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The use of complementary medicine in patients with diabetes

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ABSTRACT

OBJECTIVE: Diabetes mellitus (DM) is a growing health problem with serious complications. The chronic and progressive nature of the disease often leads patients to use complementary and integrative medicine. The present study aimed to investigate the frequency of use of alternative medicine by patients with DM and the products used.

METHODS: Between September 2014 and May 2015, 301 patients with DM were selected from Bezmialem Foundation University Hospital Diabetes Clinic to participate in the study.

RESULTS: The results of the study indicate that 81 (26.9%) patients had tried alternative medicine, and 50 (16.6%) patients continued to use some form of alternative medicine product. A total of 43 (14.3%) patients used such products every day and 24 (8%) patients had used alternative medicine products for up to 6 months. Glycated hemoglobin (HbA1c) levels were significantly decreased in patients using alternative medicine products compared to the remainder of patients in the study (p=0.017). No other significant difference was found between the two groups. It was observed that among patients using alternative medicine products, only 10 (12%) had informed their physicians.

CONCLUSION: This study indicated that patients with diabetes are very likely to use alternative medicine products. Additional studies are needed to further determine the efficacy of these products. Patients as well as health providers must be educated about complementary medicine and alternative products.

Keywords: Complimentary medicine; diabetes mellitus; regulation of glucose.

Diabetes Mellitus (DM) is a critically significant disease and its global prevalence is increasing. Its outcomes have a serious effect on patient quality of life, and costs associated with DM also have an important impact on national budgets. According to 2015 World Health Organization (WHO) data, a total of 150 million patients have been diagnosed with DM worldwide, and this figure is likely

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to double by 2025, attributed largely to factors such as population increase, aging of population, unhealthy dietary habits, and sedentary lifestyles.[1] According to data published by Turkish Diabetes Epidemiology Study (TURDEP-II), the incidence of diabetes among adult population of Turkey has reached 13.7%.[2]

The increase in the number of patients diagnosed with DM, and the chronic, progressive nature of the disease means that more patients are seeking out alternative products in addition to clinical medical therapy. Many studies have been performed in Turkey on use of complementary medicine; however, only a limited number of studies have been conducted about its use in patients with DM. [3-6] The aim of the present study was to investigate the frequency of use of alternative methods and the products used.

MATERIALS AND METHODS

Between September 2014 and May 2015, patients from Bezmialem Faculty of Medicine Diabetes Outpatient Clinic whose follow-up care was conducted only at Bezmialem Foundation University Hospital were asked to answer a survey about the use of alternative medicine supplements. Patients were asked to provide demographic data, information regarding complications secondary to diabetes, available treatments, and any use of alternative medicine products. Participants who responded affirmatively regarding alternative medicine were then asked to indicate the duration of this therapy, where they learned about the product(s), where they obtained the item(s), and whether or not they had informed their physician about use of the product(s). Patient clinical information was collected from patient medical files, including glycated hemoglobin (HbA1c) values and diabetic complications. Patients who had sought treatment at the outpatient clinic for the first time or whose follow-up examinations were not performed at Bezmialem Foundation University Hospital were excluded from the study.

This study was approved by Bezmialem Foundation University Hospital Ethics Committee. Signed written informed consent forms were obtained from all patients before initiation of the survey.

SPSS software (version 20.0; SPSS Inc., Chicago, IL, USA) was used for statistical calculations. Student's t-test was used for intergroup comparisons of variable means with normal distribution, and Mann-Whitney U test was used for variables with non-normal distribution. Nonparametric variables were compared using chi-square test. $P < 0.05$ was the limit for statistical significance.

Table 1. Demographic characteristics of the study participants

Parameters	Number of patients		Parameters	Number of patients	
	n	%		n	%
Gender			Education level		
Female, n (%)	214	(71.1)	Illiterate	44	(14.7)
Male, n (%)	87	(28.9)	Primary school	175	(58.1)
Marital status			Secondary school	36	(11.9)
Married	267	(88.7)	Lycée	29	(9.7)
Single	34	(11.3)	University	17	(5.6)
Monthly income			Profession		
<1500 TL	219	(72.8)	Housewife	188	(62.5)
1500-3000 TL	64	(21.3)	Retired	52	(17.3)
>3000 TL	18	(5,9)	Other	60	(20,2)

RESULTS

Demographic characteristics of the 301 diabetic patients included in this study are provided in Table 1. Patients were taking oral antidiabetic drugs plus insulin (n=143; 47.5%), just oral antidiabetics (n=101; 33.6%), or just insulin therapy (n=56; 18.6%). Some patients discontinued treatment within 1-6 months. Of the total, 81 (26.9%) study participants had tried alternative medicine products, and 50 (16.6%) were continuing to use these treatment methods. The most preferred alternative products in order of decreasing frequency were nigella sativa (black seed), cinnamon, various herbal teas, olive leaf, herbal mixtures with unknown content purchased from an herbalist, lemon, green lentils, flaxseed, yogurt, parsley juice, hibiscus, fruits, and herbs (Table 3). Patients cited the presumptive hypoglycemic, weight loss, and mood-enhancing effects of the products as basis for use. Lack of beneficial effect, difficulty procuring the items, dramatic decrease in blood sugar levels, and unpleasant taste were among various adverse effects reported as cause for discontinuing use. Patients were most often first introduced to the products by close friends or through media.

The majority of participants (n=43; 14.3%) who used alternative products were doing so every day or had consumed them for a period of 1-6 months (n=24; 8%). Forty study participants indicated that they liked alternative medicine products because they observed blood sugar lowering effects. Only 4 (1.3%) patients discontinued antidiabetic drugs prescribed by physician while using alternative therapies. The recommendations of family members and/or friends influenced 27 (9%) patients to begin consuming alternative medicine products, and television and radio programs led 19 (6.3%) patients to use the alternative treatments. However, only 10 participants informed their physician about the dietary supplements they elected to use.

The present study revealed significantly lower levels of HbA1c in patients who used alternative medicine products compared to those who did not (p=0.017). Unmarried individuals with higher income levels used the products more frequently (Table 2). Study data did not yield a statistically significant correlation between the use of alternative medicine products and other parameters.

DISCUSSION

Many patients are choosing to use alternative medicine, and inevitably this interest has an effect on theoretical and clinical applications of medicine. The global rate of diabetic patients using alternative medicine products varies from 17-72.8 %.[7-

Table 2. Comparison of users and non-users of alternative medicine

	Users (n=81)	Non-users (n=220)	p
Gender (male-female), n (%)	19 (23.5)-62 (76.5)	68 (30.9)-152 (69.1)	0.206
Median age (years)	56.09	56.29	0.885
Median age of diabetics (years)	13	11.8	0.311
Glycated hemoglobin (HbA1c) (%)	7.72	8.33	0.017
Marital status (married-single)	66 (81.5)-15 (18.5)	201 (91.4)-19 (8.6)	0.016
Retinopathic patients, n (%)	18 (22.2)	60 (27.2)	0.375
Patients with bypass stent, n (%)	12 (5.5)	39 (17.7)	0.550
Nephropathic patients, n (%)	15 (18.5)	28 (12.7)	0.203
Neuropathic patients, n (%)	33 (40.7)	100 (45.5%)	0.465
Patients with diabetic foot, n (%)	8 (9.9)	10 (4.5)	0.101

Table 3. Alternative medicine products used by patients (n=81)

Product	n	%
Nigella sativa/Black seed	19	23.4
Cinnamon	18	22.2
Herbal tea	18	22.2
Olive leaf	15	18.5
Herbal medicine mixture purchased from an herbalist	6	7.4
Other	5	6.2

9] Analysis of current trends indicates that Momordica charantia (bitter gourd) and cinnamon are used most frequently worldwide, but there is a broad spectrum of herbal products in use that varies greatly between countries.[10,11] In Turkey, 41% of diabetic patients choose to use alternative medicine therapies. In the past, thyme, pomegranate, stinging nettle, and rosehip were preferred; [8] however, in the present study, 26.9 % of participants most often used cinnamon and nigella sativa.

Female gender, high income, monthly blood glucose tests, birthplace, education level, and living with immediate family are common demographic characteristics of patients who have a preference for alternative medicine products, according to international data. [7,8] Although a significant correlation was not found between education level and use of these products, the majority of patients in the present study (58%) were primary school graduates, with a few (n= 17; 5.6%) high school graduates. Additional studies with a different population group are recommended.

Criteria such as gender, average age of the patients, and average age at onset of diabetes, and education level do not seem to be relevant to use of alternative medicine, nor did present or past history of retinopathy, nephropathy, diabetic foot or cardiac disease create significant difference. This suggests that progression, severity of the disease, and complications developed are not meaningful factors in patients' choice to use alternative medicine products.

Another notable outcome concerns sources of patient information. Patients primarily learned about alternative treatments from television and radio, their family and friends, and the newspaper, demonstrating that they are open to external influence, they trust non-scientific sources, and make decisions about their health based on the recommendations of laymen who are not knowledgeable about acute or chronic effects of DM.

The Ministry of Health, media organs, and non-governmental organizations have a tremendous responsibility in this regard. For example, only experts in their fields should give medical information on TV programs, and programs not relying on scientific sources should be prohibited in order to protect the health of patients and ensure that they make rational choices. Efforts should be made to raise awareness about the risks associated with uninformed and potentially misleading recommendations from members of patient's family and social circle. Requirements of the disease differ among individuals, and the course of the disease demonstrates individual variation. Products recommended by family and friends may not have the same effect on different individuals.

Another significant outcome of the study is that only 10 (12%) patients informed their physicians about the use of alternative medicine products. This finding reveals weakness in patient-physician rapport. Patients reported shyness, fear of the physician, physician indifference, and disregard for or lack of knowledge about side effects as reasons for not informing their physicians about use of the products. It is thought that lack of good communication and the fact that diabetes requires lifelong treatment and has no possibility of complete cure leads many patients to try easily applied treatment modalities with uncertain outcomes.

Worldwide, patients with DM have been inclined to use alternative medicinal products. As a result of this trend, the effects of alternative products on diabetes should be further investigated. Some studies have suggested that alternative medicine products can decrease blood sugar levels of diabetic patients. [12] The effectiveness of alternative medicine products is beyond the scope of this study; however, when we evaluated levels of HbA1c as criteria of effectiveness of alternative treatments for diabetes,

lower HbA1c values were found in patients who used alternative medicine products. This outcome may indicate that patients who used alternative medicine products are more attentive to blood glucose regulation. In the present study, 81 patients used alternative medicine products. The most common choice, used by 19 patients, was nigella sativa. For better evaluation of alternative medicine products, prospective randomized studies should be performed with a larger number of patients comparing users and non-users of each product.

The results of the present study indicated that patients did not cease to use clinically prescribed drugs, adopting a complementary approach, and that users of alternative medicine products frequently discontinued use of the products in the event of any adverse effect or lack of beneficial effect, suggesting that patients still ultimately trust their physicians and clinical medicine more than alternative medicine.

Life-long treatment of DM is a challenge for patients. Living with the disease of diabetes, compliance with dietary therapy, performing regular blood glucose tests, and the compulsory, regular use of antidiabetic drugs can be very demanding. Patients often seek a quick cure, leading many to try alternative medicine. More detailed studies should be conducted on the effects and potential role of alternative medicine therapies in the context of diabetes regulation and treatment.

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