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Knowledge of Seniors with Diabetes Mellitus about Self-Care

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Abstarct: **Background:** Diabetes Mellitus is a significant global medical issue that stands out among chronic diseases due to its influence on national and international measures of morbidity and death.

Objectives: The objectives of the present study were to evaluate the knowledge of diabetic old age about self-care.

Method: descriptive study was conducted among 69 elderly patients with diabetes mellitus who attended the Diabetes Center in Al Muthanna City. The data collected using questionnaire, which consists of two parts. Part I: consists of demographic characteristics. Part II: consists of (5) domains about knowledge the self-care of DM.

Results: The study showed that the more half of participants were aged (65-75) years with most patients were males and majority of patients (66.7%) are read and write only. about (56.5%) of responders' resident in rural area and (81%) are insufficient monthly income. most of the participants had poor level knowledge toward self-care.

Conclusion: The study concluded that the participants had a poor knowledge regarding diabetes selfcare.

Key points: Knowledge, Seniors, Diabetes Mellitus, Self-Care.

Introduction

Diabetes is a serious health problem that has gotten worse, due to prevalence of diabetes, related complications, and mortality, as well as health cost at global [1,2]. population aging that has led to an increase in the of people 65 and older from 6% in 1990 to 9% in 2019. By 2050, that percentage is expected to increase to 16%, meaning that one in six individuals on the world be 65 or older [3]. specially in developing countries [4]. Adult population estimates for diabetes prevalence in 2021 were 10.5%, with a predicted increase to 12.2% by 2045. The prevalence of diabetes was highest in people (75–79) years old, and it was equal in men and women[5]. Moreover, diabetes in older adults is related to an increased risk of death early due to its association with other diseases and geriatric conditions [6,7]. the age group of 65 years and above who suffer from diabetes is estimated at 135.6 million people of the total number of older people in the world [8]. The number of people with diabetes in this age group is expected to increase 195.2 million in 2030 [1]. in Iraq the estimated diabetes prevalence will increase from 8.5% to 13.9%, it is a higher rate than other countries in Middle East and North Africa (MENA) region [9]. Diabetes mellitus that affects every systems of body and may be lead to a many complications, including cardiovascular disease [10,11], kidney diseases [12] peripheral diabetic neuropathy [13], and osteoporosis [14]. Diabetes

education is important for promotion self-care activities such as healthy eating, being physically active, monitoring of blood sugar, compliance with medications for adaptive with diabetes disease, in addition, Diabetes self-care requires the patient to make major lifestyle modifications for maintaining health [15]. Therefore, study aimed to assess the diabetes self-management activities among diabetic seiners living in in AL-Muthanna City.

Methodology

Design of the study: A quasi-experimental design was used, which carried out to assess diabetic knowledge regarding self-care. A non-probability (purposive) sample of (69) patients diagnosed with diabetes mellitus these patients have met the study criteria which was selected from Diabetes Center in AL-Muthanna city for January 2023 to May 2024.

Ethical considerations: Informed agreement was obtained from ethics Committee at the nursing College in Baghdad University before any data collection from participants, each patient was informed about its aim, method, and possibility of withdrawal at any stage of the research. The participants were also assured full anonymity and the voluntary nature of the study.

Study Instruments: The instruments were developed by analyzing the literature available and expert's points to evaluate patients' knowledge regarding self-care. A questionnaire consisted of two sections, the first part includes demographic characteristics of patients, including age, gender, marital status, education, residency and occupation and the second part is concerned with evaluating patients' knowledge about self-care which consists of (26) items.

Data Analysis: Data were statistically analyzed by use of the descriptive (frequency, percentage, mean and standard deviation) and statistical Inferential data analysis (Independent sample t-test, Paired t-Test) and Statistical Package of Social Sciences (SPSS,26).

Results:

The table (1) indicate the socio-demographic characteristics of the study participants in term of percent and frequency. The results showed of age diabetic patients, (65–69) years were (51.1%) were men (60.9%) were men. majority of patients (66.7) are read and write only, regarding of residential status (56.5%) were rural area. about (37.5) of participants were not work and more (81%) are not enough of monthly income.

The distribution of the participants knowledge regarding diet management were (89.58%) had poor knowledge, table (2), were (90.16 %) incorrect response about physical activity table (3). Most patients had low knowledge toward self-monitoring of blood glucose table (4), medications adherence was poor in (90%) table (5), and (88.22%) from participants had incorrect responses concerning foot care table (6).

Table (1): socio-demographic characteristics

Characteristics		*F*	*%*
Age	*(65 – 69) group*	*38*	*55.1*
	(70 – 74) group	*27*	*39.1*
	(75 & above) group	*4*	*5.8*
Gender	*Male*	*42*	*60.9*
	Female	*27*	*39.1*
Education Level	*Read and Write*	*46*	*66.7*
	Primary School	*12*	*17.4*
	Secondary School	*3*	*4.3*
	Academic	*3*	*4.3*
	Diploma	*3*	*4.3*
	College & Above	*2*	*2.9*
Residential Area	*Rural*	*39*	*56.5*
	Urban	*30*	*43.5*

Occupational Status	Daily Work	1	2.9
	Farmer	5	7.2
	Retired	15	21.5
	House Wife	19	27.6
	Not Work	26	37.5
	Free Work	3	4.3
Economic Status	Enough	1	2.9
	Sometime enough	12	17
	Not enough	56	81.1

Table (2): Assessment knowledge of diabetic participants regarding diet

Items	Correct (%)	Incorrect (%)	Mean	Assessment
The most important sources of healthy carbohydrates are	8.6	91.4	1.08	poor
Which of the following food options is an appropriate choice for a patient with diabetes?	7.3	92.7	1.06	poor
Which of the following foods raises blood sugar more than others?	15.9	84.1	1.15	poor
Which of the following contains the highest percentage of starch (carbohydrates)?	8.8	91.2	1.08	poor
Eating fried food contributes to	11.5	88.5	1.11	poor
Total	10.42	89.58	1.09	poor

Poor knowledge (Mean 1-1.33); Fair knowledge (Mean1.34-1.67), Good knowledge (1.68 and more).

%= percentage; F= frequency

Table (3): Assessment knowledge of diabetic participants about physical activity

Items	Correct (%)	Incorrect (%)	Mean	Assessment
Moderate physical activity contributes to	16	84	1.16	poor
Among the best types of exercise for a diabetic patient to do	14.5	85.5	1.14	poor
The total number of minutes of exercise per day is about	4.3	96.7	1.04	poor
Number of days in which he exercises	7.2	92.8	1.06	poor
If signs of low blood sugar appear, you should	7.2	92.8	1.06	poor
Total	9.84	90.16	1.09	poor

Poor knowledge (Mean 1-1.33); Fair knowledge (Mean1.34-1.67), Good knowledge (1.68 and more).

%= percentage; F= frequency

Table (4): Assessment knowledge of diabetic participants about self-monitoring of blood glucose

Items	Correct (%)	Incorrect (%)	Mean	Assessment
the test (HbA1c) sugar measures the blood sugar level in the past	15	85	1.12	poor
Low blood sugar may be caused by	10.2	89.8	1.09	poor
Signs of low blood sugar	7.2	92.8	1.06	poor

What is the best way to test blood sugar levels at home	*13.1*	*86.9*	*1.12*	*poor*
Total	11.38	88.62	*1.10*	*poor*

Poor knowledge (Mean 1-1.33); Fair knowledge (Mean1.34-1.67), Good knowledge (1.68 and more).

%= percentage; F= frequency

Table (5): Assessment knowledge of diabetic participants about medication adherence

Items	*Correct (%)*	*Incorrect (%)*	*Mean*	*Assessment*
Medication adherence for a diabetic patient includes	*18.8*	*82.2*	*1.18*	*poor*
The places where insulin is injected into the body are	*10.2*	*89.8*	*1.1*	*poor*
Repeatedly forgetting to take medication	*7.2*	*92.8*	*1.06*	*poor*
If misses a dose of medication and does not take it at the specified time, he must	*5.8*	*94.2*	*1.05*	*poor*
The drug (Metformin) has side effects on the body, the most common of which are	*5.8*	*94.2*	*1.05*	*poor*
Total	*9.40*	*90.60*	*1.08*	*poor*

Poor knowledge (Mean 1-1.33); Fair knowledge (Mean1.34-1.67), Good knowledge (1.68 and more).

%= percentage; F= frequency

Table (6): Assessment knowledge of diabetic participants about Foot care

Items	*Correct (%)*	*Incorrect (%)*	*Mean*	*Assessment*
Foot care is important and necessary because a diabetic is a patient	*7.2*	*92.8*	*1.06*	*poor*
The best way to take care of your feet is	*14.5*	*85.5*	*1.14*	*poor*
Wounds and infection that occur in the feet of a diabetic patient	*7.2*	*92.8*	*1.06*	*poor*
Numbness and tingling in the feet may be symptoms of	*10.2*	*89.8*	*1.09*	*poor*
Smoking causes diabetes	*14.5*	*85.5*	*1.14*	*poor*
The best shoes suitable for a patient with diabetes are	*10.1*	*89.9*	*1.09*	*poor*
The shoe or sock must be examined by hand before wearing it to look for	*18.8*	*72.2*	*1.18*	*poor*
Total	*11.78*	*88.22*	*1.11*	*poor*

Poor knowledge (Mean 1-1.33); Fair knowledge (Mean1.34-1.67), Good knowledge (1.68 and more).

%= percentage; F= frequency

Discussion

Diabetes mellitus is an chronic illness that is becoming increasingly common worldwide [16]. According to (Table 1) the findings, shows there were (51.1%) among diabetic patients (65–69 year) age. The result is reinforced by a Bonikowska et al., study who concluded in their results that the dominant age of the study sample were (69) years old. The diabetes disease incidence increase with the advanced age of the patients which will contribute in raising the occurrence of disease [17]. concerning gender, the results showed the majority participants are were male, the men patients are

more who easy participation in occur study [18]. Regarding educational level, the higher percent (66%) are read and write only, the reason behind this may be the old age of the participants and their deprivation of education school when they were young due to the conditions of the country at that time, this result are supported by the Mohammed et al, [19]. the retired, not work status and inadequate monthly income for seniors may reduce activities, that are important factors in effect the quality of life of older population [20].

The results of this study revealed that most of the diabetic elderly are lower percent knowledge to dietary management as compared to other studies, may be because the nature of the study population differs with regard to diet [21]. Concerning physical activity, the study finding indicate that (90%) of the study sample don't any information about it. Physical activity is essential for preventing severe and long-term problems from diabetes; but, given the age of the elderly, it could seem difficult for adhere to these requirements, this result is found to be consistent with the study of Shazwani et al. which they found that diabetic patients are not performing exercise, or any activities related physical activity [22] . Regarding the domain of monitoring self-blood glucose, the findings depict that this domain is poor. As a result, these patients lack to follow up their health [23]. in addition, about medication adherence, the results indicate the most participants study haven't inadequate knowledge in relation to this domain. the outcome is consistent with Upamali, et al., study [24], which concluded to medications adherence among older age is related with variety of factors, including their knowledge, attitudes and age changes .The similar between the finding of the study and other researchers results in of non-adherence of medications indicated a need to selection medication management suitable to improve clinical outcomes in elderly age with diabetes mellitus. also found that foot care among diabetic patients was poor and that there was a need for patients to periodic inspections. so should provide more information to patients toward foot care [25].

Conclusion

The study showed that diabetic elderly are had low knowledge in all self-care domains (diet, physical activity, self-monitoring blood glucose, medication adherence and feet care). so, should be developing group activities by focused on seniors for the prevention of disabilities and complications related to diabetes disease.

Ethical Clearance: The approval of the ethics Committee at the University of Baghdad, College of Nursing (approval number 8 in 21/5/2023) and all experiments were carried out in accordance with approved guidelines.

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