Factors Affecting Disease Acceptance and Disease Acceptance of Individuals with Diabetes

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Abstract

Aim: Disease acceptance in patients with diabetes provides disease management. It can play an important role in improving the treatment and care outcomes of diabetes, reducing disease complications, and reducing health costs. The research is a descriptive and cross-sectional study and aims to determine the disease acceptance and behaviors of individuals with diabetes.

Method: The data were obtained from individuals with diabetes who applied to the diabetes outpatient clinic of a public hospital in Istanbul between November and December 2023. The inclusion criteria were composed of individuals who were diagnosed with Type 2 diabetes, who were literate, who did not have vision problems, and who agreed to participate in the study. The research data were collected with the "Personal Information Form" and the "Acceptance and Action Form Scale for Diabetic Patients". A total of 266 diabetic individuals participated in the study.

Results: The mean age of individuals with diabetes was 61.10±10.8 (38-85) years, the mean duration of diabetes was 7.55±3.4 years, and the mean acceptance score was 43.74±9.2. In the study, it was found that married individuals with diabetes had lower disease acceptance levels than single or divorced/widowed individuals ($p<0.05$), individuals with diabetes with a disease duration of 1-10 years had higher disease acceptance levels than those with a disease duration of 11 years or more ($p<0.05$), and individuals with diabetes who received education had higher disease acceptance levels than those who did not receive education ($p=0.001$). In the developed multiple linear model, marital status, duration of diabetes, and diabetes education variables explain 46% of the variance of disease acceptance ($r=0.68$; $R2=0.46$; $p=0.000$).

Conclusion: As a result, the disease acceptance of patients with diabetes is slightly above the moderate level. Factors affecting disease acceptance are that the duration of diabetes is not long and participation in diabetes education is ensured. It can play an important role in improving the treatment and care outcomes of diabetes, reducing disease complications, and reducing health costs.

Keywords: Diabetes, diabetic individual, disease acceptance, diabetes education.

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Diyabetli Bireylerin Hastalık Kabulü ve Hastalık Kabulünü Etkileyen Faktörler

Öz

Amaç: Diyabetli hastalarda hastalık kabulü hastalık yönetimini sağlamada etkilidir. Diyabetin tedavi ve bakım sonuçlarının iyileştirilmesini, hastalık komplikasyonlarının azaltılmasını ve sağlık maliyetlerinin düşürülmesinde önemli bir rol oynayabilir. Araştırma tanımlayıcı ve kesitsel bir çalışma olup, diyabetli bireylerin hastalığı kabulü ve davranışlarını belirlemeyi amaçlamıştır.

Yöntem: Veriler Kasım-Aralık 2023 tarihleri arasında İstanbul'da bir devlet hastanesinin diyabet polikliniğinde ayaktan başvuru yapan diyabetli bireylerle yapılmıştır. Araştırmaya alınma kriterlerini Tip 2 diyabet tanısı konulmuş, okuma yazma bilen, görme sorunu olmayan ve araştırmaya katılmayı kabul eden bireyler oluşturmuştur. Araştırma verileri, "Kişisel Bilgi Formu" ve "Diyabetli Hastalar İçin Kabul ve Eylem Formu Ölçeği" ile toplanmıştır. Araştırmaya toplam 266 diyabetli birey katılmıştır.

Bulgular: Diyabetli bireylerin yaş ortalaması 61,10±10,8 (38-85) yıl, diyabet süresi ortalaması 7,55±3,4 yıl ve hastalığı kabul puan ortalamaları 43,74±9,2'dir. Araştırmada; evli olan diyabetli bireylerin bekar ya da boşanmış/dul olan bireylere göre hastalık kabul düzeylerinin daha düşük (p<0,05) olduğu, hastalık süresi 1-10 yıl olan diyabetli bireylerin, hastalık süresi 11 yıl ve üzeri olanlara göre hastalık kabul düzeylerinin daha yüksek (p<0,05) olduğu ve eğitim alan diyabetli bireylerin eğitim almayanlara göre hastalık kabul düzeylerinin daha yüksek (p=0,001) olduğu saptanmıştır. Geliştirilen çoklu doğrusal modelde, medeni durum, diyabet süresi ve diyabet eğitimi alma değişkenleri hastalığı kabul varyansının %46'sını açıklamaktadır (r=0,68; R²=0,46; p=0,000).

Sonuç: Sonuç olarak diyabetli hastaların hastalık kabulü orta düzeyin biraz üstündedir. Hastalık kabulünü etkileyen faktörler diyabet süresinin uzun olmaması ve diyabet eğitimine katılımın sağlanmasıdır. Etkin bir diyabet eğitimi ve erken dönemlerde hastalık kabulünün sağlanması önemlidir.

Anahtar Sözcükler: Diyabet, diyabetli birey, hastalığı kabul, diyabet eğitimi.

Introduction

Diabetes mellitus is an important health problem with high mortality and morbidity. It has become the health problem of the world, requiring a lifestyle change. It has turned into a health problem that will reduce the quality of life of the individuals with diabetes and make them dependent[1].

The goal of diabetes treatment is to provide good diabetes management. Keeping blood glucose at normal levels and minimizing the resulting complications of diabetes[2].

Diabetes management includes multidimensional self-care activities and lifestyle changes including nutrition, exercise, foot care, oral antidiabetic use, insulin use, and self-blood sugar monitoring[3]. The diabetic patient can manage diabetes individually with the support of health team members, family, and friends in his/her daily life. They can

manage individually[4]. Care and treatment of individuals with diabetes continue not only in the hospital but also at home. For this, the diabetic individual must first accept his/her disease and change his/her behavior[5].

An individual with diabetes needs to have sufficient knowledge, skills, and positive behaviors to successfully manage and control their daily diabetes. He/She needs to admit his/her illness. Positive behaviors and acceptance of the disease form the basis of diabetes treatment[6].

Effective diabetes management and control require individual behavior compliance. Positive beliefs and behaviors of individuals with diabetes are important in the treatment of diabetes[7]. When the literature was reviewed, it was found that patients with negative attitudes and behaviors faced more problems in diabetes care and those with positive attitudes and behaviors faced fewer obstacles[8]. In order to cope with diabetes, the patient's behavior needs to be positive and accept his/her disease. It is important that he/she has a positive attitude towards his/her self-care skills, broad knowledge about the disease, his/her health and self-care. He/she needs to realize that the control of his/her disease is important and that he/she needs to manage his/her own disease in order to be protected from complications[9]. The aim of this study is to determine the disease acceptance and behaviors of individuals with diabetes.

Material and Methods

Type of Research

The research was conducted descriptively and cross-sectionally.

Place and Time of Research

The study was conducted between November and December 2023 on individuals with diabetes receiving outpatient treatment in a diabetes outpatient clinic of a state hospital in Istanbul.

Population and Sample of the Research

The population of the study consisted of individuals with diabetes who applied to the diabetes outpatient clinic of the state hospital, and the sample consisted of individuals with diabetes who agreed to participate in the study and met the research criteria. The criteria for inclusion in the study are being diagnosed with Type 2 diabetes, being literate, not having vision problems, and voluntarily agreeing to participate in the study.

Data Collection Tools

The research data were collected with the "Personal Information Form" and "Acceptance and Action Form Scale for Diabetic Patients".

Personal Information Form: It is a form prepared by the researchers and consists of a total of 9 questions containing the socio-demographic information and descriptive characteristics of individuals with diabetes.

Admission and Action Form Scale for Patients with Diabetes: The scale is a seven-point Likert-type scale with 11 questions developed by Gregg et al. (2004)[10]. This scale was redeveloped for individuals with diabetes using the Acceptance and Commitment Therapy scale developed by Heyes (2004)[11]. It was adapted to Turkish by Karadere et al. (2019)[12]. The scale adapted to Turkish consists of nine questions. The scale examines the acceptance of feelings and thoughts about diabetes and the effects of these feelings and thoughts on people's behaviors. Except for the first question, the other questions were scored reversely. High scores obtained from the scale indicate high disease acceptance. Karadere et al. (2019) found the Cronbach Alpha value to be 0.836[12]. In this study, the Cronbach Alpha value was found to be 0.851.

Data Collection Method

Individuals who applied to the diabetes outpatient clinic and met the research criteria were informed about the study and their consent was obtained. Individuals who agreed to participate in the study were asked to answer the questions in the "Personal Information Form" and the Acceptance and Action Form Scale for Patients with Diabetes. The identity information of the individuals was not obtained.

Data Analysis

SPSS 22.0 statistical package program was used in computer environment. Descriptive and inferential statistics were used. The data distribution was evaluated by the Shapiro-Wilk Test. Kurtosis and skewness values were found to be in the range of +1.0-1.0 and showed normal distribution[13]. Independent-Samples T-Test was used to compare two independent groups, and One-Way Anova test was used to compare three or more independent groups. Predictors of disease acceptance were evaluated by multiple linear regression analysis.

Ethical Issues

Ethics committee approval dated 22.09.2023 and numbered 2023-07 was received from the Gelisim University Ethics Committee. The research was conducted under the guidelines related to the Helsinki Declaration of Human Rights. The patients who participated in the study were informed about the purpose of the study and that their information would be kept confidential, and that their verbal consent was obtained.

Result

The mean age of individuals with diabetes was 61.10 ± 10.8 (38-85) years, and the mean duration of diabetes was 7.55 ± 3.4 years. 50% of the individuals with diabetes in the study were female, 77.8% were married, 39.1% were high school graduates, 41.7% lived only with their spouses, and 61.7% had no chronic disease (Table 1). It was determined from the Acceptance and Action Scale for Diabetic Patients that married individuals with diabetes scored lower than single individuals and married individuals had lower disease acceptance levels ($p<0.05$). It was found that individuals with a diabetes duration of 1-10 years had higher mean scores of the Acceptance and Action Scale for Diabetic Patients than those with a diabetes duration of 11 years or more, and their disease acceptance levels were higher ($p<0.05$). It was determined that the mean scores of the Acceptance and Action Scale for Diabetic Patients were higher and the level of disease acceptance was higher in individuals with diabetes who received diabetes education compared to those who did not ($p=0.001$). There was no significant difference between the other descriptive characteristics of diabetic individuals and the mean scores of the Acceptance and Action Scale for Diabetic Patients ($p>0.05$). (Table 1)

Table 1. Comparison of descriptive characteristics of individuals with diabetes with mean scores of the acceptance and action scale for patients with diabetes

Characteristic			n	%	Mean±SD	p t$^{\text{æ}}$/ F$^{\#}$
					Acentence and Action Diabetes Questionnaire	
Gender	Women		133	50	44.20±9.1	0.413
	Men		133	50	43.28±9.3	0.820$^{\text{æ}}$
Age	Under 65		156	58.6	44.02±9.1	0.559
	65years and above		110	41.4	43.34±9.4	0.585$^{\text{æ}}$
Marital status	Married		207	77.8	43.07±9.2	0.025*
	Single or widow/divorced		59	22.2	46.10±9.0	-2.282$^{\text{æ}}$
Education	Literate		50	18.8	42.96±9.4	0.664
	Primary school		100	37.6	43.23±8.7	0.527$^{\#}$
	High school		104	39.1	44.60±9.5	
	University		12	4.5	43.75±10,1	
People living with at home	With partner		111	41.7	43.67±8.4	0.191
	With children		45	16.9	45.33±8.9	1.594$^{\#}$
	With partner and children		92	34.6	42.49±9.9	
	Alone		18	6.8	46.55±9.6	
Duration of diabetes	1-10 years		227	85,3	44.31±9.0	0.014*
	11 years end above		39	65,4	40.41±9.6	2.473
Chronic diseases other than diabetes	Yes		102	38.3	43.34±9.6	0.585
	No		164	61.7	43.99±8.9	-0,547$^{\text{æ}}$
Presence of chronic disease other than diabetes	Chronic obstructive pulmonary disease	Yes	14	5.3	46.07±8.5	0.331
		No	252	94.7	43.61±9.2	0,975$^{\text{æ}}$
	Cardiovascular diseases	Yes	27	10.2	40.67±11.0	0.131
		No	239	89.8	44,09±8.9	-1,554$^{\text{æ}}$
	Hypertension	Yes	81	30.5	44.04±9.6	0.745
		No	185	69.5	43.61±9.0	0.325$^{\text{æ}}$
	Chronic renal failure	Yes	6	2.3	42.67±6.8	0.713
		No	260	97.7	43.76±9.2	-0.387$^{\text{æ}}$
Receiving diabetes education	Yes		166	62.4	48.53±6.1	0.000***
	No		100	37.6	35.79±7.8	14.766$^{\text{æ}}$

Table 2 shows the mean scores of diabetic individuals from each item in the Acceptance and Action Scale for Diabetic Patients. The mean scores of individuals with diabetes from the items "I avoid thinking about diabetes because someone I knew died from diabetes" and "I often deny and reject what diabetes can do to my body" on the scale were found to be in the medium-high range (5.36±0.9, 5.34±0.9, respectively). In the study, it was determined that they avoided such behaviors with their answers to these items, on the contrary, they accepted the disease and behaved positively. In the study, the mean score of individuals with diabetes from the total scale was 43.74±9.2 (Table 2).

Table 2. Item and total score means of individuals with diabetes on the acceptance and action scale for patients with diabetes (n=266)

Acceptance and Action Diabetes Questionnaire	Mean±SD	Min-Max
I have thoughts and feelings about being diabetic that are distressing.	**4.14±1.7**	1-7
I do not take care of my diabetes because it reminds me that I have diabetes.	4.87±1.7	1-7
I eat things I shouldn't eat when the urge to eat them is overwhelming.	4.66±1.6	1-7
I avoid taking or forget to take my medication because it reminds me that I have diabetes.	5.16±1.5	1-7
I avoid stress or try to get rid of it by eating what I know I shouldn't eat.	4.66±1.6	1-7
I often deny to myself what diabetes can do to my body.	**5.34±0.9**	3-7
I don't exercise regularly because it reminds me that I have diabetes	4.66±1.6	1-7
I avoid thinking about what diabetes can do to me.	4.87±1.7	1-7
I avoid thinking about diabetes because someone I knew died from diabetes.	**5.36±0.9**	3-7
Scale total	43.74±9.2	9-63

SD=Standart Develation, Min: Minimum, Max: Maxsimum

When the marital status, duration of diabetes and diabetes education variables of the diabetic individuals participating in the study are evaluated together, it explains 46% of the variance of disease acceptance (r=0.68; R^2=0.46; p=0.000). When the model was evaluated according to the β coefficient, it was found that a unit increase in diabetes duration decreased disease acceptance by 11.9% (p<0.05), and a unit increase in diabetes education increased disease acceptance by 65.5% (p<0.001) (Table 3).

Table 3. Multivariate linear regression model explaining acceptance and action for patients with diabetes (n=266).

¶R^2= 0.46 Variables	B	SE	β	t	p
Marital status	-1.500	1.021	-0.068	-1.470	0.143
Duration of diabetes	-2.944	1.191	-0.113	-2.471	**0.014**
Receiving diabetes education	12.410	0.866	0.655	14,326	**0.000**

¶ Multivariate Linear Regression Analysis

Discussion

Disease acceptance may not be a situation that every individual can easily accept. Diabetes is a disease that suddenly enters the life of the individual, requires treatment and care to be adapted to his/her daily life, and becomes chronic when he/she cannot show careful care. Acceptance of the disease in individuals with diabetes enables them to find the power to cope with the disease and manage the disease despite disabilities, limitations, and disorders. Ensuring disease acceptance is effective in the positive outcome of diabetes treatment and care, increasing the mobilization to cope with errors, and reducing health costs. This study aims to determine the disease acceptance and behaviors of individuals with diabetes.

In the study, it was found that married diabetic individuals had lower disease acceptance levels than single or widowed/divorced diabetic individuals (p<0.05). In studies conducted on patients with diabetes-related disease acceptance in our country, no significant relationship was found between marital status and harvest acceptance[14-16]. In a study conducted with patients with diabetic foot in a university hospital in our country, it was found that the disease acceptance levels of single patients were higher than married patients, but there was no significant difference[17]. Again, in the study conducted in Sinop province in our country, it was found that the disease acceptance levels of single people were high, but there was no significant difference[18]. The results of the research are not similar to the studies. In the study, the fact that people who are single or widowed/divorced do not see someone to support them, that the factors related to their struggle with the problems they usually experience alone make them stronger, and that they think about how they can cope with the disease first when they face the disease may have led them to accept the disease more.

In the study, it was found that patients with a diabetes duration of 1-10 years accepted the disease more than those with a diabetes duration of 11 years or more (p<0.05). Yılmaz et al. (2019) found that the disease acceptance level was lower in diabetic patients with a disease duration of 11-15 years and over 16 years compared to other groups, but there was no significant difference[19]. Özkaptan et al. (2019) examined the relationship between treatment compliance and disease acceptance and found that patients with diabetes duration over 10 years had a lower disease acceptance level than patients with 1-9 years, but there was no significant difference[18]. However, many studies have also shown that the level of disease acceptance decreases and there is a significant difference in patients with prolonged diabetes[14-16,20-22]. The research is consistent with other studies except for

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the studies of Yılmaz et al., (2019) and Özkaptan et al. (2019)[18,19]. Prolonged duration of diabetes in patients with diabetes complicates disease acceptance. It is thought that the increase in the duration of diabetes causes the patient to age, experience more age-related biological, physiological, and psychological problems, and be more likely to experience complications caused by the disease, therefore the level of disease acceptance decreases.

In the study, it was determined that individuals who received diabetes education accepted the disease more than individuals who did not receive education (p=0.001). In a study examining disease acceptance and self-efficacy in self-care in diabetic patients, it was found that the disease acceptance levels of individuals who received information about the disease were significantly lower (Şireci et al. 2017)[14]. Starczewska et al. (2018) found that as participation in diabetes awareness training decreased, the level of disease acceptance was higher, and there was a significant correlation between them[21]. Contrary to these results, it was found that those who received diabetes education had a higher level of disease acceptance in diabetic patients[22]. At the same time, in a study conducted on patients with Type 1 and Type 2 diabetes, the importance of providing regular training programs to correct negative attitudes in patients was emphasized[23]. In their study, Şireci et al. (2017) and Starczewska et al. (2018) questioned the status of receiving information about diabetes and receiving diabetes awareness training[14,21]. The uneasiness and suspicion caused by the information provided to the patients in these trainings may have reduced the level of disease acceptance. It is thought that obtaining different results in the aforementioned studies may be due to the content of the training. In this study, the education in which the patients participated consisted of diabetes education programs conducted under the guidance of a nurse in the hospital. The fact that the education is comprehensive may have ensured that the disease acceptance in diabetes education is in the medium-high range. Increasing such training and planning the quality of education according to the individual characteristics of the patient will further increase the level of disease acceptance.

In the study, the disease acceptance level of individuals with diabetes was 43.74±9.2. Acceptance of the disease is slightly above the moderate level. There are studies in the literature showing that disease acceptance is moderate or high[17,22,24-26]. The results of the research are generally in line with these studies. It is thought that the fact that 62.4% (n=166) of the individuals with diabetes received diabetes education in the sample group in the study, that the disease acceptance level was significantly higher in those who

received diabetes education, and that a unit increase in education in the multiple linear model created increased the disease acceptance level by 65.5%, caused the disease acceptance score averages to be slightly above the moderate level. The research emphasizes that diabetes education is an effective method in disease acceptance and that increasing diabetes education will also increase the disease acceptance rate.

Conclusion

As a result, it was concluded that the disease acceptance level of patients with diabetes was slightly above the moderate level. The fact that the duration of diabetes is not long and that diabetes education has been received is effective in disease acceptance. Providing effective training to patients with diabetes in hospitals by addressing the individual characteristics of the patient and ensuring disease acceptance in the early stages of diagnosis will ensure healthy results in the treatment and care of diabetes, reduce the incidence of complications, ensure mobilization to cope with the disease, and reduce health costs.

Limitations

The limitations of this study are that it is carried out only within the provincial borders of Istanbul and in a hospital.

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