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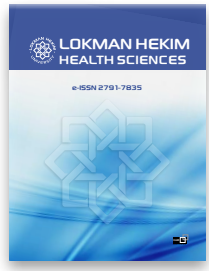

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ORIGINAL ARTICLE

The Factors Affecting the Attitude and Behavior for Hypoglycemia in Individuals with Diabetes Mellitus

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Abstract

Introduction: Hypoglycemia, a common complication in diabetes mellitus, can cause fear and negatively impact self-management. This study aimed to examine the effects of various factors on hypoglycemia attitudes and behaviors in individuals with diabetes mellitus.

Methods: This study was conducted as a prospective and descriptive study between November 2023 and March 2024 in Ankara, Türkiye, at the internal medicine outpatient clinic of a training and research hospital. For the collection of research data, a questionnaire and the Hypoglycemia Attitude and Behavior Scale were used.

Results: The study included 146 patients. Among participants, 90.4% had experienced hypoglycemia, 50% received education about hypoglycemia and 39% had severe hypoglycemia. Differences between the economic status, educational status, alcohol consumption, hospitalization due to diabetes in the last one year, experience of nocturnal hypoglycemia, receiving education about hypoglycemia, knowing the 15/15 rule for approaching hypoglycemia, and experience of severe hypoglycemia with the Hypoglycemia Attitude and Behavior Scale total scores were significant ($p<0.05$). According to the regression analysis, the Hypoglycemia Attitude and Behavior Scale score was 0.47 units higher in individuals who drank alcohol, 0.39 units higher in those experiencing nocturnal hypoglycemia, and 0.21 units higher in those aware of the 15/15 rule.

Discussion and Conclusion: Understanding factors affecting hypoglycemia attitudes and behaviors is essential for improving self-management in individuals with diabetes. Targeted education and lifestyle interventions can help reduce risks and enhance confidence.

Keywords: Attitude; Diabetes mellitus; Hypoglycemia

Diabetes mellitus (DM) is a chronic metabolic disorder characterized by a deficiency or complete absence of insulin, which can lead to both acute and chronic complications.[1,2] It is recognized as a significant public health issue with extensive socioeconomic consequences that impact not only individuals but also families and society. According to the International Diabetes Federation, an estimated 589 million adults aged 20–79 were living with diabetes in 2024, and this number is projected to rise to 853 million by 2050.[3]

This study was presented as an oral presentation at the 26th national congress of internal medicine held in TRNC between October 2–6, 2024.

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The inability to maintain blood glucose regulation and the progressive nature of DM may result in a wide range of acute and chronic complications. Among these, hypoglycemia is considered one of the most critical acute complications, as it requires immediate recognition and management due to its potential to cause severe neurological damage or even death if left untreated.[2,4] Hypoglycemia typically results from absolute or relative insulin excess and impaired glucose regulation in individuals with type 1 and type 2 DM. According to the definition by the American Diabetes Association (ADA), hypoglycemia refers to a plasma glucose level below 70 mg/dL and is among the most frequently encountered acute complications of DM.[5] The annual incidence of severe hypoglycemia among insulin-dependent individuals ranges from 3.3% to 13.5%.[6] Fear of hypoglycemia is a psychological response that affects individuals with diabetes, particularly those who have experienced hypoglycemic episodes. It is characterized by symptoms such as anxiety, tension, and discomfort.[7,8]

Individuals with DM may experience intense fear of hypoglycemia due to the distressing physical symptoms, emotional distress, and negative social consequences associated with hypoglycemic episodes. In such individuals, this anxiety can reduce the quality of life and impair glycemic control.[9–11] Hypoglycemic episodes may also disrupt daily routines and sleep patterns and may compel individuals to eat or drink when not physiologically necessary, all of which contribute to a diminished sense of well-being and increased psychological burden. These experiences not only fuel fear of hypoglycemia but also influence patients' attitudes and behaviors towards its prevention and management.[12]

Given these complex emotional and behavioral consequences, understanding attitudes and behaviors related to hypoglycemia is essential for improving coping mechanisms in individuals with DM. However, a review of the literature reveals a significant gap, with a limited number of studies exploring these aspects at the international level.[13] Therefore, this study aimed to investigate the effect of selected variables on the hypoglycemia-related attitudes and behaviors of individuals with DM. Understanding these factors may contribute to the development of more effective interventions, support individualized diabetes management, and help reduce the psychological and clinical burden of hypoglycemia.

Materials and Methods

Study Place and Design

This study was carried out in the internal medicine clinic of a training and research hospital in Ankara between November 2023 and March 2024. The study was also designed as a prospective and descriptive study.

Research Questions were: Do demographic factors and diabetes mellitus-related clinical characteristics influence hypoglycemia attitudes and behaviors?

Population and Sample

Volunteer patients with DM were enrolled in the study. Inclusion criteria were individuals aged 18-65 years, volunteering to participate in the study, with a diagnosis of type 2 DM for at least one year, and with no communication problems.

A power analysis was conducted using G*Power 3.1 to evaluate the adequacy of the sample size for multiple linear regression analysis. In line with the main hypothesis of the study, alcohol consumption, experiencing nocturnal hypoglycemia, and knowing the 15/15 rule for hypoglycemia approach as independent variables, while the HABS score was identified as the dependent variable. Assuming a medium effect size ($f^2 = 0.15$), a significance level of 0.05, and three independent variables, the achieved power (1–β) calculated for a total sample size of 146 participants was 0.98. This result indicates that the study had sufficient statistical power to detect medium-sized effects.

Data Collection Tools

For the collection of research data, a questionnaire and the Hypoglycemia Attitude and Behavior Scale (HABS Turkish form) were used.

Questionnaire

The questionnaire used in the research was created by the researchers after inspecting the literature. This form comprised information related to sociodemographic data, DM and hypoglycemia.[14,15]

Hypoglycemia Attitude and Behavior Scale (HABS Turkish form)

The scale was developed by Polonsky et al.[14] It was adapted to Turkish by İnkaya and Bulantekin Düzalan[9] (2020). The scale contains a total of 11 items and comprises three subscales of avoiding hypoglycemia, hypoglycemic trust and hypoglycemic anxiety. This scale is a five-point Likert scale measuring the attitudes and behavior of individuals with DM during hypoglycemia. Total points obtained from the scale are separately interpreted for each subscale. High points obtained from the avoiding and anxiety

subscales indicate the individual with DM has a low level of well-being, higher anxiety levels, and commonly uses unhealthy statements about preventing hypoglycemia. High points obtained from the trust subscale show beliefs about how to overcome hypoglycemia.[14] İnkaya and Bulantekin Düzalan[9] (2022) determined that the Cronbach alpha values were 0.71 for the avoiding subscale, 0.72 for the trust subscale and 0.85 for the anxiety subscale. In the current study, the Cronbach alpha was 0.718 for the avoiding subscale, 0.980 for the trust subscale and 0.680 for the anxiety subscale.

Data Collection

Research data were collected from individuals with DM who accepted participation in the research as volunteers and who met the inclusion criteria. Data were collected during face-to-face interviews between the researcher with individuals with DM in a suitable room of the hospital, where institutional permission was provided. The aim of the research and the privacy of personal data were explained to every participant and written informed consents were obtained. Interviews lasted 20-25 minutes.

Ethical Considerations

The research was performed in accordance with the principles of the Declaration of Helsinki. The researchers obtained permission from Ankara Yıldırım Beyazıt University Health Sciences Ethics Committee (date: 13.04.2023; research no: 2023- 178) and institutional permission from the state hospital where the study was performed. Written consent was taken from all patients.

Data Analysis

Analysis of data used the IBM SPSS 27.0 (Version 22.0, SPSS Inc., Chicago, IL, USA; License: Ankara Yıldırım Beyazıt University) and R-Project software (Version 4.4.0, R Foundation for Statistical Computing, Vienna, Austria; License: Open Source) packet programs. Whether variables had a normal distribution or not was determined with the Shapiro-Wilk normality test and parametric tests were used according to normal distribution. The Levene test was used to test the homogeneity of variances. Analysis of descriptive data was reported as numbers, percentages, mean and standard deviation. The parametric tests of one-way ANOVA (using the post-hoc Tukey test as variances had homogeneous distribution) and independent samples t-test were used. Regression findings are presented using data visualization methods in the sjPlot package. For the statistical significance level, $p<0.05$ was accepted.

Table 1. Sociodemographic characteristics of participants (n=146)

Sociodemographic characteristics	n	%
Gender		
Female	109	74.7
Male	37	25.3
Marital status		
Married	56	38.4
Single	90	61.6
Education status		
Primary school	42	28.8
High school	41	28.1
Undergraduate and above	63	43.2
Employment status		
Not working	96	65.8
Working	50	34.2
Economic situation		
Income less than expenditure	49	33.6
Income matches expenditure	75	51.4
Income more than expenditure	22	15.1

%: Percentage.

Results

The study included 146 patients. Sociodemographic characteristics of individuals participating in the research are given in Table 1. 74.7% of individuals were female, 38.4% were married and the majority were not employed (65.8%). The mean age of participants was 43.79±15.50 years, the mean DM diagnosis year was 10.71±8.14 and the mean HbA1c value was 7.59±1.32.

Table 2 presents the diabetes-related and hypoglycemia-related characteristics of the participants. Among them, 60.3% used insulin for DM treatment, 10.3% consumed alcohol, 90.4% had experienced hypoglycemia, and 66.4% had experienced nocturnal hypoglycemia. Additionally, 50% had received education on hypoglycemia, 22.6% carried a diabetes identity card, and 39% had experienced severe hypoglycemia (Table 2).

In this study, the mean total scores for HABS and subscales were calculated for individuals with DM. Participants had a HABS total score of 2.57±0.61, with scores of 2.45±0.84 for hypoglycemic anxiety, 2.70±1.04 for hypoglycemic avoidance, and 3.32±1.04 for hypoglycemic trust. The statistical correlations between some variables belonging to individuals with DM and the total scores for HABS and subscales are presented in Table 3. Significant differences were observed in HABS total scores with respect to

Table 2. Information related to the diabetes and hypoglycemia behavior of participants

Variables	n	%
Diabetes duration		
1–10 year	79	54.1
11–20 year	48	32.9
20+ years	19	13.0
Form of treatment		
Insulin	88	60.3
Oral antidiabetics	47	32.2
Oral antidiabetics + Insulin	11	7.5
Hospitalization due to diabetes in the last one year		
Yes	12	8.2
No	134	91.8
Alcohol consumption		
Yes	15	10.3
No	131	89.7
Previous experience of hypoglycemia		
Yes	132	90.4
No	14	9.6
Awareness of hypoglycemia symptoms		
Yes	118	80.8
No	28	19.2
Experience of nocturnal hypoglycemia		
Yes	97	66.4
No	49	33.6
Received education about hypoglycemia		
Yes	73	50.0
No	73	50.0
Carries a diabetes identity card		
Yes	33	22.6
No	113	77.4
Knowledge of 15/15 rule for approach to hypoglycemia		
Yes	76	52.1
No	70	47.9
Experience of severe hypoglycemia		
Yes	57	39.0
No	89	61.0
Availability of glucagon at home		
Yes	40	27.4
No	106	72.6
Presence of a person knowledgeable and competent in glucagon administration at home		
Yes	66	45.2
No	80	54.8

%: Percentage.

economic status, educational level, alcohol consumption, hospitalization due to DM in the last one year, experience of nocturnal hypoglycemia, education about hypoglycemia, knowledge of the 15/15 rule, and experience of severe hypoglycemia ($p<0.05$).

To determine factors affecting HABS, a multiple linear regression analysis was conducted. Independent variables that showed significant associations in preliminary analyses—namely alcohol consumption, experience of nocturnal hypoglycemia, and knowledge of the 15/15 rule for hypoglycemia management—were included in the model (Table 4 and Fig. 1). Based on the variance inflation factor (VIF) values (VIF <10), it was confirmed that there was no multicollinearity among the independent variables. The regression model adequately met the necessary statistical assumptions, which allows for a reliable interpretation of the results.

The results of regression analysis showed that alcohol consumption, experiencing nocturnal hypoglycemia, and knowing the 15/15 rule for addressing hypoglycemia, and knowing the 15/15 rule for approach to hypoglycemia positively and significantly affected the HABS score ($p<0.05$). Individuals who consumed alcohol had HABS scores higher by 0.47 units higher than individuals who did not consume alcohol. The HABS score for people experiencing nocturnal hypoglycemia was 0.39 units higher than those who did not experience it, and the HABS score for people who knew the 15/15 rule for approach to hypoglycemia was 0.21 units higher compared to those who did not know this rule (Table 4 and Fig. 1).

Discussion

This study aimed to investigate the effects of certain variables on hypoglycemia attitudes and behaviors in individuals with DM. The findings revealed that participants' hypoglycemia anxiety and avoidance levels were moderate (2.45±0.84 and 2.70±1.04, respectively), while hypoglycemic trust scores were relatively high (3.32±1.04). These results differ from those reported by Polonsky et al.,[14] who found lower scores in both the hypoglycemic anxiety and avoidance subdimensions. This difference may be attributed to the cultural differences among the participants in this study, as well as environmental factors such as access to health services, frequency of exposure to hypoglycemia, general health status, and levels of awareness. These findings emphasize the need to develop and monitor education programs specific to the individual to manage fear and avoidance behavior related to hypoglycemia. Additionally, in this study, hypoglycemic trust was above average.

Table 3. Investigation of differences in HABS scale and subdimension total scores according to some variables of participants (n=146)

	Hypoglycemic trust (Mean±SD)	Avoidance of hypoglycemia (Mean±SD)	Hypoglycemic anxiety (Mean±SD)	HABS total score (Mean±SD)
Gender				
Female	3.31±1.07	2.66±0.75	2.44±0.83	2.55±0.60
Male	3.34±0.98	2.84±0.73	2.50±0.90	2.63±0.67
t	-0.122	-1.294	-0.397	-0.687
p	0.903	0.198	0.692	0.493
Economic status*				
Income less than expenditure[a]	3.13±1.20	2.47±0.78[c]	2.23±0.88[c]	2.48±0.618[c]
Income equal to expenditure[b]	3.47±0.98	2.79±0.71	2.47±0.74	2.54±0.580
Income more than expenditure[c]	3.24±0.79	2.93±0.69 a	2.89±0.94[a]	2.88±0.674[a]
F	1.608	3.852	4.942	3.543
p	0.200	**0.023; c>a**	**0.008; c>a**	**0.032; c>a**
Educational status*				
Primary school[a]	3.42±1.16	2.57±0.83	2.16±0.74[c]	2.34±0.50[b,c]
High school[b]	3.39±0.92	2.68±0.73	2.39±0.87	2.57±0.70
Undergraduate and above[c]	3.21±1.04	2.80±0.69	2.69±0.83[a]	2.72±0.59
F	0.586	1.188	5.564	4.988
p	0.558	0.308	**0.005; c>a**	**0.008; b,c>a**
Diabetes duration				
1–10 years	3.30±1.02	2.65±0.706	2.33±0.757	2.51±0.60
11–20 years	3.36±1.10	2.79±0.831	2.67±0.981	2.69±0.67
20+ years	3.29±1.05	2.69±0.724	2.42±0.768	2.50±0.51
F	0.044	0.533	2.378	1.438
P	0.957	0.588	0.096	0.241
Alcohol consumption				
Yes	2.93±0.83	2.93±0.52	3.15±0.75	3.10±0.40
No	3.36±1.06	2.68±0.76	2.37±0.82	2.51±0.60
t	-1.533	1.236	3.460	3.692
p	0.323	0.087	**0.010**	**<0.001**
Hospitalization due to diabetes in the last one year				
Yes	2.97±1.02	2.95±1.27	2.97±1.17	2.96±0.80
No	3.35±1.04	2.68±0.68	2.41±0.80	2.53±0.56
t	-1.217	1.214	2.252	2.306
p	0.226	**<0.001**	**0.045**	**0.023**
Experience of nocturnal hypoglycemia				
Yes	3.16±1.02	2.77±0.74	2.67±0.86	2.74±0.60
No	3.63±1.03	2.57±0.75	2.02±0.62	2.23±0.49
t	-2.578	1.504	4.704	5.076
p	**0.011**	0.135	**0.010**	**<0.001**
Education about hypoglycemia				
Yes	3.14±1.07	2.68±0.88	2.57±0.95	2.68±0.65
No	3.50±0.99	2.72±0.591	2.34±0.705	2.46±0.55
t	-2.078	-0.358	1.671	2.155
p	0.080	**<0.001**	**0.004**	**0.033**
Knowing the 15/15 rule for approach to hypoglycemia				
Yes	3.13±1.06	2.77±0.81	2.67±0.86	2.74±0.57
No	3.53±0.99	2.63±0.67	2.22±0.76	2.38±0.60
t	-2.351	1.107	3.365	3.727
P	0.155	0.077	0.176	**<0.001**
Experience of severe hypoglycemia				
Yes	3.19±1.02	2.84±0.87	2.66±.0.98	2.74±0.66
No	3.40±1.05	2.61±0.64	2.32±0.71	2.46±0.56
t	-1.159	1.812	2.358	2.712
p	0.248	**0.004**	**0.001**	**0.008**

t: Independent Sample t test; F: One Way Anova a, b, c: The groups indicated by different letters showed statistically significant differences in HABS total and subdimension scores, according to the Tukey Test. *: Tukey; SD: Standard deviation; HABS; Hypoglycemia Attitude and Behavior Scale.

Table 4. Regression analysis results for HABS score predictors

Predictor variable (Ref = No)	Beta	95% CI	p
Alcohol consumption	0.47	0.18–0.77	0.002
Experiencing nocturnal hypoglycemia	0.39	0.19–0.59	<0.001
Knowing the 15/15 rule for hypoglycemia approach	0.21	0.03–0.40	0.027

CI: Confidence interval; HABS: Hypoglycemia Attitude and Behavior Scale.

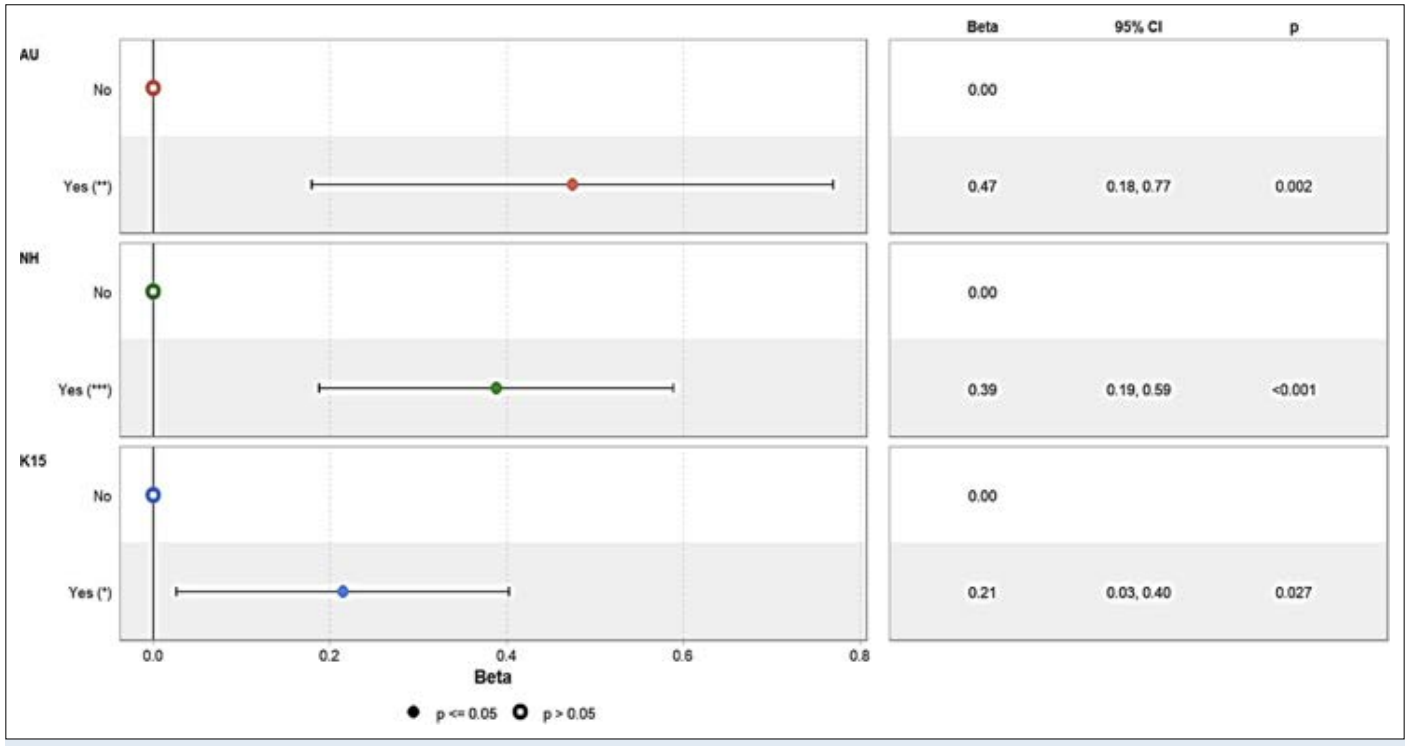

Figure 1. Regression model established with HABS as the dependent variable.

AU: Alcohol use; K15: Knowing the 15/15 rule for hypoglycemia approach; NH:Experiencing nocturnal hypoglycemia.

This situation suggests that individuals possess the necessary knowledge and skills to manage hypoglycemia effectively. This finding reveals the importance, one more, of strengthening education and support programs for individuals about the management of hypoglycemia and the trust the individual has in themselves.

According to the findings, individuals with undergraduate and higher education were determined to have higher hypoglycemic anxiety levels compared to individuals who were primary school graduates. Hypoglycemic fear may emerge as individuals have high academic knowledge, just as awareness levels about hypoglycemia may increase. The investigation of the literature revealed parallel findings in the study by Rossi et al.[16] One could argue that the fear of hypoglycemia may have a correlation with an individual's education level. Increased awareness about hypoglycemia among individuals with high education levels may cause these individuals to be more careful about disease management while also increasing anxiety levels. As a result, nurses should offer effective education and counseling services about the management of hypoglycemia for educated individuals, especially, and should provide psychosocial support to reduce unnecessary fear.

The literature reports that alcohol consumption is associated with poor glycemic control.[17] Among risks associated with alcohol intake in DM are hypoglycemia and delayed hypoglycemia, increases in body weight, and hyperglycemia as a result of excess intake.[2] According to the ADA, alcohol consumption was assessed as one of the risk factors laying the foundation for hypoglycemia.[5] In the present study, individuals who consumed alcohol were found to have higher levels of hypoglycemia-related anxiety compared to those who did not. This finding may reflect prior negative experiences with alcohol-induced

hypoglycemia, leading to greater emotional sensitivity regarding future episodes. It suggests that individuals with DM may develop heightened concern about hypoglycemic events as a result of alcohol consumption.

According to the findings of the study, individuals with DM who were hospitalized due to hypoglycemia in the one year exhibited higher scores in the hypoglycemia avoidance and hypoglycemic anxiety subscales, as well as higher total scores on the HABS, compared to those who were not hospitalized. Hospital admissions for hypoglycemia are a common occurrence among individuals with DM.[18,19] Supporting this finding, Wang et al.[13] reported a strong association between hospital admission due to DM and fear of hypoglycemia. These findings suggest that hospitalization due to hypoglycemia may be an important factor contributing to increased levels of hypoglycemia-related anxiety and avoidance behaviors in individuals with DM. Individuals with DM who have experienced hospitalization may develop a greater awareness of hypoglycemia and a stronger tendency to avoid facing this situation again. These factors cause individuals to develop more cautious behavior related to hypoglycemia. Nurses should inform individuals about hypoglycemia management and develop strategies to reduce excessive anxiety that may develop in them.

The findings of this study indicate that individuals who had previously experienced nocturnal hypoglycemia exhibited higher levels of hypoglycemia-related anxiety and total HABS scores compared to those without such experience. For individuals with DM, recognizing nocturnal hypoglycemia is more challenging. Nocturnal hypoglycemia may impair the perception or awareness of early hypoglycemic symptoms.[2] Unawareness of hypoglycemia symptoms may cause anxiety among individuals with DM. Nocturnal hypoglycemia can lead to negative outcomes such as seizure, coma and cardiovascular events in individuals and may affect the individual's quality of life and mental state.[20] This situation may cause fear of hypoglycemia for individuals experiencing nocturnal hypoglycemia. The study by Anderbro et al.[21] found a significant correlation between the frequency of experiencing nocturnal hypoglycemia and levels of hypoglycemia fear among individuals with type 1 DM, similar to the findings of this study. Additionally, the findings of this study show that individuals not previously experiencing nocturnal hypoglycemia had higher scores in the hypoglycemic trust subscale. Individuals who have not previously experienced nocturnal hypoglycemia may have greater confidence in their ability to maintain glycemic control and manage hypoglycemia. In contrast, those with a history of nocturnal hypoglycemia may experience heightened anxiety, which can negatively affect their quality of life and psychological well-being. This underscores the importance of addressing the emotional and behavioral consequences of nocturnal hypoglycemia in diabetes management. As a consequence, this may induce increasing concern about hypoglycemia and recurrent fear of nocturnal hypoglycemia in individuals. Nurses can provide education and support on preventing and managing this condition. Emphasizing blood sugar checks before sleeping, determining snack requirements, and daily movement can help prevent hypoglycemia. This can reduce anxiety levels and increase trust in individuals' ability to cope with hypoglycemia.

The study's findings revealed significant differences in hypoglycemia avoidance, hypoglycemic anxiety subdimensions, and HABS total scores between individuals who had received education about hypoglycemia and those who had not. Receiving education about hypoglycemia may be effective for individuals with DM to recognize symptoms, manage episodes, and maintain glycemic control. However, having information about hypoglycemia may not only enhance trust but also contribute to fear.[13,16,22] Wang et al.[13] reported high levels of hypoglycemia fear among individuals who had received diabetes education, those with a university-level education or higher, and those informed about prevention and management strategies.

The American Diabetes Association recommends the 15-15 rule for treating hypoglycemia.[23] According to this guideline, individuals should consume 15 grams of fast-acting carbohydrates—such as glucose tablets, fruit juice, sugar, or honey—when their blood glucose level drops below 70 mg/dL. After 15 minutes, blood glucose should be rechecked, and if it remains below 70 mg/dL, the process should be repeated until a safe range is achieved.[24,25] The studies examining the effectiveness of the 15/15 rule have shown that it is beneficial in the management of hypoglycemia.[24,26] In this study, patients who were aware of the 15/15 rule had higher HABS scores, particularly in the anxiety and avoidance subdimensions. However, they also exhibited greater trust in their ability to manage hypoglycemic episodes.

According to the findings of the study, individuals with a history of severe hypoglycemia had significantly higher scores on the Avoiding Hypoglycemia and Hypoglycemic Anxiety subdimensions, as well as higher total HABS scores, compared to those without such a history. Severe hypoglycemia may cause permanent brain damage and coma and requires outside assistance and parenteral treatment.[2] Individuals with DM probably develop attitudes and behaviors about avoiding hypoglycemia to prevent recurrence of

hypoglycemia due to their previous experience. The results of this study revealed that individuals with experience of severe hypoglycemia had the fear of hypoglycemia; as a result, they try to avoid experiencing hypoglycemia.

Limitations and Drawbacks

This study has several important limitations. First, the study was conducted exclusively with individuals who visited the internal medicine clinic of a single oncology hospital. This limited the researcher's access to individuals with DM and restricted the diversity of the sample. Conducting the study at a single center also reduces the generalizability of the findings to other institutions or broader populations. Additionally, the data collection method relied on self-reported information. These factors may have influenced the accuracy and reliability of the data, potentially affecting the interpretation of the results.

Conclusion

This study highlights the significant impact of various factors, including alcohol consumption, nocturnal hypoglycemia, and awareness of the 15/15 rule, on the attitudes and behaviors of individuals with DM regarding hypoglycemia. The findings emphasize the need for targeted education and support programs that address these factors to enhance self-management and reduce anxiety and avoidance behaviors related to hypoglycemia. Nurses and healthcare professionals should prioritize personalized care that takes into account the individual's experiences, education level, and lifestyle choices to improve their confidence in managing hypoglycemia. These interventions can contribute to better health outcomes and quality of life for individuals living with DM.

Ethics Committee Approval: The Ankara Yıldırım Beyazıt University Health Sciences Ethics Committee granted approval for this study (date: 13.04.2023, number: 2023- 178).

Informed Consent: Written informed consent was obtained from participants.

Conflict of Interest: None declared.

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