Artuklu Health

Research Article / Araştırma Makalesi

The Effect of Self-Stigma on Self-Esteem and Treatment Compliance in Individuals with Type-2 Diabetes: An Example in the Southeast of Türkiye

Tip-2 Diyabetli Bireylerde Kendini Damgalamanın Benlik Saygısı ve Tedavi Uyumuna Etkisi: Türkiye'nin Güneydoğusunda Bir Örnek

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ARTICLE INFO

Article History:
Received: 06.01.2024
Received in revised form: 01.03.2024
Accepted: 20.03.2024
Publication: 29.04.2024

Citation:
Buyukbayram Genc, Z. and Zengin Aydın, L. (2024). The Effect of Self-Stigma on Self-Esteem and Treatment Compliance in Individuals with Type-2 Diabetes: A Example in the Southeast of Turkey. Artuklu Health, 8, 18-25. https://doi.org/10.58252/artukluhealth.1475124

ABSTRACT

Introduction: The aim of the study is to examine the effect of self-stigma on self-esteem and treatment compliance in individuals with Type-2 diabetes.
Methods: This descriptive and correlational study was conducted with type 2 diabetes patients who applied to a hospital in southeast Turkey. The study was carried out between June and December 2022. The sample of the study consists of 172 patients who agreed to participate in the study. Participant Introductory Questionnaire, Self Stigma, Rosenberg Self-Esteem, and Morisky Medication Adherence Scale forms were used to collect data.
Results: In the study, the mean scores of patients' self-stigma, self-esteem, and treatment adherence were 51.16±15.41, 17.84±3.31, and 5.66±2.25, respectively. The results also indicated that there was a significant negative correlation between the mean scores of individuals' self-stigma, self-esteem, and adherence to treatment ($p<0.05$).
Conclusion: The study findings disclosed that the patients' self-stigma and self-esteem were at a moderate level, and their treatment adherence was at a low level. The research revealed that as the self-stigma level of the patients increased, their self-esteem and treatment compliance levels decreased.

Keywords: Type 2 diabetes, Self-stigma, Self-esteem, Adherence to treatment

MAKALE BİLGİLERİ

Makale Geçmişi:
Geliş Tarihi: 06.01.2024
Revizyon Tarihi: 01.03.2024
Kabul Tarihi: 20.03.2024
Yayım Tarihi: 29.04.2024

Atıf Bilgisi:
Büyükbayram Genç, Z. ve Zengin Aydın, L. (2024). Tip-2 Diyabetli Bireylerde Kendini Damgalamanın Benlik Saygısı ve Tedavi Uyumuna Etkisi: Türkiye'nin Güneydoğusunda Bir Örnek. Artuklu Health, 8, 18-25. https://doi.org/10.58252/artukluhealth.1475124

ÖZET

Giriş: Çalışmanın amacı, Tip-2 diyabetli bireylerde kendini damgalamanın benlik saygısı ve tedavi uyumuna etkisini incelemektir.
Yöntem: Tanımlayıcı ve ilişkisel olarak yapılan bu çalışma, Türkiye'nin güneydoğusunda bulunan bir hastaneye başvuran tip 2 diyabet hastalarıyla yapılmıştır. Çalışma, Haziran-Aralık 2022 tarihleri arasında gerçekleştirilmiştir. Araştırmanın örneklemi ise çalışmaya katılmayı kabul eden 172 hastadan oluşmaktadır. Verilerin toplanmasında, Katılımcı Tanıtıcı Anketi, Kendini Damgalama, Rosenberg Benlik Saygısı ve Morisky Uyum ölçek formları kullanılmıştır.
Bulgular: Çalışmada, hastaların kendini damgalama, benlik saygısı ve tedavi uyumu puan ortalamaları sırasıyla 51.16±15.41, 17.84±3.31 ve 5.66±2.25 olarak saptanmıştır. Bireylerin mesleğe göre kendini damgalama bilişsel alt boyutu, hastalık süresine göre ilaç uyumu ve ailede diyabet öyküsüne göre benlik saygısı ve ilaç uyumu puan ortalamaları arasında fark istatistiksel olarak önemli olduğu bulunmuştur ($p<0.05$). Bireylerin kendini damgalama ile benlik saygısı ve tedaviye uyum puan ortalamaları arasında negatif yönde anlamlı bir ilişki olduğu bulunmuştur ($p<0.05$).
Sonuç: Hastaların kendini damgalama ve benlik saygısının orta düzeyde, tedaviye uyumu ise düşük düzeyde olduğu saptanmıştır. Hastaların kendini damgalama düzeyi arttıkça benlik saygısı ve tedaviye uyum düzeylerinde azalma olduğu tespit edilmiştir.

Anahtar Kelimeler: Tip 2 diyabet, Kendini damgalama, Benlik saygısı, Tedaviye uyum

1. Introduction

Today, the incidence of diabetes is increasing due to reasons such as a sedentary lifestyle and the rise in the number of obese individuals resulting from poor eating habits (Cho et al., 2022; Kato et al., 2021). According to the International Diabetes Federation (IDF), in 2021, there were 537 million adults with diabetes aged 20-79 worldwide, and it is estimated that this number will reach 783 million in 2045. While the number of individuals with diabetes in Turkey was 9 million in 2021, it is estimated to reach 13.4 million in 2045 (IDF, 2021). Therefore, managing diabetes is a global health concern (Cho et al., 2022).

Diabetes is a significant chronic disease that has adverse affects on individuals' physical and mental states, family life, work, and social interactions (Cho et al., 2022; Krzemińska et al., 2021). As a result of the negative attitude of society towards diabetes or the complications caused by diabetes, patients have faced stigma (Cho et al., 2022; Kato et al., 2021). Studies have reported that type-2 diabetes patients are stigmatized by society (Himmelstein & Puhl, 2021; Liu et al., 2017). Patients may develop prejudices against themselves due to stigma. These prejudices cause them to stigmatize themselves over time (Kato et al., 2021; Puhl et al., 2020)). Self-stigma is the individual's acceptance of negative judgments and thoughts resulting from prejudgment (Kato et al., 2021). In diabetes-related stigma, the impact of self-stigma is intertwined with social influences (Liu et al., 2017). Thus, Consequently, individuals with diabetes may be inclined to conceal their condition, fearing societal stigmatization (Kokoszka et al., 2022; Puhl et al., 2020). This situation negatively affects the physical health of the individual as well as the psychological effects (Cho et al., 2022; Harper et al., 2018; Kato et al., 2016). In addition, the fact that individuals use drugs and have to follow up on diabetes by themselves increases self-stigma (Cho et al., 2022; Puhl et al., 2020). Therefore, self-stigma emerges as a critical factor that increases the burden of disease. Self-stigma of the patient also negatively affects self-esteem and the treatment process (Himmelstein & Puhl, 2021; Liu et al., 2017). A study found that patients with self-stigma had a decrease in self-esteem (Kato et al., 2016).

Self-stigma in diabetes patients causes psychosocial problems such as isolation from society, deterioration in family and social relations, and loss of employment. This situation leads to a decrease in self-esteem (Cho et al., 2022; Liu et al., 2017). Low self-esteem leads to a lack of motivation and self-care and a fear of being rejected or judged by others. In a study, it was found that patients with diabetes experienced low self-esteem (Okwaraji et al., 2017). That makes it difficult for patients to comply with treatment. Treatment adherence is the patients' compliance with their medication behavior or lifestyle changes with the advice of healthcare providers. Studies have also found that patients with diabetes have low adherence to treatment (Krzemińska et al., 2021; Zhang et al., 2021). While the self-stigma of patients causes non-compliance in the diabetes management process, it also causes a decrease in self-esteem and adherence to treatment (Cho et al., 2022; Okwaraji et al., 2017). Therefore, it is crucial to investigate the interplay between the level of self-stigma, self-esteem, and drug compliance. Additionally, a quantitative assessment of how patients' self-stigma impacts self-esteem and treatment adherence holds significance in nursing practice. It is imperative to take necessary measures to identify the factors contributing to patients' self-stigma, enhance their self-esteem, and to improve treatment outcomes.

It aimed to examine the effect of self-stigma on self-esteem and treatment compliance in individuals with Type-2 diabetes.

2. Methods

2.1. Study Design and Sample

This is a descriptive and correlational study conducted between June and December 2022 at a education and research hospital in the southeast of Turkey. The hospital where the study was conducted is the only education and research hospital in the city, and the hospital has a total of 450 beds. Diabetic patients are treated in internal clinics, and there is a diabetes education room for diabetes. A diabetes nurse provides service here.

The study population consists of patients diagnosed with type 2 diabetes for at least six months who applied to the diabetes follow-up outpatient clinic of the hospital where the study was conducted. The G*Power program was used for the sample size (Version 3.1.9.7). In the power analysis, a total of 156 samples were calculated with an effect size of 0.2291, error level of 5%, and statistical power of 90% (Cohen, 1988). Considering the 10% sample loss, 172 patients participated in the study. This study included patients who were 18 years of age or older, had been diagnosed with type-2 diabetes mellitus (defined according to ICD-10 International Classification of Diseases-10 codes) for at least six months, and had been taking medication for at least six months. Patients who did not consent and had a severe mental problems, vision, hearing were excluded from the study.

2.2. Data Collection

The data was collected by the researchers. Each interview lasted approximately 10-15 minutes. The study was performed through the Participant Introductory Questionnaire, Self-Stigma, Rosenberg Self-Esteem, and Morisky Medication Adherence Scale Forms.

Socio-demographic Questionnaire: This questionnaire was prepared in line with the literature by the researchers (Aloudah et al., 2018; Gredig & Bartelsen-Raemy, 2017; Öztürk et al., 2022). It consisted of questions about the age, gender, marital status, education level, occupation, duration of the diabetes diagnosis, and individuals diagnosed with diabetes in the family.

Self-Stigma Scale (SSS): The scale was developed by Mak et al. in 2010 (Mak & Cheung, 2010). The Turkish validity and reliability of the scale was conducted by Ulusoy et al. in 2022 (Ulusoy & Ulus, 2022). The scale, which is in a four-point Likert type, consists of 36 items, including the cognitive sub-dimension, the affective sub-dimension, and the behavioral sub-dimension. The scale is in the range of 0-108 points. A high score means a high level of self-stigma (Mak & Cheung, 2010). The Cronbach alpha value obtained from the scale was reported as 0.97 (Ulusoy & Ulus, 2022). In this study, the Cronbach alpha level was calculated as 0.90.

Rosenberg Self-Esteem Scale (RSES): The scale was developed by Rosenberg in 1965 (Rosenberg, 1965). The Turkish reliability and validity study of the scale was carried out by Çuhadaroğlu (Çuhadaroğlu F, 1986). The scale, which consists of 10 items, is in the 4-point Likert type and is in the range of 0-30 points. A score between 15 and 25 on the scale indicates sufficient self-esteem, while a score below 15 indicates low self-esteem. The Cronbach alpha value of the scale was determined as 0.91 (Çuhadaroğlu F, 1986). In this study, the Cronbach alpha level was calculated as 0.70.

Morisky Medication Adherence Questionnaire (MMAS-8): The scale was developed by Morisky et al. (Morisky et al., 1986). The Turkish validity and reliability of the scale were performed by Oğuzülgen et al. in 2014 (Oğuzülgen et al., 2014). The scale is in the form of a 5-point Likert scale and consists of 8 items. It is in the range of 0-8 points. A score of 0-6 is considered low compliance, 6-8 points as a medium, and 8 points as full compliance. In this study, the Cronbach alpha level was determined as 0.61.

2.3. Data Analysis

The data were analyzed in the statistical program SPSS 25 (Statistical Package for Social Science). Descriptive statistics for the variables were determined as the number, mean, percentage and standard deviation and multiple regression analysis were used. A statistically significant $p<0.05$ value was accepted.

2.4. Ethical Considerations

Before starting the study, written permission from the hospital and ethical approval from Siirt University Non-Invasive Clinical Research Ethics Committee (Date: 01.10.2021, No: 14254) were obtained. In addition, written and verbal consent was obtained from the patients participating in the study.

3. Results

The mean age of the patients was 48.97±15.19, 54.7% female, 75.6% married, 34.2% illiterate, 29.1% housewives, 44.8% disease duration between 0-5 years, and 38.4 of them had diabetes in their families (Table 1).

Table 1. Distribution of data according to socio-demographic and disease characteristics of patients (n=172)

Characteristics of the patients	n (%)
Gender	
Female	94 (54.7)
Male	78 (45.3)
Marital status	
Married	130 (75.6)
Single	42 (24.4)
Educational background	
Illiterate	59 (34.2)
Literate	54 (31.4)
Primary education	24 (14.0)
Highschool	22 (12.8)
Bachelor degree or higher	13 (7.6)
Job	
Unemployed	45 (26.2)
Employee	37 (21.5)
Officer	15 (8.7)
Housewife	50 (29.1)
Others	25 (14.5)
Duration of illness	
0-5 years	77 (44.8)
6-10 years	62 (36.0)
11 years or more	33 (19.2)
History of diabetes in the family	
In first degree relatives	66 (38.4)
In second degree relatives	55 (32.0)
None	51 (29.6)
Age (X̄±SD)	**48.97±15.19**

X̄= Mean, SD: Standard Deviation, Min: Minimum, Max: Maximum

The study results depicted that the patient's cognitive, affective, and behavioral subscales and the mean total score of BDI were 26.44±8.09, 18.99±6.25, 5.72±3.04, and 51.16±15.41, respectively. The patients' total self-esteem scale score was 17.84±3.31, and the total score on the adherence to treatment scale was 5.66±2.25 (Table 2).

Table 2. Regression analysis results according to descriptive characteristics (n=172)

Scale and subscales	Min-Max Scores	X̄±SD
SSS total score	5.00.00-100.00	51.16±15.41
SSS cognitive subscale	4.00-53.00	26.44±8.09
SSS affective subscale	0.00-36.00	18.99±6.25
SSS behavioral subscale	0.00-15.00	5.72±3.04
Self-esteem scale total score	8.00-27.00	17.84±3.31
MMAS-8 total score	1.00-11.00	5.66±2.25

SSS: Self-Stigma Scale X̄= Mean, SD: Standard Deviation, Min: Minimum, Max: Maximum

Multiple regression analysis was performed for the sociodemographic characteristics of the patients, total SSS and its sub-dimensions, RSES, and MMAS-8. In the analysis performed for the total SSS and cognitive and affective sub-dimensions, it was determined that education and occupation were statistically significant predictors (p<0.05). In the analysis performed for RSES, it was found that those who did not have a family history of diabetes were statistically significant predictors (p<0.05). In the analysis performed for MMAS-8, it was determined that the disease duration and family history of diabetes were statistically significant predictors (p<0.05) (Table 3).

Table 3. Regression analysis results according to descriptive characteristics (n=172)

Dependent variables		Independent variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% CI	
			B	SE	β			Lower Bound	Upper Bound
Cognitive subscale	1	(Constant)	26.564	.798		33.306	.000	24.989	28.138
		Educational background (Illiterate)	3.085	1.259	.181	2.451	.015	.600	5.570
		Job (Unemployed)	-4.489	1.360	-.244	-3.301	.001	-7.173	-1.804
			R=0.289	R^2=.084	F= 7.725	p=.001*			
Affective subscale	2	(Constant)	19.030	.620		30.678	.000	17.806	20.255
		Educational background (Illiterate)	2.254	.979	.172	2.302	.023	.321	4.187
		Job (Unemployed)	-3.093	1.058	-.218	-2.925	.004	-5.181	-1.005
			R=.264	R^2= .070	F=6.321	p=.002*			
SSS total score	4	(Constant)	51.216	1.528		33.523	.000	48.200	54.232
		Educational background (Illiterate)	5.741	2.411	.177	2.381	.018	.980	10.501
		Job (Unemployed)	-7.706	2.605	-.220	-2.959	.004	-12.848	-2.564
			R=.269	R^2=.072	F=6.576	p=.002*			
Rosenberg self-esteem scale	5	(Constant)	17.306	.292		59.235	.000	16.729	17.883
		History of diabetes in the family (None)	1.831	.537	.253	3.414	.001	.772	2.891
			R=.253	R^2=.064	F=11.652	p=.001*			
Medication adherence scale	6	(Constant)	5.065	.270		18.741	.000	4.532	5.599
		Duration of illness (0-5 years)	.688	.341	.152	2.019	.045	.015	1.360
		History of diabetes in the family(In first degree relatives)	.770	.348	.167	2.210	.028	.082	1.457
			R=.216	R^2=.047	F=4.131	p=.018*			

*Significance level was accepted as p<0.05. CI: Confidence Interval; SE: Standard Error; β: Standardized Regression Coefficient

It was found that patients' self-stigma significantly predicted their self-esteem and treatment compliance in a statistically negative way (p<0.05) (Table 4).

Table 4. Regression analysis results on the explanation of patients' self-stigma, self-esteem and treatment adherence

Independent variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% CI	
	B	SE	β			Lower Bound	Upper Bound
(Constant)	97.088	6.103		15.909	.000	85.041	109.135
Total RSES	-1.970	.308	-.423	-6.399	.000	-2.578	-1.363
Total MMAS-8	-1.897	.453	-.277	-4.190	.000	-2.790	-1.003
	R=.511	R^2=.261	F=29.818	p=.000*			

CI: Confidence Interval, SE: Standard Error, β: Standardized Regression Coefficient, RSES: Rosenberg Self-Esteem Scale, MMAS-8: Morisky Medication Adherence Questionnaire

4. Discussion

Diabetes continues to be an important global health challenge in the world and our country (Cho et al., 2022). Disease management for the health and diseases of diabetic patients gains priority at this point (Alzubaidi et al., 2022). The attitudes of patients affect the effective management and treatment of diabetes. Patients with

diabetes develop a negative attitude toward themselves when they feel stigmatized and watched by others. These negative attitudes lead patients to self-stigmatize (Seo & Song, 2020). Therefore, this study aimed to examine the relationship between self-stigma, self-esteem, and adherence to treatment in type 2 diabetes patients. The results showed that self-stigma negatively affected the self-esteem and treatment compliance of the patients. In addition, it was concluded that the patients' self-stigma and self-esteem were moderate, and their treatment adherence was low.

Patients, who declared that their diabetes was self-stigmatized, stated that they had lower diabetes self-management and efficacy (Puhl et al., 2020). In another study, results pointed out that self-stigma of patients was associated with the duration of diabetes and that self-stigma gradually increased as the duration of diabetes increased (Kato et al., 2021). Kato et al. stated that the self-stigma of patients is a negative factor that affects their self-care behaviors (Kato et al., 2016; Lin et al., 2022). In addition, most diabetes patients expressed that they experienced stigma and felt criticized by others (Cho et al., 2022). It has been reported that patients with diabetic foot ulcers also stigmatize themselves, which affects their quality of life (Luo et al., 2022). Many patients with high diabetes-related stigma stated that they internalized this stigma. It has been stated that stigma should be reduced to provide adequate care for type 2 diabetes patients (Himmelstein & Puhl, 2021). Many studies show that patients with type 2 diabetes experience stigma related to the disease (Gredig & Bartelsen-Raemy, 2017; Holmes-Truscott et al., 2018; Kato et al., 2021; Pedrero et al., 2021; Wang et al., 2021). The results of this research are consistent with the results of the studies. These results show that diabetes patients self-stigmatize, and stigma causes many adverse effects.

The findings exposed that the self-esteem of patients with type 2 diabetes was moderate. Safavi et al. found that the intervention group had low self-esteem, whereas the control group demonstrated moderate self-esteem (Safavi et al., 2011). Different studies highlighted that 11.5% (Rivera-Hernandez, 2014) and 20.0% (Okwaraji et al., 2017) of the patients had low self-esteem. Research findings stated that low self-esteem is a substantial risk factor, and patients should have high self-esteem to cope with the disease, comply more with treatment, and sustain a good quality of life (Okwaraji et al., 2017; Ribeiro et al., 2017). It can be concluded that low self-esteem has many detrimental effects on patients. The indifference of patients to others and themselves can lead to a deterioration in self-esteem.

It was observed that the adherence level to treatment in type 2 diabetes patients was low. In a similar study, the findings displayed that patients showed low adherence to treatment (Polonsky & Henry, 2016). In several related studies, the results indicated that 52.47% (Krzemińska et al., 2021), 59.8% (Zhang et al., 2021), and 31.5% (Alshehri et al., 2020) of the patients did not comply with the prescribed treatment. Studies also show that drug compliance is not at an adequate level (Aloudah et al., 2018; Huang et al., 2021; Zhang et al., 2021). Other studies conveyed that the treatment compliance of patients with type 2 diabetes was moderate (Özkaptan et al., 2019; Yuksel & Bektas, 2021). These findings showed that patients' compliance with diabetes treatment was insufficient. The low level of adherence to treatment of the patients may be due to the low literacy rate. In addition, it is necessary to determine the causes of non-compliance and take precautions to prevent the complications of the disease and reduce the overall burden.

It has been determined that the self-esteem of the patients without a family history of diabetes was. The assumption might be that there is a decrease in the patients' self-esteem because they witnessed the negative process their families experienced during the diabetes care process. It was observed that the duration of the disease predicted the adherence to treatment of the patients. In similar studies, the results revealed that as the disease duration of the patients increased, treatment compliance decreased (Fadare et al., 2015; Tekalegn et al., 2018). Since the disease is a chronic disease, it may be due to the difficulties caused by the continuous treatment of the patients. It was observed that patients with a history of diabetes in their first degree relatives predicted their compliance with treatment. Patients with the same disease in their family members may have adapted more quickly to their treatment compliance because they have gained experience in treatment. It can be thought that the characteristics of the sample group may also cause this situation.

The study's determinations indicate that the self-stigma of the patients caused a decrease in their self-esteem. Research results stated that self-stigma, having negative thoughts about oneself, and feeling worthless are related to self-esteem (Kato et al., 2014). It may cause patients to develop negative emotions while dealing with the illness, decrease self-esteem and efficacy, and avoid disclosing the disease by social withdrawal. Seo et al. noted that this situation causes a decrease in self-esteem (Seo & Song, 2019). In another study, the results emphasized that perceived stigma was a predictor of self-esteem in patients with type 2 diabetes (Öztürk et al., 2022).

Kato et al. found that there is a relationship between self-stigma and self-esteem. They also stated that patients who internalize stigma tend to have a sense of low self-worth (Kato et al., 2016). In another study, similar to this finding, it was determined that there was a moderate and negative significant relationship between self-stigma and self-esteem (Ulusoy & Ulus, 2022). In many studies, it has been found that there is a negative relationship between self-stigma and self-esteem (Kato et al., 2017; Pedrero et al., 2021). Stigma arises when the stereotypical negative views of society regarding the development of the disease are internalized by the stigmatized person and become a part of the self-concept (Alzubaidi et al., 2022). Therefore, the findings show that support programs should be carried out to positively change attitudes towards diabetes in order to reduce self-stigma.

It has been observed that self-stigma reduces treatment compliance in patients. In a similar study, the findings revealed that the prevalence of self-stigma is high in diabetes patients and that this may affect disease management and blood sugar control (Uchigata, 2018). In another study, it was stated that the self-stigma of patients might reduce their social relations and adherence to treatment (Kato et al., 2016). Most people with diabetes feel stigmatized and criticized by others. This situation has shown that it affects the treatment compliance of the patients (Cho et al., 2022). It can be said that the stigma experienced by the patients negatively affects the treatment process.

4.1. Limitations

The study had some limitations. The study was carried out in a single center. The study was not a population-based study and patients admitted to the hospital were included in the study.

5. Conclusion

It has been found that self-stigma of type 2 diabetes patients harms their self-esteem and adherence to treatment. Self-stigma, which is rarely addressed in diabetes patients, is an essential factor affecting the emotional state of patients and the treatment process. Self-stigma, which is rarely addressed in diabetes patients, is a critical factor affecting the emotional state of patients and the treatment process. Therefore, it can be said that an in-depth analysis of the factors affecting stigma is needed to reduce the self-stigma of patients.

More studies are needed to understand how the stigma of diabetes can affect both psychological and physiological health outcomes. To increase the patients' self-esteem and drug compliance, psychosocial support programs that positively change their attitudes toward diabetes can be organized. In addition, evaluating patients in terms of stigma can provide nurses with a new perspective on intervention to support their patients' lives.

Article Informations

Evaluation: Two External Reviewers / Double Blind

Ethical Consiredation: Before starting the study, written permission from the hospital and ethical approval from Siirt University Non-Invasive Clinical Research Ethics Committee (Date: 01.10.2021, No: 14254) were obtained. In addition, written and verbal consent was obtained from the patients participating in the study.

Similarity Screening: Done – iThenticate

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Research Design (CRediT 1):	ZBG (% 50) - LZA (% 50)
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Research - Data Analysis - Verification (CRediT 3-4-6-11)	ZBG (% 50) - LZA (% 50)
Writing the Article (CRediT 12-13)	ZBG (% 50) - LZA (% 50)
Development and Revision of the Text (CRediT 14)	ZBG (% 50) - LZA (% 50)

Conflict of Interest: No conflict of interest declared.

Financing: No external funding was used to support this research.

Acknowledgments: We thank all the patients for participating in our study.

References

Aloudah, N. M., Scott, N. W., Aljadhey, H. S., Araujo-Soares, V., Alrubeaan, K. A., & Watson, M. C. (2018). Medication adherence among patients with Type 2 diabetes: A mixed methods study. PLoS ONE, 13(12), e0207583. https://doi.org/10.1371/journal.pone.0207583

Alshehri, K. A., Altuwaylie, T. M., Alqhtani, A., Albawab, A. A., & Almalki, A. H. (2020). Type 2 Diabetic Patients Adherence Towards Their Medications. Cureus, 12(2), e6932. https://doi.org/10.7759/cureus.6932

Alzubaidi, H., Namara, K. M., Samorinha, C., Saidawi, W., Versace, V. L., & Speight, J. (2022). Type 2 Diabetes Stigma Assessment Scale (DSAS-2): Cultural and linguistic adaptation and psychometric assessment of the Arabic version. Primary Care Diabetes, 16(5), 703-708. https://doi.org/10.1016/j.pcd.2022.08.004

Cho, S. E., Kwon, M., & Kim, S. A. (2022). Influence of Diabetes Knowledge, Self-Stigma, and Self-Care Behavior on Quality of Life in Patients with Diabetes. Healthcare, 10(10), 1983. https://doi.org/10.3390/healthcare10101983

Cohen, J. (1988). Statistical Power Analysis for the Behavioral Sciences (2. bs). Routledge. https://doi.org/10.4324/9780203771587

Çuhadaroğlu F. (1986). Self-esteem in adolescents, Unpublished master thesis Psychiatry. Hacettepe University, Ankara, Turkey.

Fadare, J., Olamoyegun, M., & Gbadegesin, B. (2015). Medication adherence and direct treatment cost among diabetes patients attending a tertiary healthcare facility in Ogbomosho, Nigeria. Malawi Medical Journal, 27(2), 65-70. https://doi.org/10.4314/mmj.v27i2.7

Gredig, D., & Bartelsen-Raemy, A. (2017). Diabetes-related stigma affects the quality of life of people living with diabetes mellitus in Switzerland: Implications for healthcare providers. Health & Social Care in the Community, 25(5), 1620-1633. https://doi.org/10.1111/hsc.12376

Harper, K. J., Osborn, C. Y., & Mayberry, L. S. (2018). Patient-Perceived Family Stigma of Type 2 Diabetes and its Consequences. Families, systems & health : the journal of collaborative family healthcare, 36(1), 113-117. https://doi.org/10.1037/fsh0000316

Himmelstein, M. S., & Puhl, R. M. (2021). At multiple fronts: Diabetes stigma and weight stigma in adults with type 2 diabetes. Diabetic Medicine, 38(1), e14387. https://doi.org/10.1111/dme.14387

Holmes-Truscott, E., Browne, J. L., Ventura, A. D., Pouwer, F., & Speight, J. (2018). Diabetes stigma is associated with negative treatment appraisals among adults with insulin-treated Type 2 diabetes: Results from the second Diabetes MILES - Australia (MILES-2) survey. Diabetic Medicine: A Journal of the British Diabetic Association, 35(5), 658-662. https://doi.org/10.1111/dme.13598

Huang, J., Ding, S., Xiong, S., & Liu, Z. (2021). Medication Adherence and Associated Factors in Patients With Type 2 Diabetes: A Structural Equation Model. Frontiers in Public Health, 9, 730845. https://doi.org/10.3389/fpubh.2021.730845

IDF (International Diabetes Federation). (2021). Turkey diabetes report 2000—2045. https://diabetesatlas.org/data/

Kato, A., Fujimaki, Y., Fujimori, S., Isogawa, A., Onishi, Y., Suzuki, R., Ueki, K., Yamauchi, T., Kadowaki, T., & Hashimoto, H. (2021). Associations between diabetes duration and self-stigma development in Japanese people with type 2 diabetes: A secondary analysis of cross-sectional data. BMJ Open, 11(12), e055013. https://doi.org/10.1136/bmjopen-2021-055013

Kato, A., Fujimaki, Y., Fujimori, S., Isogawa, A., Onishi, Y., Suzuki, R., Yamauchi, T., Ueki, K., Kadowaki, T., & Hashimoto, H. (2016). Association between self-stigma and self-care behaviors in patients with type 2 diabetes: A cross-sectional study. BMJ Open Diabetes Research & Care, 4(1). https://doi.org/10.1136/bmjdrc-2015-000156

Kato, A., Fujimaki, Y., Fujimori, S., Isogawa, A., Onishi, Y., Suzuki, R., Yamauchi, T., Ueki, K., Kadowaki, T., & Hashimoto, H. (2017). Psychological and behavioural patterns of stigma among patients with type 2 diabetes: A cross-sectional study. BMJ Open, 7(3), e013425. https://doi.org/10.1136/bmjopen-2016-013425

Kato, A., Fujimaki, Y., Fujimori, S., Izumida, Y., Suzuki, R., Ueki, K., Kadowaki, T., & Hashimoto, H. (2016). A qualitative study on the impact of internalized stigma on type 2 diabetes self-management. Patient Education and Counseling, 99(7), 1233-1239. https://doi.org/10.1016/j.pec.2016.02.002

Kato, A., Takada, M., & Hashimoto, H. (2014). Reliability and validity of the Japanese version of the Self-Stigma Scale in patients with type 2 diabetes. Health and Quality of Life Outcomes, 12. https://doi.org/10.1186/s12955-014-0179-z

Kokoszka, A., Pacura, A., Kostecka, B., Lloyd, C. E., & Sartorius, N. (2022). Body self-esteem is related to subjective well-being, severity of depressive symptoms, BMI, glycated hemoglobin levels, and diabetes-related distress in type 2 diabetes. PLoS ONE, 17(2), e0263766. https://doi.org/10.1371/journal.pone.0263766

Krzemińska, S., Lomper, K., Chudiak, A., Ausili, D., & Uchmanowicz, I. (2021). The association of the level of self-care on adherence to treatment in patients diagnosed with type 2 diabetes. Acta Diabetologica, 58(4), 437-445. https://doi.org/10.1007/s00592-020-01628-z

Lin, M.-H., Ou, H.-Y., Wang, R.-H., Lin, C.-H., Liao, H.-Y., & Chen, H.-M. (2022). Glycaemic control mediates the relationships of employment status and self-stigma with self-care behaviours in young adults with type 2 diabetes. Journal of Clinical Nursing, 31(5-6), 582-591. https://doi.org/10.1111/jocn.15915

Liu, N. F., Brown, A. S., Folias, A. E., Younge, M. F., Guzman, S. J., Close, K. L., & Wood, R. (2017). Stigma in People With Type 1 or Type 2 Diabetes. Clinical Diabetes: A Publication of the American Diabetes Association, 35(1), 27-34. https://doi.org/10.2337/cd16-0020

Luo, R., Ji, Y., Liu, Y., Sun, H., Tang, S., & Li, X. (2022). Relationships among social support, coping style, self-stigma, and quality of life in patients with diabetic foot ulcer: A multicentre, cross-sectional study. International Wound Journal, 20(3), 716-726. https://doi.org/10.1111/iwj.13914

Mak, W. W. S., & Cheung, R. Y. M. (2010). Self-stigma among concealable minorities in Hong Kong: Conceptualization and unified measurement. American Journal of Orthopsychiatry, 80(2), 267-281. https://doi.org/10.1111/j.1939-0025.2010.01030.x

Morisky, D. E., Green, L. W., & Levine, D. M. (1986). Concurrent and predictive validity of a self-reported measure of medication adherence. Medical Care, 24(1), 67-74. https://doi.org/10.1097/00005650-198601000-00007

Oğuzülgen, I. K., Köktürk, N., & Işikdoğan, Z. (2014). [Turkish validation study of Morisky 8-item medication adherence questionnaire (MMAS-8) in patients with asthma and chronic obstructive pulmonary disease]. Tuberkuloz Ve Toraks, 62(2), 101-107. https://doi.org/10.5578/tt.7401

Okwaraji, F. E., Onyebueke, G. C., Nduanya, C. U., Nwokpoku, E. N., & Abakaliki N. (2017). Life satisfaction, self esteem and mental health in a sample of diabetic out-patients attending a Nigerian tertiary health institution. The Journal of Medical Research, 3(2), 60-65. https://doi.org/10.31254/jmr.2017.3207

Özkaptan, B. B., Kapucu, S., & Demirci, İ. (2019). Tip 2 diyabetli hastalarda tedaviye uyum ve hastalık kabulü arasındaki ilişki. Cukurova Medical Journal, 44, 447-454. https://doi.org/10.17826/cumj.554402

Öztürk, A., Akin, S., & Kundakci, N. (2022). Self-esteem mediates the relationship perceived stigma with self-efficacy for diabetes management in individuals with type 2 diabetes mellitus. Saudi Medical Journal, 43(10), 1157-1164. https://doi.org/10.15537/smj.2022.43.10.20220344

Pedrero, V., Manzi, J., & Alonso, L. M. (2021). A Cross-Sectional Analysis of the Stigma Surrounding Type 2 Diabetes in Colombia. International Journal of Environmental Research and Public Health, 18(23), Article 23. https://doi.org/10.3390/ijerph182312657

Polonsky, W. H., & Henry, R. R. (2016). Poor medication adherence in type 2 diabetes: Recognizing the scope of the problem and its key contributors. Patient Preference and Adherence, 10, 1299-1307. https://doi.org/10.2147/PPA.S106821

Puhl, R. M., Himmelstein, M. S., Hateley-Browne, J. L., & Speight, J. (2020). Weight stigma and diabetes stigma in U.S. adults with type 2 diabetes: Associations with diabetes self-care behaviors and perceptions of health care. Diabetes Research and Clinical Practice, 168. https://doi.org/10.1016/j.diabres.2020.108387

Ribeiro, M. de N. de S., Diniz, C. X., Perdomo, S. B., Ribeiro, J. H. de S., Barbosa, O. G., Barros, K. M. S. C. de, Silva, A. B. da, & Oliveira, E. da C. (2017). Self-esteem and resilience in people with type 2 diabetes mellitus. Mundo Saúde (Impr.), 41(2), 223-231.

Rivera-Hernandez, M. (2014). Depression, self-esteem, diabetes care and self-care behaviors among middle-aged and older Mexicans. Diabetes research and clinical practice, 105(1), 70-78. https://doi.org/10.1016/j.diabres.2014.04.017

Rosenberg, M. (1965). Rosenberg Self-Esteem Scale (RSE). Princeton, NJ: Princeton University Press, 2.

Safavi, M., Samadi, N., & Mahmoodi, M. (2011). Effect of quality of life improvement on type 2 diabetes patients' self-esteem. Saudi Medical Journal, 32(9), 953-957.

Seo, K., & Song, Y. (2019). Self-stigma among Korean patients with diabetes: A concept analysis. Journal of Clinical Nursing, 28(9-10), 1794-1807. https://doi.org/10.1111/jocn.14789

Seo, K., & Song, Y. (2020). Development and validation of the self-stigma scale in people with diabetes. Nursing Open, 8(3), 1089-1097. https://doi.org/10.1002/nop2.719

Tekalegn, Y., Addissie, A., Kebede, T., & Ayele, W. (2018). Magnitude of glycemic control and its associated factors among patients with type 2 diabetes at Tikur Anbessa Specialized Hospital, Addis Ababa, Ethiopia. PLoS ONE, 13(3), e0193442. https://doi.org/10.1371/journal.pone.0193442

Uchigata, Y. (2018). The still persistent stigma around diabetes: İs there something we can do to make it disappear? Diabetology international, 9(4), 209-211. https://doi.org/10.1007/s13340-018-0373-z

Ulusoy, E., & Ulus, B. (2022). Tip 2 Diyabeti Olan Bireylerde Kendini Damgalama Ölçeğinin Türkçe Geçerlik ve Güvenirliği. Hacettepe Üniversitesi Hemşirelik Fakültesi Dergisi, 9(2), Article 2. https://doi.org/10.31125/hunhemsire.1167292

Wang, R.-H., Lin, C.-C., Chen, S.-Y., Hsu, H.-C., & Huang, C.-L. (2021). The Impact of Self-Stigma, Role Strain, and Diabetes Distress on Quality of Life and Glycemic Control in Women With Diabetes: A 6-Month Prospective Study. Biological Research For Nursing, 23(4), 619-628. https://doi.org/10.1177/10998004211009606

Yuksel, M., & Bektas, H. (2021). Compliance with treatment and fear of hypoglycaemia in patients with type 2 diabetes. Journal of Clinical Nursing, 30(11-12), 1773-1786. https://doi.org/10.1111/jocn.15736

Zhang, Z. P., Premikha, M., Luo, M., & Venkataraman, K. (2021). “Answer to: Diabetes distress and peripheral neuropathy are associated with medication non-adherence in individuals with type 2 diabetes in primary care”-authors’ reply. Acta Diabetologica, 58(7), 973. https://doi.org/10.1007/s00592-021-01732-8