



The association between quality of life and complementary and alternative medicine use in patients with diabetes mellitus

Ali Candar, Hakan Demirci^{*}, Ayse Karalar Baran, Yakup Akpınar

Family Medicine, University of Health Sciences, Bursa Yuksek Ihtisas Training and Reseach Hospital, Bursa, Turkey

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ABSTRACT

Aim: In the current study, we aimed to evaluate the relationship between life quality and use of complementary and alternative medicine (CAM) in patients with diabetes mellitus.

Methods: The Audit of Diabetes-Dependent Quality of Life (ADDQOL-19) scale was applied to 453 diabetic patients. Socio-demographic characteristics of the patients and their CAM usage were recorded.

Results: The rate of CAM use among diabetic patients was 46.1%. The most preferred practices were herbal medicine, including black cummin (26.6%), cinnamon (23.3%) and olive leaf (12.5%). 'Freedom to eat' ($p = 0.002$), 'drinking freedom' ($p = 0.001$) and 'physical health' ($p = 0.001$) were the most negatively affected items that may drive patients to use CAM.

Conclusions: In this sampling, the use of CAM among patients with diabetes mellitus is high. The association between CAM usage and eating and drinking freedom and physical health should be studied in detail in further studies.

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1. Introduction

Diabetes Mellitus (DM) is a common public health problem around the world and its prevalence continues to increase [1–3]. The global prevalence of DM in adults was estimated to be 8.8% in 2015 and is predicted to rise to 10.4% in 2040 [4]. The high prevalence of diabetes in adults has many social and health care implications. Management of DM has a great impact not only on mortality and morbidity of the disease but also on quality of life of diabetic patients [4].

Dietary and lifestyle changes as well as oral antidiabetic agents, insulin and other modern evidence-based approaches are recommended for its treatment. On the other hand, complementary and alternative therapies are also popular among diabetic patients [5–8]. In studies conducted all over the world, CAM use was reported for more than two-thirds of the population [9–15].

It was shown that diabetics are 1.6 times more likely than non-diabetics to use CAM products [16]. Cinnamon, garlic preparations and fenugreek and multi-vitamins are herbal products commonly

used among diabetics and research continues on their hypoglycemic effects [17]. Body-mind practices like yoga and tai chi are also used by diabetic patients but their long-term effects on glycemic control are not satisfactory [18–20].

It has been proven in many studies that DM affects health-related quality of life negatively [21–24]. Chronic complications such as cardiovascular disease, peripheral neuropathy, vision problems, chronic renal failure and impotence, and acute complications such as hypoglycemia, hyperglycemia, obesity and intensive medical treatment are co-morbid conditions that may reduce the quality of life in these patients [25–27].

In previous studies, some of the causes leading to a search for alternative treatment in patients with diabetes mellitus were reported to be inadequate medical treatment, inability to obtain medication, pain, vaginal itching, poor living conditions and individual beliefs [28–30]. Changes in the quality of life are another reason why patients with DM seek for help. It was shown that CAM users had a lower total quality of life than those who did not use CAM. Individuals who used both CAM practices and products in the last 12 months had a life quality that was 3.4 percentage points lower than those who did not use CAM at all [31].

In the current study, we aimed to evaluate the association between life quality and CAM usage in patients with DM.

^{*} Corresponding author. Bursa Yuksek Ihtisas Eğitim ve Araştırma Hastanesi, Yıldırım, Bursa, 16310, Turkey.

E-mail addresses: alicandar42@saglik.gov.tr (A. Candar), hakan.demirci@sbu.edu.tr (H. Demirci), ayse.karalarbaran@saglik.gov.tr (A.K. Baran), yakupakpinar@saglik.gov.tr (Y. Akpınar).

2. Methods

We carried out this study with 453 diabetic patients aged 18 years and over who registered with the Bursa Yuksek Ihtisas Training and Research Hospital Education Family Health Center between February 2016 and July 2016. Nine patients were excluded from the study because they did not fully answer the questions. One patient refused to participate in the study. The subjects included in the study were 86.9% of the patients with DM who were registered at the family health center in the same period.

The inclusion criteria for the patients were as follows: being over the age of 18, having diabetes mellitus, volunteering to participate in the study, being able to answer the questions and not being pregnant or lactating. The Ethics Committee of Bursa Yuksek Ihtisas Training and Research Hospital approved the study.

In this study, a questionnaire form on the socio-demographic characteristics of patients, a questionnaire on the use of CAM for the treatment of diabetes mellitus and another questionnaire on assessment of the quality of life associated with diabetes (ADDQOL) were used.

The diabetes-related quality of life assessment scale is a DM-specific tool aimed to measure the feelings of people about the impact of diabetes [32]. In the analysis of the ADDQOL scale, for each of the 19 separate domains the impact (−3, +1) and the significance (0, +3) scores of the participants are multiplied (−9, +3) to obtain the weighted impact factor. The average weighted effect score is obtained by dividing the sum of the weighted effect scores applied for each field by the number of application areas. For items that cannot be applied to the entity, the “not applicable” option has been created, which does not affect the score of the person. Participants were asked to rate the current quality of life in general (between 3 and 3) in the 20th question, and the patients’ opinion on their quality of life (between −3 and 1) in the 21st question if they did not have diabetes.

2.1. Statistical analysis

The normal distribution suitability of the variables was examined by Shapiro Wilk test. Continuous variables are expressed as [median (minimum: maximum)] (mean) or mean ± standard deviation. Mann Whitney *U* test was used when two groups were compared according to the normality test result, and Kruskal Wallis test was used when the group number was more than two. When general significance was obtained after the Kruskal Wallis test, binary comparisons between groups were made using Mann Whitney *U* test. Categorical variables were compared between groups using chi-square test or Fisher’s exact chi-square test. The internal consistency of the scale was assessed by the Cronbach alpha coefficient and the Cronbach alpha value, which reflects the internal consistency of the ADDQOL Scale. The Cronbach alpha value was $\alpha = 0.904$ and the internal consistency of the scale was “good”. For statistical analysis, the SPSS program was used (IBM Corp. Released 2012. IBM SPSS Statistics for Windows, Version 21.0, Armonk, NY: IBM Corp.) and $p < 0.05$ was considered statistically significant.

3. Results

In this study, 38.4% of the patients were male and 61.6% were female. When we examined educational status, 11.9% of the participants were illiterate and 47.0% were primary school graduates (Table 1).

Complementary and alternative medical practices used by the participants are shown in Table 2. Among the CAM users, 73.7% of the respondents stated that they used herbal medicine, 9.1% used cupping and 5.7% used mind and body practices (Table 2). Also,

Table 1
Socio-demographic characteristics of the participants.

	Frequency (n)	Percent (%)
Gender		
Male	174	38.41
Female	279	61.59
Age (years)		
18–39	15	3.31
40–59	210	46.36
60–79	218	48.12
≥80	10	2.21
Education		
Illiterate	54	11.92
Literate	64	14.13
Primary School	213	47.02
Secondary School	40	8.83
High School	49	10.82
University	33	7.28
Economic Status		
Low	64	14.13
Moderate	261	57.62
High	128	28.26
Marital Status		
Married	366	80.80
Single	4	0.88
Divorced	83	18.32
Employment		
Housewife	234	51.66
Retired	140	30.90
Worker	28	6.18
Unemployed	22	4.86
Professional job	14	3.09
Other	15	3.31

Table 2
Distribution of complementary and alternative medicine practices used by the participants.

	Frequency (n)	Percent (%)
Herbal Medicine	154	73.68
Cupping	19	9.09
Mind and Body Practices	12	5.74
Leech (Hirudotherapy)	9	4.31
Religious and spiritual healing	8	3.83
Spa (Balneotherapy)	7	3.35

black cumin, cinnamon and olive leaf were the most commonly preferred herbal products (Table 3).

Table 3
Distribution of herbal products used by the participants.

	Frequency (n)	Percent (%)
Black cumin (<i>Nigella sativa</i>)	115	26.56
Cinnamon (<i>Cinnamomum verum</i>)	101	23.33
Olive leaf (<i>Olea europaea</i> L. folium)	54	12.47
Thyme (<i>Thymus vulgaris</i>)	27	6.24
Walnut (<i>Juglans nigra</i>)	27	6.24
Garlic (<i>Allium sativum</i>)	20	4.62
Onion (<i>Allium cepa</i>)	18	4.16
Garden sage (<i>Salvia officinalis</i>)	11	2.54
Flaxseed (<i>Linum usitatissimum</i>)	10	2.31
Cabbage (<i>Brassica oleracea</i> var. <i>capitata</i> f. <i>alba</i> .)	9	2.08
Blueberries (<i>Vaccinium myrtillus</i>)	5	1.15
Black mulberry (<i>Morus nigra</i> L.)	5	1.15
Fenugreek (<i>Trigonella foenum-graecum</i> L.)	5	1.15
Basil (<i>Ocimum basilicum</i>)	4	0.92
Mahaleb cherry (<i>Prunus mahaleb</i>)	3	0.69
Blackberry (<i>Rubus fruticosus</i>)	3	0.69
Artichoke (<i>Cynara scolymus</i> L.)	3	0.69
Cultivated Mushroom (<i>Agaricus Biporus</i>)	3	0.69

Note: Some of the participants were using more than one product.

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