



Volume 2 Issue 1
2024

Submission:

28th September,
2024

Acceptance:

16th October, 2024

DOI: 10.5281/

zenodo.13943300

Corresponding Author

Dr Sampriti Samanta
Senior Resident, Department
of Community Medicine,
Tamralipto Govt. Medical
College & Hospital,
Tamluk-721636,
e-mail: saman-
ta.sampreeti55@gmail.com

Indexed in:

Google Scholar



Citation: Karmakar S, Das S,
Das S, Manna S, Samadder S,
Bag S, et al. Use and attitude
towards assistive device among
elderly population attending
Outpatient department of a
tertiary care hospital of Darjee-
ling, west Bengal. RJUMS; 2
(1):21-27.

Available from: [https://
esrfjums.co.in/index.php/main/
article/view/43](https://esrfjums.co.in/index.php/main/article/view/43)

Published by: Eureka Scientech Research
Foundation, Kolkata.

Online access: <https://esrfjums.co.in>

Use and attitude towards assistive device among elderly population attending Outpatient department of a tertiary care hospital of Darjeeling, West Bengal

Sreeja Karmakar,¹ Subhadip Das,¹ Subhanjan Das,¹ Subhankar Manna,¹ Subhro Samadder,¹ Sudipta Bag,¹ Swagato Bhattacharyya,¹ Sweety Agarwal,¹ Tabasmum Taniya,¹ Tanaya Ghosh,¹ Tuhina Dey,¹ Vivek Kumar Sah,¹ Yuvraj Pandey,¹ Rivam Sarkar,² Sampriti Samanta,³ Sharmistha Bhattacharjee⁴

¹MBBS Students (Session 2018- 23), North Bengal Medical college and Hospital, Darjeeling

²Post Graduate trainee, Department of Community Medicine, North Bengal Medical college and Hospital, Darjeeling

³Senior Resident, Department of Community Medicine, Tamralipto Govt. Medical College & Hospital, Tamluk

⁴Associate Professor, Department of Community Medicine, North Bengal Medical college and Hospital, Darjeeling

Abstract

Background: Elderly suffer from age-related limitations like mobility issues and sensory impairments, depend on others for daily activities. Assistive device will help them to perform daily tasks that might otherwise be difficult or impossible. The study aims to estimate the proportion of assistive device user among elderly patients and to find out attitude and barriers towards assistive device use.

Methodology: A cross-sectional descriptive study was carried out among 161 elderly attending the outdoor of a tertiary care hospital of Darjeeling, West-Bengal. A questionnaire-based study tool was used for data collection. The Socio-demographic characteristics, use of assistive devices and attitude and barriers of assistive device use were explored.

Results: The majority of the study participants belonged to 60-65 years of age (48.4%), were male (57%) and rural people (74%). 37.8% were partially dependent on others for their daily activities. 59% participants were using assistive devices. Among them 91.5% were using mobility devices and 8.5% were using hearing devices. 96.8% said they had improved quality of life after AD use. Majority agreed that using AD devices reduce stress on family care-givers (80%), enable to perform daily activities (75.2%), plays an important role in social life (72%), increases self-confidence (73.3%). Perceived barriers of AD use were regarding cost (74.5%), fear of dependency (57.7%), technical illiteracy (55.2%), embarrassment (54.6%) etc.

Conclusion: Elderly reported positive experiences with ADs, barriers such as cost and fear of dependency also expressed. By addressing these issues, healthcare providers and policymakers can

Keywords: assistive device, elderly, attitude

INTRODUCTION

The silver tsunami is an often-used metaphor used to describe the demographic shift caused due to an increasing ageing population. In India, the number is projected to increase from 103 million (2011) to 319 million (2050).¹ The older adults are more susceptible to chronic conditions, functional impairments, and disabilities that limit their mobility and independence. Thus, this demographic shift will impose many challenges to the healthcare systems.²

Older individuals are much more likely to suffer from age-related limitations like mobility issues and sensory impairments. It is sometimes cumbersome and tedious for family members or caregivers. Assistive device (AD) is a tool or technology designed to assist individuals with disabilities for daily tasks that might otherwise be difficult or impossible. Such technologies play a crucial role in improv-



-ing the quality of life with disabilities or functional limitations. Examples include Mobility aids- walker, crutches, wheelchair; hearing aids, fall prevention, medication management etc.³ ADs help the elderly to live active, safe, productive, independent and dignified lives reducing dependency on caregivers. Studies have shown that most of the elderly had poor knowledge and negative attitudes towards its use.⁴

However, the use of assistive devices in India, particularly in rural and semi-urban areas like West Bengal, remains under-explored. Despite the clear benefits, many elderly individuals do not utilize these devices, either due to a lack of awareness, cultural stigma, or economic barriers. This study aims to assess the use of assistive devices and explore the attitudes and perceptions of the elderly population towards these aids in West Bengal. By identifying the barriers and facilitators to assistive device utilization, the findings of this research will help inform healthcare policies and programs designed to support the aging population in India.

MATERIALS AND METHODS

Study Type & Design: Hospital-based Descriptive Study with Cross-Sectional Design

Study Setting: Out Patient Department of orthopaedics, surgery, PMR in North Bengal Medical College & Hospital which is a tertiary care hospital in Siliguri, West Bengal

Study Period: 24th April 2023 – 23rd May 2023

Study Participants: Patients ≥ 60 years of age attending the Out-Patient Department of orthopaedics, surgery, PMR in North Bengal Medical College & Hospital

Exclusion Criteria:

- People who do not consent
- Unable to communicate
- Gravely ill

Sample Size & Sampling technique: Convenient sampling was done. A total of 161 elderly patients were included in the present study.

Study tools: Pre-designed, pre-tested, semi structured schedule prepared in with 3 parts-

- Section I: Socio-demographic characteristics
- Section II: Use of assistive devices
- Section III: Attitude and barriers of assistive device use

Study variables:

1. *Section 1:* Socio-demographic characteristics

Age, Gender, Residence, Literacy Status, Occupation, SES, Marital Status, Level Of Dependency, Known Medical Condition, Medications History, Presence Of Care-giver and Accessibility To

Health Services

2. *Section 2:* Use of assistive devices

Use of assistive device, duration, type, H/o of previous use and reason for discontinuation, instruction before use, maintenance, improvement

3. *Section 3:* Attitude and barriers of assistive device use

Attitude among all participants, by 11 statements with Agree > Neutral > Disagree as possible answers, Barriers to the utilisation of assistive devices, difficulty in use.

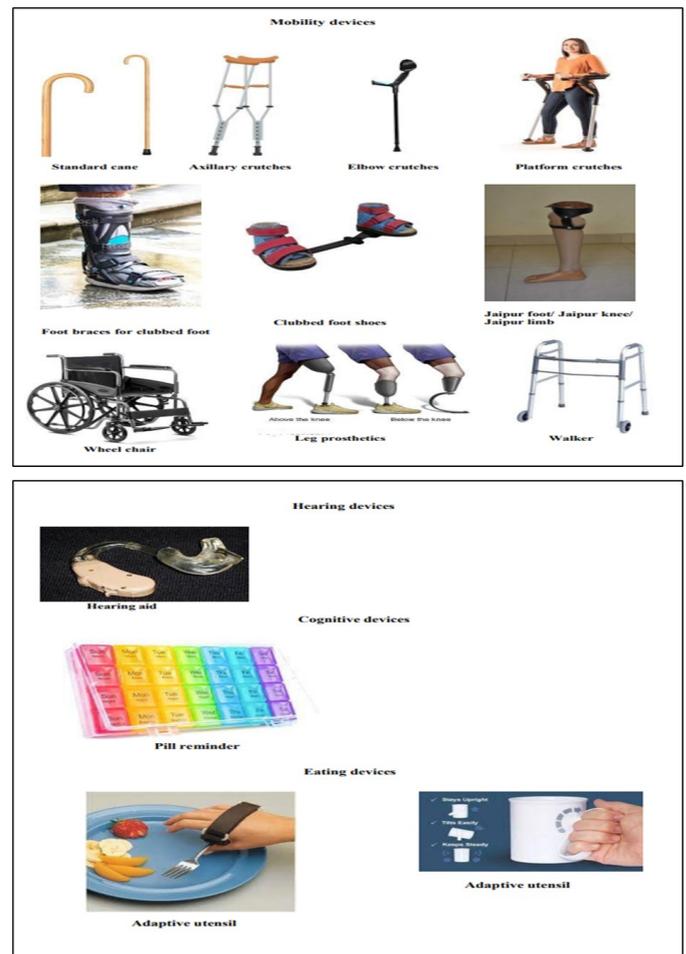


Figure 1: The list of assistive devices

Operational definitions:

- **Assistive device user:** If anyone ≥ 60 years old, using devices currently from the given list was considered as assistive device user

Study procedures: Research topic was firstly discussed among the team members and a questionnaire was prepared for the research. Then a pilot study was conducted and some modifications of the questionnaire have been made. Then the data collection was started



by the group members. After taking consent, each participant was interviewed with the questionnaire.

Data analysis: After collection of data, it was compiled and entered in Microsoft excel. Then it was checked for consistency and completeness. After that data cleaning was done and finally the data were analyzed using Microsoft excel. Then the data were presented using the principle of description statistics.

Ethical consideration: Ethical permission for the study was obtained from the Institutional Ethics Committee of the North Bengal medical college. The study participants were explained about the study and informed consent was taken. Anonymity and confidentiality were maintained.

RESULTS

The majority of the study participants belonged to 60-65 years of age (48.4%) followed by 66-70 years of age group (31.7%). Majority were male (57%) and rural people (74%) (table 1). Majority of the participants were had formal education, 23.6% completed secondary school followed by primary education (22.3%). 42% were still employed. Majority of the participants belonged to socio-economic class II (36.1%). 71.4% were still married, 24.2% were widowed and rest were unmarried or divorced.

Table 1 is showing that 91.9% were living with family whereas 3.9% were living by their own, .4% were living in old age home and 2.4% were living with care-giver. 37.8% were partially dependent on others for their daily activities while 9.9% were totally dependent on others. Figure 2 is showing only 45% had caregivers to help them and among them 90.2% participant had family members as their care-giver. 75.7% had existing conditions and 37% were taking 1 to 2 number of medications per day followed by 36.2% were taking 3 to 5 numbers of medications per day (table 1). 27.9% had difficulty to access health care services (table 1).

Table 2 is showing 59% participants were using assistive devices. Among them 91.5% were using mobility devices and 8.5% were using hearing devices. Majority were using the AD 1 to 5 years of duration (49.5%). 57.8% received previous training for AD use. Only 38.9% regularly check and maintain AD. 80.1% said AD was very useful to them. 92.6% have found it easy to use AD. 96.8% said they had improved quality of life after AD use.

Table 3 is showing attitude towards AD use by the participants. Majority agreed that using AD devices reduce stress on family caregivers (80%), enable to perform daily activities (75.2%), plays an important role in social life (72%), increases self-confidence (73.3%), improve quality of life (82%). AD use should be explained by doctors as majority perceived (65.2%), and the safety should be checked before using (68.3%). A major proportion thinks that it can reduce the incidence of fall (65.2%). Majority also thinks that AD will reduce the home-care cost for older adults (51.5%).

Figure 3 is showing barriers of AD use as perceived by the participants. The major concerns were regarding cost (74.5%), followed by fear of dependency (57.7%), technical illiteracy (55.2%), embarrass-

ment (54.6%) etc.

DISCUSSION

The present study aimed to investigate the use and attitude towards assistive devices (ADs) among the elderly population attending outpatient departments in a West Bengal hospital. The majority of participants were aged 60-65 years, predominantly male and residing in rural areas. These demographics align with broader trends observed in aging populations.¹ A study also showed the predominance of males in using walking stick/canes compared to female.⁵ In this study a higher proportion of individuals were married, suggests a potential support network. However, it was also seen that many were partially dependent on others for daily activities which indicates a significant portion of this population may require additional support.

The study found that 59% of participants were using assistive devices, primarily mobility aids (91.5%). The high percentage of users (80.1%) reporting the positive impact of these devices on their quality of life; findings from other studies also indicate assistive devices can significantly enhance functional independence and social participation among older adults. The fact that 57.8% received previous training indicates a proactive approach to AD use, yet there remains room for improvement in ensuring all users are adequately trained. A community-based population aged 70 and over (N = 170), showed that under 80 years of age, 24% were users of assistive devices; in the 80 years or above group, it was 57%. Hygiene and mobility devices were the most common. The reasons for discontinuation were an improved health status, or difficulties in using the device.⁶

Participants overwhelmingly reported positive experiences with ADs, citing improvements in quality of life, reduced stress on caregivers, enhanced social participation, and increased self-confidence. These findings underscore the crucial role of ADs in empowering older adults and enabling them to maintain active and fulfilling lives. Moreover, the perception that AD can reduce fall incidence is particularly relevant given the high risks associated with falls in older populations. Interestingly, a substantial proportion believed that healthcare providers should explain AD usage to patients, highlighting a gap in communication that could be addressed through improved patient education initiatives. A study (n=200) stated that 26.7% and 38.4% of the studied elderly people had inadequate knowledge and negative attitude respectively regarding assistive device.⁷ Another study reported that 77% of the study subjects were having good awareness regarding the use of assistive devices whereas 23% of the study subjects were having average awareness regarding the use of assistive devices, 42% subjects sometimes use assistive device, 32% subjects frequently use assistive devices whereas 26% of study subjects always use some assistive device while performing daily living activities. The majority of them were aware about the use of Assistive devices but minimal usage was reported among them.⁸

Despite the perceived benefits, several barriers to AD adoption were identified, with cost being the most significant concern. This is a common challenge in many countries, particularly in low- and middle-income settings where healthcare expenses can be burdensome. Other barriers included fear of dependency, technical illiteracy, and





embarrassment. Addressing these barriers requires a multi-faceted approach, including affordable pricing, accessible training, and social support programs.

LIMITATIONS

While this study has limitations. As it was a hospital-based study and the sample size and sampling technique did not portray generalizability to other regions.

CONCLUSION

In conclusion, this study provides valuable insights into the use and attitudes towards assistive devices among the elderly population in West Bengal. While many participants reported positive experiences with ADs, barriers such as cost and fear of dependency also expressed. By addressing these issues, healthcare providers and policymakers can contribute to the well-being and independence of the growing elderly population. Healthcare professionals should play a proactive role in assessing the needs of older adults and recommending appropriate ADs. They should also provide education and training on AD use to ensure optimal outcomes. Future research should explore longitudinal outcomes related to AD use to further understand its impact on quality of life.

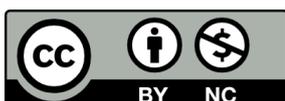
CONFLICT OF INTEREST

The authors declare no conflicts of interest.

FUNDING

None

Continued in next page.



Articles in The ESRF Research Journal for Undergraduate Medical Students are Open Access articles published under a Creative Commons Attribution-Non Commercial 4.0 International License (CC BY-NC). This license permits use, distribution, and reproduction in any medium, provided the original work is properly cited, but it cannot be used for commercial purposes and it cannot be changed in any way.

Table 1: Socio-demographic and dependency status of the participants

(n=161)

Study variables		Frequency	Percentage (%)
Age group (years)	60-65	78	48.4
	66-70	51	31.7
	71-75	26	16.1
	76-80	6	3.7
Sex	Female	69	43
	Male	92	57
Residence	Rural	119	74
	Urban	42	26
Literacy status	Illiterate & non-formal education	62	38.5
	Primary school	36	22.3
	Secondary school	38	23.6
	Higher-secondary	13	8.1
	Graduate and above	12	7.4
Occupation	Employed (Currently working)	67	42
	Employed (Retired)	40	25
	Unemployed	54	33
Socio Economic Status	I (\geq ₹8819)	16	9.9
	II (₹4410-₹8818)	58	36.1
	III (₹2646- ₹4409)	39	24.2
	IV (₹1323-₹2645)	39	24.2
	V (\leq ₹1322)	9	5.6
Marital Status	Married	115	71.4
	Unmarried	5	3.1
	Divorced	2	1.3
	Widowed	39	24.2
Currently living condition	With Family	148	91.9
	Independent	6	3.9
	Old age home	3	1.8
	With Caregiver	4	2.4
Level of dependency for daily activities	Independent	84	52.1
	Partially dependent	61	37.8
	Totally dependent	16	9.9
Existing medical condition	Yes*	122	75.7
	No	39	24.3
No of medication per day	Nil	32	20.2
	1-2	58	37
	3-5	57	36.2
	>5	10	6.6
Accessibility to health care services	Easy to reach	116	72.1
	Difficult to reach	45	27.9
Total		161	100

*Hypertension, diabetes, cardiac problems, fracture, arthritis etc



Articles in The ESRF Research Journal for Undergraduate Medical Students are Open Access articles published under a Creative Commons Attribution-Non Commercial 4.0 International License (CC BY-NC). This license permits use, distribution, and reproduction in any medium, provided the original work is properly cited, but it cannot be used for commercial purposes and it cannot be changed in any way.

Table 2: Details of Assistive Device (AD) use

(n=95)

Variables		Frequency	Percentage (%)
Use of assistive device	Yes	95	59
	No	0	0
Type of assistive devices used	Mobility device*	87	91.5
	Hearing device#	8	8.5
Duration of AD use	<1 year	32	33.7
	1-5 year	47	49.5
	6-10 year	9	9.5
	>10 year	7	7.3
Receiving Previous Instruction/training	Yes	55	57.8
	No	40	42.2
Regularly check and maintain the assistive device	Yes	37	38.9
	No	58	61.1
Usefulness of the device	Very useful	76	80.1
	Some useful	17	17.8
	Not useful	2	2.1
Ease of use	Easy	88	92.6
	Little bit difficult	3	3.2
	Difficult	4	4.2
Quality of life improvement	Yes	92	96.8
	No	3	3.2
Total		95	100

*Wheelchair, leg prosthetics, standard cane, walker etc.; # Hearing aids

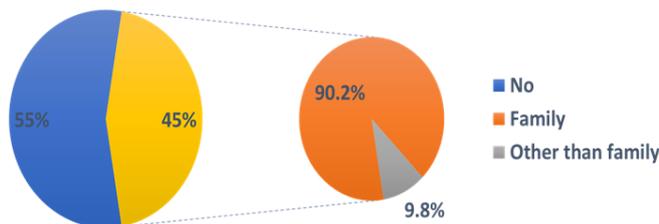


Figure 2: Distribution of study participants according to presence and type of caregiver (n=161)

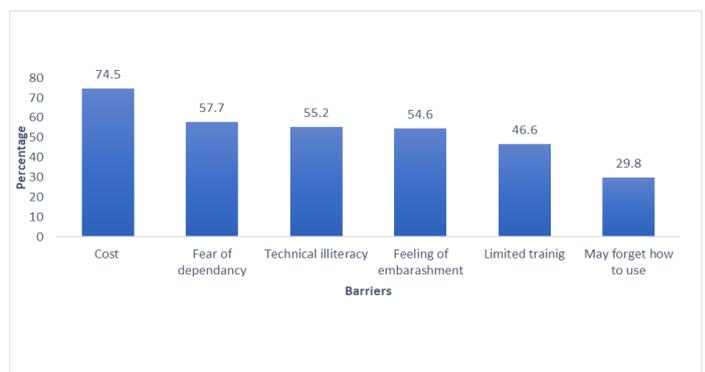
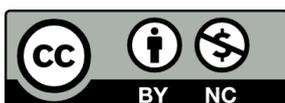


Figure 3: Perception regarding Barriers of AD use among the study participants (n=161)



Articles in The ESRF Research Journal for Undergraduate Medical Students are Open Access articles published under a Creative Commons Attribution-Non Commercial 4.0 International License (CC BY-NC). This license permits use, distribution, and reproduction in any medium, provided the original work is properly cited, but it cannot be used for commercial purposes and it cannot be changed in any way.



Table 3: Distribution of study participants according to response to the Statements regarding attitude towards AD use (n=161)

Statements	Agree (%)	Neutral (%)	Disagree (%)
1. Using assistive devices reduce stress on family care-givers	130 (80.7%)	29 (18%)	02 (1.3%)
2. Utilizing assistive device should be as explained by the doctor	105 (65.2%)	53 (32.9%)	03 (1.9%)
3. Safety of assistive device should be checked before initiation	110 (68.3%)	50 (31.1%)	01 (0.6%)
4. Assistive device enables to manage daily activities	121 (75.2%)	39 (24.2%)	01 (0.6%)
5. Assistive devices use play an important role in social life	116 (72%)	42 (26.1%)	03 (1.9%)
6. Using assistive device increases self confidence	118 (73.3%)	43 (26.7%)	0
7. Using assistive device properly prevent incidents of falls	105 (65.2%)	53 (32.9%)	03 (1.9%)
8. Assistive devices should be safe	130 (80.7%)	31 (19.3%)	0
9. Using assistive device can improve quality of life	132 (82%)	28 (17.4%)	01 (0.6%)
10. Using assistive devices promote self-care abilities	121 (75.2%)	39 (24.2%)	01 (0.6%)
11. Assistive devices can reduce home care costs for older adults	83 (51.5%)	61 (37.9%)	17 (10.6%)

REFERENCES

- Sharmila K. Role of happiness in health of elderly. Indian Journal of Gerontology. 2020;34(4):544-52.
- Skalska A, Wizner B, Piotrowicz K, Klich-Rączka A, Klimek E, Mossakowska M, et. al. The prevalence of falls and their relation to visual and hearing impairments among a nation-wide cohort of older Poles. Experimental gerontology. 2013 Feb 1;48(2):140-6.
- Carmeli E, Imam B, Merrick J. Assistive technology and older adults. Health care for people with intellectual and developmental disabilities across the lifespan. 2016:1465-71.
- Yu S, Luo D, Zhu Y, Yang L, Li H, Luo J, et. al. Factors influencing utilisation of assistive devices by the elderly in China: a community-based cross-sectional study. Public Health. 2022 Dec 1;213:12-8.
- Prajapati G, Sharmila K. A Pilot Study on Assistive Device usage and Mental Wellbeing of Elderly. Annals of the Romanian Society for Cell Biology. 2021 Jul 16;25(6):17962-72.
- Sonn U, Davegårdh H, Lindskog AC, Steen B. The use and effectiveness of assistive devices in an elderly urban population. Aging Clinical and Experimental Research. 1996 Jun;8:176-83.
- Mohamed AM, Hassanen ST, Elsheriny AE, El-sherbieny EM. Knowledge and Attitude of Elderly regarding Assistive Devices; Explore Barriers. NILES journal for Geriatric and Gerontology. 2022 Jan 1;5(1):206-33.
- Thakur M, Kalia R, Kaur M, Sharma S. A Descriptive Study to Assess the Awareness and Usage of Assistive Devices for Mobility and Self Care among Elderly Residing in Selected community area of Kurali (Punjab). Asian Journal of Nursing Education and Research. 2018;8(3):357-61.



Articles in The ESRF Research Journal for Undergraduate Medical Students are Open Access articles published under a Creative Commons Attribution-Non Commercial 4.0 International License (CC BY-NC). This license permits use, distribution, and reproduction in any medium, provided the original work is properly cited, but it cannot be used for commercial purposes and it cannot be changed in any way.