Elderly Knowledge of Fall Prevention at Primary Health Care Centers

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ABSTRACT

Background: The second-most common reason for unintentional injury deaths globally is falls. Globally, falls are an important public health threat. Education on fall hazards and behavior modification can assist to decrease the frequency of falls among the elderly.

Objective: The present study aimed to determine the elderly' knowledge about fall prevention, and find out the association between the elderly knowledge with their demographic characteristic.

Method: A cross-sectional design was carrying out in the primary health care centers at Holy Karbala City from the 19 December 2022 to 27 February 2023. A questionnaire was used to measure elderly knowledge. A non-probability "convenience" sample consisted of (200) elderly. The Statistical Package for Social Sciences (SPSS), version 26.0, program was used to analyze and interpret the data.

Results: About two third of elderly were females (67%), the average age for elderly refers to 65.67±3.7 years, the 34% of elderly refers to "primary school graduation", that 81.5% of elderly are unemployed\housewives. There is a significant association between elderly knowledge and their socio-demographic characteristics such as gender (r= 0.199 at P-value= 0.005), level of education, marital status and occupational status (r= 0.652, r = 0.501, r= 0.351 at P-value= 0.001 resp.).

Conclusion: The study concluded that the participants had fair level of knowledge about fall prevention in elderly.

Key words: Elderly, Fall Prevention, Primary Health Care Centers

INTRODUCTION

Globally, there were roughly 600 million older people, and it is predicted that this number would rise to 1.2 billion by 2025 and 2 billion by 2050. Currently, over 70% of this population resides in developing countries[1]. According to annual report of Ministry of Planning of Iraq in 2015, the percentage of age over 60 years old in the national level is 5.01[2]. One in three people over the age of 65 experience falls every year, which is a significant public health issue. These slips and falls may result in bodily harm, a loss of independence, and occasionally even death[3]. More than 80% of fall-related fatalities take place in low- and middle-income nations, with 60% of these deaths taking place in the Western Pacific and South East Asia. Worldwide, those over 60 years have the greatest mortality rates[4]. Fall-related injuries may result in skin bruises, but more serious injuries may result in fractures, prolonged hospital visits, a loss of the capacity to care for oneself, and significant financial burdens on the patient's family, society, and healthcare institutions[5]. Falls have many different causes, including age-related muscular deterioration, poor balance and stride, vision impairment, and sex. Further, a single fall for an elderly raises their chance of further falls and frequently increases their anxiety of falling again, which can become crippling[6]. If older persons have fall risk factors, their likelihood of falling increases. These risk factors can be categorized as extrinsic (originating from without oneself) and intrinsic originating from within older persons[7]. Age, past falls, gait and balance issues, muscular weakness, fear of falling, poor vision, chronic illnesses including arthritis, diabetes, incontinence, postural hypotension, dementia, stroke, and Parkinson's are all intrinsic variables[8]. Environmental, economic, and behavioral variables are examples of external causes. Behavioral fall risk factors, which include things like drinking too much alcohol, wearing the wrong shoes, and being inactive, may be changeable[9]. The care plan is guided by a set of measures in fall prevention. A focused intervention program that may involve a referral to another healthcare practitioner must first be developed by the therapist after determining whether falling is a problem and after evaluating the risk factors for falls[10]. The same approaches that were used to evaluate and address risk factors before to the initial fall apply

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to preventing repeat falls, maybe with greater understanding obtained from the previous event's lessons learned[11]. Strategies for multifactorial falls prevention may be both cost-effective and cost-saving. A multifactorial intervention or preventive plan is made up of various parts that are all intended to reduce the risk factors for falling that a person's unique multifactorial assessment has found[12]. Community health nursing plays a crucial role in fall prevention, which includes education, strengthening and balancing exercises, medication reviews, and environmental enhancements. The nurse may start teaching and giving interventions to guarantee continuing safety for many independent seniors who prefer to stay in their homes by using a home safety checklist as a starting point[13]. Primary prevention tries to identify and minimize any risks of infections, such as those brought on by hazardous or unsafe surroundings. Lowering the negative consequences of illnesses or any symptoms is the main goal of secondary and tertiary preventative methods[14]. The major cause of death and morbidity among elderly is falls, which also put an extra burden on healthcare systems by increasing hospitalizations. This study examining elderly knowledge about prevent fall and provides information on how to address the gaps in knowledge.

OBJECTIVES

The study aims to assess the elderly knowledge towards fall prevention and to found out the relationship between elderly knowledge with their socio-demographic characteristics such as age, gender, occupation, level of education, material status and body mass index.

METHODS

Study Design and Participants: A cross-sectional design was used in this study. Data collected from the Primary Health Care Centers-Center sector in Karbala. The study was conducted during the period from October 2022 and ended in May 2023. A convenient sample of 200 elderly individuals who were attending the Primary Health Care Centers at Center sector in Karbala during the period of study was selected. Sample size was calculated based on confidence interval of 95% with sampling error of 5%. This was estimated to be 210 participants, on the basis that the total older age of 2,110 in 2020[15]. The final sample was n = 200 because 10 participants refused to continue with the study. Inclusion criteria: All elderly (equal to or more than 60 years) clients attending Primary Health Care Centers. Exclusion criteria: Elderly with severe medical problems who cannot tolerate the interview and Uncooperative individuals.

Data Collection Instruments: To make the study instrument more valid, the created instrument was chosen after an investigation of the clarity, applicability, and sufficiency of the questionnaire to evaluate knowledge for elderly by a panel of specialists with more than five years of expertise in respective fields. A preliminary copy of the questionnaire was designed and presented to a panel of (12) experts. The consistency and dependability of the research tool are issuing that reliability addresses. Based on Cronbach's Alpha reliability, the questionnaire's validity is assessed. The findings from knowledge regarding elderly at PHCs in Karbala City are represented by 26 items (r= 0.845). The questionnaire covered the following items: socio-demographic data which includes age, gender, marital status, educational status, occupation of participants, and body mass index, 26 items questions were introduced to assess the knowledge of participants towards for fall prevention.

A 3-Likert scale was used to score the instrument's items, and they were given the following scores: I don't know (1), uncertain (2), and I know (3) for knowledge scale. The overall score of knowledge was estimated by calculating the range score for mean of total score after calculating the range from minimum score and maximum score; the range score rated into three levels and scored as follows: Poor= 26 – 43.33, Fair= 43.34 – 56.67, Good= 56.68 – 78. P value ≤0.05 was considered significant. The cutoff point for the mean score was calculated, and three levels were also assigned to each item on the scale: Poor= 1– 1.66, Fair= 1.67 – 2.33, Good= 2.34 – 3.

Data Analysis: Microsoft Excel 2010 was used for data entry and statistical package for social science version 26 (SPSS version 26) was used for statistical analysis. Frequencies and percentages, means and standard deviation (SD) were calculated to describe study variables including demographic variables. Spearman's rank correlation coefficient and Point Biserial Correlation was used to determine the relationship among elderly knowledge with their variables included in this study.

Ethical Considerations: Ethical approval for this study was obtained by the Ethics Committee of the University of Karbala, College of Medicine, Iraq through scientific codes (IRAQ. COMUOK. RESEARCH.REC. 1510.90). The intent of the study and ethical points such as the lack of a need for the right to with-draw from the research, free participation, name of participants, and information confidentiality were clarified to the participants at the start of the interview.

RESULTS

Table 1: Socio-demographic characteristic

List	Characteristics		f	%
1	Gender	Male	66	33
		Female	134	67
		Total	200	100
2	Age M±SD= 65.67 ± 3.7	60 – 64 year	91	45.5
		65 – 69 year	79	39.5
		70 – 74 year	30	15
		Total	200	100
3	Level of education	Doesn't read & write	7	3.5
		Read & write	30	15
		Primary school	68	34
		Intermediate school	34	17
		Secondary school	33	16.5
		Diploma degree	16	8
		Bachelor degree or more	12	6
		Total	200	100

4	Marital status	Unmarried	15	7.5
		Married	103	51.5
		Divorced	15	7.5
		Widowed/er	63	31.5
		Separated	4	2
		Total	200	100
5	Occupation	Unemployed/ Housewife	163	81.5
		Employee	5	2.5
		Retired	32	16
		Total	200	100
6	Body mass index	Underweight	0	0
		Normal	12	6
		Overweight	78	39
		Obesity I	106	53
		Obesity II	4	2
		Obesity III	0	0
		Total	200	100

f: Frequency, %: Percentage, M: Mean, SD: Standard deviation

This table shows that the mean age of the participants was (65.67 ± 3.7 SD) years, about (45.5%) of the studied sample was in the age group of (60-64) years old, nearly two-thirds of the participants were women (67%), (34%) of the study population had a primary school certificate, (81%) percent of the elderly sample was unemployed/Housewife, (51.5%) were married, and more than half (53%) were obesity I.

Table 2: Overall assessment of the elderly's knowledge about fall prevention

Knowledge	f	%	M	SD	Assessment
Poor	77	38.5	46.03	13.925	Fair
Fair	86	43			
Good	37	18.5			
Total	200	100			

f: Frequency, %: Percentage. M: Mean for total score, SD: Standard Deviation for total score

Poor= 26 – 43.33, Fair= 43.34 – 56.67, Good= 56.68 – 78

This table indicates that elderly people show fair level of knowledge about fall prevention as reported among 43% of them (M±SD= 46.03 ± 13.925).

According to this table, there is a significant relationship between elderly persons' knowledge and their gender, education level, occupation, and marital status.

DISCUSSION

The findings of the present study showed that more than 67% of the studied sample were women. This is due to our Arab culture as well as other cultures where women are often more concerned with the health aspect than men, and grandmothers often have the responsibility of taking children to health care facilities to get immunizations.

This finding agrees with a descriptive cross-sectional survey study that was carried out on elderlies by Abdulsaheb and Fadhil. (2019) concerned "The Knowledge of Elderly Clients Attending Geriatric Clinic at Baghdad Teaching Hospital towards the Prevention of Fall", They found that the most of the study sample were women and accounted for 268 (66.5%). In addition, in another study of 70 parents conducted by Francis-Coad et al. (2019) around "Evaluation of older people's knowledge, awareness, motivation, and perceptions about falls and falls prevention in residential aged care homes: A tale of two cities", they found that most of the participants (71.4%) were also female. Most of the elderlies in the present study sample are between 60 and 64 years old. In contrast, the mean age was about 68.55.4 SD years in a study of Abdulsaheb and Fadhil in Baghdad in 2019; 74.16.8 SD years in a study of Cevizci et al. in Turkey in 2015; 75.76.4 SD years in a study by Wu TY et al. in Taiwan in 2013; and 73.58.4 SD years in a study of Fhon et al. in Portuguese in 2013. This variation in the mean age may be due to population differences, lifestyle, quality of life, and other factors that affect elderly people.

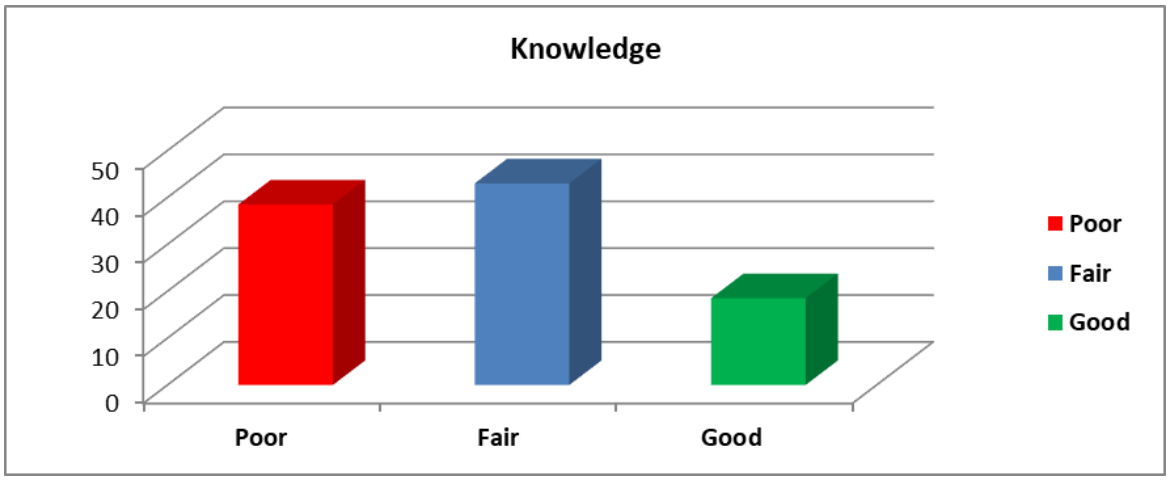

Figure 1: Overall level of elderly's knowledge about fall prevention (N=200)

Table 3: Relationships between elderly's knowledge and socio-demographic characteristic

Variables		Knowledge				Relationship
		Poor	Fair	Good	Total	
Gender	Male	17	36	13	66	r_{pb} = .199 P-value= .005 Sig= H.S
	Female	60	50	24	134	
	Total	77	86	37	200	
Age	60 – 64 year	32	37	22	91	r_S = .068 P-value= .335 Sig= N.S
	65 – 69 year	33	35	11	79	
	70 – 74 year	12	14	4	30	
	Total	77	86	37	200	
Level of education	Doesn't read & write	4	2	1	7	r_S = .652 P-value= .001 Sig= H.S
	Read & write	24	6	0	30	
	Primary school	39	26	3	68	
	Intermediate school	6	22	6	34	
	Secondary school	3	17	13	33	
	Diploma degree	1	10	5	16	
	Bachelor degree +	0	3	9	12	
	Total	77	86	37	200	
Marital status	Unmarried	6	8	1	15	r_S = .501 P-value= .001 Sig= H.S
	Married	59	40	4	103	
	Divorced	10	3	2	15	
	Widowed/er	2	32	29	63	
	Separated	0	3	1	4	
	Total	77	86	37	200	
Occupation	Unemployed/House-wife	73	69	21	163	rs = .351 P-value= .001 Sig= H.S
	Employee	0	3	2	5	
	Retired	4	14	14	32	
	Total	77	86	37	200	
Body mass index	Normal	7	5	0	12	r_S = .057 P-value= .420 Sig= N.S
	Overweight	24	38	16	78	
	Obesity I	43	42	21	106	
	Obesity II	3	1	0	4	
	Total	77	86	37	200	

r_{pb}= point biserial correlation coefficient, r_S = Spearman correlation coefficient, P= Probability, Sig= Significance, N.S= Not significant, S= Significant, H.S= High significant

According to the current study's findings about the educational level of the study group, the majority of the elderly (34%) had completed their primary education. In the study of Abdulsaheb and Fadhil (2019), it was shown that the majority of the sample (40.4%, 30.8%) obtained a college degree and attended primary school, respectively. The marital status reveals that more than half of elderly people are married (51.5%), while 31.5% of them are widowed or widowers. The present study results agree with Abdulsaheb and Fadhil (2019), who reported that the majority of elderly people in their study married 73.2% of the time. Laing et al. (2011), in a study titled "Fall Prevention Knowledge, Attitude, and Practices of Community Stakeholders and Older adult" reported that the majority of participants (50%) were married. The occupational status indicates that 81.5% of elderly people are either unemployed or housewives. The large percentage of elderly non-employees may be attributed to the lack of financial income for the job compared to self-employment in their time, and for women, community habits, distances, and a lack of means of transportation may be reasons for not completing the stage of study and obtaining a job. These results are consistent with the study done by Gamage et al. (2018), who mentioned that the majority of elderly people were not employed and accounted for 79.3%. The result of the current study is that, concerning body mass index, more than half of elderly people have obesity class I (53%), according to the body mass index calculator, and 39% are overweight.

The most of the studied elderly had a fair level of knowledge about fall prevention, as reported by 43% of them (MSD = 46.03 ± 13.925). The present study results agree with Yang et al. (2022) in their study titled "Development of the Home-Based Fall Prevention Knowledge (HFPK) Questionnaire to Assess Home-Based Fall Prevention Knowledge Levels Among Elderly in China," who reported that urban elderly have a moderate level of knowledge about fall prevention. Gamage et al. (2018) report that in Sri Lanka, 61% had average knowledge of falls and preventive measures. A study by Abdulsaheb and Fadhil, 2019, who reported that the finding regarding the knowledge towards intervention to prevent falls revealed that (56.3%) of the overall studied group had no information about how to prevent falls among elderly people, which may be due to the fact that most of them depend on family, social media, and the internet for their information, which reflects poor information from these sources. Francis-Coad et al. (2019) found in their study that

the elderly had limited knowledge about fall risk factors and prevention. This result comes from a study done by Laing et al. which found most elderly people had minimal knowledge of fall prevention.

The findings of this study indicated that there is a strong positive relationship between elderly people's knowledge and their gender, level of education, marital status, and occupational status. In relation to the association between elderly knowledge and their age group and body mass index, the findings show that there is no significant association. These results are supported by a cross-sectional study done by Gamage et al. (2018), which found a significant relationship between elderly knowledge and educational status. Moreover, the result of the current study is supported by Hakami (2019), who mentioned that there was a significant association between the study sample's knowledge and their demographic characteristics (educational level, marital status, and occupational status).

LIMITATIONS OF THE STUDY

Lack of previous studies related to the topic of interest to present it as supportive of the study's findings.

CONCLUSION

Most of the sample is elderly, female, a primary school graduate, married, unemployed, and obese. The overall assessment of elderly knowledge towards fall prevention is fair, and there is a significant association between elderly knowledge and their socio-demographic characteristics such as gender, level of education, marital status, and occupational status.

Authorship Contribution: All authors share equal effort contribution towards (1) substantial contributions to conception and design, acquisition, analysis and interpretation of data; (2) drafting the article and revising it critically for important intellectual content; and (3) final approval of the manuscript version to be published. Yes.

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Potential Conflicts of Interest: None

Competing Interest: None

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