Original article

Dietary and Lifestyle Habits of Patients with Type 2 Diabetes in Subotica

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SUMMARY

Introduction: The activities of the health care service in the control of diabetes and the improvement of glucoregulation of patients are primarily focused on lifestyle modification. The goal of this study was to review the recommendations in the field of adequate nutrition and lifestyle and to assess the health behavior of patients with type 2 diabetes in Subotica.
Methodology: The research was conducted in the form of a cross-sectional study in February 2017 at the Diabetes Counseling Center of the Health Center in Subotica, Serbia. The study included 114 patients with type 2 diabetes. The research instrument consisted of a customized survey questionnaire.
Results: Only a third of the patients actually consumed at least five meals a day, that was suggested as part of the treatment. Three-quarters of patients always prepared their own meals, but 41% of them never read the declarations about the ingredients of the food they consumed. Twenty percent of patients did not know how to assemble a healthy plate and what low-carbohydrate foods were. Two-thirds of patients used dietary supplements. A relatively small number, one-quarter of patients, consumed alcoholic beverages and 22 patients were active smokers. More than half of the patients exercised lightly, although 68% of them were dissatisfied with their body weight.
Conclusion: We identified some deficiencies in the health behavior and lifestyle of people with diabetes. There is a recommendation to repeat the information on proper nutrition and the importance of physical activity in achieving ideal health and optimal glucoregulation during the educational work with patients.

Keywords: **type 2 diabetes mellitus, eating habits, physical activity, alcohol consumption**

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INTRODUCTION

The treatment of diabetes has remained one of the greatest health care challenges of the 21st century, representing one of the main causes of illness, health care use, absenteeism, disability and premature death in all European countries (1). It is estimated that globally 9% (in urban areas 11%, in rural areas 7%), and over 12.4% of the adult in Serbia population suffer from diabetes (2, 3). Type 2 diabetes (T2DM) accounts for almost 90% of all cases of diabetes, and approximately 17,000 new cases of T2DM are recorded annually. Diabetes is the fourth leading cause of death in Serbia and Europe (4).

The recommendations of the American Diabetes Association (ADA) and the World Health Organization (WHO) emphasize that T2DM patients should independently control their disease through adequate health behavior and lifestyle, thus preventing complications, and prolonging life expectancy (5). Adequate health behavior includes proper eating habits, with regular consumption of vegetables and fruits, engaging in physical activities, avoiding harmful habits, including smoking cessation and cultivating preventive activities. Health control requires knowledge and skills to perform appropriate health behaviors (6). Therefore, the activities of the health service in controlling diabetes and improving the glucoregulation of patients are primarily aimed at modifying the lifestyle and health behavior, which is achieved through education, i.e. by developing health literacy and empowering the ill (5, 7).

The goal of this paper was to consider the recommendations in the field of adequate nutrition and lifestyle in patients with T2DM, to assess the health behavior of patients in Subotica, and to compare them with recommendations and literature data from other countries.

RECOMMENDATIONS FOR THE MODIFICATION OF HEALTH BEHAVIOR

Medical Nutritional Therapy (MNT) represents the basis of the treatment of T2DM, and almost a quarter of patients are treated exclusively by changing their diet (5). MNT should support healthy eating habits by emphasizing a varied diet rich in nutrients, in appropriate portions, with the aim of achieving ideal body weight, target values of glycemia, blood pressure and lipid status, elim-

inating symptoms, while reducing the risk of diabetes complications (8).

Carbohydrate intake should be reduced, not completely eliminated from the diet, as they make up 50 – 55% of the daily energy intake (9). Increased intake of fiber (> 30 g/day) slows down the resorption of sugar from food and prevents large oscillations in blood sugar after a meal. Patients with diabetes should avoid the intake of simple sugars (cakes, chocolate, white sugar) and sweetened beverages (fructose corn syrup and sucrose). Instead, they are recommended to use non-nutritive sweeteners, since they have no effect on glycaemia and can reduce caloric (especially carbohydrate) intake (5, 10).

The ADA, as a proven method to control carbohydrate intake, recommends the carbohydrate counting method, which evenly distributes the total daily carbohydrates in meals and helps to clarify how each type of carbohydrate affects the blood glucose levels. With this method, the carbs are first calculated as a percentage of total calories (50%), and then in calories and grams. For example, in a 2.200 - calorie diet, 50% of energy is 1.100 calories. Since there are 4 calories per gram of carbohydrates, it amounts to 275 g (1.100 calories/4 = 275 g). This total amount of daily carbs can be divided into three (275g/3 = 92 g of carbohydrates per meal) or five meals (275 g/5 = 55 g of carbohydrates per meal) (5, 11). With this method, six months after the start, HbA1c level can be decreased by 0.6% (12). The other method is the Modified Healthy Plate. This visual guide shows that carbohydrate intake should be limited to the amount corresponding to a quarter of the plate, with the emphasis on non-starchy vegetables (5). This method can result in effective glycemic control and decreases the HbA1c level by 0.8% (12).

Proteins in the diet of patients with T2DM should make up 10 - 15% of the daily energy intake, with the recommendation of lean meat and low-fat dairy products. Fats in the diet make up 30% of the daily energy intake. The quality of the fat seems to be more important than the quantity, i.e. it is necessary to eat mono- and polyunsaturated fats in the form of fatty fish at least twice a week, and as much as possible to avoid saturated and trans fats and refined oils (9).

Recent research highlights the Mediterranean diet and the plant-based DASH diet as a suitable diet for the treatment of diabetes. This diet gave positive

results in glycemic reduction, HbA1c levels from 0.3 to 2% and cardiovascular risk (5).

However, there is no single diet pattern or optimal recommended percentage of energy intake from nutrients ideal for all patients. There are only principles, recommendations and good examples that serve to better cope with the disease. The overall quality of the consumed food seems to be more important than the quantity, with an emphasis on the intake of whole grains, vegetables and fruits, berries, nuts, yogurt, with a minimal intake of refined and processed foods, red meat and sugar (5, 10). As part of the education about MNT, recommendations for the intake of macronutrients, food groups and measuring the amount should be simplified as much as possible. It is necessary to give information about the energy value of foods, foods that have highest content of carbs, foods that can be taken without restriction and stress the importance of physical activity during treatment; to recognize carbohydrates, fats and proteins in foods and compose the optimal meal (13).

The education about physical activity should include advice on the type, duration and frequency of activities. WHO, as part of its lifestyle modification, recommends at least 150 minutes of moderate-intensity aerobic physical activity throughout the week (fast walking, running, swimming, cycling), and activities to increase flexibility, balance and strength at least 2 - 3 times a week (14). Physical activity should be performed at least three days a week, so that there are no more than two consecutive days without activity. Physical activity promotes optimal blood glucose levels, improves insulin sensitivity of tissues, reduces the need for drugs to lower glucose, improves weight loss and reduces the risk of cardiovascular disease (15, 16). It is necessary to reduce the time spent in a daily sedentary position. Prolonged sitting (over 90 minutes) should be interrupted every 30 minutes for better muscle activity and better blood glucose metabolism (16, 17).

Smoking cessation counseling is a routine part of diabetes treatment. Nicotine and carbon monoxide can damage the interior of blood vessels, narrow blood vessels, making them more susceptible to the development of atherosclerosis and ischemic heart disease (5, 18).

Alcohol use, if it is moderate, has no significant adverse effects on long-term glycemic control.

The acceptable amount of alcohol intake for women is one and for men two drinks a day; one drink corresponds to 3 dl of beer, a 1.5 dl of wine or 0.5 dl of hard alcohol (5). However, its avoidance should be advised, because alcohol consumption increases the risk of hypoglycemia (especially with insulin therapy or derivatives of sulphonylurea) or weight gain (16). Alcohol can increase arterial blood pressure, triglyceride levels, and exacerbate cardiovascular complications (19).

PATIENTS AND METHODS

The research was conducted in the form of a cross-sectional study in February 2017 at the Diabetes Counseling Center of the Health Center in Subotica, Serbia. The study included 114 patients with T2DM, who had already received standard education at the Counseling Center. Data were obtained during follow-up examinations of patients through interviews with the researcher in order to analyze the habits of patients and adherence to the given recommendations.

The research instrument consisted of an adapted survey questionnaire, formed by combining and modifying two questionnaires:

a) The first was the Diabetes Project Participation Questionnaire, which was developed, approved and implemented at the Center for Health in Denver (Colorado, USA), in 2006 (20).

b) The second is the Diabetes Self-Management Questionnaire developed by the Cincinnati Health Care Network, USA (21).

The questionnaire, in addition to general and demographic questions, contains open-ended and closed-ended questions about health behaviours relevant to controlling diabetes. The research was anonymous and voluntary; the questionnaires were marked with code numbers. The research was approved by the director and ethics commission of the Health Center of Subotica (No.01-5/III/I/2016 & 01-5480), and the Ethics Committee of the Medical Faculty of the University of Novi Sad (No.01-39/192/1). For the use of survey questionnaires in this research, the consent of the authors of these questionnaires was obtained.

IBM Statistics SPSS 20 software package was used for statistical analysis. Descriptive statistics methods were used for data analysis.

RESULTS

The study involved 114 patients, mostly women (68%), average age 63.7 ± 7.7 years, mostly retirees (68%), with completed secondary education (54%), with an average disease duration of 7.9 ± 6, 9 years.

As far as the patients' eating habits were concerned, two-thirds of patients (65%) were suggested to consume five meals a day, yet only 27% actually consumed that much. Most patients (90%) were advised to limit their sugar intake, and more than half (60%) were advised to limit their fat intake. However, 41% of them never read food composition declarations, and only a third of them did so.

Most patients (46%) had a habit of dining out once a month. On average, patients dined out three times a month. The largest number of patients (73%) always prepared their own meal, most often women (92%), and a smaller number of male patients.

When asked about food, half of the patients knew which foods did not contain carbohydrates. It is optimistic that most patients are informed about, i.e. low-carb foods, and how to put together a healthy plate (Table 1).

Patients were asked to label the three most commonly used foods in the diet. The frequency of the presence of certain foods in the diet of patients with T2DM is shown in Graph 1.

Table 1. *Distribution of patients according to specifics in nutrition*

Variables		N	%
The type of diet plan proposed in the treatment of diabetes	Five meals a day	74	**65**
	Smaller, more frequent meals according to the food pyramid	34	30
	Carbohydrate calculation method	4	4
	Other	2	2
Meal frequency/day	3 meals	52	46
	4 meals	31	27
	5 meals	31	**27**
Dietary restrictions	Sugar restriction	102	**90**
	Fat restriction	67	**59**
	Salt restriction	43	38
	Fluid restriction	7	6
	No restriction	10	9
Reading and using the declaration (composition) of food as a guide for diet planning	Always	35	31
	Sometimes	32	28
	Never	47	**41**
Dining outside the house/month	Never	27	24
	Once a month	**52**	**46**
	Twice a month	8	7
	Once a week	10	9
	Often, until daily	16	14
Preparing your own meals	Always	83	**73**
	Sometimes	23	20
	Never	8	7
Questions about proper nutrition (number of correct answers)	Which foods do not contain carbohydrates	60	53
	What are freely used carbohydrates	91	80
	Which foods will quickly raise your blood sugar level	102	90
	Fill a "healthy plate" with appropriate foods	93	82
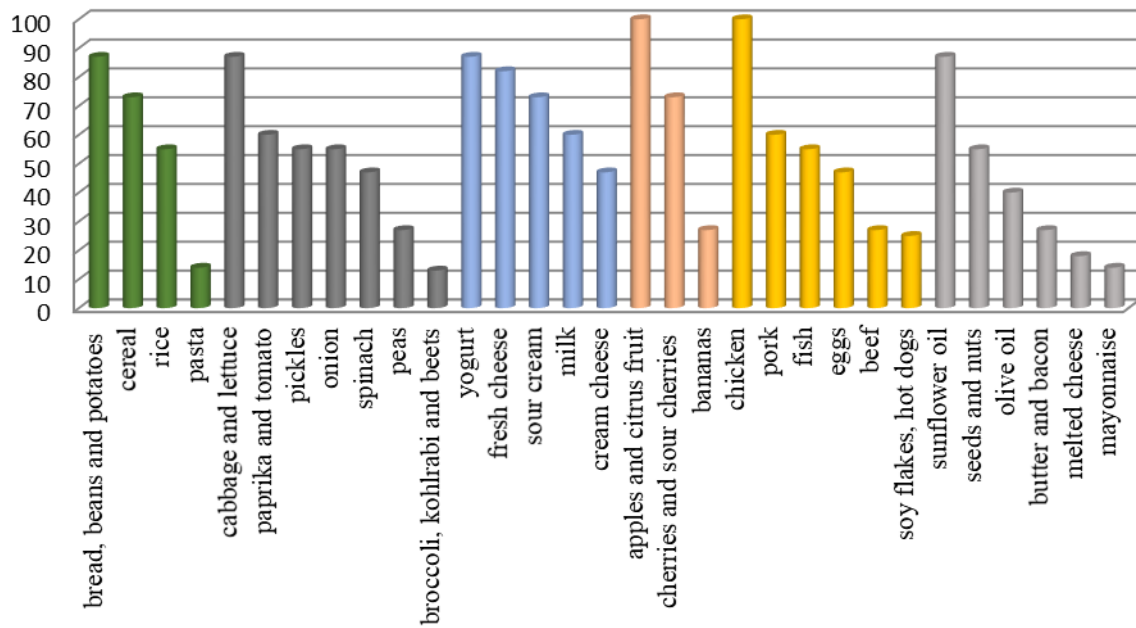
Graph 1. *Frequency of consumption of certain foods among patients*

Table 2. *Distribution of patients according to the use of dietary supplements*

Variables		N	%
Taking dietary supplements	Yes	73	**64**
	No	40	35
Types of supplements	Multivitamin, alone or with other supplements	10	9
	Vitamin B, alone or with other supplements	39	**34**
	Vitamin C, alone or with other supplements	44	**39**
	Magnesium	20	18
	Vitamin D, alone or with other supplements	8	7
	Vitamin E, alone or with other supplements	1	1
	Zinc	2	2
	Calcium	3	3
	Selenium	1	1
	Bereš drops	1	1
	Alpha lipoic acid	1	1
	Diabion	1	1
	Glucosamine	1	1
	Omega 3 – 6	1	1
	Bean pod tea	1	1
	Comfrey	1	1
	Cranberry	1	1
	Ginko biloba	1	1
	Herbal teas for lowering sugar levels (Diabeta)	1	1

Patients were asked to set a goal regarding adequate nutrition, and the most common responses were:

- Moderate diet (smaller, more frequent meals and smaller portions);
- Light diet (increased proportion of low-calorie vegetables and salads, chicken and fish, water);
- Reduced intake of cereals, bread, pasta, fatty and red meats;
- Avoiding fats and salts when preparing food, and reducing blood cholesterol;
- Regular rest, self-discipline in lifestyle and increased physical activity.

Dietary supplements were used by 64% of patients. Of the vitamins, most commonly consumed vitamins were vitamin C (39%) and vitamin B (34%), while 18% used to take magnesium (Table 2).

As far as avoiding bad habits is concerned, only one quarter of patients consumed alcoholic beverages, men (56%) more frequently than women (14%). The average amount of alcohol consumed was 2 dl, and patients most often consumed beer and wine. Twenty-two patients were active smokers, smoking on average 10 cigarettes per day (Table 3).

In the field of physical activity, more than half of the patients practiced light physical activity, with 68% of patients pointing out that they were dissatisfied with their body weight. Patients identified the most appropriate type of exercise and personal motive for engaging in physical activity, as well as personal stress management techniques (Table 4).

Table 3. *Distribution of patients according to the consumption of alcoholic beverages and cigarettes*

Variables		N	%
Alcohol consumption	Yes	29	**25**
	No	85	75
Types of beverages consumed	Hard alcohol	9	8
	Beer	14	**12**
	Wine	17	**15**
	Liqueur	2	2
The amount of alcoholic beverages consumed	Less than 2 dl	27	24
	2 dl	56	**49**
	More than 2 dl (up to 5 dl)	31	27
Frequency of consumption	Doesn't consume	85	75
	Daily	3	3
	Weekly	5	4
	Monthly	5	4
	Occasionally	16	**14**
Cigarette consumption	Yes	22	**19**
	No	82	72
	Quit smoking	10	9
Amount of cigarettes smoked daily	Up to 10	13	12
	Up to 20	8	7
	More than 20	1	1
	Not a smoker	92	81

Table 4. *Level of physical activity, attitude towards body weight, motive for physical activity and personal techniques for coping with stress among patients with T2DM*

Response		N	%
Intensity of physical activity	Light	65	**57**
	Moderate	44	39
	Intense	5	**4**
Do you think you have an ideal body weight	Yes	36	32
	No	78	68
The most ideal way of physical activity for the patient	Fast walking	99	**87**
	Riding a bike	68	60
	Swimming and yoga, stretching	31	27
	Muscle strength exercises	26	23
	Running	21	18
Personal motivation of patients to engage in physical activity	Regulation of sugar levels	73	**64**
	Weight optimization	68	**60**
	Lowering blood fat levels	42	37
	Regulation of blood pressure levels	36	32
Patient's personal techniques for coping with stress	Gathering with friends and family	53	47
	Listening to music or reading a book	46	41
	Engaging in physical activity, meditation, relaxation	10	9

DISCUSSION

The onset of diabetes is most often associated with an inadequate lifestyle and the first step in treatment is actually a modification of these factors (3). Adequate education, training of patients for self-control of the disease by adhering to the recommendations of medical nutritional therapy and physical activity are necessary in controlling the disease. Accordingly, this paper aimed to examine the habits of patients in these areas.

Literature data indicate that very few patients adhere to adequate health behaviors and lifestyle changes. For example, the results of a study conducted in the United Arab Emirates showed that after the diagnosis of diabetes, only 3% of patients followed the recommended treatment guidelines (22). Similarly, a study conducted in South Africa found that 98% of patients with diabetes did not have adequate health behavior (23).

In our study, although 65% of the patients are recommended to have 5 meals per day (of which 30% of patients are recommended to consume more frequent smaller meals), only 27% of patients do so (others had 3 or 4 meals; so they have their meals less frequently; even though they are recommended to have more frequent meals. The positive aspect is

that most patients (73%) always prepare their own meals, and 46% of patients have a habit of dining out only once a month. It is worrying that only a third of patients pay attention and read the declarations on the composition of the food they consume. When it comes to food, half of the patients usually do not recognize carbohydrates in milk and vegetables, especially peas. About 20% of patients do not know which carbohydrates are freely used, and how to make a healthy plate. We can conclude that in the field of recognizing nutrients in food and choosing adequate foods, our patients require additional education, as pork (59%) and hot dogs (27%) are still present in their diet in a large percentage.

Patients' knowledge and attitude towards adequate MNT, as well as daily eating habits, are a central part of controlling diabetes and its complications. Nevertheless, non-compliance with MNT appears to be a common problem in many countries (24), as similar results on the level of knowledge and eating habits of patients have been presented by other researchers. In a study conducted at the Clinical Center of Vojvodina among patients with diabetes, it was found that almost half of patients (45%) take an average of six meals, and a quarter of patients five meals a day. This research also revealed several deficiencies in the knowledge about the diet

of people with diabetes. The author also states that only 10% of patients were aware of the fact that carbohydrates make up half of the daily energy intake (25). Also, a large number of patients did not know how to include certain foods in the food pyramid, they did not know what the glycemic index of foods means, nor that potatoes have a high glycemic index, or that sweets are fast-acting, simple sugars, although, according to the patients' personal assessment, only 30% of them adhered to the treatment recommendations suggested by health professionals (25). Similarly, in a study from the United Arab Emirates, 76% of their patients did not know how to distinguish between high and low carbohydrate foods (22). In a study conducted in Iran, it was found that only 20% of patients adhered to the proposed MNT recommendations, 85% of patients had low knowledge of adequate nutrition and the actual habits of patients in their daily diet were inadequate (24). A study from South Africa points out that 92% of patients do not know the benefits of MNT in controlling diabetes (23).

Adequate education on nutrition is a very delicate issue in training of patients with diabetes for successful self-control. Although MNT education is the responsibility of nutritionists, due to frequent contacts and meetings with patients and nurses, they have a key role to play in this area. In a clinical-hospital setting, nurses are in contact with patients 24 hours a day. According to a study conducted in the United States, nurses are 40 times more likely to have contact with patients than dietitians and 100 times more likely than diabetes educators. This explains why patients trust them and more often seek advice from them regarding the treatment and control of the disease. Therefore, it is essential that nurses also have adequate knowledge of MNT in order to provide effective advice (26).

In our health system, the method of a healthy plate - the food pyramid and the method of calculating carbohydrates - is most often recommended for controlling diabetes (5). However, patients often lack the motivation to adhere to the prescribed diet, and most perceive this as a serious daily waiver in the diet. Other diets should be considered and suggested so that patients can choose the most appropriate one for themselves. Among the best diets for patients with diabetes, the Mediterranean diet has been suggested, as it is the most suitable one for cardiovascular diseases and the diet that is easiest to follow (27). This diet is associated with better glycemic con-

trol, and the average reduction in HbA1c levels ranges from 0.1 to 0.6% (28). Increased intake of foods that are the basis of the Mediterranean diet can reduce the risk of cardiovascular disease (29). This fact is also supported by the REDUCE-IT, international, multicenter study. The results of this study clearly show that higher intake of fish oil, primarily EPA (eicosapentaenoic) fatty acid, characteristic of the Mediterranean diet is associated with a 26% reduction in the risk and incidence of ischemic stroke, atherosclerotic heart disease and peripheral arteries (30). Plant polyphenols from foods, characteristic of the Mediterranean diet (fruits, vegetables, whole grains, coffee, tea, nuts, red wine, olive oil) have a strong antioxidant role, affect glycemic levels and insulin resistance through various mechanisms, such as improving tissue glucose uptake and thus improving insulin sensitivity (31).

A very positive effect of the DASH diet on T2DM has also been found. This diet promotes increased intake of whole grains, vegetables, berries, skimmed milk products, lean meat and legumes, which in combination with increased physical activity has been shown to reduce arterial blood pressure and encourage a reduction in waist circumference, thereby reducing the risk of metabolic syndrome and cardiovascular complications in patients with T2DM (27, 32).

When it comes to avoiding harmful habits, in our research it was determined that only one quarter of patients consume alcoholic beverages, mostly men, occasionally wine or beer, up to 2 dl on average. Alcohol consumption is not strictly prohibited in patients with diabetes, but restrictive intake is recommended, since excessive consumption can lead to poor glycemic control, worsening of insulin resistance, and the appearance or worsening of complications of diabetes (5). However, research in Japan and China suggests that moderate alcohol consumption may actually reduce the risk of developing diabetes and reduce cardio-metabolic risk, compared to patients who do not consume alcohol at all or consume it in excessive amounts (33, 34). However, consuming higher amounts of alcohol and spirits has been found to result in dyslipidemia and increased blood triglyceride levels, and thus progression of atherosclerosis (34, 35).

It is encouraging that only 20% of our patients use tobacco, usually up to 10 cigarettes a day. Data from the literature on the effects of smoking in patients with diabetes confirm the increased risk and

prevalence of early death associated with the development of macro and microvascular complications in smokers, as tobacco smoke leads to dyslipidemia, vasoconstriction, progression of glucose intolerance and insulin resistance, further exacerbating the cardiovascular risk (36). A study conducted in Japan points out that the cardio-metabolic risk is significantly higher in smokers, and that cardio-metabolic risk depends on and increases in proportion to the number of cigarettes consumed per day (37). Therefore, it is necessary to advise all patients with diabetes to stop smoking and support them in this regard (5).

Counselling for regular physical activities is one of the recommendations for lifestyle changes and it is necessary in the treatment of diabetes. The benefits of physical activity in the treatment of diabetes are widely known, especially due to the increase in insulin sensitivity, reduction of blood pressure and protective effect on the cardiovascular system (38). In our study, we found that more than half of patients exercise lightly, and only 39% of patients engage in moderate-intensity physical activity. These results are significantly better compared to a study conducted in the United Arab Emirates where it was found that only a quarter of patients increased the level and frequency of physical activity after being diagnosed with T2DM, which was more frequently found in male patients (22).

In our study, patients highlighted brisk walking and cycling as the most appropriate type of exercise, and two-thirds of patients recognized the importance of physical activity in regulating blood sugar levels and optimizing body weight. However, several studies point out that patients usually have a low level of knowledge and awareness about the benefits of physical activity in the treatment of diabetes. In a study from South Africa, it was concluded that 92% of patients (23) are not aware of the benefits of exercise and weight loss in controlling diabetes, and that most patients are obese. Similarly, a

lack of knowledge about the importance of physical activity was discovered in Jordan, so the authors of the study suggest that during the advisory work, greater emphasis be placed on the importance of exercise in preventing complications and achieving a better clinical treatment outcome (39).

Changes in the behaviour and lifestyle of patients are difficult to achieve, because habits are difficult to change. Therefore, it is recommended to constantly repeat the facts and desirable behaviours that lead to health, so that patients implement the received recommendations in everyday life and persevere in lifestyle changes. This would be particularly useful in relation to diet, given that adherence to the recommended MNT has been shown to be most zealous within one month of education, but which, after an initial increase, also shows the greatest decline (40).

CONCLUSION

The results of this study show that a large percentage of patients consume less frequent meals than suggested in the treatment. Most patients do not pay attention to the declaration and composition of food before consuming. Half of the patients are not fully familiar with high or low carbohydrate foods. The majority of patients are not satisfied with their body weight, yet they do not engage in moderate or intense physical activities.

The results of this study suggest that among patients with diabetes, during health-educational work, it is necessary to repeat information regarding proper nutrition, carbohydrate content and adequate food selection, and the importance of physical activity in treatment. Identification of deficiencies in health behavior suggests preventive and corrective activities in daily work with patients.

Conflict of interest

None.

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Navike u ishrani i životnom stilu obolelih od dijabetesa Melitusa tipa 2 u Subotici

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S A Ž E T A K

Uvod. Aktivnosti zdravstvene službe u kontrolisanju dijabetesa i poboljšanju glikoregulacije bolesnika najpre su usmerene na modifikaciju stila života. Cilj ovog rada bio je da se sagledaju preporuke na polju adekvatne ishrane i stila života i da se proceni zdravstveno ponašanje bolesnika obolelih od dijabetesa melitusa tipa 2 u Subotici.

Metodologija. Istraživanje je sprovedeno u vidu studije preseka u februaru 2017. godine u Savetovalištu za dijabetes Doma zdravlja Subotice u Srbiji. U istraživanje je uključeno 114 bolesnika sa tipom 2 dijabetesa melitusa. Instrument istraživanja činio je prilagođen anketni upitnik. Za statističku analizu korišćene su metode deskriptivne analize pomoću programa SPSS 20.

Rezultati. Samo trećina bolesnika zaista je konzumirala bar pet obroka dnevno, kako im je predloženo u okviru lečenja. Tri četvrtine bolesnika uvek sami pripremaju svoj obrok, ali 41% njih nikada ne čita deklaracije o sastavu hrane koju konzumira. 20% bolesnika nije znalo kako se sastavlja zdrav tanjir i koje su niskougljenohidratne namirnice. Dodatke u ishrani koristi dve trećine bolesnika. Relativno mali broj, četvrtina od ukupnog broja pacijenata konzumirala je alkoholna pića i 22 bolesnika bila su aktivni pušači. Više od polovine bolesnika upražnjavalo je laku fizičku aktivnost, iako je 68% bolesnika nezadovoljno svojom telesnom težinom.

Zaključak. Utvrđeni su pojedini nedostaci u zdravstvenom ponašanju i stilu života obolelih od dijabetesa melitusa. Preporuka je da se tokom zdravstveno-vaspitnog rada sa bolesnicima ponavljaju informacije o pravilnoj ishrani i značaju fizičke aktivnosti u postizanju idealnog zdravlja i optimalne glikoregulacije.

Ključne reči: dijabetes melitus tip 2, navike u ishrani, fizička aktivnost, konzumiranje alkohola