



**Prevalence and Pattern of Traditional and Complementary Alternative Medicine Use in
Diabetic Patients in Dubai, UAE**

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Abstract

Background: The current study explored the prevalence and pattern of traditional and complementary alternative medicine (TCAM) use, its perceived benefits and possible impact on health outcomes amongst diabetics in Dubai, UAE.

Objectives: Diabetes is highly prevalent in the UAE, with diabetics potentially not complying with the prescribed conventional medicines, or preferring to use of traditional and complementary alternative medicines. The current study therefore sheds light on these two areas.

Methods: A descriptive cross-sectional pilot study was conducted in 4 healthcare facilities in Dubai using quantitative data collection methods. Using a systematic random sampling method, 145 diabetic participants completed a self-reported questionnaire. Measures in the questionnaire included traditional and complementary alternative medicine use, and perceived benefits. SPSS version 21 was used for result analysis. Chi-square test was used to confirm significance amongst various groups.

Results: Amongst 145 diabetic participants recruited, 66.9% were female, and 57.9% had undergraduate degree. Majority of participants (95.2%) had type II diabetes. Participants age was between 20 to 79 years. The prevalence of TCAM use amongst the participants was 21.4%, with the majority of users being female (27.8%). TCAM use was more common amongst housewives (28.6%). None of the TCAM users had the intervention prescribed by a health specialist, and the majority (51.6%) used it for the purpose of slowing the progression of the disease. More than half (58.1%) of TCAM users reported receiving the desired effect, and 77.4% used TCAM in combination with the prescribed conventional medicine.

Conclusion: The current study confirmed the un-prescribed use of TCAM amongst participants in Dubai, UAE. Further studies are required to elaborate on the interaction between TCAM and prescribed conventional medicines.

Keywords: Alternative Medicine, Diabetes Mellitus, Traditional Therapies, Herbs

Introduction

Traditional medicine is defined by the World Health Organization (WHO) as a set of knowledge; skills and practices integrated to different cultures, and is used in healing and maintenance of health. Complementary Alternative Medicine (CAM) is not linked directly to traditional medicine of some countries, nevertheless, it encompasses practices that aim to improve and maintain health (WHO, 2015). Examples on traditional and complementary alternative medicine (TCAM) varies from herbal remedies, acupuncture, hijama to traditional Indian and Chinese medicines (Haad, 2015).

Diabetes mellitus is becoming a major public health issue worldwide due to its high prevalence, and its association with other health complications. Recent International Diabetes Federation figures revealed that 382 million people in the world live with diabetes, and this number is projected to increase to 592 million by 2035 (International Diabetes Federation, 2015). In United Arab Emirates (UAE), approximately 19% of the population are living with diabetes, and this number is projected to elevate to 32% by 2020 (Diabetesuae, 2015). The socio-economic changes that occurred have encouraged a sedentary lifestyle, and increased obesity rates. The preceding factors are considered main contributors to the development of diabetes, and are preventable. Diabetes management requires constant self-care. This involves adherence to components of the treatment plan which includes following a healthy diet, being physically active, and receiving anti-diabetic medicines.

Evidence points out to an increasing number of individuals using traditional and complementary alternative medicine as a mode of disease management, including diabetes (Eisenberg et al., 1998). This may have serious implications on the patient's health when taken with conventional medical treatments, or when patients abandon the conventional treatments in

favor of TCAM. The National Center for Complementary and Alternative Medicine reported that several dietary supplements proved to be ineffective in treating diabetes, and were linked to side effects such as hypoglycemia and kidney problems. Amongst them were chromium supplements used in controlling diabetes, which were shown to have side effects such as kidney disease and muscular problems. Herbal medicines like cinnamon have no clear benefits for diabetics. Nonetheless, it can lead to liver disease, and hemorrhage due to interaction of coumarin substance in cinnamon with blood thinners (NCCAM, 2015).

Objectives

Data is sparse regarding the usage of traditional and complementary alternative medicine amongst diabetics in the UAE. To provide preliminary data for further studies, we set out to investigate the prevalence and the pattern of traditional and complementary alternative medicine use amongst diabetes patients in Dubai, to determine the perceived benefits of TCAM, and to determine the health outcomes.

Methods

Study design and settings

This descriptive cross-sectional pilot study was conducted in 4 healthcare facilities in Dubai, UAE. Similar studies had been conducted in other Emirates of the UAE. We therefore decided to conduct the study in Dubai due to the differing cultural map compared to the other Emirates. The study used a questionnaire as a quantitative method for data collection. Chosen healthcare facilities were informed about the study through official e-mails, based on their request. Ethical approval was obtained from the Zayed University Ethics Committee and the healthcare facilities. An inclusion criterion was participants using TCAM on a daily basis. Furthermore, consent form was signed by patients. After signing the consent, the researcher provided patients with

instructions. Questionnaires were completed in the waiting area without the presence of the researcher or the health specialist.

Population and sampling

The pilot study participants consisted of 145 diabetic patients out of 385 sample size calculated using the following equation, $\text{Sample Size} = (Z\text{-score})^2 * \text{StdDev} * (1 - \text{StdDev}) / (\text{margin of error})^2$, with 95% confidence level, 0.5 standard deviation, and 0.05 confidence interval.

Out of 145 participants, 66.9% were females and 33.1% were males. Patients age group was between 20 to 79 years, and those under 18 years were excluded from the study. The onset of diabetes starts at age of 18, and peaks from 20 to 79 years of age (Haad, 2015). All participants were UAE nationals. The study involved patients with type I and type II diabetes, excluding pregnant women with diabetes.

The method of sampling employed was systematic random sampling. Appointment list was obtained from the participating healthcare facilities to determine the number of appointments in the designated days. Every fifth patient was asked to take part in the study voluntarily.

Instrument

The research instrument was developed by the researchers, based on previous literatures by Naja et al., (2014) and Wazaify et al., (2011). The questions were approved by health specialists. The questionnaire was translated to Arabic to avoid language barriers. It was piloted on 10 diabetic members of the community. The results of the pilot study were excluded from the study analysis.

Measures

Traditional and complementary alternative medicine

Patients were asked if they utilized TCAM as a mode of diabetes management. The responses provided were: (yes/no). If the participants response was yes, then they were asked to specify whether it was prescribed by health specialist, and if they used it in addition to the conventional medicines. Moreover, participants reported reasons for taking TCAM.

Perceived benefits

Patients were asked if they experienced benefits from TCAM usage. The responses were: (yes/no). They were then asked in a self-reported question if they experienced any complications that were associated with TCAM.

Data Analysis

Data was analyzed using SPSS program version 21. Chi-square analysis test was used to test for any significant differences between groups. Level of significance was set at p-value less than 0.05.

Results

Demographic Characteristics

Table 1 summarizes the demographic characteristics of the research participants, and the frequency of using TCAM. Out 145 participants 21.4% use TCAM. Majority of participants were females (66.9%), out of which they constituted the majority of TCAM users (27.8%). Significance difference was observed between both genders with relation to TCAM use ($p=0.009$). More than half of participants (57.9%) had undergraduate degree, 20% had high school certificate, and 20.7% of participants had no formal education. The highest frequency of utilizing TCAM was amongst participants with a high school certificate (27.6%) followed by

ones with an undergraduate degree (26.2%). The vast majority of participants had type II diabetes (95.2%). Participants age range was 20 to 79 years old. Around (39%) of participants were housewives, and they had the highest frequency of TCAM usage (28.6%). Similarly, 28% of TCAM users were employees. Significant difference was found between housewives and self-employed participants ($p= 0.029$), Table 1.

Table 1- Demographic Characteristic of the Research Participants (n=145)

Characteristics		Number	Percent (%)	Utilizing TCAM Number (%)	P-value
Gender	Male	48	33.1	4 (8.3)	$P=0.009$
	Female	97	66.9	27 (27.8)	
Education Level	No formal education	30	20.7	1 (3.3)	*
	High school	29	20.0	8 (27.6)	
	Undergraduate degrees	84	57.9	22 (26.2)	
	Postgraduate degrees	2	1.4	0	
Type of Diabetes	Type I	7	4.8	0	*
	Type II	138	95.2	31 (22.5)	
Age group	20-29	27	18.6	2 (7.4)	*
	30-39	32	22.1	5 (15.6)	
	40-49	38	26.2	16 (42.1)	
	50-59	30	20.6	7 (23.3)	
	60-69	14	9.7	1 (7.2)	
	70-79	4	2.8	0	
Employment Status	Employee	50	34.5	14 (28.0)	$P=0.026$
	Self-employed	24	16.5	1 (4.2)	
	Retired	3	2.1	0	
	Housewife	56	38.6	16 (28.6)	
	Student	12	8.3	0	

*No significant difference

Pattern of TCAM Use

Table 2 shows the pattern of use of TCAM by diabetics. All TCAM users amongst the study participants stated that they utilize TCAM without a prescription from the diabetes health

specialist. The most prominent reason for using TCAM was its effect in slowing the progression of the disease (51.6%), followed by its perceived safety in comparison to conventional medicines (32.3%). Amongst users of TCAM, 41.9% reported that they did not get the desired effect. However, the 58.1% received the desired effect stated that they had recommend the remedy to other diabetics. Most of TCAM users said that they take it in addition to the prescribed conventional medications (77.4%), while 22.6% said they have abandoned the conventional medicine because TCAM was safer. Some of the common negative health outcomes reported by the users were hypoglycemia, fatigue, slow heart rhythm, kidney damage, and impotence.

Table 2- Pattern of Use of TCAM by Diabetic Patients		
Characteristics		Percent (%)
Is the TCAM prescribed by Diabetes Health Specialist?	No	100.0
Why do you use TCAM?	Slows the progression of the disease.	51.6
	Treats complications of diabetes.	16.1
	Safer compared to conventional medicines.	32.3
Did you receive the desired effect?	Yes	58.1
	No	41.9
Did you take TACM with the conventional medicine?	Yes	77.4
	No	22.6

Discussion

Popularity of traditional remedies as well as complementary and alternative medicines is indigenous in the Middle East region, and the UAE is no different to that. The predominant

reason for this popularity is the belief that TCAM is natural, thus safer. However, use of TCAM in conjunction with conventional drugs can have adverse consequences due to possible interactions with drugs, or lack of evidence of safety (WHO, 2015).

This current study revealed that 21.4% of diabetics had used TCAM. The utilization of TCAM was significantly associated with demographic variables such as gender, and employment status. TCAM was widely used amongst females and housewives, 27.8% and 28.6% respectively. Similar studies conducted in several Middle Eastern countries showed supporting results. Wazaify et al., (2011), Al-Saeedi et al., (2015), Shtayeh et al., (2011), Al-Kindi et al.,(2011), Naja et al., (2014) and Al-Asadi et al., (2015) have shown that the prevalence of TCAM use amongst diabetic patients in the studied-countries was high, yet the percentages varied. This can be attributed to different definitions of TCAM used in the studies. A study conducted in the United States (USA) also showed that diabetics are 1.6 times more likely to use TCAM compared to non-diabetics (Egede et al., 1998). In Jordan, Saudi Arabia and Palestine , Wazaify et al., (2011), Al-Saeedi et al., (2015), and Shtayeh et al., (2011) have shown that 18.1% ,33% and 51.9% of diabetic patients reported using TCAM respectively, and the users were predominantly females. Although our study results didn't show significant association with level of education, TCAM use was more common amongst participants with holders of high school certificate and Undergraduate qualifications. This result was consistent with both studies conducted in USA and Lebanon. The study in Lebanon was conducted to assess the prevalence and methods of TCAM use amongst diabetics. Out of 333 patients, 26.3% of high school holders and 26.0% of university level degree holders use TCAM (Naja et al., 2014).This can be explained by the fact that people with higher education might be interested in updating their information about trendy methods used to improve the management of diabetes.

Alarmingly, all TCAM users in our study reported taking it without the prescription or supervision of the diabetes health specialist. This result was consistent with another study conducted in the Emirate of Ajman in the UAE, where 71.8% of the TCAM use was not through physician prescription or supervision (Mathew et al., 2013). Similar finding was seen in the study conducted in Palestine. Out of 1883 patients assessed, 68% did not refer to the physicians for prescription or supervision on TCAM use (Shtayeh et al., 2011).

Furthermore, the majority of TCAM users in the current study reported using it together with the conventional drugs. However, 22.6% reported using TCAM as a replacement for conventional drugs. The main reason provided was their belief that TCAM was safer and more effective compared to conventional drugs. Almost similar rate of diabetics abandoning the conventional drugs was seen in Lebanon (20%) (Naja et al., 2014). The most prominent reason provided to use TCAM in the current study was that it slows the progression of the disease. Similar result was observed in Palestine where 45.7% reported using TCAM to slow the progression of diabetes (Shtayeh et al. 2011). Nonetheless, this study in addition to others showed that majority of TCAM users were satisfied with the results (Shtayeh et al., (2011), Al-Kindi et al.,(2011), Naja et al., (2014), Al-Asadi et al.,(2015), Mathew et al.,(2013). Despite that, special attention has to be given to those experiencing diabetes side effects. In the current study, some TCAM users reported side effects such as hypoglycemia, fatigue, slow heart rhythm, kidney damage, and impotence. Such conditions are of particular concern as diabetes is the leading cause of many chronic diseases including chronic kidney disease; which can progress to kidney failure (NCCAM, 2015).

Due to the limited sample size, further studies are required to acquire sufficient knowledge on the prevalence and pattern of TCAM use amongst diabetic patients in the UAE. The

information can be used to develop clear guidelines on the use of TCAM in the UAE. It can also be incorporated in clinical practices, and highlighted by diabetes health specialists when disseminating educational information. Further studies are also required to elaborate on the possible physiological and molecular mechanisms of action of TCAM, detailing their active constituents and the relationship of that to potential specific benefits.

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