

Original Article

Relationship between Nutritional Status, Treatment and Care Attitude in Diabetic Individuals

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Abstract

Aim: The study was designed in order to determine the nutritional status of individuals with Type 2 diabetes and to evaluate the relationship between nutritional status and treatment and care attitudes.

Method: The study was performed on 100 diabetic patients applying to the endocrinology department of Samsun Education and Research Hospital between 1 January 2014-28 February 2014. As an instrument of accumulating the data, the individual identification form and Diabetes Attitude Scale were used. The individual identification form was included sociodemographic and disease-related data Diabetes Attitude Scale was reflected the approaches easing and preventing the compliance of people with diabetes with their care and treatments. In the statistical assessment of the data, percentile calculations, mean, t test were carried out. The accumulated data were evaluated using SPSS 16.00 package software.

Results: The mean of total DAS scores about diabetic patients is positive; 4.23 ± 0.28 . It was observed that the patients with diabetes acquired the least score (3.26 ± 0.78) as the lowest level of The Severity of Non-insulin Dependent Diabetes Mellitus and exhibited a positive attitude. It was also observed that the highest positive attitude (4.49 ± 0.41) was displayed in terms the Special Education Need. No statistically significant difference was determined to exist between gender, marital status, education level, diagnostic period of diabetes and existence of relatives diabetes, plasma glucose/HbA1c levels, treatment types, control frequency and total score of Diabetes Attitudes Scale ($p > 0.05$). Statistically significant difference was determined to exist between economical status and total score of Diabetes Attitude Scale.

Conclusions: On the patients of diabetes adjustment to diet have a positive effect on attitudes towards the disease. Positive attitude is a great role in the control of diabetes.

Key words: Diabetes mellitus, attitude, care, diabetes attitude scale

Introduction

Type 2 diabetes is a chronic and progressive disorder characterized by continuous high blood glucose, which over time can cause serious damage to the heart, eyes, kidneys, blood vessels, and nerve cells of the individual. Type 2 diabetes, which accounts for approximately 91% of all diabetes and is mostly seen in adult individuals, occurs when insulin sensitivity is reduced in spite of the normal production of insulin in the body (WHO, 2018). Risk factors for Type 2 diabetes that are rapidly increasing in prevalence include

mild obesity/obesity, physical activity inactivity, genetic, gestational diabetes mellitus, advanced age and unhealthy nutrition. According to the current report of International Diabetes Federation, the number of people with diabetes in the world is 415 million and in Turkey this number is 6.3 million (IDF, 2015). Lowering diabetes prevalence take part in among the goals of the World Health Organization 2025 (WHO, 2016).

Type 2 diabetes greatly affects the individual's general health status and quality of life. It is responsible for 2/3 of the heart attacks and stroke

cases. It can also cause complications such as neuropathy, nephropathy, retinopathy, and foot ulceration with reduced blood flow (WHO, 2018). For this reason, prevention of Type 2 diabetes is the main objective, and the attitudes and behaviors of diabetics in treatment are very important. Attitude is a feeling that prepares individuals to respond positively or negatively to a particular thought (Fishbein & Ajzen, 1975). The attitudes and behaviors of the diabetic individuals are very important in terms of diabetes management as they play a role in the first stage of treatment. According to the researches, diabetic individual's positive attitudes on nutrition management, exercise, drug use, insulin injection, regular blood glucose control affects long term metabolic outcome positively. Since some negative attitudes and behaviors may lead to increased complications, limb amputations, and death, attempts should be made to acquire positive attitudes and behaviors as soon as possible (Kara & Cinar, 2011, Krepia et al 2011).

The goal of diabetes control with positive attitudes and behaviors is to keep blood glucose levels within normal or near normal limits to prevent and/or delay acute and chronic complications, to provide lipid profile to reduce the risk of macrovascular complications, and thus to provide and maintain desired metabolic outcomes (NIH, 2018). Diabetes management involves in attitudes and behavior towards medical nutrition therapy, regular physical activity, blood glucose monitoring, and drug use. Medical nutrition therapy is provided through healthy nutrient selection, portion control, nutrition label reading and a regular meal plan (Fransen, Wagner & Essink-Bot, 2012). In this study, it was aimed to determine the nutritional status of individuals with Type 2 diabetes and to evaluate the relationship between nutritional status and treatment and care attitudes.

Methodology

The study was planned as a descriptive and cross-sectional study. The study was conducted with individuals with Type 2 diabetes who were applied to Samsun Education Research Hospital Internal Medicine Policlinic. The research was carried out between 1.1.2014-28.2.2014. Questionnaire forms have been started to be applied after approval of the ethics committee, approval of the institution and the patients. The study included volunteer individuals with type 2 diabetes for at least 1 year, open to communication, and no serious

complications. 100 patients were included in the study.

Collection of Data

Survey Form

Using the relevant literature and studies, this form prepared by the researcher was composed of 33 questions to determine the sociodemographic characteristics of the individuals, their characteristics related to diabetes treatment and their nutritional habits.

Diabetes Attitude Scale

Diabetes Attitude Scale (DAS) was developed by the National Diabetes Commission in the USA and the validity and reliability study was conducted by Ozcan (Ozcan, 1999). The seven subgroups covered by the DAS are Need for Special Education, Attitude to Adaptation to the Illness, Severity of Diabetes, Blood Glucose Control and Complications, Effect of Diabetes on The Patient's Life, Attitudes to Patient Autonomy and Attitudes to Team Care. Scale items were scored with likert type scoring system ranging from 1 to 5. If the score is > 3 , it means positive attitude and if the score ≤ 3 it means negative attitude. The increase or decrease in score strengthens the attitude towards it (Ozcan, 1999).

Evaluation of Data

Analysis of the data was done in SPSS for Windows package program. Descriptive statistics are shown as mean \pm standard deviation for variables with normal distribution, median (top-down) for non-normal distributions, and number of cases and (%) for nominal variables. One Way Anova was used if the distribution of the groups is normal. Results for $p < 0.05$ were considered statistically significant.

Ethics Committee Approval

Research ethics committee approval, the Ministry of Health of the Republic of Turkey Samsun Provincial Public Hospitals Authority by the General Secretariat of the Association of Public Hospitals 54103609-044 / 22 477 numbered decision was taken on 12.10.2013.

Results

The average age of the subjects with Type 2 diabetes who were taken into the research was 59.54 ± 12.04 years. The proportion of individuals who are slightly obese according to their body mass index is 21% and that of obese is 64%.

Table 1: Distribution of Diabetic Attitude Scale and Subscale Scores of Diabetic Individuals (N:100)

Subscales	Mean±Standart Deviation	Minimum	Maximum
Special Education Need	4.66±0.37	2.71	5
Attitudes Towards Patient Adaptation	4.18±0.40	2.83	5
The Severity of Non-insulin Dependent Diabetes Mellitus	3.26±0.78	1.67	5
Blood Glucose Control and Complications	4.33±1.36	2.75	17
The Effect of Diabetes on the Life of the Patient	3.94±0.76	1.80	5
Attitude Towards Patient Autonomy	4.56±0.46	2.80	5.20
Attitudes Towards Care Team	4.30±0.71	2.25	5
Total Score	4.23±0.28	2.94	4.71

Table 2: Diabetic Attitude Scale Total Score Averages According to Sociodemographic Variables (N:100)

Sociodemographic Variables	N/%	Mean±Standart Deviation	Minimum	Maximum	p
Gender					
Female	69.00	4.22±0.28	2.94	4.68	0.649
Male	31.00	4.24±0.30	3.62	4.71	
Marital Status					
Married	77.00	4.24±0.30	2.94	4.71	0.362
Single	6.00	4.26±0.12	4.03	4.41	
Widow	17.00	4.17±0.22	3.74	4.44	
Body Mass Index (kg/m²)					
18.50-24.99	15.00	4.34±0.20	4.03	4.71	0.20
25.00-29.99	21.00	4.21±0.34	2.94	4.62	
30.00+	64.00	4.21±0.28	3.62	4.68	
Income Level					
Good	5.00	3.77±0.59	2.94	4.56	0.00*
Moderate	81.00	4.27±0.24	3.68	4.71	
Poor	14.00	4.13±0.22	3.74	4.44	
Education Status					
Non-literate	32.00	4.24±0.21	3.74	4.65	0.549
Primary school	58.00	4.24±0.32	2.94	4.71	
High school	5.00	4.20±0.26	3.82	4.41	
University	5.00	4.11±0.30	3.71	4.41	
Job					
Housewife	63.00	4.23±0.28	2.94	4.68	0.796
Worker, Farmer	13.00	4.26±0.28	3.62	4.56	
Officer, Retired, Student	24.00	4.21±0.29	3.71	4.71	
Dietary Compliance					
Yes	9.00	4.13±0.21	3.76	4.41	0.193
No	42.00	4.20±0.32	2.94	4.65	
Partly	49.00	4.27±0.26	3.68	4.71	

*p<0.05

**One-way ANOVA

Table 3: Diabetic Attitude Scale Total Score Averages According to Disease Related Variables (N:100)

Variables	N/%	Mean±Standart Deviation	Minimum	Maximum	p
Diabetes Age (years)			2.94	4.71	
0-5	46.00	4.24±0.30	3.68	4.65	0.934
6-10	21.00	4.23±0.25	3.71	4.68	
11+	33.00	4.22±0.28			
Fasting Blood Glucose(mg/dL)	27.00	4.22 0.27	3.71	4.68	0.697
140 and below	73.00	4.23±0.29	2.94	4.71	
HbA1c (%)					
7 and below	38.00	4.21±0.33	2.94	4.68	0.773
Above 7	62.00	4.24±0.25	3.68	4.71	
Treatment Type					
Oral Antidiabetic	52.00	4.25±0.30	2.94	4.71	0.620
Insulin	24.00	4.20±0.27	3.71	4.68	
Insulin and Oral Antidiabetic	24.00	4.21±0.27	3.68	4.59	
Control Frequency					
When necessary	6.00	4.27±0.26	3.62	4.71	0.251
Once in one month	13.00	4.10±0.40	2.94	4.53	
Once in three month	14.00	4.17±0.25	3.71	4.44	
Once in six month	67.00	4.22±0.14	4.03	4.38	
Physical Activity					
I don't	4.00	4.23±0.27	3.62	4.71	0.032*
Mild activity	33.00	4.28±0.22	3.76	4.59	
Moderate activity	63.00	3.73±0.53	2.94	4.03	

*p<0.05. **One-way ANOVA

Table 4: Distribution of Subscale Score Averages of DAS According to BMI of Patients (N:100)

Body Mass Index (kg/m ²)	Subscale1	Subscale2	Subscale3	Subscale4	Subscale5	Subscale6	Subscale7
	Mean±Standart Deviation						
18.50-24.99	4.71±0.32	4.22±0.26	3.44±0.72	4.21±0.49	4.20±0.75	4.66±0.19	4.45±0.57
25.00-29.99	4.55±0.54	4.26±0.46	3.07±0.84	4.11±0.55	4.06±0.58	4.49±0.61	4.45±0.62
30.00+	4.68±0.32	4.14±0.41	3.28±0.78	4.42±1.66	3.84±0.80	4.55±0.45	4.21±0.76
	p:0.320 F:1.149	p:0.490 F:0.719	p:0.373 F:0.997	p:0.629 F:0.466	p:0.197 F:1.654	p:0.549 F:0.604	p:0.288 F:1.261

*One-way ANOVA

Table 5: Distribution of the Subscale Score Average of the DAS according to Diabetes Compliance of Diabetic Individuals (N:100)

Dietary Compliance	Subscale1	Subscale2	Subscale3	Subscale4	Subscale 5	Subscale6	Subscale7
	Mean±Standart Deviation						
Yes	4.52±0.39	4.31±0.37	3.03±0.63	4.27±0.40	3.77±0.32	4.40±0.44	4.00±0.84
No	4.70±0.40	4.10±0.46	3.21±0.81	4.07±0.54	3.91±0.71	4.55±0.47	4.35±0.70
Partly	4.65±0.34	4.22±0.35	3.35±0.78	4.56±1.85	4.00±0.86	4.59±0.45	4.31±0.70
	p:0.258 F:0.841	p:0.141 F:1.535	p:0.465 F: 0.772	p:0.063 F:1.504	p:0.197 F:0.363	p:0.278 F:0.653	p:0.394 F:0.899

*One-way ANOVA

When the characteristics of the subjects taken into consideration for the disease are examined, 46% of them are diabetic for 0-5 years, 21.11% is for 6-10 years and 33% is for 11 years; 73% had over 140 mg/dL of fasting glucose, 62% had over 7% of hemoglobin A1c (HbA1c) values; 52% of them take oral antidiabetic therapy, 24% take insulin therapy; 73% had a family history of diabetes; 65% of them have diabetes related complication; 67% did not go to the control regularly and 63% did not have regular physical activity. When individual nutritional habits were examined, 68% of participants received dietary training; 32% of them take this education from the dietitian, 30% from the doctor, and 7% from the nurses. When the number of meals were examined, it was determined that three of 67%, two of 26%, and 7% consumed one main meal. The proportion of individuals who did not eat snack meals at all is 17%, the proportion of people who make one meal is 55%, two meals is 21%, three meals is 7%. 65% of individuals do not eat outdoors. Diabetics who add sugar to food or drink are 23%, and those who use sweeteners are 7%. 4% of participants using sweeteners use saccharin, 2% aspartame, and 1% use sampsas. 6% of the individuals using sweeteners started to use sweeteners with doctor advice and 1% with pharmacist recommendations. 66% of the individuals consumed 1-2 portion of fruits a day and 23% consumed 2-3 portions a day; 89% of these individuals consumed fruit alone, 1% with milk and 6% with yoghurt. It was determined that 37% of the individuals consumed 500-1000 ml water per day, 22% of them consumed 1000-1500 ml water, 25% of them consumed 1500-2000 ml water, 16% of them 2000 ml water and above.

The proportion of individuals who follow the diabetic diet given to them by diabetic individuals is 9%, 42% of them don't follow that, and the

proportion of individuals who report partial adherence is 49%. When questioned about the reasons for not following the diabetic diet, 10% stated that the diet was not suitable for itself and 17% said that they could not keep themselves from eating. The proportion of individuals who think that they do not need them is 2%. The proportion of individuals who can not afford as much time for their diet is 11% and 2% due to financial situation inadequacy. When the dietary preferences of diabetic individuals are examined, the proportion of individuals consuming vegetables and fruits is 89%; 67% of the individuals consuming the milk-yoghurt group and 66% of the people consuming meat, poultry and fish were found. When considering the consumption of bread, half of the individuals consume white bread and 43% prefer whole wheat bread. The percentage of individuals consuming legumes is 39%. Among the cooking methods, 9% of the individuals prefer frying. The proportion of individuals consuming ready-to-eat flour products is 4%. It was determined that 92% of diabetic individuals did not apply an additional method of drug treatment to lower blood glucose. It was determined that 7% of the practitioners preferred cinnamon tea and 1% preferred lemonade.

Table 1 shows the distribution of DAS subscale scores of individuals with diabetes. Accordingly, the mean score of Special Education Need was 4.66 ± 0.37 ; Attitudes Towards Patient Adaptation was 4.18 ± 0.40 ; The Severity of Non-insulin Dependent Diabetes Mellitus was 3.26 ± 0.78 ; Blood Glucose Control and Complications was 4.33 ± 1.36 ; The Effect of Diabetes on the Life of the Patient was 3.94 ± 0.76 ; Attitude Towards Patient Autonomy was 4.56 ± 0.46 and Attitudes Towards Care Team was 4.30 ± 0.71 .

In Table 2, the DAS total score averages were shown according to sociodemographic variables. It was determined that gender, marital status, BMI, education, occupation, compliance with diet variables did not significantly affect the DAS total score ($p > 0.05$). According to the income levels, the mean score of those with good income level was 3.77 ± 0.59 ; middle income was 4.27 ± 0.24 and the mean score of the worst score was 4.13 ± 0.22 and statistically significant difference was found ($p=0.00$) (Table 2).

Table 3 shows that the diabetic individuals have an average of DAS total points according to disease-related variables. There was no significant difference between DAS scores in terms of diabetes duration ($p = 0,934 > 0,05$). The DAS total score was found to be significant according to fasting blood glucose values ($p = 0.697 > 0.05$). The mean score of HbA1c score of 7% and above was 4.21 ± 0.33 for the DAS total score and 4.24 ± 0.25 for the HbA1c score of less than 7%, but the difference was not significant ($p = 0.773 > 0.05$).

When the treatment forms of individuals were examined, the average DAS score of those who received oral antidiabetic treatment was 4.25 ± 0.30 ; the mean score of those who took insulin treatment was 4.20 ± 0.27 . The mean score of the individuals who applied both treatment methods was found as 4.21 ± 0.27 ($p = 0.620 > 0.05$). There was no statistically significant difference between attitude scores according to individuals' attending to control ($p = 0.251 > 0.05$).

The DAS total score of individuals who did not perform physical activity was 4.23 ± 0.23 ; the mean score of individuals with mild activity was 4.28 ± 0.22 ; and average scores of medium-active individuals were 3.73 ± 0.53 . The difference was statistically significant ($p = 0.032 < 0.05$) (Table 3).

Table 4 shows the mean scores of the subscale scores of the DAS according to the BMI of individuals with diabetes. When the BMI groups were compared with all the subscales, it was observed that the BMI group's attitude score of the diabetic subjects was not significantly affected ($p > 0.05$).

Table 5 shows the mean scores of the subscale scores of the DAS according to diet compliance of diabetic individuals. It was determined that the patients' compliance with the diet did not

significantly affect the DAS subscale attitude scores ($p > 0.05$).

Discussion

The mean age of the subjects with Type 2 diabetes who participated in this study was 59.54 ± 12.04 years. The average age at the study of Vardar Inkaya was 56.81 ± 12.17 years (Inkaya & Karadag, 2011); in one study it was 62.19 ± 11.18 years (Yagci & Yilmaz Karabulutlu, 2017). Advanced age is a risk factor for Type 2 diabetes. According to the IDF 320.5 million in the 20-64 age and in the 65-79 age there are 94.2 million people with diabetes. Depending on some personal and environmental factors, the disease can be seen at earlier ages and even in children (IDF, 2015). According to this study, 69% of the participants were female and 31% were male. In another study, 51.5% of the participants were female and 48.5% were male (Kueh, Morris & Ismail, 2017). According to the IDF, the prevalence of diabetes in men is higher, but the gap is expected to decrease until 2040 (IDF, 2015). In this study, the rate of illiterate was 32% and the rate of primary school graduates was 58%. These rates were found to be 7% and 37% respectively in the studies of Kartal (Kartal et al., 2008). Similar results were obtained in the study of Vardar Inkaya and it was concluded that education level in general is low (Inkaya & Karadag, 2011). When we look at occupational groups in this study, the percentage of those who are housewives is 63%; the proportion of individuals who are workers and farmers is 13%; retired, civil servant, student group is 24%. Occupational groups have been selected in parallel with their educational level and income levels are generally low.

According to BMI, 21% of the individuals with type 2 diabetes who were taken into the study were slightly obese and 64% were obese. In the study of Yagci and Karabulutlu, the mean BMI of the participants was 32.8 ± 36.5 kg / m² (Yagci & Yilmaz Karabulutlu, 2017). According to another study done, the proportion of obese and obese is 56.5% and 2.9%, respectively (Elkoca, 2010). Mild obesity or obesity is among the most important risk factors for Type 2 diabetes and weight loss is recommended to control blood glucose levels. The duration of illness among these individuals is 46% for 0-5 years, 21,11% for 6-10 years and 33% for 11 years. In a study conducted by He and Wharrad, 32% of diabetic individuals are diabetics, which last longer than

10 years (He & Wharrad, 2015). Eagle and his colleagues reported that 31.8% of the subjects had diabetes for 10 years or more (Kartal et al., 2008). Given the steadily decreasing age of onset of diabetes, this study is parallel to the literature. 73% of the individuals taken into this study were found to have family stories. It was reported that 69.1% of the individuals had diabetes in first-degree close relatives (Kartal et al., 2008). In addition to some environmental and individual factors, genetic predisposition is also effective in the development of Type 2 diabetes (Zheng, Ley & Hu, 2018). The results are in parallel with the literature. According to the findings of this study, 27% of the individuals with fasting blood glucose of 140 mg / dL or less were found. In Ozcan's study, only 14.9% of the individuals had optimal blood glucose values (Ozcan, 1999). In this study, the HbA1c values of the individuals were 7% and the proportion of those with HbA1c was 62%. In Ozcan's study, it was also found that the HbA1c values of most of the individuals were high (Ozcan, 1999). These values are evidence that diabetes management is not good. In this study, 18% of the individuals had hypertension, 7% had nephropathy, and 4% had retinopathy. In Ozcan's study, the frequency of chronic complications in 134 diabetic individuals was 55% of the group had chronic complications; hypertension (40%), retinopathy (39%) and neuropathy (18.7%) were present (Ozcan, 1999). It was found that 63% of the diabetic individuals taking this study did not have physical activity, 33% were mild, and 4% had moderate activity. In Ozcan's study, the proportion of diabetic individuals who regularly exercise is low (49,3%) (Ozcan, 1999). Physical activity improves glucose control by increasing the peripheral sensitivity of insulin, leading to a decrease in plasma insulin levels by reducing insulin or oral antidiabetic requirements (Karapolat, 2007).

DAS is a measure designed to identify attitudes that facilitate and prevent compliance with the treatment and care of diabetes. In our study, the DAS was used to investigate the success or failure of patients with diabetes care. In addition to providing data to support our findings, we aimed to provide a valid and reliable measurement tool adapted to Turkish literature (Ozcan, 1999). In this study, DAS mean total score was 4.23 ± 0.28 , which is positive. When the distribution of DAS subscale scores of diabetic individuals is examined, the subscale with the highest score is Special Education Need and the mean is $4.66 \pm$

0.37 . The least score was taken from the subscale of Severity of Non-insulin Dependent Diabetes Mellitus (3.26 ± 0.78). According to Ozcan's study, the DAS total score average was 4.04 ± 0.31 . The subscales and the total score reflect a positive attitude. While the Special Education Need subscale reflects the strongest positive attitude, the subgroup of Severity of Non-insulin Dependent Diabetes Mellitus reflects the weakest positive attitude (Ozcan, 1999). A study was conducted to assess disease attitudes and metabolic control of 271 individuals with type 2 diabetes. In this DAS study, individuals were found to have negative attitudes towards diabetes in general, and only positive attitudes toward the Severity of Non-insulin Dependent Diabetes Mellitus subscale of diabetes (Yagci & Yilmaz Karabulutlu, 2017). 227 Type 2 diabetic individuals were included in a study conducted to evaluate the varying attitudes of individuals with type 2 diabetes depending on some sociodemographic and medical factors. 227 Type 2 diabetic individuals were included in a study conducted to evaluate the varying attitudes of individuals with type 2 diabetes depending on some sociodemographic and medical factors. In this study, which was conducted by the DAS, it was found that the general diabetes attitudes of the individuals were positive and that the male individuals with higher educational level living in the city got higher scores (Olszak et al., 2017). When the total scale score and subgroup scores of the scale are evaluated, it is seen that the individuals generally show a positive attitude. Our results are similar to the general literature.

When the DAS total score averages were analyzed according to sociodemographic variables, it was determined that gender, marital status, BMI, education, occupation, dietary adjustment variables did not significantly affect the DAS total score. However, statistical significance was found between the DAS total point averages according to income levels. In the study of Inkaya Vardar, there was no difference between genders, educational status, economic status and marital status and diabetic attitudes of diabetic individuals (Inkaya & Karadag, 2011). In this study, there was no significant difference between the diabetes year, fasting blood glucose, HbA1c value, the type of treatment used, the incidence of controls, and the DAS total score averages. These results were also obtained in the study of Inca Vardar and Javansir. However, there was a significant

difference between physical activity status and DAS average (Inkaya & Karadag, 2011).

In this study, it was observed that BMI groups and all subscales did not significantly affect the attitude scores of diabetic individuals ($p > 0.05$). The most positive attitude is that the individuals with normal weight are in the Special Education Need subscale. The study of Ustaalioglu and Tan is similar to this study (Ustaalioglu & Tan, 2017). In addition, it was determined that individual's diet compliance did not significantly affect DAS subscale attitude scores in this study ($p > 0.05$). The most positive attitude was found in the Special Education Need subscale of all groups.

Conclusions

As a result, some sociodemographic characteristics of the participants were similar to the literature, and the mean BMI was found to be high. In parallel, it seems that compliance with nutrition therapy, which has an important place in the care of Type 2 diabetes, is low and that the education is inadequate. Most individuals have a sedanter lifestyle and healthy and catering food types are less preferred. When the results of the DAS are examined, the participants show a positive attitude towards the diabetic. The strongest positive attitude subscale was found in the Special Education Need, and the weakest positive attitude was found in the subscale of Severity of Non-insulin Dependent DM. When the DAS total point means were analyzed according to sociodemographic variables, it was determined that gender, marital status, BMI, education, occupation, diet compatibility variables except from income level did not significantly affect the DAS total score. The most positive attitude is that the individuals with normal weight are in the Special Education Need subscale.

Positive attitudes and behaviors towards medical nutrition therapy should be increased and body weight should be brought to an optimal level if a multidisciplinary team work on dietitian pioneer. In general, individuals have high blood glucose levels. For this reason, in addition to medical nutrition treatment of diabetic individuals, training for treatment and nursing care applications should be increased and positive attitudes and behaviors should be targeted.

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