

Examining the correlation between the acceptance of the disease and the diabetes self-efficacy of the diabetic patients in a family health center

Ummuhan Akturk, Emine Aydinalp

Inonu University, School of Health, Department of Public Health Nursing, Malatya, Turkey

Copyright © 2018 by authors and Annals of Medical Research Publishing Inc.

Abstract

Aim: For this purpose, the research was conducted to evaluate the relationship between diabetes self-efficacy and acceptance of the disease.

Material and Methods: The descriptive - relational research community of diabetics registered in Başharık Family Health Center in Malatya province center between January and March 2018. Two hundred sixty four patients were reached for the investigation. Before the research, ethics committee approval and oral approval were taken from the necessary institutions. Data were collected using face-to-face interview method, personal information form, Diabetes Self-Efficacy Scale and Acceptance of illness scale. The values of $p < 0.05$ was accepted as statistically significant.

Results: Patients Disease Acceptance scale score (27.89 ± 5.6) and Diabetes self-efficacy scale scores (52.12 ± 14.2) was found. In the study it was determined that the patients had moderate disease acceptance and self-efficacy. According to the research, it was determined that the patients' acceptance of the disease and the Diabetes Self-Efficacy were high at a positive level. A positive relationship was found between diabetes patient acceptance and self-efficacy in the study.

Conclusion: In the follow-up of patients in primary health care institutions; it is recommended that patients with diabetes be admitted to the hospital at certain intervals and assess their self-efficacy status, plan appropriate interventions, and strengthen the patient's acceptance and self-efficacy by continuing patient education.

Keywords: Acceptance of The Disease; Diabetes Self-Efficacy; Primary Care; Public Health.

INTRODUCTION

Diabetes is a chronic disease that occurs in the situations in which pancreas cannot produce insulin sufficiently or body cannot use the produced insulin effectively (1). Diabetes affects the whole life of an individual with its biological, psychological and social effects. The diabetic patient should maintain a planned care and receive expert help from time to time. In addition to these limitations and necessities, possible acute and chronic complications decrease quality of life. Diabetes causes that individuals to lose their joy of life and experience some psychological problems. The individuals, who begin to worry about losing the independence self-efficacy, gradually lose their self-confidence and experience hopelessness (2,3).

The self-efficacy (self-efficacy), defined as the self-

trust of the individuals, is a determinant to start and maintain positive health behaviors and is an important characteristic of the individuals that determines how they will feel, think and behave (4). Acceptance is conceptually opposed to denial; accepting a disease may be defined as "a patient's acceptance of a disease with all positive and negative aspects without feeling insufficiency and dependency". The acceptance of disease is defined as awareness by a patient and it is like a private agreement between patient and disease (5).

It is important that patients accept their disease and they have high self-efficacy for their maintaining the treatment and care. Diseases suddenly come into an individual's life and they prevent to fulfill its functions and impose many restrictions. Therefore, it is not so easy to accept diseases. It is stated that the patients, who succeed to

Received: 03.05.2018 Accepted: 17.05.2018 Available online: 20.06.2018

Corresponding Author: Ummuhan Akturk, Inonu University, School of Health, Department of Public Health Nursing, Malatya, Turkey
E-mail: ummuhan_akturk@hotmail.com

accept their disease, continue their daily life more easily with together disease and they overcome the individual, familial, occupational and social problems, caused by disease, easily (6). In the study by Schmitt et al., (2014), it was determined that the patients with low level of diabetes acceptance had low self-care agency, higher HBA1c levels and display more depressive symptoms (7). The belief of self-efficacy plays an important role for the individuals, who have a health problem that requires a complex treatment and care such as diabetes, to learn new skills about making changes in their lifestyles and coping with the disease process. The diabetes management does not only means to adapt to the recommended treatment but also to make some behavioral changes in the individual's life. The "self-efficacy" concept is indicated as the key to reaching the desired targets by making the required behavioral changes. The diabetics are expected to have adequate efficacy in order to effectively cope with the complex diabetes care and treatment (8). "The self-efficacy" is the beliefs of an individual that his/her judgments, thoughts and behaviors, related to performing a behavior successfully, will lead him/her to the desired result. The self-efficacy perception of an individual is an important determinant in starting and maintaining the behaviors that improve health (9).

The feeling of low self-efficacy occurs with depression, anxiety, and feeling of despair. The individuals with high self-efficacy make a longer-term effort against problems and maintain their efforts to achieve their objectives by using more effective coping strategies (10).

It has been determined that the diabetics with high self-efficacy level have less emotional distress and higher life quality (1). It is stated that individuals become effective in maintaining their self-efficacy if they focus their thoughts on accepting the disease.

Due to this necessity, this study was conducted in order to determine the diabetic patients' acceptance of the disease and the self-efficacy levels in their self-care and the affecting factors and to examine the correlation between the acceptance of the disease and the self-efficacy levels.

MATERIAL and METHODS

The design of the study: The design of the study was descriptive and correlational.

Data Collection

The data were collected from diabetic patients enrolled in the Başharık Family Health Center in the city of Malatya between January and March 2018. There are 900 diabetic patients registered to the three Family physicians in the Başharık Family Health Center. The sample size of the study was determined as 264 people with power analysis at the confidence interval of 95%, the significance

level of 0.05, the effect size of 0.25, and population representation of 0.95. 264 patients were included in the study. Before the study, the ethics committee approval from the necessary institutions and the verbal consent of the patients were obtained. The data were collected using face-to-face interview method, personal information form, the Diabetes Self Efficacy Scale, and The Acceptance of Illness Scale. The data were filled by performing face-to-face interviews with the patients in the Family Health Center and in accordance with the answers received by the researcher reading the questions. It took averagely 15 minutes to complete an interview.

The Inclusion Criteria of The Study

- Being diagnosed with diabetic patient at least 6 months ago
- Being open to communication and cooperation

The Data Collection Tools

Personal Information Form

The form was developed by the researcher and had 14 questions containing the sociodemographic characteristics of the patients.

The Acceptance of Illness Scale:

In order to determine the level of the acceptance of the disease, the validity and the reliability study of the "Acceptance of Illness Scale" developed by Felton and Revenson (1984) was conducted by Besen (2009) in Turkey and it was adapted to diabetic patients in accordance with our culture. This Likert type scale is scored according to 5-point agree/disagree status and has 8 items. The lowest score received from the scale is 8 and the highest score is 40. The 6th item of the scale is scored reversely. The high acceptance of the disease signifies the adherence and that the physical distress is felt less. The acceptance of the disease demonstrated that the negative feelings and reactions caused by the disease are low in the patients. The Cronbach's alpha internal consistency coefficient was found to be 0.79 in the Turkish validity and reliability study of the scale (12). In this study, Cronbach's alpha internal consistency coefficient of the acceptance of illness scale was determined as 0.72.

Diabetes Self-Efficacy Scale (DSES)

It was developed by Lorig et al., in 2009. The scale was developed in order to determine the self-efficacy of the diabetic patients. It is a likert type scale and composed of 8 items. The items of the scale have a numbering system between 1 and 10 (1- I don't feel secure at all, 10- I am exactly sure). It takes 5-6 minutes to apply the scale. The Cronbach's Alpha coefficient of this scale, developed by Lorig et al., is 0.89 (13). In this study, the Cronbach's Alpha reliability coefficient was found as 0.86. The Cronbach's Alpha reliability coefficient of the scale, the Turkish validity and reliability scale of which was conducted by Mankan et al., in 2017, was found as

0.86 (14). In this study, the Cronbach's Alpha reliability coefficient was found as 0.88.

Data Assessment

The statistical analyses of the results of the study were carried out using the SPSS 22 program. In the statistical analysis of the data; frequency and percentage distribution tests were used for the grouped variables and arithmetic mean and standard deviation tests were used for numeric variables. In the data related to the numeric variables; in the comparisons of the more than two groups; one-way analysis of variance (ANOVA) was used for the ones with normal distribution and Kruskal-Wallis test (KW) was used for the ones without normal distribution. The Student test (t) was used to compare the difference between the two independent groups that met the normal distribution. In order to examine the correlation between the mean scores received from the scales, Pearson Correlation test was used. The values of $p < 0.05$ was accepted as statistically significant.

Ethical principles of the study

Approval of the Malatya Clinic Researches Ethics Committee was obtained to conduct the study (supplemental material). Before filling out the data collection questionnaire, the patients were informed about their freedom to participate, and their informed consent were obtained, explaining that they are free to withdraw from study at any time.

Table 1 shows the socio-demographic characteristics of the participants. In the study, the age average of the patients was 52.33 ± 14.6 , 44.3% of them were in the age group of 51-65 years, 88.6% of them were married, 39.4% were illiterate, the perceived family income status of 68.9% was middle, 76.1% were unemployed, 61.4% did not take support for care, 39.2% of those, who took support, took it from their spouses and children, 58.3% did not have other chronic disease apart from diabetes, 30.7% had diabetics for 0-4 years, and 64.4% were nonsmokers (Table 1).

In the study, a statistically significant correlation was determined between the age of the patients and the duration of the disease and the acceptance of illness scale ($p < 0.05$). Also, a statistically significant correlation was determined between the educational level, perceived income level, employment status, the status of taking support for care, having another chronic disease, and the diabetes self-efficacy and acceptance of illness scale; on the other hand, a statistically significant correlation was determined between the time of disease diagnosis and the acceptance of illness scale ($p < 0.05$) (Table 2).

In the study, a positive correlation was determined between the Acceptance of Illness Scale and the Diabetes Self-Efficacy Scale in diabetic individuals ($r = .322$, $p = .000$). According to this, it was observed that the self-efficacy for diabetes of the patients increased as the acceptance of illness level increased (Table 3).

Table 1. Descriptive Characteristics of Patients Attending Research (N = 264)

Features	N	%
Gender		
Female	160	60.6
Male	104	39.4
Age		
18-35	37	14.0
36-50	70	26.5
51-65	117	44.3
66 and above	40	15.2
Marital status		
Married	234	88.6
Single/ divorced	30	11.4
Education level		
Illiterate	104	39.4
Literate	38	14.4
Primary education	78	29.4
High school	18	6.8
University	26	9.8
Perceived income situation		
Good	55	20.8
Middle	182	68.9
Bad	27	10.2
Working status		
working	63	23.9
Not working	201	76.1
Support for care		
Yes	102	38.6
No	162	61.4
Who is taking care support?		
Spouse	40	39.2
Children	40	39.2
Family members	22	21.6
Is there another chronic disease?		
Yes	110	41.7
No	154	58.3
Duration of illness		
0-4 year	81	30.7
5-9 year	79	29.9
10-14 year	51	19.3
15 year and above	53	20.1
Smoking status		
Yes	523	19.7
No	170	64.4
Have used	42	15.9
Do you have diabetes complications?		
Yes	72	27.3
No	192	72.7
Average age		52.33±14.6
Average number of children		4.8±2.8

Table 2. The Comparison of Total Mean Scores of the Acceptance of Illness Scale and Self-Efficacy Scale According to the Descriptive Characteristics of the Patients (N=264)

Features	N	Diabetes Self-Efficacy Scale	P	Disease Acceptance Scale	P
Gender					
Female	160	52.15±13.7	t=0.039	28.03±5.4	t=0.478
Male	104	52.08±15.1	p=0.969	27.69±5.9	p=0.633
Age					
18-35	37	50.00±16.9	F=2.162	27.32±6.0	F=2.875
36-50	70	55.34±14.0	p=0.093	28.97±5.1	p=0.037
51-65	117	50.41±12.9		28.13±5.4	
66 and above	40	53.47±15.2		25.85±6.0	
Marital status					
Married	234	52.57±13.8	t=0.039	28.05±5.5	t=1.309
Single/ divorced	30	48.66±16.9	p=0.969	26.63±5.8	p=0.192
Education level					
Illiterate	104	48.65±17.9	KW ² =13.729	26.83±5.7	KW ² =3.785
Literate	38	49.64±13.9	p=0.003	27.34±5.7	p=0.005
Primary education	78	52.43±13.9		29.10±5.2	
High school	18	57.05±10.5		30.23±5.0	
University	26	59.77±14.6		30.50±4.1	
Perceived income situation					
Good	55	55.74±15.1	KW ² =6.800 p=0.033	28.54±6.0	
Middle	182	51.78±14.2		28.13±5.4	KW ² =7.709
Bad	27	48.29±12.2		25.22±5.2	p=0.021
Working status					
working	63	55.26±14.7	t=2.024	30.60±4.8	t=4.307
Not working	201	50.80±15.4	p=0.044	26.80±6.4	p=0.000
Support for care					
Yes	102	50.33±15.3	t=4.307	25.61±6.2	t=-4.416
No	162	52.83±15.3	p=0.000	29.02±5.9	p=0.000
Is there another chronic disease?					
Yes	110	57.00±14.4	t=4.681	29.15±5.4	t=2.810
No	154	48.86±13.3	p=0.000	27.18±5.6	p=0.005
Duration of illness					
0-4 year	81	53.04±15.6	F=2.032	29.98±4.7	F=10.225
5-9 year	79	54.50±12.8	p=0.110	27.98±5.7	p=0.000
10-14 year	51	51.00±15.0		27.96±5.5	
15 year and above	53	48.5±13.2		24.71±5.6	
Smoking status					
Yes	523	47.78±17.2	F=3.589	28.28±5.1	F=0.693
No	170	42.81±14.0	p=0.029	27.64±5.7	p=0.501
Have used	42	55.81±10.1		28.69±5.8	
Do you have diabetes complications?					
Yes	72	53.11±14.5	t=1.632	29.15±5.2	t=6.254
No	192	49.77±13.7	p=0.104	24.43±5.2	p=0.000

Table 3. The Correlation Between Total Scores of the Acceptance of Illness Scale and Self-Efficacy Scale (N=264)

Scales	Average \pm standard deviation	Correlation
Disease Acceptance Scale	27.89 \pm 5.6	r=0.322
Diabetes Self-Efficacy Scale	52.12 \pm 14.2	p=0.000

DISCUSSION

In the study, a statistically significant correlation was determined between the age of the patients and the acceptance of illness scale ($p < 0.05$). Accordingly, it was observed that the acceptance of illness scores of the patients at the age of 66 and over were lower. In some research in the literature, a significant correlation was determined between age and self-efficacy (15,16). Differently from the present study, some studies have revealed no correlation between age and self-efficacy level (16-21).

In the study, a statistically significant correlation was determined between the educational level of the patients and the diabetes self-efficacy scale ($p < 0.05$). According to this, it was observed that the self-efficacy scores of the patients were higher as their educational level increased. In the study conducted by Tekin and Erol on diabetic patients, results about education were determined to similar to the present study (20). Also in the studies conducted with the individuals with different diseases, it is reported that the self-efficacy level increases with increasing educational level, which supports this result (10,15,22).

In the study, a statistically significant correlation was determined between the educational level of the patients and the acceptance of illness scale ($p < 0.05$). According to this, it was observed that the illness acceptance scores of the patients were higher with increasing educational status. The studies in the literature have similar results with the present study (21,23,24). This may be associated with reaching information easier, applying the obtained information, the increase in the awareness in the health-related subjects and giving more importance, as the educational level increases.

In the study, a statistically significant correlation was determined between the perceived income level of the patients and the diabetes self-efficacy scale ($p < 0.05$). Accordingly, it was observed that the illness acceptance scores of the patients were higher as the perceived income level increased. In the literature, the studies determining the self-efficacy/sufficiency of patients have revealed similar results with the present study (10,15,17,20,25).

In the study, a statistically significant correlation was determined between the perceived income level of the patients and the acceptance of illness scale ($p < 0.05$). Accordingly, it was observed that the illness acceptance scores of the patients were higher as the perceived income level increased. In the study by Şireci and Karabulutlu, a significant correlation was not determined between

the income level of the diabetic patients and the acceptance of illness scale (21).

In the study, a statistically significant correlation was

determined between the employment status of the patients and the diabetes self-efficacy scale ($p < 0.05$). Accordingly, it was observed that the disease acceptance scores of the working patients were higher. In Kılıç's study, significance was not determined between the employment status and self-efficacy (15).

In the study, a statistically significant correlation was determined between the employment status of the patients and the acceptance of illness scale ($p < 0.05$). According to this, it was observed that the disease acceptance scores of the working patients were higher. Results of the study by Şireci and Karabulutlu (year?) were similar with ones of the present study (21). Reasons like workforce loss, job loss or unemployment are stated as important social factors that provide the adherence of the patient to the chronic disease (10). In another related study, the disease acceptance levels of the diabetics with long-term jobs are higher compared to the unemployed ones (23).

In the study, a statistically significant correlation was determined between the patients' taking support for care and the diabetes self-efficacy and the acceptance of illness scales ($p < 0.05$). Accordingly, it was observed that the self-efficacy and the acceptance of illness scores of the patients, taking support for care, were low. The results of the present study are important as they are first in the literature.

In the study, a statistically significant correlation was determined between the presence of other chronic diseases apart from diabetes and the diabetes self-efficacy and the acceptance of illness scales ($p < 0.05$). Accordingly, it was observed that the self-efficacy and the acceptance of illness scores of the patients, with other chronic disease, were low. A significance was not determined in the study of Şireci and Karabulutlu unlike the present study (21). It was stated in another study that the presence of different chronic diseases may affect self-efficacy negatively (26).

In the study, a positive correlation was determined between the Acceptance of Illness Scale and the Diabetes Self-Efficacy Scale of the diabetic patients ($r = .322$, $p = .000$). According to this, it was observed that the self-efficacy for diabetes of the patients increased as their acceptance of disease level increased. In the study by Şireci and Karabulutlu (year?), unlike the present study, significance was not determined between the acceptance of illness level and self-efficacy of the patients (21). It is emphasized that the acceptance of illness is an important step that helps the patient to use all his/her power to cope with the disease and the patient can maintain his/her self-efficacy/sufficiency power depending on the patient's canalizing his/her thoughts into the acceptance of illness (27).

Limitations

The limitations of the present study may involve that the data were based on verbal statement, the sample was not in the desired size due to the fact that only the patients registered in the Başharık Family Health Center. The results of the study cannot be generalized as the improbable sampling technique was preferred.

CONCLUSION

CAs diabetes is a chronic health issue, it is very important that the individuals have adherence to the diabetes care and treatments in their whole life. According to the study, it was determined that the acceptance of illness and the Diabetes Self-Efficacy of the patients were positively high. In the study, a positive correlation was determined between the acceptance of illness and the Self-Efficacy of the diabetic patients. According to this, it is recommended to evaluate the acceptance of illness and self-efficacy situations of the diabetic patients periodically, especially in the follow-up in the primary health institutions, to plan the proper interventions and to strengthen the acceptance of illness and self-efficacy of the patients by performing continuing patient training. Also, it is recommended to perform similar studies with a larger group of participants.

Competing interests: The authors declare that they have no competing interest.

Financial Disclosure: There are no financial supports

Ethical approval: Before the research, ethics committee approval and oral approval were taken from the necessary institutions.

REFERENCES

- Altındaş M. Diyabetik ayak. İstanbul: Nobel Tıp Kitapevleri; 2002.
- Kumcağız H, Ersanlı K. Diyabet hastalarının umutsuzluk düzeylerinin cinsiyet ve eğitim düzeylerine göre incelenmesi. Buca Eğitim Fakültesi Dergisi 2008;23:123-8.
- Acemoğlu H, Ertem M, Bahçeci M, et al. Levels of health care utilization in patients with type 2 diabetes mellitus. Eurasian J Med 2006;38:89-95.
- Ünsal A, Kaşıkçı M. Artritli bireylerde öz-etkililik ölçeğinin geçerlik ve güvenilirliği. Atatürk Üniversitesi Hemşirelik Yüksekokulu Dergisi 2008;11:40-50.
- Côté JK, Pepler C. A Focus For Nursing Intervention: Realistic Acceptance or Helping Illusions? Int J of NursPract 2005;11:39-43.
- Demirtaş A, Akbayrak N. Tip 2 diabetes mellitus'lu hastaların, hastalıklarına uyum ve kabullenme kriterlerinin belirlenmesi. Anatol J Clin Investig 2009;3:10-8.
- Schmitt A, Reimer A, Kulzer B, et al. Short Report: Educational and Psychological Issues Assessment of Diabetes Acceptance Can Help Identify Patients with Ineffective Diabetes Self-Care and Poor Diabetes Control. Diabetic Medicine 2014;31:1446-51.
- Van Der Ven NC, Weinger K, Yi J, et al. The Confidence in Diabetes Self-Care Scale Psychometric Properties of A New Measure of Diabetes-Specific Self-Efficacy in Dutch And U.S. Patients With Type 1 Diabetes. Diabetes Care 2003;26:713-8.
- Bandura A, Adams NE, Hardy AB, et al. Tests of Generality of Self-Efficacy Theo-ry. Cognitive Therapy and Research 1980;4:39-66.
- Mollaoğlu M. Kronik Hastalıklarda Uyum Süreci. Durna Z, editör. Kronik Hastalıklar ve Bakım. 1. Baskı. İstanbul: Nobel Tıp Kitapevleri. 2012. p. 51-63.
- Zhu Y, Fish AF, Li F, et al. Psychosocial factors not metabolic control impact the quality of life among patients with type 2 diabetes in china. Acta Diabetol 2016;53:535-41.
- Besen BD. Hastalığı Kabul Ölçeğinin Türk Toplumundaki Diyabetik Bireylere Uyarlanması ve Etkileyen Faktörlerin Belirlenmesi, Doktora Tezi İzmir: Ege Üniversitesi, Sağlık Bilimleri Enstitüsü, İç Hastalıkları Hemşireliği AD 2009.
- Lorig K, Ritter PL, Villa FJ, et al. Community-based peer-led diabetes self-management: a randomized trial. Diabetes Educ 2009;35(4):641-51.
- Mankan T, Erci B, Bahçecioglu G, et al. Turkish validity and reliability of the Diabetes Self-Efficacy Scale. Int J Nurs Sci. 2017;1-5.
- Kılıç M. Tip 2 diyabetli bireylerin öz-etkililik düzeyleri ve sağlık kontrol odağı ile ilişkisi. İç Hastalıkları Hemşireliği. Yüksek Lisans Tezi. Selçuk Üniversitesi. 2016.
- DePalma MT, Trahan LH, Eliza JM, et al. The relationship between diabetes self-efficacy and diabetes self-care in american indians and alaska natives. Am Indian Alaska Native Mental Health Res 2015;22:1-22.
- Bohanny W, Wu SF, Liu CY, Y, et al. Health literacy, self-efficacy, and self-care behaviours in patients with type 2 diabetes mellitus. J Am Assoc Nurse Pract 2013;25:495-502.
- Al-Khawaldeh OA, Al-Hassan MA, Froelicher ES. Self-efficacy, self-management, and glyce-mic control in adults with type 2 diabetes mellitus. J Diabetes Complications 2012;26:10-6.
- Gao J, Wang J, Zheng P, et al. Effects of self-care, self-efficacy, social support on glycemic control in adults with type 2 diabetes. BMC Fam Pract 2013;14:1-66.
- Tekin Yanık Y, Erol Ö. Tip 2 Diyabetlilerin Öz- Yeterlilik düzeylerinin değerlendirilmesi. Anadolu Hemşirelik ve Sağlık Bilimleri Dergisi 2016;19:166-74.
- Şireci E, Karabulutlu EY. 2017. Tip 2 diabetes mellituslu hastaların hastalıklarını kabullenme ve kendi bakımlarındaki öz yeterlilik düzeylerinin belirlenmesi. Anadolu Hemşirelik ve Sağlık Bilimleri Dergisi 2017;20:49-55.
- Wang JQ, Tak-Ying Shiu A. Diabetes self-efficacy and self-care behaviour of chinese patients living in Shanghai. J Clin Nurs 2004;13:771-2.
- Richardson A, Adner N, Nordström G. Persons with Insülin Dependent Diabetes Mellitus: Acceptance and Coping ability. J Adv Nurs 2001;33:758-63.
- Nowicki A, Marciniak J, Farbicka P, et al. Satisfaction with life and disease acceptance By patients with a stomy related to surgical treatment of the rectal cancer – Dd-terminants of quality of life? Pol Przegl Chir 2015;87:434-42.
- Erol Ö, Enç N. Hypoglycemia fear and self- efficacy of turkish patients receiving insülin therapy. Asian Nurs Res 2011;5:222-8.
- Beckerle C, Lavin M. Association of self-efficacy and self-care with glycemic control in diabetes. Diabetes Spectrum 2013;26:172-8.
- Aygün M. Obezite ve Yönetimi. Durna Z, editör, Kronik Hastalıklar ve Bakım. İstanbul: Nobel Tıp Kitapevleri; 2012. p. 341-80.