common factor affecting on the ADL was (13.91%) shivering of hands and (13.04%) general weakness.

Conclusion: From the study, researcher came to understand that after having adequate data on ADL, it is found that maximum elderly population is moderately dependent and the common factors affecting ADL were muscle weakness and shivering of hands.

Keywords: Elderly, functional Independence, activities of daily leaving

Introduction

The percentage of elderly individuals in India's population has been steadily rising, increasing from 5.6% in 1961 to 8.6% in 2011. Projections indicate a further rise to 12.5% in 2030 and an estimated 20% in 2050.[1] Independence for the elderly encompasses various aspects, such as accepting assistance, managing tasks independently, relying on family, friends, and financial resources, and preserving physical and mental well-being. In Australia, a significant majority of individuals aged 65–74 (99%) and those over 85 (75%) were residing in private homes in 2006.[2] Many older people express a preference for staying in their homes rather than moving to care facilities as they age.[3] Considering that older individuals spend a substantial portion of their time indoors (up to 72%), the decision on where to live becomes crucial. Remaining in one's home provides a familiar environment to navigate the challenges of aging, offering stability amidst life's changes. Living at home allows older individuals to maintain some control over their daily lives, promoting independence and autonomy.[4]

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The ability to perform activities of daily living (ADLs) relies on cognitive (e.g., reasoning, planning), motor (e.g., balance, dexterity), and perceptual (including sensory) capabilities.[5]

Research Methodology

Quantitative research approach was chosen, and the study was conducted in an urban community. Descriptive research design was selected for data collection and analysis. Target population was elderly people above 65 years and the accessible population was elderly people above 65 years residing in the urban community. 60 elderly individuals were selected for study, and handicapped, physically, and mentally challenged individuals were excluded from the study. Data were collected from the urban community in Panvel. Consent was obtained from willing male and female participants. Demographic data were collected to understand frequency percentage. Barthel Index was used to assess the level of independence. Questionnaire was designed by the researcher to analyze factors affecting daily living activities. Data were collected by following the approval of ethical committee included and well-informed written consent was taken from participants. Data were collected door-to-door approach in urban community under Panvel Municipal Corporation

Results

Section A: Demographic data

- SECTION A: Description of subject (elderly people) according to demographic characteristics by frequency and percentage.

Demographic variables

Table 1 shows that majority of elderly people 53.33% were suffering from hypertension. 46.66% of elderly people were suffering from diabetes mellitus. 25% of elderly people were suffering from arthritis. 5% of elderly people were suffering from cardiovascular. 30% of elderly people were suffering from cataracts. 10% of elderly people were suffering from respiratory disease. 5% of elderly people were suffering from chronic kidney disease. Not a single elderly people were not having any type of disease.

Section B: Barthel index

- Level of functional independence in elderly population

Table 2 shows the level of independence in performing activity of daily living (ADL) among elderly population (the Barthel scale). Majority of elderly population (43.35%) are slightly dependent. 40% of elderly population are moderately dependent. 16.66% of elderly population are severely dependent and 0% of elderly population are totally dependent.

Section C: Identify the factors affecting the activity of daily living of the elderly

Factors affecting on dependence level

Table 3 shows the factors affecting ADL among elderly population in an urban community; out of total population, 26.95% elderly population reported that the reason of functional independence is shivering of hands. 13.91% reported because of general weakness, 13.04% elderly

Table 1: Percentage of demographic characteristics

S. No.	Demographic variables	f	%
1	Age		
	65–70	30	50
	71–75	20	33.33
	76 above	10	16.67
2	Gender		
	Male	36	60
	Female	24	40
3	Education		
	Illiterate	20	33.33
	Primary education	20	33.33
	Secondary's education	6	10
	Higher education	6	10
	Graduate	6	10
	Professional education	2	2.34
4	Occupation		
	Unemployed	14	23.34
	Unskilled	12	20
	Semiskilled	9	15
	Clerical/farmer and shopkeeper	4	6.66
	Semi professional	4	6.66
	Professional	17	28.34
5	Health disorders		
	Diabetic mellitus	28	46.66
	Hypertension	33	53.33
	Arthritis	15	25
	Cardiovascular disease	11	18.33
	Respiratory disease	6	10
	Cataract	18	30
	Kidney disease	3	5

Table 2: Level of independence in performing ADL among elderly population

S. No.	Level of functional independence in elderly population	Score	Frequency	Percentage
a	Total dependent	0–20	0	0%
b	Severe dependent	21–60	10	16.66%
c	Moderate dependent	61–90	24	40%
d	Slight Dependent	91–100	26	43.35%

ADL: Activity of daily living

Table 3: Factors affecting activity of daily living among the elderly population

Factors affecting dependence level	Frequency	Percentage
Unable to hold the things	1	0.86
Shivering of hands	31	26.95
Finger cramp	1	0.86
Muscle weakness	15	13.04
Numbness of fingers	6	3.87
Tingling sensation of fingers	0	0
Body posture	10	8.89
General weakness	16	13.91
Body pain	8	6.95
Lack of coordination	7	6.08
Gait imbalance	2	1.29
Blurred vision	4	2.58
Unsteady gait	12	10.43
Back pain	5	4.34

population reported because of muscle weakness, 10.43% elderly population reported because of unsteady gait, 8.89% elderly population reported because of body posture, 6.95% elderly population reported because of body pain, 6.08% elderly population reported because of lack of coordination, 4.34% elderly population reported because of back pain, 3.87% elderly population reported because of numbness of fingers, 2.58% elderly population reported because of blurred vision, 1.29% elderly population reported because of gait imbalance, 0.86% elderly population reported because of unable to hold the things, and 0.86% elderly population reported because of finger cramps they are unable to perform ADLs.

Discussion

Mathieson *et al*. (2002) conducted a research study on the preservation of functional independence in elderly adults, focusing on the predictive roles of health status and financial resources in home modifications and the use of mobility equipment in the U.S. participants were identified from the national survey of self-care and aging (n = 3,485). The study revealed that while several health-status variables had significant direct effects on functional adaptations, the impact of ADLs limitations diminished at higher levels of impairment. Among the financial variables, subjective income measures and supplemental insurance showed significant direct effects on functional adaptations.[6]

In a study by Juan Manuel Cardona-Torres (2019) in Spain, which examined disability in basic and instrumental ADLs among older individuals, 25,465 non-institutionalized older people participated in cross-sectional surveys from 2009 to 2017. The prevalence rates of disability were assessed using the Katz scale and Lawton and Brody scale. Results indicated a higher prevalence of disability in instrumental ADLs (31.9%) compared to basic activities (11.1%). The most common disability in instrumental activities was severe housework (34%), and disability rates decreased from 2009 to 2017. Factors associated with disability included female gender, advanced age, lower education, restricted daily activity, being bedridden, and higher pain levels.[7]

Data collected through interviews highlighted the relationship between perceived health status and the elderly's dependency on others, ADL, and health-care emergencies. Challenges in accessing healthcare included distance, time required to reach a facility, and a lack of comprehensive health-care infrastructure. The study emphasized the importance of rapport with doctors in seeking medical advice and highlighted that families bear the entire cost of health care and caregiving for the elderly.[8]

Mudey *et al*. (2011) conducted a study on the quality of life (QOL) among rural and urban elderly populations in Wardha District, Maharashtra, India. The multidimensional nature of QOL was explored, with rural elderly reporting significantly lower QOL levels in the domains of social relations (55.9 ± 2.7) and environment (57.1 ± 3.2) compared to urban populations. Differences in socio-demographic factors, social resources, lifestyle behaviors, and income adequacy were identified as contributing factors.[9]

In a cross-sectional study by Medhi *et al*. (2019) in an urban setting of Assam, India, 300 elderly participants were examined for the association between health-related QOL (HRQOL) and ADLs. The findings indicated that a decline in ADL negatively impacted various dimensions of HRQOL among the elderly.[10]

This study emphasized the need for attention to restoring functional health in later life to improve the QOL among the elderly in India. A broader study examined the characteristics of elderly individuals, including age, gender, marital status, living arrangements, education, occupation, and prevalent diseases. The majority of participants were aged 65–70, male, married, residing in urban areas, and had various occupations. Commonly diagnosed diseases included hypertension, diabetes mellitus, and cataract. Dependency levels increased with age, lower education, and lower socio-economic status. Similar results were found in studies conducted in other areas.

Conclusion

This study aimed to evaluate the level of functional independence in an urban elderly community. The elderly population was selected for study and it was found that maximum elderly were slightly dependent, and few were moderately dependent, common factors impacting their ability to perform ADLs included shivering of the hands, general weakness, muscle weakness, unsteady gait, body posture body pain, lack of coordination, back pain, numbness of fingers, blurred vision, gait imbalance, and difficulty holding things.

Conflict of Interest and Funding

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