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Evaluation of diabetes patients' knowledge and practice levels about diabetic foot care*

Ocena poziomu wiedzy i praktyki pacjentów chorych na cukrzycę na temat pielęgnacji stopy cukrzycowej

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Summary

Introduction. Diabetes is a very common public health problem. Diabetic foot is a complication of diabetes and can cause significant foot problems. Diabetic foot wounds are a significant problem with serious consequences for both patients and healthcare systems.

Aim. Our aim in this research was to determine the knowledge and practice levels of diabetic patients regarding diabetic foot care.

Materials and Methods. The research was conducted in a cross-sectional descriptive design. Research data were collected from April 2022 to July 2022. The sample was diabetic patients (n=200). A form was used to determine the sociodemographic characteristics of the patients and their knowledge and practice levels regarding diabetic foot care.

Results. Diabetic foot care knowledge level was found to be low in 60.5% of the patients. Additionally, it was determined that 62.5% of the patients had low diabetic foot application. A statistically significant difference was found between the patients' level of knowledge about diabetic foot and their gender, education level, profession, income, place of residence, and whether there is a health center or hospital close to where they live. A statistically significant dif-

ference was found between the patients' diabetic foot practice level and their level of education, profession and residence ($p < 0.05$).

Conclusion. It was observed that the level of knowledge and practice regarding diabetic foot was low in most of the patients. Diabetic patients should be informed about foot problems and treatments when they apply to hospitals.

Keywords: Diabetes Mellitus, Diabetes Complications, Diabetic Patient, Diabetic Foot Care, Knowledge

Streszczenie

Wstęp. Cukrzyca jest bardzo powszechnym problemem zdrowia publicznego. Stopa cukrzycowa jest powikłaniem cukrzycy i może powodować poważne problemy ze stopami. Rany stopy cukrzycowej stanowią istotny problem, mający poważne konsekwencje zarówno dla pacjentów, jak i systemu opieki zdrowotnej.

Cel. Naszym celem w tym badaniu jest określenie poziomu wiedzy i praktyki pacjentów chorych na cukrzycę w zakresie pielęgnacji stopy cukrzycowej.

Materiał i metoda. Badanie zostało przeprowadzone w przekrojowym projekcie opisowym. Dane badawcze zbierano od kwietnia 2022 r. do lipca 2022 r. Próbę stanowili pacjenci z cukrzycą ($n=200$). Formularze gromadzenia danych zostały wykorzystane do określenia cech socjodemograficznych pacjentów oraz ich wiedzy i poziomu praktyki w zakresie pielęgnacji stopy cukrzycowej.

Wyniki. Stwierdzono, że poziom wiedzy na temat pielęgnacji stopy cukrzycowej jest niski u 60,5% pacjentów. Ponadto stwierdzono, że praktyka dotycząca stopy cukrzycowej była niska u 62,5% pacjentów. Stwierdzono istotną statystycznie różnicę między poziomem wiedzy pacjentów na temat stopy cukrzycowej a ich płcią, poziomem wykształcenia, zawodem, dochodami, miejscem zamieszkania oraz tym, czy w pobliżu miejsca zamieszkania znajduje się ośrodek zdrowia lub szpital. Stwierdzono istotną statystycznie różnicę pomiędzy poziomem praktyki chorych w zakresie stopy cukrzycowej a poziomem wykształcenia, zawodu i miejsca zamieszkania ($p < 0,05$).

Wnioski. Zaobserwowano, że poziom wiedzy i praktyki w zakresie stopy cukrzycowej był niski u większości pacjentów. Pacjenci z cukrzycą powinni być informowani o problemach ze stopami i leczeniu podczas zgłaszania się do szpitala.

Słowa kluczowe: cukrzyca, powikłania cukrzycy, pacjent z cukrzycą, pielęgnacja stopy cukrzycowej, wiedza

Introduction

Diabetes is a chronic disease that requires constant monitoring and medical care, characterized by carbohydrate, protein and fat metabolism disorders and chronic hyperglycemia [1].

Diabetes mellitus [DM] is one of the most common chronic diseases among non-communicable diseases and is characterized by hyperglycemia [2]. The presence of hyperglycemia is what differentiates diabetes from other metabolic disorders. Chronic hyperglycemia, which is a consequence of diabetes, is linked with relatively long-term microvascular problems that damage the eyes, kidneys, and nerves [3]. Diabetic neuropathy causes patients to lose sensation in their feet. This makes it difficult to detect any injuries to the foot. In addition, since diabetes weakens the immune system, there is a high probability of infection developing in ulcers [4]. If diabetic neuropathy is not noticed and preventive foot care is not applied, there is a risk of injury to the feet with loss of sensation [5]. Diabetic foot disease is one of the most serious complications of diabetes. It is a source of great pain and financial cost for the patient. At the same time, it puts a serious burden on the patient's health, family, health professionals and hospitals [6]. Diabetes-related lower extremity complications are common and increasing. It affects approximately 131 million people worldwide; global prevalence is estimated to be 1.8% [7]. The risk of developing gangrene in the foot and the need for amputation is 15 times higher in DM patients. Without a reason for trauma, limb amputation is mostly caused by DM [8]. Approximately 50% to 60% of diabetic ulcers become infected. Approximately 20% of moderate to severe infections lead to lower extremity amputations. The 5-year mortality rate for patients with diabetic foot ulcers is about 30%, compared to more than 70% for those with major amputations [9].

DM is one of the 10 diseases that cause death worldwide. The number of patients with DM worldwide, which was 108 million in 1980, is

expected to increase to 700 million in 2045 [10]. Proper treatment and education can prevent 85 percent of diabetic foot amputations. It is important to identify risky foot conditions, wear the right shoes, early treatment of foot problems, and education of patients and healthcare personnel [11]. It is necessary to prevent diabetic foot problems in diabetic patients and to inform patients about foot care if a foot problem has developed. The patient should be told what the emergencies are regarding foot ulcers; They should be explained in which cases they should apply to a health institution [12]. Since type 2 diabetes is one of the life-long chronic diseases, the individual must cope with many factors in order to adapt to the disease [13].

Aim

This research aimed to determine the knowledge and practices of diabetic patients regarding diabetic foot care in Iraq. Sociodemographic and medical information of Diabetic Patients admitted to AL- Al-Hüseyin Training Hospital in Iraq were determined and their practices regarding Diabetic Foot Care were examined.

Research questions

1. What is the knowledge level of DM patients about diabetic foot care?
2. What is the practice level of DM patients regarding diabetic foot care?
3. Is there a relationship between the level of knowledge and practice of diabetic patients regarding diabetic foot and demographic information?

Material and methods

Design of the research – This is a descriptive cross-sectional research.

Place and time of research

The data were collected by the researcher at AL- Al-Hüseyin Training Hospital, in Al-Muthanna, Iraq. Al-Muthanna governorate is loca-

ted in southwestern Iraq. It shares a border with Qatar and Saudi Arabia to the south. The estimated population of the governorate is 835,797 people. The majority of Muthanna's population are Shia Arabs (<https://euaa.europa.eu/country-guidance-iraq-2021/muthanna>). The sample of the study consisted of 200 diabetic patients. The participation rate of patients is 95%. Data collection forms were given to diabetic patients and filled in under the supervision of the researcher. It took approximately 15-20 minutes to fill out the survey. The research was carried out between April 2022 and July 2022.

Permission was received from the ethics committee of Cankiri Karatekin University to conduct the research. Permission was obtained from the Ministry of Health and Environment/Muthanna Health Directorate/Training and Development Center. Permission to use the survey was obtained from an Arab researcher by email [13]. Patients were informed about the research before data collection. Patients were told that these results would be used for research purposes only. Additionally, patients were informed that there was no obligation to participate in the study and that they could refuse if they wished.

The Research Instrument

Three forms were used in the study. The first of these consisted of General Information about the patient. the second is about Foot Care Knowledge, the third is about Diabetic Foot Care Practice. There were 13 questions to measure diabetes knowledge regarding foot care. The questions were asked to be answered as True or False. The section on diabetic foot care practices consists of 11 questions. They were asked to answer yes or no to the questions in the form.

Data Assessment

IBM SPSS (Statistical Package for Social Sciences) was used (version 25) for data analysis. The data were summarized using number, percentage, frequency, mean and standard deviation values. T-test was used for the mean comparisons of two independent groups, and one-

-way analysis of variance was used for mean comparisons of more than two independent groups. Statistically, $p < 0.05$ value was accepted as significant.

Validity of the Instrument

This survey is based on the survey prepared by Pollock et al. [14]. It was developed by Alshehri et al. [15] and translated into Arabic and used in the study conducted in Saudi Arabia. Cronbach's alpha coefficient, which measures the reliability of the variables in the Arabic version, was found to be Cronbach's alpha coefficient=.71.

Variables of research

The dependent variable of the study is the total score of the foot care knowledge and practice scale. The Independent Variables of the research are the characteristics related to sociodemographic and medical information.

Sampling inclusion criteria

- 1- Diabetic patients admitted to AL- Al-Hüseyin Training Hospital
- 2- Patients aged 30 years and over.
- 3- Patients who volunteered to participate in the study

Sampling exclusion criteria

- 1- Participants who have been diagnosed with mental health problem.
- 2- Diabetic patients younger than 30 years old.
- 3- Araştırmaya katılmaya istekli olmayan hastalar

Limitations

One of the limitations of the study is that the participants were patients who applied to a training hospital in the Al-Muthanna region of Iraq. Additionally, the sample size was relatively small, and a study with

a larger sample size could be conducted in the future. Another limitation of our study is that it was conducted within a certain time interval.

Results

In the research, 34.5% of the patients were between the ages of 50-60. male patients 64%; married patients, 87%; illiterate 46.5%; those who were housewives 27.5%; those with insufficient income 60.5%; Rural residents were 58.0%. It was determined that the rate of patients diagnosed with diabetes 6-10 years ago was 34.5%. 62% of the patients were using tablets for the treatment of DM. 44% of the patients did not have any disease other than diabetes; 71% were nonsmokers; 68% had no foot ulcers; 53.5% had no knowledge about foot care. 50.5% of the patients stated that there was no health center or hospital near where they lived, and 27.5% stated that they went to the doctor every 3 months (Table 1).

Table 1. Distribution of patients according to social demographic features and medical information

Demographic data		n (200)	Percent %	Median
Age	30 to 40	43	21.5	3.00
	40 to 50	45	22.5	
	50 to 60	69	34.5	
	60 and over	43	21.5	
Gender	Male	128	64.0	1.00
	Female	72	36.0	
Marital Status	Single	26	13.0	2.00
	Married	174	87.0	
Education Level	Illiterate	93	46.5	2.00
	Primary	16	8.0	
	Intermediate	22	11.0	
	Secondary	19	9.5	
	Diploma degree	32	16.0	
	College and above	18	9.0	

Occupation	Daily wage worker	53	26.5	3.00
	Peasant or farmer	24	12.0	
	Government employee	43	21.5	
	Retired	16	8.0	
	Housewife	55	27.5	
	Does not work	9	4.5	
Income	Enough	29	14.5	3.00
	Somewhat enough	50	25.0	
	Not enough	121	60.5	
Residence	Urban	84	42.0	2.00
	Rural	116	58.0	
Duration of DM	Less than 3 years	25	12.5	3.00
	3 to 5 years	66	33.0	
	6 to 10 years	69	34.5	
	More than 10 years	40	20.0	
Type of treatment	Diet	15	7.5	2.00
	Pills	124	62.0	
	Insulin	61	30.5	
Chronic diseases	Heart disease	35	17.5	2.00
	Hypertension	77	38.5	
	I don't have any diseases other than DM	88	44.0	
Smoker	No	142	71.0	0.00
	Yes	58	29.0	
Foot ulcer	No	136	68.0	0.00
	Yes, less than 6 months	30	15.0	
	One year	24	12.0	
	More than a year	10	5.0	
Receive education	No	107	53.5	0.00
	Yes By Doctor	71	35.5	
	By Nurse	12	6.0	
	By Other	10	5.0	

Health centres, hospital close to where you live	No	101	50.5	0.00
	Yes	99	49.5	
Your reviews of the doctor	Never	1	,5	4.00
	Weekly	7	3,5	
	Per monthly	50	25,0	
	Every 3 months	55	27,5	
	Every 6 months	40	20,0	
	Every year (Almost)	47	23,5	

It was seen that there was no difference between age, marital status, age at diagnosis of DM, treatment method, chronic disease, smoking, foot ulcer, disease guidance, doctor’s evaluations and knowledge about diabetic foot care in diabetic patients ($p > 0.05$). However, there is a high level of significance difference between gender, education level, occupation, income, place of residence, living close to a health center and knowledge level ($p < 0.05$) (Table 2).

Table 2. The relationship the knowledge level of patients and demographic data

Demographic data	Subgroup	Knowledge				F	p
		Low		High			
		Fre	%	Fre	%		
Age	30 to 40	28	21.9	15	20.8	.437	.727*
	40 to 50	31	24.2	14	19.4		
	50 to 60	39	30.5	30	41.7		
	60 and over	30	23.4	13	18.1		
Gender	Male	70	54.7	58	80.6	40.656	.001**
	Female	58	45.3	14	19.4		
Marital Status	Single	20	15.6	6	8.3	6.506	.321**
	Married	108	84.4	66	91.7		

Education Level	Illiterate	84	65.6	9	12.5	28.022	.001*
	Primary	12	9.4	4	5.6		
	Medium	10	7.8	12	16.7		
	Secondary	12	9.4	7	9.7		
	Diploma degree	9	7.0	23	31.9		
	College and above	1	0.8	17	23.6		
Occupation	Daily wage worker	36	28.1	17	23.6	13.305	.001*
	peasant or farmer	20	15.6	4	5.6		
	Government employee	16	12.5	27	37.5		
	Retired	2	1.6	14	19.4		
	Housewife	46	35.9	9	12.5		
	Does not work	8	6.3	1	1.4		
Income	Enough	10	7.8	19	26.4	19.128	.001*
	Somewhat enough	23	18.0	27	37.5		
	Not enough	95	74.2	26	36.1		
Residence	Urban	46	35.9	38	52.8	14.889	.002*
	Rural	82	64.1	34	47.2		
Diabetes diagnosis date	Less than 3 years	16	12.5	9	12.5	.720	.541*
	3 to 5 years	45	35.2	21	29.2		
	6 to 10 years	42	32.8	27	37.5		
	More than 10 years	25	19.5	15	20.8		
Type of treatment	Diet	10	7.8	5	6.9	.175	.839*
	Pills	78	60.9	46	63.9		
	Insulin	40	31.3	21	29.2		
Do you suffer from other chronic diseases (other than DM)?	Heart disease	24	18.8	11	15.3	.726	.485*
	Hypertension	49	38.3	28	38.9		
	I don't have any diseases other than diabetes	55	43.0	33	45.8		
Do you smoke?	No	93	72.7	49	68.1	.003	.977**
	Yes	35	27.3	23	31.9		

Do you have a foot ulcer?	No	85	66.4	51	70.8	1.155	.328*
	Yes, less than 6 months	22	17.2	8	11.1		
	One year	16	12.5	8	11.1		
	More than a year	5	3.9	5	6.9		
Do you receive education or guidance on the disease?	No	69	53.9	38	52.8	.226	.878*
	Yes, by doctor	45	35.2	26	36.1		
	Nurse	7	5.5	5	6.9		
	Other	7	5.5	3	4.2		
Is there a health center, hospital or close to where you live?	No	71	55.5	30	41.7	11.743	.046**
	Yes	57	44.5	42	58.3		
Your reviews of the doctor	Never	0	0.0	1	1.4	1.376	.235*
	Weekly	6	4.7	1	1.4		
	Per monthly	33	25.8	17	23.6		
	Every 3 months	36	28.1	19	26.4		
	Every 6 months	21	16.4	19	26.4		
	Every year (Almost)	32	25.0	15	20.8		
* ANOVA, ** Independed t-test; Fre: Frequency, %: percent, F = Distribution, p-value = Probability, significant at p<0.05, high significant at p<0.01							

The knowledge level of 60.5% of DM patients was found to be low (Figure 1).

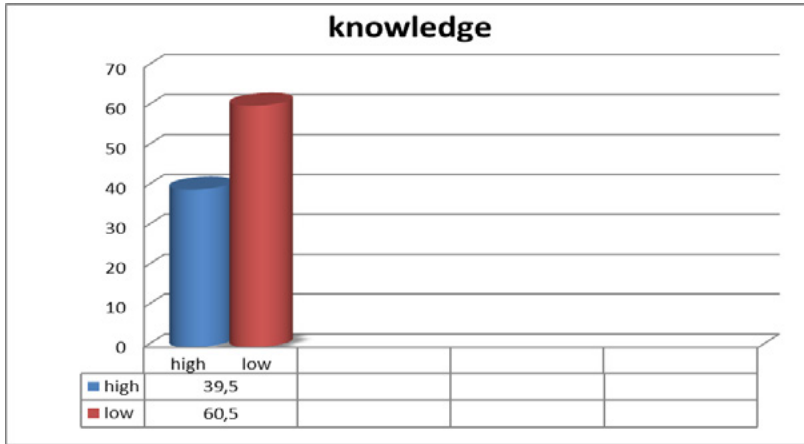


Figure 1. Distribution of the level of knowledge about foot care among patients

It was determined that 62.5% of DM patients had low diabetic foot-related practices (Figure 2).

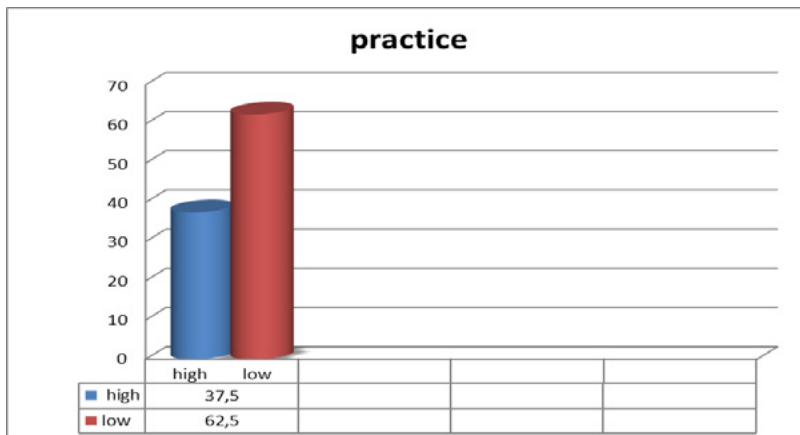


Figure 2. Distribution of the level of practice about foot care among patients

It was determined that there was a significant difference between occupation, place of residence, education level and diabetic foot practice level ($p < 0.05$) (Table 3).

Table 3. The relationship the practice level of patients and the demographic data (n=200)

Demographic data	Subgroup	Practice				F	p
		Low		High			
		Fre	%	Fre	%		
Age	30 to 40	25	20.0	18	24.0	.550	.649*
	40 to 50	29	23.2	16	21.3		
	50 to 60	41	32.8	28	37.3		
	60 and over	30	24.0	13	17.3		
Gender	Male	77	61.6	51	68.0	3.657	.364**
	Female	48	38.4	24	32.0		
Marital Status	Single	18	14.4	8	10.7	3.378	.450**
	Married	107	85.6	67	89.3		
Education Level	Illiterate	69	55.2	24	32.0	4.113	.001*
	Primary	11	8.8	5	6.7		
	Medium	10	8.0	12	16.0		
	Secondary	14	11.2	5	6.7		
	Diploma degree	12	9.6	20	26.7		
	College and above	9	7.2	9	12.0		
Occupation	Daily wage worker	28	22.4	25	33.3	2.799	.018*
	Peasant or farmer	20	16.0	4	5.3		
	Government employee	22	17.6	21	28.0		
	Retired	8	6.4	8	10.7		
	Housewife	41	32.8	14	18.7		
	Does not work	6	4.8	3	4.0		
Income	Enough	15	12.0	14	18.7	.836	.435*
	Somewhat enough	32	25.6	18	24.0		
	Not enough	78	62.4	43	57.3		

Residence	Urban	45	36.0	39	52.0	12.625	.029**
	Rural	80	64.0	36	48.0		
Diabetes diagnosis date	Less than 3 years	13	10.4	12	16.0	1.106	.348*
	3 to 5 years	38	30.4	28	37.3		
	6 to 10 years	46	36.8	23	30.7		
	More than 10 years	28	22.4	12	16.0		
Type of treatment	Diet	9	7.2	6	8.0	2.422	.091*
	Pills	71	56.8	53	70.7		
	Insulin	45	36.0	16	21.3		
Do you suffer from other chronic diseases Like	Heart disease	26	20.8	9	12.0	1.424	.243*
	Hypertension	48	38.4	29	38.7		
	I don't have any diseases other than DM	51	40.8	37	49.3		
Do you smoke?	No	88	70.4	54	72.0	.244	.810**
	Yes	37	29.6	21	28.0		
Do you have a foot ulcer?	No	80	64.0	56	74.7	.991	.398*
	Yes,less than 6 months	21	16.8	9	12.0		
	One year	16	12.8	8	10.7		
	More than a year	8	6.4	2	2.7		
Do you receive education or guidance on the disease?	No	68	54.4	39	52.0	.750	.523*
	Yes, by doctor	43	34.4	28	37.3		
	By Nurse	6	4.8	6	8.0		
	By Other	8	6.4	2	2.7		
Is there health center, hospital or close to where you live?	No	65	52.0	36	48.0	1.167	.586**
	Yes	60	48.0	39	52.0		

Your reviews of the doctor	Never	1	0.8	0	0.0	1.598	.162*
	Weekly	7	5.6	0	0.0		
	Per monthly	29	23.2	21	28.0		
	Every 3 months	30	24.0	25	33.3		
	Every 6 months	25	20.0	15	20.0		
	Every year	33	26.4	14	18.7		
	(Almost)						

Discussion

This research found that 34.5% of the patients were between the ages of 50-60 (Table 1). In some studies, it was found that 52.4% of patients with DM were over 45 years old [16], 36% were between 51-60 years old [17], 38.1% were between 41-60 years old [18]. 64% of the study participants were male (Table 1). Similar results were found in some studies [16,19,20]. It was determined that 87% of the patients in the study were married (Table 1). It was observed that there were similar results to this result [17,18, 21]. Especially Type 2 diabetes is more common over the age of 40. Most people this age are married [22]. In the study, 46.5% of the patients were illiterate (Table 1). This situation causes patients to have difficulty obtaining information and instructions regarding care. In some studies, this rate was found to be 48.6% and 21.6% [22,18]. It was determined that 27.5% of the patients were housewives. Many of the women in this city have not completed their education or are not eligible to work in any job. In some studies, this rate was found to be 37.6% and 38.8% [24,18]. 58% of the patients in this study came from rural areas (Table 1). In some studies, this rate was found to be 74.3% and 31.3% [23,17]. It was determined that the income level of 60.5% of the patients was not enough (Table 1). The poverty rate in Muthanna is 49%. Job opportunities and economic resources are insufficient [25]. In one study, this rate was found to be 43.4% [20].

34.5% of the patients had diabetes for 6-10 years (Table 1). Similar result was seen in a study [20]. 62% of patients were using tablets for treatment (Table 1). In some studies, this rate was found to be 46.5% and

61.7% [20,18]. Since most people with diabetes are type 2 DM, this type is usually treated with tablets. In the study, 71% of the patients were non-smokers (Table 1). This rate was found to be 73.3% and 90% in some studies [19, 26]. In this study, 32% of patients had diabetic foot problems (Table 1). Since the weather in Al-Muthanna is generally dry and hot all year round, people do not prefer to wear shoes. They mostly prefer to wear slippers or sandals. This can cause foot problems. In one study, diabetic foot ulcers were in 26% of patients [27]. 53.5% of the patients stated that they did not receive education about foot care (Table 1). The reason why the patients participating in the study did not receive prior training in foot January care may be that the majority of the patients live in rural areas and there are no health centers or hospitals in their location. In one study, this rate was found to be 51.9% [28]. There is no hospital or health center in the area where 50.5% of the patients live (Table 1). Since the majority of patients live in rural areas, they have difficulty accessing health services. In this study, 60.5% of patients had low knowledge of diabetic foot care (Figure 1). In the study, the reasons for the lack of knowledge of the patients about diabetic foot care may be the lack of education level of the patients and the difficulty in accessing health services. In a study, this rate was reported as 84.8% [29]. In a study conducted in Malaysia, it was found to be 98.1% [30]. Differently, there are also studies showing that the level of knowledge about foot care in diabetic patients is high [31,32, 33]. The research showed that 62.5% of the patients had poor diabetic foot care practices. In some studies, this rate was found to be 91.2% and 61.8% [29,30]. Differently, in some studies, it has been found that diabetic foot care practices of patients are good [17,31]. The reasons for this may be such as patients' low level of education and health awareness, insufficient access to health services.

The results showed that there was a statistically significant difference between gender and knowledge ($p < 0.01$), and men were more knowledgeable than women (Table 2). Pourkazemi et al. (2020) similarly found a significant relationship between gender and knowledge. Also, between the level of education and knowledge statistically high significant

relationship ($p < 0.01$) (Table 2). The results show that patients with low education level have poor knowledge about diabetic foot care, while patients with high education level have good knowledge about diabetic foot care. Similar results have been found in some studies [31,34]. A statistically significant ($p < 0.01$) difference was found between profession and diabetic knowledge (Table 2). It has been determined that the knowledge levels of civil servants and retirees are higher. This result is similar to the study of Verma et al. [32]. A statistically significant relationship ($p < 0.01$) was found between income and diabetic knowledge level (Table 2). Patients with high incomes have good knowledge, while those with low incomes have little knowledge. Verma et al. (2021) also found similar results. A significant correlation was found between residence and diabetic knowledge level ($p < 0.01$) (Table 2). It was determined that patients living in the city had more information than those living in rural areas. S. Ewais et al. (2021) found similar result in their study. It was determined that there was a significant difference ($p < 0.05$) between the presence of a health center or hospital close to where the patients lived and the level of diabetic knowledge (Table 2). It was determined that those who had a health center or hospital close to where the patients lived had a higher level of knowledge. There was no statistically significant relationship between age, duration of DM diagnosis, type of treatment, having another chronic disease, receiving education or guidance about the disease, doctor's evaluations, marital status, smoking status and diabetic foot practice level ($p > 0.05$) (Table 3). Similar results were obtained in the study of Pourkazemi et al. [29].

In the study, it was determined that there was a statistically significant difference between education level and diabetic foot practice ($p < 0.01$). The results indicated that illiterate patients and patients with low educational level have poor practices towards diabetic foot care, in contrast to patients with higher education level have good and average practices towards foot care (Table 3). Similar results were found in a study [35]. It was found that there was a significant difference between occupation and diabetic foot practice level ($p < 0.05$) (Table 3). Working

patients have a better level of diabetic administration than non-working patients. Patients residing in the city have a better level of practice for diabetic foot care than patients residing in rural areas (Table 3). S. Ewais et al. (2021) reported similar results in their study. A statistically significant difference was found between the patients' education level, profession, place of residence, and diabetic foot practice ($p < 0.05$). These results are similar to the work of Pourkazemi et al. [29].

Diabetic foot problem is a health problem that causes significant economic and social burdens and can lead to amputations and death. Inadequate knowledge of foot care and inappropriate self-care behaviors can increase the likelihood of serious foot problems and lower limb amputations. Therefore, it is important to identify risk factors for the disease and educate patients at risk [36].

Conclusions

There was a statistically significant difference between the patients' gender, education level, occupation, income, residence status and foot care knowledge. In addition, a statistically significant difference was found between the patients' education level, profession, residence and diabetic foot practices. The levels of knowledge and practices among diabetes patients may be enhanced by the implementation of community awareness and training programs.

Recommendations for Nursing Practice

Due to the inability of diabetic patients to come to hospitals, regular home visits were recommended by nurses to monitor and reduce diabetes complications. Nurses should provide training to patients with diabetes in order to increase the patient's knowledge about foot care and reduce the incidence of diabetic foot. A booklet with text and pictures containing information about foot care can be prepared. These booklets can be distributed to patients applying to health institutions. Periodic trainings on diabetic foot care should be given to nurses. Additionally, nursing students at universities should be informed about diabetic foot.

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- * According to the decision of the Cankiri Karatekin University Health Sciences Research Ethics Committee dated 21.04.2022 and numbered 425, the ethical suitability of the research was accepted.

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