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Self-efficacy levels of individuals with type 2 Diabetes Mellitus in the use of diabetes drugs: The example of Gümüşhane and Bayburt province

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Abstract

This study was conducted to determine the self-efficacy levels of individuals with Type 2 Diabetes Mellitus in the use of diabetes medication. The population of the descriptive study consisted of individuals with Type 2 Diabetes Mellitus residing in Gümüşhane and Bayburt provinces. The sample size was determined with the G*Power 3.1.6.9 program. A total of 315 individuals were reached in the study using a snowball sampling method. Data were collected by "Google Form" using "Personal Information Form" and "Diabetes Medication Self-Efficacy Scale". In the analysis of the data, independent groups t-test, one-way ANOVA test and Pearson product moments correlation test were used. The average age of the individuals with Type 2 Diabetes Mellitus participating in the study was 52.29±14.74 years, the duration of diabetes disease was 9.23±6.25 years, and 81% of them were men. The total average score of the participants from the "Diabetes Medication Self-Efficacy Scale" was determined as 38.70±12.36 points. It was found that the average total score of the "Diabetes Medication Self-Efficacy Scale" was higher for women than men, singles than married. Again, the total scale score averages were statistically different according to the occupational group ($p<0.001$). In addition, the average total score of the "Diabetes Drug Use Self-Efficacy Scale" was found to be higher for individuals who received training on diabetes drug use compared to individuals who did not receive it. It was found that the average scores of the participants from the "Diabetes Medication Self-Efficacy Scale" and its sub-dimensions were moderate. In order to increase the diabetes drug use self-efficacy levels of participants diagnosed with Type 2 diabetes, training on the use of diabetes drugs can be expanded.

Keywords: Type 2 Diabetes Mellitus, diabetes medication, nurse, self-efficacy

Introduction

Increasing population, urbanization and lifestyle changes due to aging around the world are increasing the prevalence of Diabetes Mellitus (DM). DM is a disease that has a great negative impact on individuals and societies in the long term. It is estimated that DM, which is among the top 10 causes of death in adults, caused 4 million deaths in 2017 and global health expenditures of 727 billion United States (US) dollars were realized [1].

The problem of compliance with treatment, especially DM, is the most basic problem of chronic diseases. Non-compliance with the

treatment or preventing the success of the treatment may cause the disease process to progress negatively, the development of other diseases, increase the cost of the disease and even death [2]. In this regard, literature studies evaluating the effectiveness of factors such as drug compliance or self-efficacy on clinical outcomes or clinical outcomes in patients with low levels of use of drugs used in the treatment of DM are limited [3].

Individuals diagnosed with DM often have other diseases accompanying diabetes. This situation requires the use of a large number of drugs in order for the patient to reach the glycemic

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targets and the clinical targets related to the other diseases he/she has. In this sense, it is important for patients to have self-efficacy and drug compliance in drug use [4]. However, in individuals with chronic diseases, non-compliance with treatment may develop on the grounds that the drugs they usually use have side effects, do not reduce the symptoms of the disease or do not cure the disease [5]. On the other hand, the perception that the drug should be used only in the presence of symptoms is reported to be the most common cause of drug non-compliance in individuals with diabetes [6].

In the literature, it is emphasized that non-adherence to treatment of individuals with DM is an important problem [7]. In the reviewed literature, international systematic evaluation and meta-analysis studies were found regarding the adherence to treatment of individuals with DM [7,8], and in the meta-analysis study in which 27 studies were examined, it was reported that the rate of individuals with DM who did not comply with treatment varied between 6.9-61.5% [8]. In a study conducted with 433 DM patients receiving insulin treatment in Türkiye, it was reported that 20.3% of the patients used insulin daily and 40.4% of these patients were non-compliant with the treatment [9]. Again, in a study conducted in 1456 diabetic individuals receiving insulin therapy across Türkiye, 29.7% of the patients reported that they did not comply with the prescribed drug regimen [10]. In a study by Peyrot, Barnett, Meneghini, & Schumm-Draeger [11], it was reported that 24.1% of 154 Turkish patients receiving insulin therapy did not comply with the prescribed drug regimen [11]. In line with all this information, in this study, it was aimed to determine the self-efficacy levels of individuals with Type 2 DM in the use of diabetes medication. With this study, it is thought that the evaluation of the self-efficacy of diabetes patients, especially those living in rural areas, provided a contribution to the literature by creating a different one in their patients.

Material and Methods

Purpose of the research

This study was conducted to determine the self-efficacy levels of individuals with Type 2 DM in the use of diabetes medication.

Place and time of research

The research was carried out on individuals with Type 2 DM in Gümüşhane and Bayburt provinces on 27 May 2023-22 June 2023.

Population and sample of the research

The population of this descriptive study consisted of individuals with Type 2 DM residing in Gümüşhane and Bayburt provinces on 27 May 2023-22 June 2023. Since there is no study yet on the use of the scale in individuals with Type 2 DM, no study could be taken as a reference in determining the sample. The sample size of the study was calculated as 150 patients in total, while the error amount was $\alpha=0.05$ and 0.20 effect size in the

G*Power 3.1.9.6 program and the power of the targeted test was 0.80 (80%). However, considering the risks such as not accepting to participate in the study and withdrawing from the study, the number of samples was increased by 10% to 165.

The data of the research were collected by snowball sampling and online data collection method. The first ring of the snowball was formed by 2 people with Type 2 DM diagnosis living in Gümüşhane or Bayburt, who participated in the "Diabetes Awareness" training given by the instructors of Gümüşhane University X Vocational School of Health Services on "World Diabetes Day" on November 14, 2022, with a zoom meeting. The name, surname and contact information of everyone who attended this meeting were recorded. These 2 people were also asked to send it to people with Type 2 DM living in Gümüşhane or Bayburt, who met the research criteria and agreed to fill out the questionnaire. As soon as the data saturation of the study was reached, the data collection phase of the study was completed with 315 patients.

Data collection

The data of the study were collected by online data collection method. The questionnaires used in the research were prepared via "Google Form" and sent to the smartphones of individuals with Type 2 diabetes via messaging programs. The data of the study were collected with the "Personal Information Form" and the "Diabetes Drug Use Self-Efficacy" Scale.

Data collection tools

"Personal Information Form": The socio-demographic characteristics of the participants (age, gender, marital status, educational status, occupation, income perception status, insurance status) were determined, and the characteristics related to diabetes and health status (how long they had DM for years, It consists of a total of 12 questions, 5 of which are asked about going to the hospital in a month, having a chronic disease other than DM, health perception status, getting education about the use of diabetes medication.

"Diabetes Medication Self-Efficacy": The Diabetes Medication Self-Efficacy Scale (DIKOYÖ) was developed by Sleath et al. [12] in 2016 to assess self-efficacy in overcoming barriers to the use of diabetes medications. It is a 19-item 3-point Likert-type scale whose validity and reliability in Turkish were performed by Kavuran & Türkoğlu [13] in 2022. The scale consists of "drug use self-efficacy in case of requirement" (item 1-4), "drug use self-efficacy in case of busyness" (item 5-9), and "drug use self-efficacy in case of worry" (item 10-19). It consists of three sub-dimensions. Scores on the scale range from 19 (low self-efficacy) to 57 (high self-efficacy). The Cronbach Alpha value of the Turkish version of the scale is 0.94 [13].

Evaluation of data

Statistical analysis IBM SPSS (Statistical Package for Social

Sciences) for Windows 27.0 package program was used. Since the data of the dependent variable showed normal distribution, independent groups t-test was used for pairwise comparisons, one-way ANOVA test for triple or more comparisons, and Pearson product-moment correlation test was used to analyze the relationship between continuous variables. Significance level was accepted as $p<0.05$.

Ethical aspect of research

The necessary permissions were obtained from the Scientific Research and Publication Ethics Committee of the Rectorate of Bayburt University (dated 26.05.2023 and numbered 211/9)

and X Vocational School of Health Services (14.05.2023 and E.171991). In addition, permission was obtained from the author, who made the validity and reliability of the scale, via e-mail.

Results

The mean age of the individuals with Type 2 DM participating in the study was 52.29 ± 14.74 years, the duration of diabetes was 9.23 ± 6.25 years, and 81% were male. 51.7% of the participants were single, 54% had secondary education or below, 36.8% were housewives, 51.7% had income equal to their expenses, 68.3% had insurance, 74% had a doctor for their own health once a month. It was found that 57.5% of them were in good health

Table 1. Introductory information on patients diagnosed with Type 2 DM

Introductory information		N	%
Gender	Woman	234	74.3
	Male	81	25.7
Marital status	Married	152	48.3
	Single	163	51.7
Educational status	Secondary education and below	170	54.0
	Higher secondary education	145	46.0
Job	Unemployed	9	2.9
	Officer	36	11.4
	Housewife	116	36.8
	Retired	63	20.0
	Student	91	28.9
Perceived income	Income less than expenses	98	31.2
	Income equal to expense	163	51.7
	Income more than expenses	54	17.1
Insurance status	Yes	215	68.3
	No	100	31.7
Monthly hospital going status	Once a month	233	74.0
	Semimonthly	55	17.5
	Three times a month	27	8.5
Perceived health status	Bad	8	2.5
	Not bad	72	22.9
	Good	181	57.5
	Perfect	54	17.1
Receiving education on the use of medicines due to diabetes diagnosis	Yes	180	57.1
	No	135	42.9
		$\bar{x}$	SD
Age		52.29	14.74
Diabetes disease duration (years)		9.23	6.25

and 57.1% of them received training on the use of diabetes medication (Table 1).

When the sub-dimensions of the "Diabetes Medication Self-Efficacy Scale" and the average scores they got from the total

were examined; The mean score of the sub-dimension "self-efficacy to use drugs in case of requirement" is 7.83 ± 2.75 points, the mean score of the sub-dimension "self-efficacy to use drugs when busyness" is 10.53 ± 3.43 points, the average score of the sub-dimension "self-efficacy to use drugs in case of worry"

The mean score was 20.34±6.74 points and the total scale score average was 38.70±12.36 points (Table 2).

Table 2. Mean scores and standard deviations of patients diagnosed with Type 2 DM from "Diabetes Medication Self-Efficacy Scale"

Diabetes Drug Use Self-Efficacy Scale	$\bar{x}$	SD
Requirement	7.83	2.75
Busyness	10.53	3.43
Worry	20.34	6.74
Total	38.70	12.36

The sub-dimensions of the "Diabetes Medication Self-Efficacy Scale" and the average scores they got from the total were compared according to the introductory information; mean scores in the total scale and its sub-dimensions were found higher in women than men, and higher in singles than in married people. According to the education level, the average score of the sub-dimension "requirement" was higher in those with secondary education and below. Again, it was determined that civil servants and retirees had higher mean scores on the "requirement", "busyness" sub-dimensions and total scale scores than the students and unemployed, and housewives compared to the unemployed. The mean scores of the "requirement" sub-dimension were higher than the retired housewives, the mean scores of the "busyness" sub-dimension and the total score were

Table 3. Comparison of the mean scores of the patients diagnosed with Type 2 DM from the "Diabetes Medication Self-Efficacy Scale" according to the introductory information

Introductory information		Diabetes Medication Self-Efficacy Scale								
		Requirement			Busyness		Worry		Total	
		N	$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	SD
Gender	Woman	234	8.20	2.70	11.10	3.14	21.38	6.07	40.68	11.18
	Male	81	6.78	2.63	8.89	3.72	17.33	7.66	33.00	13.82
Testing and significance			t=4.099, p=0.000		t=4.789, p=0.000		t=4.308, p=0.000		t=4.513, p=0.000	
Marital status	Married	152	7.08	2.34	10.00	2.83	19.69	5.96	36.77	10.26
	Single	163	8.53	2.92	11.02	3.86	20.94	7.36	40.50	13.82
Testing and significance			t=-4.891, p=0.000		t=-2.702, p=0.007		t=-1.666, p=0.097		t=-2.734, p=0.007	
Educational Status	Secondary education and below	170	8.13	2.46	10.85	2.73	20.99	5.91	39.97	10.10
	Higher secondary education	145	7.48	3.03	10.16	4.08	19.57	7.55	37.21	14.46
Testing and significance			t=2.056, p=0.041		t=1.728, p=0.085		t=1.837, p=0.067		t=1.929, p=0.055	
Job	Unemployed	9	6.00	0.00	9.00	0.00	20.00	0.00	35.00	0.00
	Officer	36	9.25	3.16	12.25	4.27	24.50	8.53	46.00	15.86
	Housewife	116	7.80	2.66	11.09	2.69	21.30	5.42	40.19	9.79
	Retired	63	9.00	1.20	11.43	2.15	21.71	5.49	42.14	8.05
	Student	91	6.68	3.01	8.67	3.96	16.55	6.93	31.90	13.68
Testing and significance			F=11.580, p=0.000		F=12.936, p=0.000		F=13.806, p=0.000		F=13.812, p=0.000	
Significant difference			2-1, 2-5, 4-1, 4-3, 4-5, 3-1		2-1, 2-5, 4-1, 4-5, 3-1, 3-5		2-1, 2-5, 4-5, 3-5, 1-5		2-1, 2-5, 4-1, 4-5, 3-1, 3-5	

higher among the housewives than the students, and the students in the "worry" sub-dimension had a lower mean score than the others (p<0.05) (Table 3).

When the mean scores of the total scale and its sub-dimensions are examined according to the introductory information in Table

4; It was determined that the total scale and sub-dimension score averages of those whose income is more than their expenses and whose income is equal to their expenses and whose income is less than their expenses, are higher than those who do not have insurance. Those who went to the hospital three times a month and once a month had higher scores on the "requirement" and

Table 4. Comparison of the mean scores of the patients diagnosed with Type 2 DM from the "Diabetes Medication Self-Efficacy Scale" according to the introductory information

Introductory information			Diabetes Medication Self-Efficacy Scale							
			Requirement		Busyness		Worry		Total	
			N	$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$
Perceived income	Income less than expenses	98	7.77	3.29	10.09	3.62	19.34	6.62	37.19	13.08
	Income equal to expense	163	7.48	2.25	10.20	3.08	19.73	6.25	37.41	10.80
	Income more than expenses	54	9.00	2.79	12.33	3.58	24.00	7.28	45.33	13.46
Testing and significance			F=6.404, p=0.002		F=9.513, p=0.000		F=10.285, p=0.000		F=9.930, p=0.000	
Significant difference			3-1, 3-2		3-1, 3-2		3-1, 3-2		3-1, 3-2	
Insurance status	Yes	215	8.48	2.66	11.59	2.97	22.21	6.09	42.28	10.90
	No	100	6.44	2.43	8.25	3.26	16.32	6.33	31.01	11.82
Testing and significance			t=6.513, p=0.000		t=9.010, p=0.000		t=7.890, p=0.000		t=0.255, p=0.000	
Monthly hospital going status	Once a month	233	8.09	2.81	10.81	3.33	20.69	6.74	39.59	12.28
	Twice a month	55	6.47	2.51	8.95	3.76	16.58	6.08	32.00	12.08
	Three times a month	27	8.33	1.73	11.33	2.67	25.00	3.63	44.67	7.55
Testing and significance			F=8.615, p=0.000		F=7.699, p=0.000		F=16.850, p=0.000		F=12.724, p=0.000	
Significant difference			3-2, 1-2		3-2, 1-2		3-2, 3-1, 1-2		3-2, 3-1, 1-2	

"busyness" sub-dimensions than those who went twice a month. "Worry" sub-dimension and total scale mean score were found as going three times a month, going once a month, and going twice a month, from high to low, respectively ($p<0.05$) (Table 4).

The total scale and sub-dimension mean scores of the participants

were higher than those who perceived their health as "excellent" than those who perceived "bad", and those who perceived "not bad" than those who perceived "good"; The mean scores of the "requirement" and "worry" sub-dimensions are higher in those who perceive their health as "good" and "not bad" than those who perceive their health as "bad"; It was determined that the mean scores of the "worry"

Table 5. Comparison of the mean scores of patients diagnosed with Type 2 DM from the "Diabetes Medication Self-Efficacy Scale" according to descriptive information

Introductory information			Diabetes Medication Self-Efficacy Scale							
			Requirement		Busyness		Worry		Total	
			N	$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$
Perceived health status	Bad	8	4.00	0.00	10.00	0.00	22.00	0.00	36.00	0.00
	Not bad	72	7.25	2.70	9.25	3.21	17.13	6.07	33.63	11.51
	Good	181	7.59	2.73	10.33	3.54	19.71	6.72	37.62	12.49
	Perfect	54	10.00	1.43	13.00	2.18	26.50	3.44	49.50	6.19
Testing and significance			F=21.384, p=0.000		F=14.623, p=0.000		F=26.300, p=0.000		F=22.093, p=0.000	
Significant difference			4-1, 4-2, 4-3, 3-1, 2-1		4-1, 4-2, 4-3		4-1, 4-2, 4-3, 3-1, 3-2, 2-1		4-1, 4-2, 4-3	
Receiving education on the use of medicines due to diabetes diagnosis	Yes	180	8.76	2.64	11.88	2.88	22.74	6.07	43.38	10.62
	No	135	6.60	2.40	8.73	3.29	17.13	6.26	32.47	11.77
Testing and significance			t=7.453, p=0.000		t=9.018, p=0.000		t=8.012, p=0.000		t=8.612, p=0.001	

dimension were higher for those who perceived their health as "good" compared to those who perceived "bad change". In addition, in terms of receiving education on the use of diabetes medication, those who

did not receive the training had a higher mean total score than those who did not ($p<0.05$) (Table 5).

Table 6. The relationship between continuous variables and the scores of patients diagnosed with Type 2 DM from the "Diabetes Medication Self-Efficacy Scale"

		1	2	3	4	5	6
1.Age	r	-					
	p						
2.Diabetes Disease Duration (Years)	r	0.185	-				
	p	0.001**					
3. Requirement	r	0.114	-0.212	-			
	p	0.043*	0.001**				
4. Busyness	r	0.031	-0.068	0.842	-		
	p	0.589	0.226	0.001**			
5. Worry	r	-0.009	-0.029	0.769	0.939	-	
	p	0.880	0.605	0.001**	0.001**		
6.Total	r	0.029	-0.082	0.876	0.978	0.978	-
	p	0.605	0.146	0.001**	0.001**	0.001**	

*p<0.05, **p<0.01

A low-level positive and negative correlation was found between the scores of the participants in the "Diabetes Medication Self-Efficacy Scale" sub-dimension of necessity and age, and a low negative relationship between the duration of diabetes ($p<0.05$). There was no significant relationship between the scores they got from the total and age and duration of diabetes ($p>0.05$) (Table 6).

Discussion

In this study, the self-efficacy levels of individuals with Type 2 diabetes in the use of diabetes medication were determined. This is the first study to determine the self-efficacy levels of diabetes medication use in patients with Type 2 DM in Türkiye.

Self-efficacy is the individual's belief and confidence in his ability to perform certain behaviors [14]. Self-efficacy has been reported to be the main determinant of self-care behavior in people with diabetes [15]. According to the literature, it is known that the diabetes-related self-efficacy levels of diabetic patients in our country are generally low to moderate [16-18]. In a study conducted in China with 257 individuals with Type 2 DM with a duration of Type 2 DM (7.94 ± 6.40), the mean score of the "Diabetes Drug Use Self-Efficacy Scale" (42.9 ± 9.32) was found to be moderate, similar to our study [19]. Yet another study carried out, they conducted with with 402 patients with Type 2 DM, the mean score of the "Diabetes Drug Use Self-Efficacy Scale" (33.81 ± 2.65) was found to be moderate [20]. In a study conducted with 200 individuals with Type 2 DM who were similar to our study (9.23 ± 6.25 years) in terms of Type 2 DM duration (10.0 ± 8.3 years), it was found that the mean score of the "Diabetes Medication Self-Efficacy Scale" was 77.6 ± 10.8 higher than our study. [16]. It is thought that the fact that the average score of the "Diabetes Medication Self-Efficacy Scale" is higher than our study may be due to the smaller sample size than our study, their education level, and the diabetes education they received within the scope of health services. Similar to our study, in the study conducted by Huang et al., the mean of

drug adherence was found to be moderate with 33.2 ± 6.0 [21]. In a different study, it was found that women, married people, and employees had higher "Diabetes Medication Self-Efficacy Scale" scores [20]. In our study, on the other hand, it was found that singles had higher "Diabetes Drug Use Self-Efficacy Scale" scores than married people in terms of marital status. It is thought that the difference may be due to the educational status. Patients with literacy level eighth grade or lower are highly likely to report more diabetes medication problems [22]. Previous studies on diabetes found that illiterate patients had worse adherence and more hypoglycemia [23].

It is known that patients with high drug worry have more problems in using diabetes drugs and they adapt less to drugs. Healthcare professionals should assist diabetics in overcoming any negative views or concerns they may have about the use of diabetes medications so that they can receive medications to help control blood glucose [13]. In our study, those who were "good" in the "worry" sub-dimension in terms of their perceived health status had a higher mean score than those who were "not bad", and those who received training on the use of diabetes medication since their diagnosis of diabetes had a higher average score than those who did not receive the training. According to the literature, there is a consistent relationship between better perceived health status and better adherence to medication [21,24]. This can be attributed to the fact that patients with better perceived health status have better physical functioning [25] and thus are more capable of self-management [26]. Another aspect is that patients with better perceived health status may have more positive health attitudes, which may lead to greater adherence to drug therapy [24].

Medication compliance plays an important role in improving health outcomes in patients with Type 2 diabetes. Studies show that improved drug compliance contributes to lower HbA1c levels [27,28]. Good adherence to medication may reduce the risk of all-cause death and hospitalization in patients with Type

2 diabetes [29]. However, the prevalence of drug non-adherence is high in patients with Type 2 diabetes. In Malaysia, the compliance rate of patients with Type 2 diabetes was found to be low at 34.2% [30]. In China, drug non-adherence was found in 24% of 402 patients with Type 2 DM [20]. This rate is slightly higher than other studies in the literature [30,31]. Low adherence to medication is directly associated with poor glycemic control, increased use of health resources, higher medical costs, and higher mortality [32]. Amde et al. [33] found that age, education level, duration of diabetes, alcohol consumption, and insulin therapy were among the factors associated with drug non-compliance in patients with Type 2 DM. In a study conducted with 275 patients with Type 2 DM in Ethiopia, it was found that 70.5% of the patients were dependent on diabetes medications and 42.9% of the patients had good glycemic control [34]. In a different study of 500 patients with Type 2 DM, adherence to the drug protocol was found at low, moderate, and high levels of 27.2%, 59.2%, and 13.6%, respectively [35]. In a different study conducted with 402 patients with Type 2 DM, compliance with the drug protocol was found at low, moderate, and high levels in 24.1%, 53.7%, and 22.1%, respectively [20]. These results differ from the results of Elsous et al. [36], who found low, moderate, and high adherence to the drug as 2.5%, 39.5%, and 58%. These differences can be explained by the fact that adherence to medication is affected by many factors such as social and economic factors, patients' attitudes, motivations and levels of physical/cognitive impairment, severity of medical conditions, and the health system in which the patient receives care. Mirahmadizadeh et al. similar to the results of the study, it was found in another study that low, moderate, and high adherence levels were 10.7%, 34.5%, and 54.8%, respectively [37]. Doggrell and Warot (2017) determined that increasing the level of adherence to medication in patients with Type 2 DM was effective in reducing the level of HbA1c [28]. We found studies with a positive relationship between drug self-efficacy and drug compliance in 257 patients with Type 2 DM [19]. Our findings are consistent with previous research suggesting that drug self-efficacy is a strong predictor of drug adherence and that enhancing drug self-efficacy may be the basis for interventions to improve patients' self-care skills in the management of chronic disease [38,39].

Factors affecting self-efficacy include support from healthcare professionals, patient education, family support, and lifestyle habits. Supporting and educating patients about drug use by healthcare professionals can increase individuals' self-efficacy levels. Likewise, methods such as support groups or patient education programs can strengthen individuals' self-efficacy regarding drug use. Patients with high self-efficacy may be more confident of good health outcomes resulting from medication adherence and are therefore more likely to adhere to medication [40].

Individuals with low self-efficacy in the use of diabetes medication may skip or miss their medication. This can make it difficult to maintain blood glucose levels in the desired range

and increase the risk of long-term complications of diabetes. For this reason, it is of great importance that health professionals evaluate the self-efficacy levels of individuals and support those with low levels.

Conclusion

It was found that the mean scores of the participants in the diabetes drug use self-efficacy scale and its sub-dimensions were moderate. Individuals with Type 2 DM use various drugs to keep their blood glucose levels under control. The effective and safe use of these drugs improves the quality of life of individuals with diabetes and reduces the risk of complications. However, factors such as difficulties encountered in drug use, side effects, costs and lack of motivation may adversely affect the adherence of individuals to drug treatment. Therefore, the self-efficacy levels of individuals with Type 2 DM in drug use, that is, their confidence in taking their drugs at the right time, at the right dose and in the right way, is an important variable. Individuals with a high level of self-efficacy can adapt better to drug therapy, maintain blood glucose control more easily, and maintain a higher quality of life with diabetes. Individuals with low self-efficacy levels may encounter problems such as non-compliance with medication, deterioration in blood glucose control, and decreased quality of life with diabetes. For this reason, various assessment tools and training programs should be developed to determine the self-efficacy levels of individuals with Type 2 DM and to increase them when necessary. In addition, trainings on the use of diabetes drugs can be expanded in order to increase the diabetes drug use self-efficacy levels of the participants diagnosed with Type 2 DM.

Conflict of Interests

The authors declare that there is no conflict of interest in the study.

Financial Disclosure

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Ethical Approval

The necessary permissions were obtained from the Scientific Research and Publication Ethics Committee of the Rectorate of Bayburt University (dated 26.05.2023 and numbered 211/9) and X Vocational School of Health Services (14.05.2023 and E.171991).

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