Type 2 Diabetic Patients' Knowledge Regarding Preventive Measures of Diabetic Foot

معارف مرضى السكري من النوع الثاني المتعلقة بالإجراءات الوقائية للقدم السكري

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المستخلص

الاهداف: تقييم معارف مرضى السكري من النوع 2 فيما يتعلق بالتدابير الوقائية لقدم السكري. لايجاد العلاقة بين معارف مرضى السكري من النوع الثاني فيما يتعلق بالتدابير الوقائية للقدم السكري وخصائصهم الديموغرافية

المنهجية: دراسة وصفية أجريت في الفترة من 2 كانون الثاني (يناير) 2022 إلى 26 آذار (مارس) 2022 عينة غير محتملة (هادفة) من (60) مريض بالغ تم تشخيصهم بمرض السكري من النوع الثانية وقد استوفى هؤلاء المرضى معايير الدراسة التي تم اختيارها من مدينة الإمام الحسين الطبية. تتكون أداة الدراسة من قسمين: (المعلومات الديموغرافية ، ومقياس توقعات نتائج العناية بالقدم). تم تصميم الاستبيان لقياس مستوى معرفة مريض السكري حول التدابير الوقائية للقدم السكرية ، والتي تكونت من (14) عنصرا. إضافة الى استبيان اخر يتكون من (6) أسئلة تم تطويرها من قبل الباحثة بناءً على الموارد الموجودة لتقييم معرفة المريض فيما يتعلق بالإجراءات الوقائية للقدم السكري.

النتائج: تشير الدراسة إلى أن المرضى يتمتعون بمستوى مقبول من المعرفة (متوسط حسابي =1,34) ، ولا يوجد ارتباط كبير بين معارف مرضى السكري فيما يتعلق بالإجراءات الوقائية للقدم السكري وخصائصهم الديموغرافية.

الاستنتاجات: أستنتجت الدراسة أن مستوى معارف مرضى السكري حول التدابير الوقائية لقدم السكري كان مقبولاً، ولا توجد فروق ذات دلالة إحصائية فيما يتعلق بالمتغيرات الديموغرافية.

التوصيات: على وزارة الصحة استخدام وسائل الإعلام لتنظيم حملات الصحة العامة لتعزيز المعرفة تجاه العوامل المساهمة والتدابير الوقائية للقدم السكري. يوصى بإجراء مزيد من البحث لتكرار البحث على عينة احتمالية كبيرة لتحقيق مزيد من التعميم.

الكلمات المفتاحية: داء السكري من النوع الثاني ، المعارف ، التدابير الوقائية ، القدم السكري

Abstract

Objectives: To assess type 2 diabetic patients' knowledge regarding preventive measures for diabetic foot. Find out the relationship between of type 2 diabetic patients' knowledge regarding preventive measures of diabetic foot with certain sociodemographic characteristics

Methodology: A descriptive study was carried out from 2nd January 2022 to 26th March 2022. A non-probability (purposive) sample of 60 adult patients who are diagnosed with type2 diabetes mellitus these patients have met the study criteria which was selected from Imam AL-Hussein Medical-City. The study instrument consists of two sections: (Demographic Information Sheet, and Foot Care Outcome Expectations Scale) The questionnaire was designed to measure the level of diabetic patient' knowledge about preventive measures for diabetic foot, which consisted of 14 items and other structured knowledge questionnaire containing 6 questions were developed by the researcher based on the existing resources to assess knowledge of patient regarding preventive measures of diabetic foot.

Results: The study indicates that the patient have fair level of knowledge (MS=1.34), and no significant association between diabetic Patients' Knowledge Regarding Preventive Measures for Diabetic Foot and their demographic characteristics**.**

Conclusion: The results show that the level of knowledge about preventive measures for the diabetic foot of the patients was Fair. There are no significant differences were found regarding demographic variables.

Recommendations: The Ministry of Health should use the media to organize public health campaigns to strengthen knowledge towards contributing factors and preventive measures for diabetic foot. Further research is recommended to repeat the research on a large probability sample to achieve further generalization**.**

Keywords: Type 2 Diabetes, Knowledge, Preventive Measures, Diabetic Foot

Introduction

Diabetes is a group of metabolic disorders characterized by high blood sugar caused by defects in insulin secretion, action, or both. chronic hyperglycemia causes long-term damage [1].

Additionally, it is defined as a disorder marked by persistently high blood glucose levels and disturbances in carbohydrate, lipid, and protein metabolism [2]

Type 1 diabetes mellitus, type 2 diabetes mellitus, gestational diabetes mellitus, and diabetes caused by other factors are the most common types of diabetes mellitus [3].

Diabetes mellitus type 2 is significantly more frequent (accounting for more than 90% of all cases) [4]. Because of a gradual reduction of β-cell insulin production usually occurring in the presence of insulin resistance [3]. Early recognition of foot complications, immediate intervention, engagement of an adiabatic foot care team, effective control, and patient teaching could prevent 85 percent of amputations. Foot self-care activities such as daily foot inspections, professional therapy, hygiene, and suitable footwear gear can all help to reduce the risk of foot complications [3]. Foot ulcers cause more than 80% of lower-limbs amputations, with roughly 24% leading to limb amputation within 6 to 8 months of the initial assessment [5].

One of the goals of nurses' job in primary care is to provide health education to patients, which includes diabetes education and diabetic foot care [6].

Self-monitoring of foot health is critical for avoiding diabetes-related foot complications, and providers should use a patient-centered approach to identify behavioral goals, and also recognize any self-care deficits and collaborate with patients to develop a strategy to address those deficits [3]

Methodology

Design of the study: A comparative study design was carried out from (2nd January 2022 to 26th March 2022). A non-probability (purposive) sample of (60) adult patients who are diagnosed with type2 diabetes mellitus these patients have met the study criteria which was selected from Imam AL-Hussein Medical-City.

Study Instruments: The instruments were developed by analyzing the literature available and interviewing doctors, and the expert's points of view to evaluate patients' Knowledge Regarding Preventive Measures of Diabetic Foot. The questionnaire consisted of two sections, as follows:

Section I: Demographic Information Sheet:

It consisted of five (8) items on the respondents' demographic characteristics regarding their age, gender, residency, education level, occupation, family history related to diabetes mellitus, duration of diabetes, and other chronic diseases.

Section II: Foot Care Outcome Expectations Scale, the questionnaire was designed by Vileikyte et al to measure the level of knowledge about preventive measures of diabetic foot, which consisted of (14) items and other structured knowledge questionnaire containing (6) questions were developed by researcher based on the existing resources to assess knowledge of patient regarding preventive measures of diabetic foot. The questionnaire consists of twenty questions. Respondents' knowledge of diabetic and diabetic foot ulcer was ranked according to its score [(6)]. Two-point was awarded for a correct response, while a wrong response received (1) point. This gives a minimum score of (20) and a maximum score of (40) points.

The data collection phase starts from 25th January 2022 to 26th March 2022. Data are collected by using interview method was used lecture hall which specific for patient education for hospital which within target sample; questionnaire complete answer which takes approximately 10-15 minutes for each sample regarding assessment.

Ethical consideration: The participants were fully acquainted with the current study and its aims and then voluntary verbal consent was obtained in order to participate in the study. The Scientific Research Ethical Committee at the University of Baghdad, College of Nursing has approved the study to be conducted. All women who have participated in the study have signed consent form to present their agreement for their participation and to protect their human rights.

Data analysis: Statistical package for social science (SPSS) version 24 was used for analyzing data in the current study as follows: Descriptive data analysis (Frequencies & Percentage (%), Mean & Standard Deviation) and Inferential Data Analysis (Independent sample t-test, Paired t-Test, Contingency Coefficient Test C.C).

Results

Table (1): Distribution and Comparison of the Samples by Socio-Demographic Features of the Study and Control Groups

Demographic Variables	Study Group (n=30)			Control group (n= 30)	
	Groups	F.*	%	F.	%
Gender	Male	14	46.7	17	56.7
	Female	16	53.3	13	43.3
Age	30-39	5	16.7	4	13.3
	40-49	13	43.3	14	46.7
	50-59	11	36.7	10	33.3
	≥ 60	1	3.3	2	6.7
Educational level	Illiterate	8	26.7	6	20.0
	Read & write	3	10.0	6	20.0
	Primary school	10	33.3	9	30.0
	Secondary school	8	26.7	5	16.7
	University	1	3.3	4	13.3
Residence	Urban	26	86.7	21	70.0
	Rural	4	13.3	9	30.0
Occupation	Housewife	16	53.3	13	43.3
	Farmer	3	10.0	1	3.3
	Employee	1	3.3	1	3.3
	Gainer	10	33.3	14	46.7
	Retired	0	0	1	3.3
Family history of diabetes type 2	Yes	17	56.7	22	73.3
	No	13	43.3	8	26.7
Duration of DM	>5 years	10	33.3	12	40.0
	5-10 years	13	43.3	13	43.3
	> 11 years	7	23.3	5	16.7

F=frequency, %= percentage

The result of table (1) shows that highest percentage (51.6%) were male, also the sample contains the largest proportion (33%) of people in the same age group 40-49 years, while highest percentage for level of education (31.6%) of the research participants have completed primary school. Residence of study sample shows that the best proportion (78.3%). Residents make up the majority of the study's participants of urban areas, Regarding family history of diabetes the highest percentage (65%) answer Yes. Finally (43.3%) have diabetic from 5-10 Years.

Table (2): Mean Score and Stander Deviation of Patients' Knowledge about Preventive Measures of Diabetic Foot

List	Knowledge Items	MS	SD	Assess
1	Controlling blood sugar level well can prevent foot ulcers from occurring.	1.80	.4045	G
2	Examining feet every day can prevent foot ulcers from occurring.	1.415	.501	F
3	Checking inside shoes before putting them on can prevent foot ulcers from occurring.	1.00	.000	P
4	Washing feet every day can prevent foot ulcers from occurring.	1.685	.4725	G
5	Testing water temperature with hand or elbow before washing feet can prevent foot ulcers from occurring.	1.00	.000	P
6	Drying feet thoroughly after washing can prevent foot ulcers from occurring.	1.115	.3255	P
7	Putting moisturizing cream on feet can prevent foot ulcers from occurring	1.751	.458	G
8	Cutting toenails straight across can prevent foot ulcers from occurring	1.00	.000	P
9	Wearing proper footwear can preventing foot ulcers from occurring	1.585	.4865	F
10	Seeing the diabetic doctors regularly can prevent foot ulcers from occurring	1.58	.4985	F
11	Immediately informing the diabetic doctors about any changes in my feet (E.g. numb, muscle cramp, lost or reduced feeling, any lesions, corns, calluses) can prevent foot ulcers from occurring	1.78	.4145	G
12	Never walking outside in barefoot can prevent foot ulcers from occurring.	1.785	.4185	G
13	Never using chemical agents or blades to remove corns on my feet can prevent foot ulcers from occurring.	1.89	.474	G
14	Never putting my feet near hot devices/ tools articles can prevent foot ulcers from occurring.	1.00	.000	P
15	It's important to wash feet daily. Which of these options best describes how they should be washed?	1.185	.393	P
16	Which of these tips are true to prevent diabetic foot?	1.00	.000	P
17	Patient with diabetes can walk barefoot:	1.03	.183	P
18	Apply a moisturizing cream on the following part can prevent diabetic foot ulcers	1.00	.000	P
20	If you have diabetic neuropathy that is a risk factor for diabetic foot, you may feel	1.45	.5035	F
21	Which of the following measures does not help to prevent diabetes complications? a. Controlling blood glucose level b. Controlling blood pressure and blood lipids level c. Eliminating all carbohydrates from the diet d. Early detection of retinopathy and nephropathy	1.435	.5025	F
	Total mean score	1.34	.301	F

The finding of table (2) showed that total mean of score of participants' answers were (MS=1.34 Fair), Where Item (1,4,7,11,12. and 13) showed good assessment, while item (5,6,8,14,15,16,17, and 18) showed poor assessment.

Table (3): Association between Socio-Demographic and Level of Patient Knowledge toward Diabetic Foot

Socio-demographic variables	Knowledge level		
	Chi-Square	P value	Sig.*
Age groups	**30.182**	**.456**	**NS**
Gender	**14.933**	**.135**	**NS**
Residency	**6.923**	**.733**	**NS**
Educational level	**44.167**	**.300**	**NS**
Occupation	**30.219**	**.454**	**NS**
Family history of diabetes	**10.317**	**.413**	**NS**
Duration of diabetes	**24.140**	**.236**	**NS**

*** Sig. = significance level ≤ 0.05= significant**

This table (3) demonstrated the relationship between socio-demographic characteristics and patient' knowledge showed that sociodemographic and knowledge variables had no association at p value ≤ 0.05.

Discussion

The results showed that the high percentage of patients were male, and this is consistent with quasi-experimental design study which discovered that more than half of the sample (50.9 percent) were males [9].

Age groups: Result showed that highest percentage of participants (33%) within age group 40-49 Years, this result agree with study that discovered highest percentage of participants (< 38.3%) were within age group 41-50 years [10].

Educational level show that high percentage of patient were completed primary school (31.6%), and illiterate (23.4%), these finding agree with study that showed higher percentage for participants with (primary school, and illiterate) where they represent (55%) of study sample [11].

Residence and Duration of diabetic: result showed that higher percentage of participants (78.3%) lived in Urban, and have diabetic from 5-10 Years, and that agree with study which showed that highest percentage of participants were lived in urban (62.1%), and have diabetic less than ten years (54.1%) [11].

Regarding family history of diabetes, the highest percentage (65%) of

participants have diabetic family history, and that agree with study which show that about 89.5% of patients have a first or second relative family history [12].

The finding of study regarding assessment patients' Knowledge about Preventive Measures of Diabetic Foot were (MS=1.34 Fair Knowledge), and that result agree with study which showed that the preventative foot care scores for patients varied from 31.4%-14.7% [13].

These findings showed that there was no significant association between demographic and knowledge toward contributing factors and preventive measures of diabetic Foot ulcer variables (at p-value ≤ 0.05). In related to demographic characteristics study reported that no association between patients' Knowledge about Preventive Measures of Diabetic Foot and demographic variables such as gender, age, family history, or awareness of the disease [10].

According to another study that corroborated the research findings, there were significant relationships between knowledge score and gender, disease duration, occupation, place of residence, level of education, having diabetic foot ulcers DFU, having a history of hospitalization, amputation, and complication [11].

Study observed that there was no significant relationship between gender and BMI and the occurrence of diabetic foot ulcers (DFU)[12]

Conclusion

Level of diabetic patients' knowledge about preventive measures for the diabetic foot of the patients was Fair.

There are no significant differences were found between study and control samples regarding demographic variables. The results of the needs assessment show that the level of knowledge about preventive measures for the diabetic foot of the patients was low.

Recommendations

The Ministry of Health should use the media to organize public health campaigns to strengthen knowledge towards contributing factors and preventive measure for diabetic foot. Further research is recommended to repeat the research on a large probability sample to achieve further generalization.

Booklets or guidelines about diabetes mellitus and foot care should be available in AL-Hassan Specialized Center for Endocrinology and Diabetes in Imam AL-Hussein Medical-City in Arabic versions and should be distributed to each diabetic adult patient for free.

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