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The Effect of Sociodemographic Characteristics on Disease Acceptance in Individuals with Type 2 Diabetes

Nurten Terkeş, Derya Öngün

Department of Internal Medicine Nursing, Mehmet Akif Ersoy University, Bucak Health School, Burdur, Türkiye

Abstract

Background: Type 2 diabetes is a chronic metabolic disorder that requires long-term lifestyle changes and continuous self-management. The degree to which individuals accept their illness plays a pivotal role in psychological adaptation, treatment compliance, and disease outcomes.

Aim: This study aimed to investigate the effect of sociodemographic characteristics on the level of disease acceptance in individuals diagnosed with type 2 diabetes.

Methods: This descriptive study was conducted with 282 patients with type 2 diabetes receiving treatment in the internal medicine department of a district state hospital between January 5, 2024 and February 15, 2024. Personal information forms and the Illness Acceptance Scale were used by the researchers for data collection. Data were analyzed using the independent samples t-test, one-way analysis of variance (ANOVA), and the Mann-Whitney U and Kruskal-Wallis tests.

Results: The distribution of personal characteristics among type 2 diabetes patients who participated in the study showed a mean age of 58.93±12.40; 62.4% were female, 87.9% were married, 52.4% were primary school graduates, 68.7% were not working, 46% were housewives, and 36.1% had a diagnosis duration ranging from 5 to 10 years. The relationship between the level of disease acceptance and age (p=0.000), gender (p=0.036), educational status (p=0.032), marital status (p=0.003), employment status (p=0.000), occupation (p=0.000), duration of diagnosis (p=0.000), and having another disease (p=0.000) was found to be statistically significant.

Conclusion: It was found that the perceived level of disease acceptance among individuals is influenced by variables such as age, gender, marital status, educational status, employment status, occupation, and duration of diagnosis. These factors should be considered when designing individualized care plans and psychosocial support interventions.

Keywords: Disease acceptance, nursing, type 2 diabetes

Introduction

Diabetes is a lifelong, progressive, and chronic metabolic disease that can lead to the development of many complications in later stages.[1] According to data from the International Diabetes Federation (IDF), in 2019 the global prevalence of diabetes in the adult population reached 9.3%, with approximately 463 million individuals living with diabetes and about 4.2 million deaths attributed to diabetes and its complications.[2] According to recent IDF data on the prevalence of diabetes, there are approximately 7 million people aged 20–79 years with diabetes in Türkiye, corresponding to about 15% of the total adult population.[3] According to the Turkish Diabetes Epidemiology Study (TURDEP-II), the prevalence of diabetes is 13.7%, while this rate is approximately 27% among individuals with impaired glucose tolerance (IGT) or prediabetes.[4] The rapid increase in type 2 diabetes in Türkiye and worldwide clearly demonstrates the necessity of effective diabetes management.[5] Therefore, diabetes should be brought under control in the early years. When individuals with diabetes can manage their condition at an early stage, they can live for many years without developing complications. However, in individuals with uncontrolled diabetes, the treatment plan becomes difficult once complications develop, creating a significant burden on both the individual and the national economy.[6,7]

It is necessary to organize training programs on diabetes self-management, particularly to identify individuals in the risk group and provide them with the necessary information. It is important to include these individuals in communication groups with health professionals on certain social media platforms, to plan supportive training sessions, to carry out social activities, and thus to increase awareness among individuals. However, it has been reported that no matter how well the training is provided, it cannot be effective unless patients have a good level of disease acceptance.[8–10]

Disease acceptance reflects how well individuals integrate a chronic condition into their self-concept and daily routines, reducing psychological conflict and enabling adaptive self-management. Lower acceptance is typically linked to avoidance, diabetes distress, and weaker engagement with care plans, whereas higher acceptance is associated with better self-care, medication adherence, and quality of life. In type 2 diabetes, acceptance can shape how individuals appraise the day-to-day demands of diet, physical activity, and glucose monitoring, thereby influencing long-term outcomes. Although illness perceptions, coping resources, social support, and health literacy are important, sociodemographic factors—such as age, sex, marital status, education, employment, occupation, and duration of diagnosis—also matter through their effects on access to resources, caregiving

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Corresponding author: Nurten Terkeş
E-mail: nurtenterkes@gmail.com

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roles, and competing demands. Profiling acceptance across these attributes within the same population can help identify subgroups who would benefit from targeted, nurse-led education and counseling, thereby strengthening the practical impact of diabetes self-management efforts.[2,8–10] This study aimed to investigate the effect of sociodemographic characteristics on the level of disease acceptance in individuals diagnosed with type 2 diabetes.

Research Question

How does disease acceptance differ across key sociodemographic characteristics (age, sex, marital status, education, employment, occupation, and duration of diagnosis) among adults with type 2 diabetes?

Materials and Methods

Participants and Study Design

This study was conducted as a descriptive, cross-sectional research in the internal medicine clinic of a district state hospital between January 5 and February 15, 2024. The minimum sample size was calculated using G*Power 3.1 software with an effect size of f=0.25 (medium), α=0.05, and power=0.90, indicating a required minimum of 242 participants for between-group comparisons. Ultimately, 282 individuals meeting the inclusion criteria were enrolled, which enhanced the statistical power of the study. Participants aged 18 years and older, with a confirmed diagnosis of type 2 diabetes for at least six months, who had no communication barriers or psychiatric disorders, and who voluntarily provided consent were included in the sample. This study adhered to the STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) guidelines for observational research reporting.

Data Collection Tools

Two instruments were used for data collection: a Personal Information Form and the Disease Acceptance Scale (DAS), both prepared by the researchers after a thorough literature review.[11,12]

Personal Information Form

The form included one open-ended and eight closed-ended questions designed to gather descriptive data such as age, gender, marital status, educational background, employment status, occupation, and duration of diabetes diagnosis.

Disease Acceptance Scale

The DAS, originally developed by Felton et al.[11] in 1984 and adapted into Turkish by Büyükkaya Besen and Esen[12] in 2011, is a five-point Likert-type instrument with eight items. Responses are rated from 1 ("strongly agree") to 5 ("strongly disagree"), with the sixth item reverse-coded. Total scores range from 8 to 40, with higher scores indicating greater disease acceptance. The Cronbach's alpha of the Turkish version was reported as 0.79 in prior validation studies, while in the current study, internal consistency was found to be excellent (Cronbach's α=0.92).

Data Collection

Data collection was carried out in both the outpatient and inpatient units of the hospital. All questionnaires were administered by the principal investigator through face-to-face interviews. Participants were approached during their routine follow-up appointments or hospital stays and were informed about the purpose and voluntary nature of the study. After obtaining informed consent, data were collected in a quiet setting without external interruptions. Each session lasted approximately 10–15 minutes, during which the researcher ensured that participants completed all items. The responses were reviewed on-site for completeness before the participants departed. No participant withdrew or refused participation during data collection.

Data Analysis

The data obtained from the study were transferred to a computer and analyzed using the SPSS 22.0 statistical package program. Data distribution was assessed using the Shapiro-Wilk test, and variance homogeneity was tested using the Levene test. When the appropriate assumptions were met, the independent samples t-test and one-way analysis of variance (ANOVA) (post-hoc Tukey/Games-Howell) were applied; when assumptions were not met, the Mann-Whitney U and Kruskal-Wallis tests (post-hoc Dunn-Bonferroni) were used. A two-tailed $p<0.05$ significance level was applied for all comparisons.

Ethical Responsibilities

Ethics committee approval was obtained from the Non-interventional Clinical Research Ethics Committee of Burdur Mehmet Akif Ersoy University (Approval Number: GO/2024/45, Date: 03.01.2024) prior to the study to ensure its ethical appropriateness. Both written and verbal consent were obtained from type 2 diabetes patients who agreed to participate in the study. Research and publication ethics were followed in accordance with the Declaration of Helsinki.

Results

When the demographic and socioeconomic characteristics of the individuals with type 2 diabetes who participated in the study were analyzed, the mean age of the participants was 58.93±12.40 years. Of the participants, 62.4% were female, 87.9% were married, 52.4% were primary school graduates, and 68.7% were unemployed. Regarding occupational distribution, 46% of the participants were housewives. All participants used oral antidiabetic agents, and 36.1% had a diagnosis duration of 5 to 10 years (Table 1).

The mean scores, standard deviation, and Cronbach's alpha values of the Disease Acceptance Scale used in the study are presented in Table 2. The mean total scale score was calculated as 25.36±6.72, and Cronbach's alpha value of the scale was found to be 0.99, indicating that the scale has high internal consistency.

In the analyses performed to evaluate the relationship between the demographic characteristics of the participants and their scores on the Disease Acceptance Scale, statistically significant relationships were found between age, gender, marital status, educational status, employment status, occupation, and duration of diagnosis and the level of disease acceptance ($p<0.005$) (Table 3).

Table 1. Distribution of individuals with type 2 diabetes according to descriptive characteristics (N=282)

Descriptive characteristics	N	%
Gender		
Female	176	62.4
Male	106	37.6
Marital status		
Married	248	87.9
Single	34	12.1
Education		
Primary school	148	52.4
Middle school	58	20.5
High school	46	16.3
University and above	30	10.8
Employment status		
Working	88	31.3
Not working	194	68.7
Profession		
Housewife	130	46.0
Servant	72	26.1
Worker	62	21.9
Retired	18	6.0
Type of diabetes treatment		
Oral antidiabetic agents	282	100
Duration of diagnosis (years)		
1–5	88	31.2
6-10	102	36.1
>10	92	32.7
Variable	**Mean±SD**	**Min-max**
Age	58.93±12.40	32–76

SD: Standard deviation.

Table 2. Mean scores, standard deviation, and Cronbach's alpha value of the disease acceptance scale

Scale	Score range	Mean	SD	Cronbach's alpha
Total	8–40	25.36	6.72	0.92

SD: Standard deviation.

Discussion

Diabetes is a chronic disease that continuously affects the lives of individuals; therefore, developing a positive attitude toward the disease plays a critical role in the success of disease management. It is frequently emphasized in the literature that individuals with low disease acceptance or negative attitudes should be identified, and nursing interventions should be planned to help modify their perceptions.[13] In this context, this study aimed to determine the level of disease acceptance among individuals with type 2 diabetes and the sociodemographic factors affecting this level. The findings obtained from this study reveal that these factors significantly influence the level of disease acceptance.

A high level of disease acceptance in chronic diseases such as diabetes is an important factor in disease management, treatment success, prevention of complications, and improvement of quality of life.[14,15] In this study, the participants demonstrated a good level of disease acceptance. In a study conducted to determine the relationship between disease acceptance and glycemic control in individuals with type 2 diabetes, the mean Disease Acceptance Scale score was 25.01±6.20.[16] In another study, the mean score was 27.82±5.70.[17] In other studies in the literature, the mean scores obtained from this scale ranged between 22.79±6.72 and 30.39±8.13.[13,18–20] These results indicate that individuals with type 2 diabetes generally have a moderate to good level of disease acceptance. Furthermore, due to the item coverage of the scale used and the characteristics of the sample, high internal consistency was observed; however, this may also indicate the possibility of item similarity. Future research should expand validity evidence using item response theory.

In this study, a significant difference was found between the age variable and the level of disease acceptance. It was observed that individuals in the 40–65 age group had higher levels of disease acceptance compared to other age groups. This finding is in line with the study by Yılmaz et al.,[16] which also found that individuals aged 36–64 years had higher levels of disease acceptance than other age groups. Similarly, Aktürk and Aydınalp[18] reported that individuals with diabetes aged 36–50 years had higher levels of disease acceptance than those in other age groups.[18] In addition, Bąk and Kunc-Małyjurek[19] found that disease acceptance and life satisfaction were higher in patients aged 45–55 years than in those aged 55–60 years. This suggests that individuals in middle age may have a greater ability to accept the disease.

In this study, it was determined that men had higher levels of disease acceptance compared to women. The study by Yılmaz et al.[16] also showed that men had higher levels of disease acceptance than women. Similarly, in the study by Can Çiçek and Gökdoğan,[14] the disease acceptance level of men was found to be statistically significantly higher than that of women. However, Rogon et al.[20] found no significant difference between gender and the level of disease acceptance. This discrepancy may have resulted from differences in the sample characteristics of the studies.

A significant relationship was found between the educational level of the participants and their level of disease acceptance, with higher mean scores observed among individuals with university-level or higher education. In the literature, Yılmaz et al.[16] reported that the level of disease acceptance was higher among individuals with primary and secondary education. However, in the study by Aktürk and Aydınalp,[18] it was shown that individuals with university education had higher disease acceptance levels than those in other educational groups.[18] The study by Döner et al.[13] also supports the findings of this study, showing that individuals with type 2 diabetes and higher educational levels had higher disease acceptance scores. It can be said that as the level of education increases, individuals' ability to cope with and accept the disease increases, allowing them to accept the disease more easily. Conversely, individuals who lack sufficient information about the disease may have difficulty accepting it, which may negatively affect their acceptance scores.

In the present study, it was found that the mean disease acceptance scores of individuals who were employed were higher than those who were not employed.

Table 3. Mean scores of participants according to their descriptive characteristics (n=282)

Descriptive characteristics	Disease acceptance scale	
Age (years)		
<40	25.37±5.77	KW: 27.005
40–65	26.89±5.24	p=0.000
>65	23.12±5.64	
Gender		
Female	24.90±6.04	Z: -2.100
Male	26.54±4.85	p=0.036
Marital status		
Married	25.89±5.53	Z: -2.971
Single	22.82±6.04	p=0.003
Education		
Primary school	25.36±5.80	KW: 10.582
Middle school	26.00±4.03	p=0.032
High school	26.56±5.45	
University and above	27.00±5.48	
Employment status		
Working	27.88±4.57	Z: -4.508
Not working	24.45±5.81	p=0.000
Profession		
Housewife	24.46±5.95	KW: 23.052
Retired	26.88±5.25	p=0.000
Worker	28.52±3.82	
Servant	24.69±5.79	
Duration of diagnosis (years)		
1–5	26.77±5.26	KW: 16.448
6-10	26.15±5.76	p=0.000
>10	23.63±5.53	

This finding is consistent with the study by İlaslan et al.,[21] in which the disease acceptance levels of actively working individuals with type 2 diabetes were found to be higher than those of individuals who were not working. Similar results were obtained in the study by Şireci and Yılmaz Karabulutlu,[17] where it was determined that the disease acceptance levels of working individuals were higher than those of non-working individuals. This finding indicates that the level of disease acceptance is also influenced by social and economic factors such as employment status.

When the relationship between the duration of diagnosis and the level of disease acceptance was examined, it was found that individuals diagnosed within the past 1–5 years had higher disease acceptance scores. Similarly, in the study by Aktürk and Aydınalp,[18] individuals with a diagnosis duration of 0–4 years were found to have higher levels of disease acceptance. In the study conducted by İlaslan et al.,[21] disease acceptance levels were found to decrease as the duration of diagnosis increased among individuals with type 2 diabetes. This suggests that individuals may experience greater difficulty accepting the disease as the duration of diagnosis increases, which may negatively affect their acceptance levels.

Finally, it was found that the mean disease acceptance scores of individuals with another chronic disease were statistically significant. This finding is consistent with the study by Yılmaz et al.,[16] which showed that individuals with type 2 diabetes and no other chronic disease had higher levels of disease acceptance. However, in the study by Aktürk and Aydınalp,[18] it was found that individuals with diabetes and another chronic disease had higher levels of disease acceptance than those with diabetes alone. This difference indicates that individuals' coping capacity with chronic diseases and their disease acceptance processes are influenced by both individual and disease-specific factors.

Given these sociodemographic patterns in disease acceptance, we delineate pragmatic implications for individualized care in routine nursing practice. Our findings

suggest that disease acceptance varies across sociodemographic strata (e.g., longer diagnosis duration, employment status), indicating that individualized care plans can be operationalized through brief, routine screening and risk-stratified support. In practical terms, nurses can integrate a brief 1–2-minute Acceptance of Illness Scale (AIS) check during visits to identify patients with lower acceptance who are more likely to disengage from self-management. For these patients, care plans should emphasize motivational interviewing, teach-back for key skills (e.g., medication adherence, self-monitoring of blood glucose [SMBG]), and problem-solving training focused on day-to-day barriers to diet and physical activity—delivered through short, structured touchpoints that fit within the clinic workflow.

Limitations

This study has several limitations. First, it was conducted in a single public hospital, which limits external validity; findings may not generalize to other regions, care settings, or patients managed with insulin. Second, the cross-sectional design precludes causal inference. Third, outcomes and predictors were obtained via self-report instruments (including the Acceptance of Illness Scale), which are vulnerable to recall and social desirability biases as well as common-method variance; objective clinical or behavioral corroboration was not available. Fourth, diet adherence and physical activity were not assessed. Finally, treatment modality was uniform in our sample (all participants used oral antidiabetic agents), potentially restricting variability and limiting generalizability to insulin-treated populations. Future studies should use multi-center, multi-region samples with larger size, incorporate objective behavioral and clinical measures (e.g., activity tracking, dietary records), and employ prospective or longitudinal designs to better address these sources of bias and strengthen inference.

Conclusion

This study explored that the level of disease acceptance among individuals with diabetes was generally high, and various sociodemographic factors such as age, gender, marital status, educational status, employment status, occupation, and duration of diagnosis significantly affected the level of disease acceptance. In line with the findings obtained, it is strongly recommended that the disease acceptance levels of individuals with diabetes be evaluated periodically and that appropriate interventions be planned to increase disease acceptance based on these evaluations.

Health professionals should adopt an individualized care approach in diabetes management and provide the necessary support by considering the sociodemographic characteristics of individuals. In particular, identifying individuals with low levels of disease acceptance and developing strategies to increase their acceptance levels can enhance success in disease management. In this context, interventions such as educational programs, psychosocial support services, and regular follow-up systems may facilitate acceptance of the disease among individuals with diabetes.

In addition, further research involving larger and more diverse sample groups is needed to better understand the effects of sociodemographic factors on diabetes management. Such studies will contribute to the development of more effective strategies for diabetes management.

Ethics Committee Approval: The study was approved by the Burdur Mehmet Akif Ersoy University Non-interventional Clinical Research Ethics Committee (Approval Number: 2024/45, Date: 03.01.2024).

Informed Consent: Both written and oral informed consent was obtained from the participants.

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