Knowledge and Attitude of Elderly regarding Assistive Devices; Explore Barriers

Ahmed Mohamed Younis Mohamed[1], Sharbat Thabiet Hassanen [2] , Abd el hamied Ibrahim Elsaid Mohamed elsheriny[3], Eman Mohamed Elsherbeny[4]

[1]. Bachelor of science in Nursing (BSN), faculty of Nursing Cairo university, Diploma in geriatric from National Institute of Longevity Elderly Schience, Beni suef –Egypt.
2. assistant Professor of community health Nursing, Faculty of Nursing, Fayoum University –Egypt
3. Assistant Professor of Physical Therapy for neuromuscular disorder and its surgery Department of Occupational therapy NILES, Beni-suef, Egypt, ORCID iD 0000-0001-7117-6976.
4. Lecturer of community health Nursing, Faculty of Nursing, Beni-suef University –Egypt.

E-mail address: Ahmed.younis3443@gmail.com Telephone: 0097474036379

Abstract

Background: Assistive Device plays a significant role for improving elderly people independence and improve their quality of life. the current study **Aimed** to assess knowledge and attitude of elderly regarding assistive devices and explore barriers that affecting utilization of assistive devices among studied elderly people. **Design**: A descriptive research design was used in this study. **Setting**: The study was conducted was conducted at outpatient clinics in Beni-Suef university hospital. **Sample**: A convenient sample of (86) elderly people was recruited at the current study. **Tools**: Two tools were used I): A structured interviewing questionnaire which consisted of four parts to assess personal characteristics, medical history, effect of assistive devices on elderly quality of life, and knowledge of elderly people regarding assistive devices II): Scale to measure attitude of the elderly people regarding assistive devices. **Results**: the present study reveals that 50% of elderly people had ages ranged from 75≥85 yrs., 65.1% of them were male, 26.7% and 38.4% of the studied elderly people had inadequate knowledge and negative attitude respectively regarding assistive device. **Conclusion**: This study concluded that the majority of elderly people had inadequate knowledge and negative attitude toward the assistive device and a statistically significant relation between elderly people total attitude scores and their age, gender, marital status, and educational level, in addition a highly positive association between elderly people knowledge and attitude regrading assistive device. The study **recommended** that: Continuing educational programs regarding assistive devices should be provided for the elderly people to improve their knowledge and attitude.

Key words: Knowledge, Attitude, Elderly people, assistive devices, Barriers.

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INTRODUCTION:

Older age is characterized by the emergence of several complex health states that tend to occur only later in life which called geriatric syndrome (World health organization 2018). In these syndromes include like dementia, depression, delirium, incontinence, vertigo, falls, spontaneous bone fractures, failure to thrive, and neglect and abuse (1**).** During this stage health problem among them are common. There are various kinds of health problems experienced by the aged people. These include, visual impairments, hearing impairments, speech impairments, Physical disability, decline in word usage and vocabulary, pain in the joints, high or low blood pressure, falls and other illnesses (2**).** After they are not ambulatory and are dependent upon others so as to require care of their activities of daily living, such as eating, bathing, dressing, toileting and then they may get subjected to criminal and violent acts. Providing help and assistance to the individuals in meeting the daily requirements is typically cumbersome and tedious for members of the family and caregivers (3**).** although older individuals may live longer if they use assistive devices to improve their lives, many older adults use assistive devices (e.g., cane, walker, grab bar, or shower seat) or personal help to overcome limitations **(**4**).**

The term assistive devices ‘‘refers to equipment and services that support and maintain the declined physical and cognitive functions due to age and disability **(**3**).** Assistive Devices (AD) means ―any item, piece of equipment or product system, whether acquired commercially, modified or customized, that is used to increase, maintain, or improve functional capabilities of individuals with disabilities and elderly Such as; cane, wheelchairs, eyeglasses, hearing aids, communication devices etc. (5). In many low-income and middle-income countries, only 5-15% of individual who require assistive devices and technologies have access to them(WHO).Mobility Assistive Equipment may be commonly used type of Assistive Technology Devices (ATD) to facilitate transfers, walking and wheeled mobility, and also the performance of mobility-related ADLs(6).Assistive technology plays significant role for increasing independence and facilitating physical restoration. Thus, improves quality of life for elderly people. A study by (Agree & Freedman,2011) and (Molin et al. 2007) showed that the potential of assistive devices to support people with cognitive impairment to

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continue living at home and recommended that it is advantageous to develop and implement assistive devices for care of elderly people living at home (7).

Assistive technologies (ATs) can enable people with disabilities to live active, safe, productive, independent and dignified lives. There is a persistent demand, worldwide, for increased implementation of AT in community health services to meet the challenges posed by an ageing population and to facilitate active ageing and independent living. The enabling aspects of ATs and viewing them as tools for overcoming barriers to full participation, is a common understanding (8).

ISO 9999 defines assistive products as "any product (including devices, equipment, instruments, technology and software) especially produced or generally available". These assistive products refer to products that have been specifically designed for people with disabilities (e.g., wheelchairs, computer access technologies and environmental control systems) and or mainstream technology (e.g., simple devices such as nonslip mats and more complex devices such as smart home technologies) (9).

Assistive devices can play an important role to maintain or improve an individual's functioning and health to enable people to live at home independently and to improve participation in society,Assistive devices ranges from low-tech products, such as glasses or pill organizers to high-tech products, such as motorized wheelchairs or communication software. Assistive devices can benefit a wide range of people, including people with disabilities, the ageing population and people with non-communicable diseases **(**10**)**.

According to Orem, naturally all humans can care for themselves and the focus of nursing should be identifying factors that hinders people from that and support in overcoming the limitations and enable people to attain self-care. when individuals need care that is greater than their current ability, self-care disability occurs **(**11**).**

Health care professionals, informal caregivers, family, and friends play vital role in supporting self-care of older individuals. Care givers needs to provide psychological and physical support to motivate older people to have initiation for self-care and be able to actualize self-care activity. Older people with illnesses and diseases may easily lose their motivation to provide self-care. They need support from care givers to identify and prevent self-deception **(**12**).**

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Nurses have a pivotal role and responsibilities in supporting self-care includes assessing abilities of people to provide caring for own selves and identifying limitations that affects self-care abilities. Nurses also involve in selecting assistive devices services and devices that supports individuals in their disabilities and help them to attain self-care **(**13**).**

Significance of the study

Globally, the population aged 65 and over is growing faster than all other age groups. (United nation 2020). By 2050, the world 's population aged 60 years and older is predicted to succeed in a complete of 2 billion, up from 900 million in 2015. Today, 125 million people are aged 80 years or older (World health organization, 2018). In keeping with data from World Population Prospects: the 2019 Revision, by 2050, one in six people within the world are going to be over age 65 (16%), up from one in 11 in 2019 (9%) (United Nations Population Fund 2017) By 2050, 80% of all older people will live in low-and middle-income countries **(**14**).**

The growing numbers of elderly people are expected to lead to an increasing demand for assistive devices. The purpose of this study was to examine changes in the use of assistive devices over time and their relation to dependence in daily activities among old persons living at home, having difficulty performing basic self-care, mobility activities and activities of daily living is common in late life. In 2011, more than one quarter of community-dwelling older adults reported limitation in performing one or more self-care or mobility activities. The most prevalent limitation is walking, followed by getting out of bed or a chair, bathing or showering, dressing, using the toilet, and eating **(**15**).**

Well-being is a multidimensional concept Prior studies have shown that self-care and mobility limitations are related to several dimensions of well-being. Specifically, such limitations often decrease older adults' positive affect and self-realization by restricting their social participation. Limitations in self-care and mobility activities also prevent older adults from performing everyday routines on their own and subsequently decrease their sense of self-efficacy **(**16).

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Subjects and Methods:

Aims of this study: -

The aims of this study to assess knowledge and attitude of elderly regarding assistive devices and explore barriers that affecting utilization of assistive devices among studied elderly people.

Research questions

In order to address the purpose of the study, the following study question was formulated:

1. What is the level of elderly people's knowledge regarding assistive devices?
2. What is the level of elderly people's attitudes regarding assistive devices?
3. What are the barriers affecting utilization of assistive devices among elderly people studied?

The following four designs were used to discuss the current study's subject and methods:

- Technical Design
- Operational Design
- Administrative Design

1. Statistical Design

2. **Technical Design:**

The study's technical design includes research design, a study environment, study participants, and data collection instruments.

Research design:

To fulfill the present study's goals, a descriptive research approach was used.

Settings:

The current study was conducted at outpatient clinics at Beni-Suef university hospital. These clinics provide multispecialty health services and cover all Beni-Suef citizens.

Subjects:

A convenience sample of all elderly people (86) who attended the outpatient clinics at Beni-Suef university hospital and agreed to participate in the study.

Tools of data collection:

Two tools were designed to collect data:

Tool (I): Interviewing questionnaire sheet

This tool was created by a researcher after analyzing relevant national and international literature. It is divided into four sections:

Part I: Socio-demographic features

This part aimed to collect data about elderly people's socio-demographic characteristics, including age, gender, educational level, marital status, monthly income, etc.

Part II: Medical history for elderly people:

This part aimed to collect medical data about elderly people, including current home treatment, number of currently used medications, level of dependency in performing activities of daily living, etc.

Part III: Effect of assistive devices on elderly people's quality of life:

This part aimed to evaluate the effect of assistive devices on elderly people's quality of life through providing a main four questions regarding the different quality of life

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domains (physical, social, emotional, and daily activities), and each elderly person was asked to give the effect of the device on quality of life a score from (0–10). The total score was calculated as: (0. No effect, 1-3 slightly affected, 4-7 moderately affected, 8-10 highly affected).

Part IV: elderly people's knowledge questionnaire sheet

This part aimed to collect data about elderly people's knowledge of assistive devices. The study consists of five main assistive device-related questions (e.g., definition and purpose of assistive devices), each of which has a number of correct answers. The elderly people who were studied were asked to choose the correct answer, and they were informed that they could choose more than one answer.

Scoring system:

Elderly people's knowledge was tested by being asked to choose if the given answers were correct or incorrect, and elderly responses were scored as 1 and 0 respectively. The scores of the items were summed up and the total was divided by the number of items. These scores were converted into percent scores.

Total scores of elderly people's knowledge were considered.

Satisfactory---------total percent score is 60% of total knowledge score.
Unsatisfactory---------total percent score is 60% of total knowledge score.

Tool (2): : Elderly people's attitudes toward assistive devices

A three-point Likert scale was used to evaluate the elderly people's attitude toward assistive devices; it consists of 15 items.

I'm reviewing with physiotherapy/OT to ensure the safety of using assistive devices," I believe I'm using assistive devices as the therapist explains," I believe I should check for safety before using an assistive device," and so on.

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Scoring system:

The elderly patients' responses were in the form of a three-point Likert scale, which ranged from "agree," "uncertain, and "disagree," and the elderly people's scores were scored as 2, 1, and 0 respectively. The scores of the items were summed up and the total divided by the number of items. These scores were converted into percent scores. Total scores of elderly people's attitudes were calculated as:

positive attitude------ The total percent score is 60% of the total attitude score.
Negative attitude------total percent score is 60% of total knowledge score.

Tools Validity:

The validity of the research instruments was evaluated A panel of five Faculty members of community health nursing and medical surgical nursing department reviewed the previous tools. Members of the jury group evaluated the study aids based on their comprehensiveness, correctness, and linguistic clarity. Some elements were corrected, added, and/or omitted based on their recommendations.

Dependability:
Cronbach's alpha was used to assess the research tool's internal consistency. It was 0.762 for the research tool.

II: Operational Design:

This research's operational design consisted of three phases: preparation, pilot study, and field work.

Preparatory phase

This phase began with a survey of current and previous national and worldwide relevant literature on the themes of study, including textbooks, papers, journals, and websites. This evaluation was useful in assessing and constructing data collection tools, and the investigator then verified the tool's validity using a jury of experts to examine the substance, knowledge, accuracy, and relevance of questions for tools.

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Pilot study:

A pilot study was conducted on 10% of the entire study sample (9 participants) to test the applicability, efficiency, clarity of tools, the evaluation of field work feasibility, and to discover any potential hurdles that could confront the investigator and interfere with data collection. Based on the outcomes of the pilot research, necessary adjustments were made, such as the omission of certain questions from the tool in order to reinforce their content or for greater simplicity and clarity. The pilot research sample was not included in the main study sample.

Fieldwork

The study's data collection took four months. The study's data gathering began in early December 2020 and will be finished by the end of March 2021. The researcher visited the outpatient clinics at Beni-Suef University Hospital. For the elderly, three days a week from 9 a.m. to 2 p.m.

The investigator initially described the goal of the study to the older individuals and assured them that the information gathered would be kept secret and utilized exclusively for the purpose of the research. At Beni-Suef University Hospital, the investigator met with elderly people. Senior adults completed tools regarding people's knowledge and attitudes about assistive technologies, and each elderly patient spent between 30 and 45 minutes completing an interview questionnaire sheet.

III. Administrative Design.

The dean of the school of nursing at Beni-Suef University addressed an official letter asking for authorization to conduct the research to Beni-Suef University hospital in order to secure their clearance to carry out this study. This letter contained the purpose of the research as well as photocopies of data collection instruments in order to get permission and assistance with data collection.

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Ethical Consideration

Prior to the start of the study, the scientific research ethics committee of Beni-Suef University's faculty of nursing acquired ethical permission. The researcher met with the director of Beni-Suef University Hospital to describe the study's purpose and get their agreement. The researcher also visited with older people to explain the goal of the study and seek their permission to participate. They were reassured that the acquired data was anonymous and private, and that it would only be used for scientific study. The participants were guaranteed the ability to withdraw from the research at any time.

IV: Statistical Analysis:

The acquired data was coded and loaded into the social science statistical software (SPSS 26.0). Data was given, and appropriate analysis was performed based on the kind of data gathered for each parameter. For categorical variables, data was presented using descriptive statistics in the form of frequencies and percentages. The Chi-square (X2) test was used to compare qualitative categorical variables, but where the predicted count was less than 5 in more than 20% of the cells, Person and Spearman correlation was employed to investigate the correlation between quantitative variables. Statistical significance was evaluated when the P-value was less than 0.05.

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RESULTS:

Part I: Demographic characteristics of the elderly people

Table (1) Percentage distribution of demographic characteristics of elderly people (n=86 people).

Demographic characteristics	No	%
Age		
65≥75 yrs.	37	43
75≥85 yrs.	43	50
≥85 yrs.	6	7
Mean ±SD	76.58±4.85	
Gender		
Male	56	65.1
Female	30	34.9
Marital status		
Married	34	39.5
Single	8	9.3
Divorced	7	8.1
Widowed	37	43
Educational level		
Illiterate	12	14.
Read and write	24	27.9
Secondary school	17	19.8
Technical school	20	23.3
University and above	13	15.1
Monthly income		
Enough	46	53.5
Not enough	40	46.5
Job		
Governmental sector	24	27.9
Private sector	15	17.4
Freelancers	14	16.3
Crafts	16	18.6
Not working	17	19.8

Table 1: shows that 50% of elderly people had ages ranged from 75≥85 yrs., 65.1% of them were male. 43% & 39.5% of elderly people were widowed and married respectively. 27.9% of elderly people could read and write. 53.5% of

elderly people had enough monthly income. 27.9% of elderly people had job in governmental sector.

Part II: Medical history of the elderly people

Table (2) Percentage distribution of the medical history of elderly people (n=86 people).

Medical history	No	%
Asthma	40	46.5
Diabetes mellitus	65	75.6
Chronic renal disease	16	23.3
Liver disease	8	9.3
Cardiac disease	7	8.1
Glaucoma	2	2.3
Hypertension	60	69.8
Tumor	4	4.7
Autoimmune disorder	11	12.8
GI disturbances	15	17.4
Chronic obstructive pulmonary disease (COPD)	10	11.6
Skin disorders	11	12.8

Table 2: reveals that the highest percentages 75.6%, 69.8% and 46.5% of the studied elderly people had diabetes mellitus, hypertension, and asthma respectively.

Table (3) Percentage distribution of the medical history of elderly people (n=86 people).

Medical history	No	%
Number of currently used medications		
- Less than 5 medications	49	57
- More than 5 medications	37	43
Level of dependency in performing Activity of Daily Living		
- Independent	29	33.7
- partially dependent	40	46.5
- Totally dependent	17	19.8
Current living situation		
- Home with family	55	63.9
- Home with caregiver	26	30.2
- Home independently	5	5.8
Accessibility to medical health services		
- Easy to reach	38	44.2
- Difficult to reach	48	55.8

Table 3: illustrates that 57% of elderly people used less than 5 medications. 46.5% of elderly people were partial dependent to perform activity of daily living. 63.9% of elderly people were lived in home with family. 55.8% of elderly people had difficult to reach to medical health services.

Table (4): distribution of assistive devices using history among studied elderly people

Variable	No	%
Onset of using assistive device		
1-<5 years	22	25.6
5-<10 years	30	34.9
≥ 10 years	34	39.5
Number of utilized assistive device		
One	14	16.3
Two	45	52.3
Three	27	31.4
Previous training regarding assistive devices		
Yes	44	51.2
No	42	48.8
Regular check and maintenance of assistive device		
Yes	40	46.5
No	46	53.5

Table (4): indicates that 39.5 % of the studied elderly people utilized the assistive devices from more than 10 years ago.52.3%, 31.4% of them utilized two and three assistive devices. Furthermore 53.5% of them don't check and maintain assistive device regularly.

Table (5): distribution of effect of assistive devices on quality of life among studied elderly people

Variable	Highly affected		Moderately affected		Slightly affected	
	No	%	No	%	No	%
Physical wellbeing	36	41.9	30	34.9	20	23.2
Social wellbeing	36	41.9	31	36.0	19	22.1
Emotional wellbeing	24	27.9	43	50.0	19	22.1
Daily activities	26	30.2	49	57.0	11	12.8
Self-care abilities	44	51.1	32	37.2	10	11.7

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Table (5): reveals that 51.1% & 41.9 % and 41.9 % of the studied elderly people reported that utilizing assistive devices improve their self-care abilities, physical wellbeing and social wellbeing respectively. On the other hand, 57.0% and 50.0% of them reported that utilizing assistive devices moderately affected their daily activities and emotional wellbeing.

Part III: Elderly people' knowledge regarding assistive devices

Table (6) Percentage distribution of elderly people' knowledge about assistive devices definition and purpose of using assistive devices (n=86).

Knowledge	Correct		Incorrect	
Definition of assistive device	**No**	**%**	**No**	**%**
a term covering the systems and services related to the delivery of assistive products and services	7	8.1	79	91.9
Purpose of using assistive device				
Maintain elderly people independence	4	4.7	82	95.3
Promoting elderly people well-being.	9	10.5	77	89.5
Maintain elderly people functioning	48	55.8	38	44.2

Table (6): reveals that 91.9% & 95.3 % of the studied elderly people reported incorrect answer regarding the definition of assistive device and that the purpose of using assistive device was to maintain elderly people independence. On the other hand, 55.8% of them had correct answer regarding that the purpose of using assistive device was to maintain elderly people functioning.

Table (7) Percentage distribution of elderly people' knowledge about the people who can use assistive devices (n=86).

Knowledge	Correct		Incorrect	
	NO	%	NO	%
People with disabilities	72	83.7	14	16.3
Elderly people	8	9.3	78	90.7
People with non-communicable diseases such as diabetes and stroke	11	12.8	75	87.2
People with mental health conditions including dementia and autism	10	11.6	76	88.4
People with gradual functional decline	39	45.3	47	54.7

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Table (7): shows that 90.7 %& 87.2% of the studied elderly people reported incorrect answer regarding that elderly people and People with non-communicable diseases such as diabetes and stroke are the types of people who using assistive devices. On the other hand, 45.3% of them had a correct answer regarding that People with gradual functional decline.

Table (8) Percentage distribution of elderly people' knowledge about assistive devices (n=86 people).

Knowledge	Correct		Incorrect	
Care of assistive device	**NO**	**%**	**NO**	**%**
Regular check	6	7.0	80	93
Daily care	42	48.8	44	51.1
Apply assistive device care instruction	14	16.3	72	83.7
Types of assistive device				
Mobility assistive device	39	45.3	47	54.6
Hearing assistive device	9	10.5	77	89.5
Cognitive assistive device	48	55.8	38	44.2
Eating assistive device	6	7.0	80	93

Table (8): clarifies that the highest percentages 93.0%, of the studied elderly people reported incorrect answers regarding that care of assistive devices should be done regularly, also had incorrect answer regarding that eating assistive devices is a type of assistive devices. On the other hand, 55.8% &48.8% had a correct knowledge regarding cognitive assistive device as a type of assistive device and the daily care for assistive devices.

Table (9) Percentage distribution of total knowledge scores of elderly people (n=86 people).

Total knowledge	Total knowledge scores	
	No	**%**
Adequate knowledge	23	26.7
Inadequate knowledge	63	73.3

Table (9): illustrates that 73.3% of the studied elderly people had inadequate level of total knowledge regarding the assistive devices.

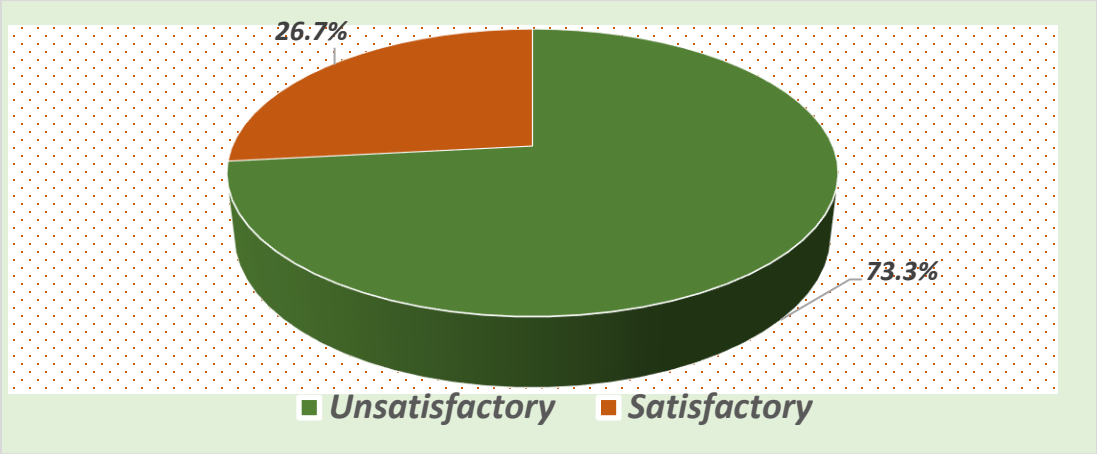

Figure (1) Percentage distribution of total knowledge scores of elderly people (n=86 people).

Part IV: Elderly people' attitude toward assistive devices.

Table (10) Percentage distribution of elderly people' attitude toward assistive devices (n=86 people).

Assistive devices attitude items	Agree		Sometimes		Disagree	
	No	%	No	%	No	%
Using assistive devices reduce stress on family careers	9	10.5	53	61.6	24	27.9
Utilizing assistive device should be as therapists explain.	13	15.1	45	52.3	28	32.6
It is important to check for safely using of assistive device before using.	11	12.8	48	55.8	27	31.4
using assistive device should be under supervision	14	16.3	52	60.5	20	23.3
Assistive device enables me to manage daily activities.	16	18.6	46	53.5	24	27.9
Using assistive devices is important role in my social life.	17	19.8	43	50.0	26	30.2
I'm able to use assistive device independently.	22	25.6	30	34.9	34	39.5
It is important to ensure efficiency of assistive device before using.	27	31.4	45	52.3	14	16.3
Using assistive device increases my self confidence	25	29.1	25	29.1	36	41.9
Using assistive device properly prevent incidents of falls.	18	20.9	38	44.2	30	34.9
Assistive devices should be safe	29	33.7	36	41.9	21	24.4
Using assistive device can improve my quality of life	28	32.6	41	47.7	17	19.8
Using assistive device supports a sense of self dignity	19	22.1	47	54.7	20	23.3
Using assistive devices promote my self-care abilities.	14	16.3	52	60.5	20	23.3
Assistive devices can reduce home care costs for older adults	29	33.7	36	41.9	21	24.4

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Table (10): clarifies that the highest percentages of elderly people (41.9% & 39.5%) of the elderly people disagreed that using assistive device increases my self-confidence and they are able to use assistive device independently respectively. In addition, 61.6% &60.5% of the studied elderly people were uncertain regarding that using assistive devices reduce stress on family careers and should be under supervision. On the other hand, 33.7%, 33.7% and 32.6% of them were agreed regarding that Assistive devices should be safe, reduce home care costs for older adults and improve quality of life respectively.

Table (11) Percentage distribution of total attitude scores of elderly people (n=86 people).

Total attitude score	Total attitude scores	
	No	%
Positive attitude	33	38.4
Negative attitude	53	61.6

Table (11): illustrates that 61.6% of the studied elderly people had a negative attitude regarding the assistive devices.

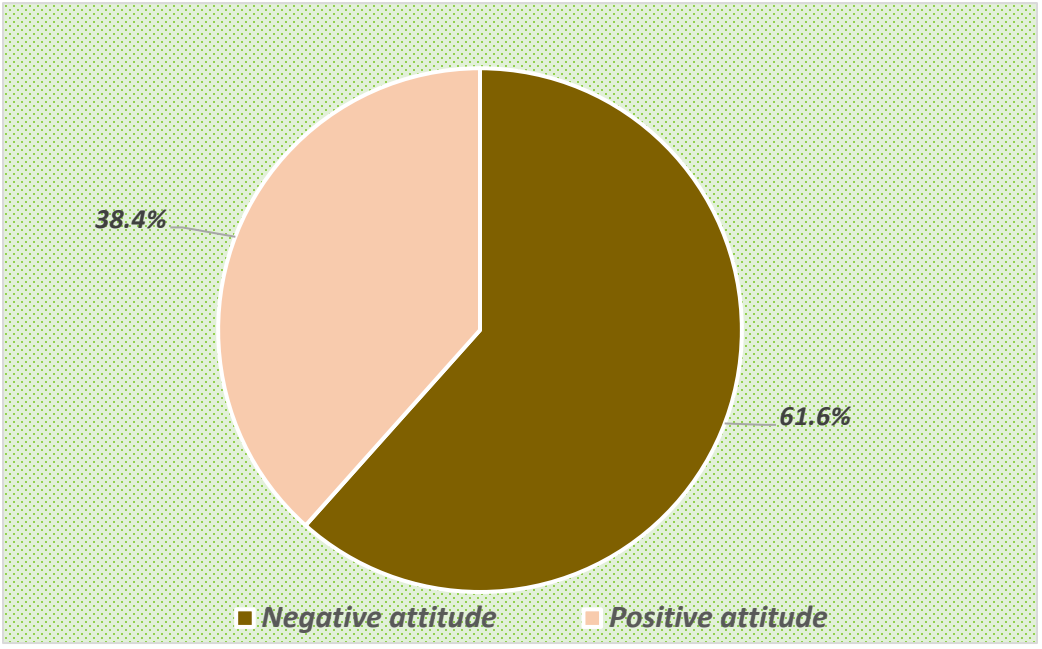

Figure (2) Percentage distribution of total attitude scores of elderly people (n=86 people).

Part V: Relations and correlations between the study variables

Table (12) the relation between elderly people' demographic characteristics and their total knowledge scores

Demographic characteristics	No	Unsatisfactory knowledge		Satisfactory knowledge		X^2	P-Value
		No	%	No	%		
Age							
- 65-<75 yrs.	37	13	15.1	24	27.9	3.78	.042*
- 75-<85 yrs.	43	10	11.6	33	38.4		
- ≥85 yrs.	6	0	0	6	7.0		
Gender							
- Male	56	12	14.0	44	51.2	2.31	.104
- Female	30	11	12.8	19	22.1		
Marital status							
- Married	34	9	10.5	25	29.1	22.4	.000**
- Single	8	2	2.3	6	7.0		
- Divorced	7	7	8.1	0	0		
- Widowed	37	5	5.8	32	37.2		
Educational level							
- Illiterate	12	2	2.3	10	11.6	8.62	.019*
- Read and write	24	9	10.5	15	17.4		
- Secondary school	17	7	8.1	10	11.6		
- Technical school	20	5	5.8	15	17.4		
- University and above	13	0	0	13	15.1		
Monthly income							
- Enough	46	5	5.8	41	47.7	14.8	.000**
- Not enough	40	18	20.9	22	25.6		
Job							
- Governmental sector	24	0	0	24	27.9	23.9	.000**
Private sector	15	5	5.8	10	11.6		
- Freelancers	14	10	11.6	4	4.7		
- Crafts	16	3	3.5	13	15.1		
- Not working	17	5	5.8	12	14.0		

(*) Statistically significant at p-value <0.05 **(**) highly statistically significant at p-value <0.05.**

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Table (12): reveals that there is a highly statistically significant relation between elderly people total knowledge scores and their marital status, monthly income, and job. Also, there is a statistically significant relation between elderly people total knowledge scores and their age and educational level. While, there is no statistically significant relation between elderly people total knowledge scores and their gender.

Table (13) the relation between elderly people' demographic characteristics and their total attitude scores

Demographic characteristics	No	Negative attitude		Positive attitude		X^2	P-Value
		No	%	No	%		
Age							
- 65-<75 yrs.	37	21	24.4	16	18.6	4.13	.042*
- 75-<85 yrs.	43	26	30.2	17	19.8		
- ≥85 yrs.	6	6	7.0	0	0		
Gender							
- Male	56	40	46.5	16	18.6	6.52	.011*
- Female	30	13	15.1	17	19.8		
Marital status							
- Married	34	19	22.1	15	17.4		
- Single	8	6	7.0	2	2.3	5.81	.027*
- Divorced	7	7	8.1	0	0		
- Widowed	37	21	24.4	16	18.6		
Educational level							
- Illiterate	12	7	8.1	5	5.8		
- Read and write	24	19	22.1	5	5.8		
- Secondary school	17	10	11.6	7	8.1	6.71	.036*
- Technical school	20	10	11.6	10	11.6		
- University and above	13	7	8.1	6	7.0		
Monthly income							
- Enough	46	30	34.9	16	18.6	2.14	.212
- Not enough	40	23	26.7	17	19.8		
Job							
- Governmental sector	24	13	15.1	11	12.8		
- Private sector	15	8	9.3	7	8.1		
- Freelancers	14	11	12.8	3	3.5	3.47	.421
- Crafts	16	9	10.5	7	8.1		
- Not working	17	12	14.0	5	5.8		

(*) Statistically significant at p-value <0.05. (**) Highly statistically significant at p-value <0.05.

Table (13): shows that there is a statistically significant relation between elderly people total attitude scores and their age, gender, marital status, and

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educational level. While, there is no statistically significant relation between elderly people' total knowledge scores and their monthly income, and job.

Table (14) the relation between elderly people' medical history and their total knowledge scores

Medical history	No	Inadequate knowledge		Adequate knowledge		X^2	P-Value
		No	%	No	%		
Number of currently used medications							
- Less than 5 medications	49	43	50.0	6	7.0	14.5	.001*
- More than 5 medications	37	20	23.3	17	19.8		
Level of dependency in performing Activity of Daily Living							
- Independent	29	23	26.7	6	7.0	4.85	.079
- partially dependent	40	25	29.1	15	17.4		
- Totally dependent	17	15	17.4	2	2.3		
Current living situation							
- Home with family	55	34	39.5	21	24.4	14.3	.002*
- Home with caregiver	26	24	27.9	2	2.3		
- Home independently	5	5	5.8	0	0		
Accessibility to medical health services							
- Easy to reach	38	29	33.7	9	10.5	.325	.122
- Difficult to reach	48	34	39.5	14	16.3		

(*) Statistically significant at p-value <0.05. (**) Highly statistically significant at p-value <0.05.

Table (14): reveals that there is a statistically significant relation between elderly people' total knowledge scores and their number of currently used medications, and current living situation. While, there is no statistically significant relation between elderly people total knowledge scores and their level of dependency in performing activity of daily living, and accessibility to medical health services

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Table (15) :the relation between elderly people' medical history and their total attitude scores

Medical history	No	Positive attitude		Negative attitude		X^2	P-Value
		No	%	No	%		
Number of currently used medications						1.28	.172
- Less than 5 medications	49	30	34.9	19	22.1		
- More than 5 medications	37	23	26.7	14	16.3		
Level of dependency in performing Activity of Daily Living						6.13	.042*
- Independent	29	23	26.7	6	7.0		
- partially dependent	40	22	25.6	18	20.9		
- Totally dependent	17	8	9.3	9	10.5		
Current living situation						7.25	.026*
- Home with family	55	30	34.9	25	29.1		
- Home with caregiver	26	18	20.9	8	9.3		
- Home independently	5	5	5.8	0	0		
Accessibility to medical health services						5.85	.014*
- Easy to reach	38	18	20.9	20	23.3		
- Difficult to reach	48	35	40.7	13	15.1		

(*) Statistically significant at p-value <0.05. (**) Highly statistically significant at p-value <0.05.

Table (15): clarifies that there is a statistically significant relation between elderly people' total attitude scores and their level of dependency in performing activity of daily living, current living situation, and accessibility to medical health services. While, there is no statistically significant relation between elderly people' total knowledge scores and their number of currently used medications

Table (16) Correlation between people' total knowledge and their attitude.

Variables	Statistical test	Total attitude scores
Total knowledge scores	r	.578
	P	.000**

(**) Highly statistically significant at p-value <0.05.

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Table (16): shows that there was a highly positive association between elderly people total knowledge and their total attitude score.

Table (17) distribution of studied elderly people regarding barrier affecting their utilization of assistive devices.

Barriers	Frequency	%
Cost	55	64.0%
Technical illiteracy	71	82.6%
Limitations of device	49	57.0%
decrease interaction with caregiver	53	61.6%
Poor sound quality	69	80.2%
Users forget how to use them	52	60.5%
Lack of awareness of availability of AT	51	59.3%
Limited training regarding utilized assistive device	60	69.8%
Loss of dignity	49	57.0%
Feeling of embarrassment	48	55.8%
Complex interfaces	59	68.6%
Fear of dependency	49	57.0%

Table (17): illustrates that, 82.6% & 80.2% of the studied elderly people reported that technical illiteracy and poor sound quality of the assistive devices is the barriers that affecting their assistive devices respectively.

DISCUSSION:

Elderly is defined as the final adult period beginning in the 60 years, Elderly is the phase of decreasing intellect, physical, and psychological ability. The decreased physical condition may include slow body movements, lack of balance of body, decreased coordination of movement between the limbs, decreased memory, and decreased capacity to process information, those limitations make elderly difficulty to do their activity and they start depend on others. Limitations possessed by the elderly can be overcome with the help of assistive devices **(**17**)**.

Assistive devices benefits older adults by providing them a chance to stay at home safely and besides that it eliminates burden of care givers and nurses (3). In addition, *Harrefors et al. (18)* confirmed that nurses can have better use of their time to help fully care dependent patients. As a result, there would be better use of time and

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human resource and reduction of healthcare cost .For many patients, independence in a particular situation (transferring, feeding, toileting, etc.) can only be improved through the use of an assistive device **(19).**

Assistive devices play important role in maintaining physical function, preventing functional decline and enabling older people with disability to cope up with their day to day life routines **(20).** For older people living with Dementia and other cognitive problems, assistive solutions and environmental modifications have a potential to provide an opportunity to live safely in their own homes without depending fully on caregivers. This also benefits nurses and informal care givers by reducing their burden **,** Orem highlighted that Nurses have knowledge and skills that can benefit people with declined ability to provide continuous self-care due to health and other physiological conditions. However, people need to maintain their self-case ability as long as possible, in order to regulate their human functioning development **(21)**.

According to elderly personnel characteristics, the results of the current study showed that one half of the studied elderly patients age ranged from 75 ≥ 85 years old, nearly two third of them were male, nearly half of them were widowed. In addition, nearly one third of them could read and write and a low percentage of them had a higher level of education. Furthermore, more than half of them had enough monthly income (Table 1). This finding was in the same line with ***Navabi et al., (22)***, in the study to "evaluate Older adults' attitudes and barriers toward the use assistive devices. Also *Kamal etal., (2015)* in the study to "assess the risk factors of falls among elderly clients at geriatric home", Who added that 21% of the elderly could read and write and a low parentage of them had a higher level of education. In addition, Hestekin *et al. (2013)* in the study to "Measure prevalence and risk factors for fall related injury in older adults in low-and middle-income countries, who illustrated that about 25.3 % of participant, had primary school education.

Regarding the medical history of the studied elderly people, the present study findings indicated that the highest percentage of elderly people had a diabetes mellitus, hypertension and asthma. These findings are in accordance with Kamal etal.,(2015), who added that a high percent of the studied sample were suffering from hypertension, arthritis and diabetes mellitus respectively. In relation to the assistive devices using history among studied elderly people , the present study findings indicated that more than one third of the studied elderly people utilized the

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assistive devices from more than 10 years ago and the majority of them utilized two and three assistive devices .These findings are consistent with a US prevalence study that reported that one-third of mobility device users reported using more than one device and multiple device use may suggest specific needs for each walking aid used according to physical capacity or environmental demands. are agreed with Gell *et al.*, **(23).**

The concept of self-care includes the ability to care for oneself and the performance of activities necessary to achieve, maintain, or promote optimal health. Different healthcare disciplines share the idea that self-care is conditional and influenced by culture and situations. The effort individuals make towards achieving optimal health depends on individual's capacity and personal characteristics such as amount control over own life, skills, personal values and level of literacy. Self-concept may be varying from managing health fully independently to relaying completely on medical care *Richard et al.* ***(24)***. Moreover, self-care can contribute for human structural integrity and human development in many ways, if it is executed successfully ***(25)***.

There are a several research studies that indicated that application of assistive devices plays important role in maintaining physical and cognitive functioning of the elderly and empowers them to live independently and safely. It also showed that assistive devices contributes a lot in improving quality of life of elderly people living at home and reduce burden of care givers as well as health care cost **,**As regarding the effect of utilization of assistive device on the Self-care among the studied elderly people .The present study findings revealed that more than half of the studied elderly people reported that utilization of assistive devices is highly positively affected their self-care abilities (table 5) .These findings are agreed with a study to identify that assistive devices products and services such as assistive robots, medication dispensers, telemedicine and sensory technology helped safe medication intake, preventing and detecting falls, minimizing depression and supporting independent living and self-care ***Khosravi& Ghapanchi,(3)***.

Concerning the effect of assistive devices on the quality of life among the studied elderly people the present study findings revealed that nearly half of the studied elderly people reported that assistive devices improve their self-care abilities, physical wellbeing and social wellbeing (table 5). These findings are in accordance

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with *Therriault et al.*, ***(26)*** , who stated that assistive devices had a positive effects on older, independence, psychological well-being, and social status, and the possibilities of negative consequences have been neglected. On the other hand, more than half of elderly people reported that utilizing assistive devices moderately affected their daily activities and emotional wellbeing, these findings are disagreed with *Thakur & Han* ***(27),*** who reported that assistive devices improve elderly people ability to perform their daily activities and highly affect their psychological wellbeing.

As regarding the studied elderly people knowledge and attitude toward assistive devices, the present study findings indicated that, nearly two third of the studied elderly people had unsatisfactory level of knowledge, these findings may be due to that lack of educational program for elderly people concerning knowledge of the assistive devices. These findings are in accordance with *Witte, et al.* ***(28)*** Who added that elderly people had a barrier of lack of information for utilizing the assistive devices. Moreover, the present study findings indicated that nearly two third of the studied elderly people had a negative attitude regarding their assistive devices, this may be due to the lack of knowledge and lack of training for using and maintaining of their assistive devices. These results are in accordance with *Sisay* ***(3),*** who added that The elderly people had negative attitude regarding their assistive devices

Conclusion:

Based on the result of the present study it was concluded that, nearly three quarter of the studied elderly people had unsatisfactory level of knowledge regarding assistive devices, nearly two third of the studied elderly had a negative attitude. In addition, there was a highly positive association between elderly people total knowledge and their total attitude score regarding the assistive devices. Moreover, the majority of the studied elderly people indicated that technical literacy and poor sound quality of the assistive devices is the barriers that affecting their assistive devices respectively.

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Recommendation

In the light of the results of the present study, the following recommendations were suggested:

Developing an educational program for the elderly people aiming at raising their awareness and knowledge about the utilized assistive devices.

Caregiver should be included during orientation of elderly people regarding using of assistive devices.

Further studies should be conducted in different settings.

Assessment of assistive devices on elderly people on their quality of life and daily activity.

DISCLOSURES

Ethical clearance: taken from ethical research committee, faculty of nursing Beni-Suef University, Egypt.

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Data Availability: The authors confirm that all data underlying the findings are fully available without restriction. All relevant data are within the paper and its Supporting Information files.

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