Obstacles and Related Factors Faced by Individuals with Type 2 Diabetes in Managing Diabetes

Abstract

Aim: The purpose of this research is to identify the obstacles that patients diagnosed with Type 2 diabetes face in diabetes management.

Methods: The population of the study consisted of 244 patients who applied to internal medicine clinics of the Public Hospital in Nevşehir between December 2018 and September 2019 with diagnosis of Type 2 diabetes. The Patient Identification Form and the Diabetes Obstacles Questionnaire (DOQ) were used to collect the data. In data analysis, percent, mean, and standard deviation were used for descriptive analyses, and Independent samples t-test and One-way ANOVA test were used for comparisons.

Results: The DOQ sub-scale scores of the individuals included in the study were found as 16.75 ± 49.18 for self-monitoring, 25.92 ± 37.31 for diagnosis, 13.40 ± 34.46 for lifestyle changes, and 33.96 ± 30.93 for coping. It was found that women faced more disabilities than men ($P < .05$) at diagnosis sub-scale; 60 years old and over faced more obstacles at knowledge and beliefs and lifestyle changes sub-scales; the single group faced more obstacles than the married group ($P < .05$) at medication sub-scale; the group that did not comply with the diet and exercise was the group that encountered the obstacles most in all sub-scales except for diagnosis sub-scale ($P < .05$).

Conclusion: In this study, it was found that the patients encountered the most obstacles related to coping with diabetes, diagnosis, self-monitoring, and lifestyle changes. It has been identified that variables such as gender, age, marital status, exercise status, and adherence to diet affect the barriers patients face in diabetes management. It is recommended to support patients in diabetes management more and to plan nursing education considering the individual differences and conditions related to the areas they perceive as obstacles.

Keywords: Diabetes, Self-care management, Obstacles, Patient

Gamze Muz[1]
Gülyeter Erdoğan Yüce[2]
Canan Yıldırım[3]
Merve Dağdelen[4]

[1] Nevşehir Hacı Bektaş Veli University Semra-Vefa Küçük School of Health Sciences, Nevşehir, Turkey
[2] Aksaray University School of Health Sciences, Aksaray, Turkey
[3] Kayseri Training and Research Hospital, Kayseri, Turkey
[4] Nevşehir Hacı Bektaş Veli University, Nevşehir, Turkey

Introduction

Diabetes mellitus is a chronic disease that affects all age groups and causes negative consequences. It is reported that there are 463 million people diagnosed with diabetes in the world in 2019, and this number will increase to 578 million in 2030 and 700 million in 2045.[1] Diabetes is among the top 10 causes of death in adults and was estimated to cause 4 million deaths worldwide in 2017.[2] In the Turkish Diabetes Epidemiology Study (TURDEP), the second of which was completed in 2010 in Turkey, the prevalence of diabetes was determined to be 13.7%.[3,4] In the literature, many factors such as negative changes in lifestyle, sedentary life, obesity, and an increase in the elderly population are cited as causes of this increase.[5-7]

In diabetes treatment, it is aimed to provide and maintain metabolic control that will ensure good diabetes management. Many of the complications associated with diabetes can be prevented by blood sugar control and self-management of diabetes.[8] Diabetes management includes complex self-care activities and lifestyle changes such as drug-insulin use, diet, self-monitoring of blood glucose, exercise, and foot care. Individuals must take responsibility for self-management to realize these components in their treatment and care.[9] In the literature, it is stated that individuals diagnosed with diabetes experience obstacles and difficulties in compliance with treatment and lifestyle changes due to these multiple responsibilities.[2,6,10] Perception of disability is the perception of how negatively the daily life, work, and social activities of an individual with diabetes are affected by diabetes.[11] These barriers and difficulties increase the frequency of diabetes complications. Depending on both diabetes and the complications caused by diabetes, the quality of life of individuals decreases, and negative changes occur in physical, mental, and social areas.[6,9,11] Studies have shown that individual with diabetes faces adversely affecting the disease management many obstacles related to individual (rejection of the disease, lack of motivation, knowledge, skills, and time), social (participation, social attitudes), cultural (perception of the disease), family-related (participation in care, support), and the health system (access to recommended foods, transportation, access to health professionals, and exercise options).[9,11–15]

The process of adaptation to the disease and successful individual management depends on the development of strategies for positive life changes to be made to identify and reduce the obstacles faced by individuals in the treatment and care process. In the treatment of many chronic diseases, especially diabetes, and in the prevention of complications, many factors need to be addressed, not just one. Health personnel, especially nurses, who have an important role in the health team, have many responsibilities in ensuring and increasing individual compliance with treatment. Among these roles and responsibilities, the continuous education of the individual diagnosed with diabetes and

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the follow-up at the end of the education has an important place. The correct planning of this education depends on the determination of the obstacles experienced by the patient during the disease process, the planning, implementation, and evaluation of the interventions to be made to reduce the identified obstacles. It is thought that by reducing the obstacles encountered in diabetes management, the risk of developing complications will decrease, and the individual's adherence to treatment and quality of life will increase. The aim of this study, which is planned in this direction, is to determine the obstacles faced by individuals with Type 2 diabetes mellitus in diabetes management.

Research Questions
1. What are the obstacles faced by individuals with Type 2 diabetes in diabetes management?
2. What are the factors associated with the barriers faced by individuals with Type 2 diabetes in diabetes management?

Method

Research Design
This cross-sectional study was conducted to determine the obstacles faced by individuals with Type 2 diabetes mellitus in diabetes management.

Population and Sample of the Research
The population of the study consisted of patients who applied to Nevşehir State Hospital internal medicine clinics with the diagnosis of Type 2 diabetes between December 2018 and September 2019. Sample selection was not made in the study, and all patients who met the inclusion criteria of the study on the specified dates were included in the sample. A total of 244 patients were followed up with the diagnosis of Type 2 diabetes for at least 1 year; were able to communicate verbally; had no neurological, mental, and sensory problems; and volunteered to participate in the study formed the sample of the study.

Data Collection Tools and Data Collection
Data were collected using the Patient Identification Form and the Diabetes Barriers Scale. The face-to-face interview method was used by the researchers. The interviews lasted an average of 20 minutes.

Patient Identification Form: This form was prepared by the researchers by examining the relevant literature.[9,11–15] This form consists of a total of 18 questions including sociodemographic and disease characteristics of individuals.

Diabetes Obstacles Questionnaire (DOQ)
The questionnaire was developed by Hearnshaw et al.[16] to assess the barriers to diabetes self-management.[16] The 5-point Likert-type questionnaire without a total score consists of 77 items and eight sub-dimensions. The questionnaire was adapted into Turkish by Kahraman et al.[6] The questionnaire consists of 8 sub-dimensions and 68 questions, including barriers to medication, barriers to self-monitoring, barriers to knowledge and belief, barriers to diagnosis, barriers to relations with health professionals, barriers to lifestyle change, barriers to coping with diabetes, and barriers to getting advice and support. Responses are scored as "2" for strongly agree, "1" for agree, "0" for undecided, "-1" for disagree, and "-2" for strongly disagree. The mean scores of the sub-dimensions are calculated by dividing the sum of the answers given to the items in each sub-dimension in the questionnaire by the number of items in that sub-dimension. This score ranges from (+2) to (−2). The scores obtained are multiplied by 50 to obtain a score that is distributed between (+100) and (−100). Negative scores obtained from the relevant sub-dimension according to the questionnaire indicate that the patient experiences fewer obstacles for that sub-dimension, while positive scores indicate that perceived barriers increase. The Cronbach's Alpha values of the original questionnaire ranged from 0.76 to 0.93, while the Cronbach's Alpha values of the Turkish version ranged from 0.63 to 0.84. In this study, Cronbach's Alpha values were found to be between 0.60 and 0.89.

Ethical Dimension of Research
Written permission was obtained from the ethics committee of Nevşehir State Hospital and Nevşehir Hacı Bektaş Veli University (Ethics committee no: 2016.10.04). The purpose of the study was explained to the individuals included in the study, and their verbal consent was obtained. In addition, the authors who conducted the validity and reliability studies for the Diabetes Obstacles Questionnaire to be used in the research were informed by e-mail and their permissions were obtained.

Data Analysis
IBM SPSS 22.0 package program (IBM Corp. Armonk, NY, USA. Released 2013) was used for statistical analysis of the data. The conformity of the data to the normal distribution was evaluated with the Shapiro–Wilk test of normality and the homogeneity of the variances with the Levene test. In the analysis of the data, percentage, mean, and standard deviation from descriptive statistics, T-test and one-way ANOVA test in independent samples were used for comparisons, Bonferroni correction was used to determine the source of the difference, and Cronbach Alpha values were used in the reliability analysis of the scales. $P < .05$ value was considered statistically significant.

Results

Considering the sociodemographic and disease characteristics of the individuals participating in the study, it was determined that the mean age of the individuals was 63.65 ± 12.07 years; of the individuals, 63.9% were female, 73.8% were married, and 78.2% had equal income status and expenditure status. It was determined that of the individuals, 58.2% had a diagnosis of diabetes for 10 years or more, 38.1% used oral antidiabetic and insulin therapy together, and 81.1% had their blood sugar measured regularly. It was found that 50.0% of the individuals partially complied with their diet, 72.1% of them did not exercise, and 91.4% of them went to regular doctor check-ups for diabetes (Table 1).

The mean scores of the DOQ sub-dimension of individuals included in the study were determined as −9.17 ± 35.31 for drug barriers sub-dimension, 16.75 ± 49.18 for self-monitoring barriers sub-dimension, −0.97 ± 39.90 for knowledge and belief barriers sub-dimension, 25.92 ± 37.46 for barriers to diagnosis sub-dimension, −10.40 ± 35.34 barriers in relationships with health professionals sub-dimension, 13.47 ± 34.57 for lifestyle change barriers sub-dimension, 36.62 ± 31.47 for diabetes coping barriers sub-dimension, and 4.50 ± 36.02 for obstacles in receiving advice and support. In line with these results, it was found that the patients encountered the most obstacles related to coping with diabetes, diagnosis, self-monitoring, and lifestyle changes (Table 2).

When the sub-dimensions of the DOQ scale were examined according to gender, it was determined that women faced more obstacles than men in the sub-dimension of obstacles in diagnosis, and this situation created a statistically significant difference ($P < .05$). When the age groups were examined, it was found that the group aged 60 and over faced more barriers in the sub-dimensions of knowledge and belief barriers and lifestyle change barriers, and this situation created a significant difference ($P < .05$). When the marital status, which was

Table 1. Distribution of Individuals by Sociodemographic and Disease Characteristics

Variables	n	%
Gender		
Women	156	63.9
Men	88	36.1
Mean age (x̄ ± SD)	63.65 ± 12.07	
Age Groups		
<50 years	32	13.1
50-59 years	48	19.7
≥60 years	164	64.2
Marital status		
Married	180	73.8
Single	64	26.2
Income status		
Income less than expenses	37	15.2
Income equal to expenses	191	78.2
Income more than expenses	16	6.6
Diabetes diagnosis time		
1-4 years	43	17.6
5-9 years	59	24.2
10 years and over	142	58.2
Type of treatment		
Only diet therapy	5	2.1
Oral antidiabetic drug	54	22.1
Insulin	92	37.7
Oral antidiabetic drug + Insulin	93	38.1
Blood glucose measurement status		
Yes	198	81.1
No	46	18.9
Dietary compliance status		
Yes	81	33.2
Partly	122	50.0
No	41	16.8
Exercise status		
Yes	68	27.9
No	176	72.1
The state of going to regular doctor check-ups for diabetes		
Yes	223	91.4
No	21	8.6

Table 2. Mean Subscale Scores of the Diabetes Obstacles Questionnaire

DOQ Sub-Dimension Scores	Min-Max	x̄ ± SD
Drug barriers	−100.00-100.00	−9.17 ± 35.31
Self-monitoring barriers	−100.00-100.00	16.75 ± 49.18
Knowledge and belief barriers	−100.00-100.00	−0.97 ± 39.90
Barriers to diagnosis	−100.00-100.00	25.92 ± 37.46
Barriers in relationships with healthcare professionals	−94.12-100.00	−10.40 ± 35.34
Lifestyle change barriers	−87.50-100.00	13.40 ± 34.46
Barriers to coping with diabetes	−71.43-100.00	36.62 ± 31.47
Barriers to getting advice and support	−78.57-100.00	4.50 ± 36.02

another variable, was examined, it was identified that the single group in the sub-dimension of drug barriers faced more obstacles than the married group, and the difference was significant ($P < .05$) (Table 3).

When the distribution of DOQ scale sub-dimension mean scores according to the disease characteristics of the individuals was examined, it was determined that there was no significant difference between the DOQ scale sub-dimension mean scores in terms of diagnosis times and treatment methods ($P > .05$). In the study, it was determined that the group with the highest number of obstacles in all sub-dimensions, except for the obstacles in the diagnosis sub-dimension, was the group that did not comply with the diet, and the difference between the groups was statistically significant ($P < .05$). In addition, it was found that the group that did not exercise faced more obstacles in all sub-dimensions, except for the obstacles in the diagnosis sub-dimension, and the difference between the group that did exercise was significant ($P < .05$) (Table 4).

Discussion

Individuals diagnosed with diabetes must have sufficient knowledge and skills and have a positive attitude towards the disease to be effective in the individual management of the disease. The existing attitude in disease management affects the positive and negative consequences of diabetes.[17–19] While individuals provide self-management, they encounter some obstacles related to social factors such as fluctuations in blood glucose level, familial factors, approaches of health personnel, and mental and cultural areas.[9,14,15,20] It is stated that increasing these barriers will negatively affect successful diabetes management.[15] In this study, the obstacles faced by individuals with Type 2 diabetes in diabetes management were investigated. In the study, it was found that patients with Type 2 diabetes faced the most obstacles in coping with diabetes and diagnosis, followed by self-monitoring and lifestyle changes. In the study of Güngören (2018) using the DOQ-30 scale, it was determined that the participants encountered the most obstacles in the areas of insulin

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Table 3. Distribution of Diabetes Obstacles Questionnaire Sub-Dimension Scores according to Individuals' Sociodemographic Characteristics

Variables	Drug barriers	Self-monitoring barriers	Knowledge and belief barriers	Barriers to diagnosis	Barriers in relationships with healthcare professionals	Lifestyle change barriers	Barriers to coping with diabetes	Barriers to getting advice and support
	$\bar{x} \pm SD$	$\bar{x} \pm SD$	$\bar{x} \pm SD$	$\bar{x} \pm SD$	$\bar{x} \pm SD$	$\bar{x} \pm SD$	$\bar{x} \pm SD$	$\bar{x} \pm SD$
Gender								
Women	−11.36 ± 35.16	16.18 ± 48.53	−2.24 ± 40.56	29.88 ± 38.14	−14.76 ± 34.47	11.93 ± 34.93	37.17 ± 30.00	1.78 ± 36.78
Men	−5.30 ± 35.43	17.75 ± 50.59	1.27 ± 38.81	18.89 ± 35.63	−2.67 ± 35.74	16.00 ± 33.66	9.33 ± 34.32	35.63 ± 34.08
t	0.368	−1.576	−1.288	−0.239	−0.661	2.219	−2.595	−0.884
P	.199	.811	.509	.027*	.010*	.337	.713	.116
Age Groups								
<50 years[a]	−16.14 ± 45.33	14.84 ± 60.61	−30.46 ± 49.86	29.29 ± 42.43	−28.12 ± 47.17	−1.56 ± 49.60	29.46 ± 37.95	−4.01 ± 47.68
50-59 years[b]	−7.40 ± 33.94	17.70 ± 47.88	−10.67 ± 42.25	30.72 ± 39.94	−7.90 ± 36.46	13.02 ± 32.24	33.18 ± 29.11	−1.93 ± 36.44
≥ 60 years[c]	−8.33 ± 33.53	16.84 ± 47.39	7.62 ± 33.36	23.85 ± 35.72	−7.67 ± 31.38	16.43 ± 28.73	39.02 ± 30.64	8.05 ± 32.87
F	0.729	0.033	15.652	0.773	4.774	3.738	1.599	2.489
P	.484	.967	<.001c > a,b	.463	.009**a < b,c	.025*c > a	.204	.085
Marital status								
Married	−9.32 ± 34.25	21.87 ± 47.34	−2.63 ± 39.14	28.33 ± 38.05	−9.73 ± 35.90	15.16 ± 34.61	38.29 ± 32.27	5.15 ± 36.49
Single	6.28 ± 30.76	9.78 ± 41.45	5.97 ± 35.57	27.71 ± 38.79	−3.83 ± 28.35	15.21 ± 22.35	36.95 ± 21.60	13.97 ± 23.34
t	−2.079	1.168	−1.004	0.073	−0.758	−0.007	0.193	−1.128
P	.039*	.244	.317	.942	.449	.994	.847	.261

Note: t: Independent samples t-test, F: One way ANOVA test, $\bar{x} \pm SD$; Mean ± standard deviation.
*P < .05
**P < .01
[a,b,c]*According to the results of the multiple comparison test (posthoc-test: Bonferroni), those indicated with superscripts indicate that there is a significant difference between the groups.*

use, self-monitoring, and lifestyle changes.[21] Similarly, Kahraman et al.[6] reported that patients mostly encountered obstacles in coping with diabetes and in diagnosis. Heissam et al.[22] reported that patients experienced treatment, belief, and motivation barriers. Saghir et al.[23] determined that patients mostly encountered lifestyle and self-monitoring barriers such as diet, exercise, and blood sugar control. Byers et al.[20] reported that patients had difficulties in lifestyle changes and lack of knowledge about diet and how to manage diabetes. Unlike our study, Jones et al.[14] determined that patients mostly experienced obstacles in communicating with health professionals. Studies have often identified poor patient motivation and self-management as barriers to achieving glycemic goals.[15,22] The results obtained from the studies are similar and reveal that individuals with diabetes need more support in coping with diabetes, lifestyle changes, diagnostic process, and self-monitoring.

When the obstacles faced by individuals in diabetes are examined according to their sociodemographic characteristics, it has been determined that both women and men have more obstacles in coping with diabetes, and women have face relatively more obstacles than men. In addition, it was determined that women faced more obstacles

in the sub-dimension of obstacles in diagnosis. The reason for this difference may be due to the fact that women are more emotional, have more roles and responsibilities in society, and have problems in allocating time for themselves. In the study of Üren and Yılmaz Karabulutlu, it was determined that women diagnosed with diabetes had more negative attitudes toward diabetes.[24] In the study of Orhan and Karabacak , it was reported that the professional and social activities of women were affected more negatively than those of male patients.[25] Similar findings were found in other studies as well.[6,21] In terms of age group variable, it was determined that the perceived barriers in the sub-dimensions of lifestyle change and knowledge and belief were higher in the 60 and older group. The increase in the number of chronic diseases with the increase in age necessitates together with the continuation of the treatment process for different diseases. Studies emphasize that the increase in the number of drugs in the treatment and the complexity of the treatment reduce the compliance of individuals to diabetes treatment.[26,27] In this study, the higher perceived barriers in lifestyle changes, knowledge, and belief sub-dimensions in the 60-year-old and older group may be due to the increase in the number of chronic diseases in this age group, the decrease in health awareness with age, and the fact that diseases

Table 4. Distribution of Diabetes Obstacles Questionnaire Sub-Dimension Scores according to Individuals' Disease Characteristics.

Variables $\bar{x} \pm SD$	Drug barriers $\bar{x} \pm SD$	Self-monitoring barriers $\bar{x} \pm SD$	Knowledge and belief barriers $\bar{x} \pm SD$	Barriers to diagnosis $\bar{x} \pm SD$	Barriers in relationships with healthcare professionals $\bar{x} \pm SD$	Lifestyle change barriers $\bar{x} \pm SD$	Barriers to coping with diabetes $\bar{x} \pm SD$	Barriers to getting advice and support $\bar{x} \pm SD$
Diabetes diagnosis time								
1-4 years	−8.13 ± 35.55	16.27 ± 44.86	−3.05 ± 41.35	34.21 ± 32.04	−5.14 ± 33.36	10.36 ± 38.20	32.41 ± 30.80	4.65 ± 33.29
5-9 years	−6.59 ± 32.82	22.24 ± 45.90	−4.13 ± 39.50	35.83 ± 26.77	−4.72 ± 34.32	11.86 ± 35.75	32.83 ± 24.98	−6.03 ± 32.43
10 years and over	−10.56 ± 36.38	14.61 ± 51.82	0.96 ± 39.78	37.67 ± 33.22	8.14 ± 37.03	14.96 ± 32.86	34.90 ± 33.28	4.79 ± 35.44
F	0.284	0.502	0.409	0.214	0.154	0.369	0.222	2.705
P	.753	.606	.665	.808	.858	.692	.801	.069
Type of Treatment								
Only diet therapy	−15.55 ± 46.21	−7.50 ± 49.68	−20.00 ± 46.22	37.50 ± 23.38	−7.64 ± 65.25	28.33 ± 32.99	30.00 ± 41.77	−17.14 ± 36.63
Oral antidiabetic drug (OAD)	−10.90 ± 32.78	17.12 ± 44.92	−6.25 ± 41.17	24.53 ± 37.37	−7.18 ± 29.66	3.62 ± 33.52	36.24 ± 28.19	−3.30 ± 32.53
Insulin	−11.35 ± 35.16	12.50 ± 51.12	−1.01 ± 41.30	21.60 ± 35.65	−12.30 ± 35.97	17.66 ± 34.51	34.70 ± 32.49	4.34 ± 36.04
OAD + Insulin	−5.67 ± 36.56	22.04 ± 49.57	3.15 ± 37.34	30.37 ± 39.67	−10.53 ± 36.30	14.06 ± 34.31	39.09 ± 32.04	10.36 ± 37.13
F	0.516	0.994	1.027	1.030	0.246	2.276	0.378	2.306
P	.672	.396	.381	.380	.864	.080	.769	.077
Blood glucose measurement status								
Yes	−10.24 ± 33.97	14.64 ± 48.60	−2.77 ± 38.14	25.69 ± 36.89	−11.92 ± 33.65	13.38 ± 33.09	35.78 ± 29.41	4.76 ± 36.96
No	−4.32 ± 41.09	25.27 ± 51.64	6.80 ± 46.90	27.50 ± 40.46	−4.05 ± 42.09	13.51 ± 40.71	40.31 ± 39.74	3.33 ± 32.39
t	−1.013	−1.309	−1.455	−0.291	−1.349	0.275	−0.869	0.239
P	.312	.192	.147	.771	.179	.981	.385	.811
Dietary compliance status								
Yes[a]	−15.43 ± 37.55	6.01 ± 49.88	−7.48 ± 38.68	26.23 ± 41.62	−19.97 ± 32.41	4.93 ± 33.39	26.10 ± 33.71	−4.67 ± 37.15
Partly[b]	−9.60 ± 31.90	18.85 ± 50.26	−2.81 ± 40.33	28.58 ± 33.57	−9.83 ± 34.68	12.94 ± 33.67	37.88 ± 28.84	4.56 ± 34.36
No[c]	4.47 ± 37.47	31.70 ± 40.02	17.37 ± 36.26	17.37 ± 39.41	6.81 ± 36.86	31.50 ± 32.79	53.65 ± 26.49	22.47 ± 32.44
F	4.466	4.033	5.763	1.382	8.320	8.616	11.549	8.184
P	.012*	.019*	.004**	.253	<.001	<.001	<.001	<.001
	c > a	c > a	c > a		c > a.b	c > a,b	c > b > a	c > a,b
Exercise status								
Yes	−20.79 ± 34.88	5.49 ± 51.52	−17.14 ± 35.52	23.67 ± 27.67	−19.07 ± 37.65	−9.46 ± 35.66	29.76 ± 31.21	−13.09 ± 36.06
No	−4.86 ± 34.59	21.23 ± 47.83	5.32 ± 33.91	26.70 ± 30.64	−7.10 ± 33.14	21.92 ± 30.09	39.61 ± 31.17	11.28 ± 33.86

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Variables	Drug barriers	Self-monitoring barriers	Knowledge and belief barriers	Barriers to diagnosis	Barriers in relationships with healthcare professionals	Lifestyle change barriers	Barriers to coping with diabetes	Barriers to getting advice and support
$\bar{x} \pm SD$	$\bar{x} \pm SD$	$\bar{x} \pm SD$	$\bar{x} \pm SD$	$\bar{x} \pm SD$	$\bar{x} \pm SD$	$\bar{x} \pm SD$	$\bar{x} \pm SD$	
t	−3,183	−2.232	−4.014	−0.557	−2.361	−6.860	−2.188	−4.899
P	.002**	.027*	<.001	.578	.019*	<.001	.030*	<.001

Table 4. Distribution of Diabetes Obstacles Questionnaire Sub-Dimension Scores according to Individuals' Disease Characteristics. (Continued)

Note: F: One way ANOVA test, $\bar{x} \pm SD$; Mean ± standard deviation
t: Independent samples t-test, F: One way ANOVA test, $\bar{x} \pm SD$; Mean ± standard deviation.
*$P < .05$
**$P < .01$
a,b,c According to the results of the multiple comparison test (posthoc-test: Bonferroni), those indicated with superscripts indicate that there is a significant difference between the groups.

are considered as a natural consequence of aging. Another remarkable finding in this study is that the single group in the sub-dimension of drug barriers faced more obstacles than the married group. The presence of individuals with diabetes in the family also raises awareness in the first- and second-degree relatives of the patients. It is emphasized that family members help in the care of the diabetic patient, living with a spouse can facilitate the activities recommended in the disease and follow the treatment process.[28] The study findings support this information.

When the obstacles faced by individuals in diabetes according to the characteristics of the disease are examined, it was determined that the duration of diagnosis and the type of treatment of individuals did not affect the mean scores of the DOQ scale sub-dimensions. It was determined that the group who did not comply with their diet and did not exercise faced more obstacles in all other sub-dimensions, except for the obstacles in the diagnosis sub-dimension. Kahraman et al.[6] reported that the group who did not have their blood sugar measured regularly, did not comply with their diet, and did not exercise faced more obstacles similarly. In another study, it is stated that those who are not successful in self-management of diabetes face more negative results in the disease process.[29] Self-medication, diet compliance, and implement the exercise plan, which are among the self-management behaviors of individuals diagnosed with diabetes, have an important place in achieving positive patient outcomes. It is stated that a successful diabetes management is achieved by maintaining these behaviors together.[30] The results of this research both reveal results that support the literature and draw attention to the importance of self-management in diabetes. The factors of culture, age group, educational status, etc., which are among the sociocultural factors, are stated to be effective especially in the failure of individual management.[29] In this study, it can be thought that the fact that most of the individuals included in the sample are old will affect these results.

Conclusion

In this study, patients faced the barriers of coping with diabetes, diagnosis, self-monitoring, and lifestyle change the most. It was determined that gender, age, marital status of individuals, sociodemographic characteristics, affect the obstacles encountered, and variables such as exercise status and diet compliance, which are among the characteristics related to the disease, are effective on the obstacles. Despite the wide variety of therapeutic options, few patients with Type 2 diabetes achieve their glycemic goals and many experience from long-term hyperglycemia. There are a number of obstacles we must address and overcome in order to improve patient outcomes. It is thought that identifying the obstacles experienced by patients with Type 2 diabetes, supporting patients to overcome the obstacles, can facilitate the management of the disease and the treatment process, support the adaptation process and improve the quality of life of individuals. Nurses, who have important responsibilities in determining the obstacles experienced by diabetes patients, can contribute to the elimination or reduction of these obstacles by creating a good social support system and by taking into account the sociodemographic and disease characteristics of the patients. As a result of this study, it is recommended to support patients more in diabetes management and to plan nursing education considering the individual differences and conditions related to the areas that patients perceive as obstacles.

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