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Research paper

Herbal medicine use among patients with type 2 diabetes in Kashan, Iran, 2015

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ABSTRACT

Introduction: Despite the increased use of complementary medicine by diabetic patients, there is no clear estimation of complementary and herbal medicine use by these patients in Iran. This study was conducted to investigate the uses of herbal medicine among patients with type II diabetes in Kashan, Iran, in 2015.

Methods: A cross-sectional study was carried out on 500 patients with type II diabetes referred to two diabetes clinics in Kashan city from June to September 2015. A questionnaire developed and validated by the researcher was used for data collection. In addition to demographics and disease-related information, the instrument included questions about using herbal medicine and patients' satisfaction of the herbs used. Descriptive statistics, Chi-square and Fisher's exact tests were used to analyze the data.

Results: Of the 500 patients, 54% used at least one herb. The most common herb used was cinnamon (24%). The majority of patients used herbs on a daily basis (56.9%). Relatives or friends (65.9%) were the main information sources that guided patients toward using herbs. Using herbal medicine was significantly associated with education level (P = 0.01) and the place of residence (0.009).

Conclusions: Herbal medicines are commonly used by patients with type 2 diabetes. Therefore, it is crucial for physicians and nurses to communicate with their patients with diabetes regarding their use of herbs.

1. Introduction

Diabetes mellitus is the fastest growing chronic disease and a major international health problem with serious complications [1]. Its worldwide prevalence was approximately eight percent in 2011 and is predicted to be more than 10 percent in 2030. In 2013, the prevalence of diabetes in the Middle East countries varied from 23.9% in Saudi Arabia to 7.4% in Iraq [2]. In Iran, 7.7% of adults in the age range of 25–64 years (2 million adults) lived with diabetes in 2005 [3]. It is also estimated that 16.8% or 4.4 million of Iranian adults have impaired fasting glucose, and 70% of them will eventually develop diabetes [3,4]. The type II diabetes accounts for more than 95% of all cases of diabetes mellitus and results in complications such as blindness, nephropathy, neuropathy, vascular problems, diabetic foot ulcers and premature death [1,5]. Given the many complications of diabetes, its long-term control is a great challenge for patients and health care systems [6].

Diabetes management needs long-term use of health care services to manage patients' physical and emotional needs [7]. Lifestyle modification, exercise, nutrition, oral medications and insulin therapy are among the management methods for type II diabetes [8].

Given the increasing number of patients with diabetes, health care systems are unable to provide adequate health care to these patients. The inadequacies in health services and treatment failure for patients with chronic diseases such as diabetes has disappointed many patients and has led them to use alternatives [9–12]. Moreover, people believe herbal medicine is safe and free of side-effects which has increased their enthusiasm [13].

Despite the facts about increasing use of complementary medicine by diabetic patients, no clear estimation exists on the use of complementary and herbal medicine by these patients in Iran. Most of the studies on the use of complementary and herbal medicine have been conducted on the general population in other countries. Although studies on the prevalence of complementary medicine use are not directly comparable across countries and surveys because of differences in research methods, local definitions and types of methods used [14]. It is estimated that one out of three people use some type of complementary therapy for common medical problems such as back pain, anxiety and depression [15]. For instance, it is reported that in the United States (US) and Europe, estimates are 50% and 40% respectively [16–18].

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Also, studies in Middle East countries have shown that a large number of people use complementary therapies including herbal medicines. For instance, in Saudi Arabia 82.6% of people with digestive system problems [19] and 42.3% of those with neurological disorders [20] use herbs for their disorders. A study in Egypt also showed that 82% of people used complementary therapies; herbal products, spiritual healing, cupping and acupuncture being the most common, but herbs consisted of 92% of the complementary therapies used [21]. In Turkey 55.4% of the general population reported using herbal medicines [22]. In another study, nutritional remedies, herbal remedies and physical methods were the most common complementary therapies used by Qatari women [23]. Adib-Hajbaghery and Hoseinian have also investigated the knowledge, attitude and practice of complementary and traditional medicine among a sample of Iranian health care staff and reported that herbal medicine, cupping, massage therapy, and meditation were the most common complementary therapies used by Iranian health care providers [24]. Overall studies have shown that herbal medicine is one of the most common alternative used among the general population [25] and for patients with diabetes [26]. However, no studies are available on the use of herbal medicine among patients with type II diabetes in Kashan, Iran.

Assessment of how patients use complementary therapies (i.e. herbal medicine) is the first step toward identifying the situation and planning strategies to promote the safe use of these methods and to prevent or reduce the possible side effects and unwanted consequences. Therefore, this study aimed to investigate the prevalence of herbal medicine use among patients with type II diabetes in Kashan, Iran, in 2015.

2. Methods

A cross-sectional study was carried out on 500 patients with type II diabetes registered at Golabchi and Naqavi diabetes clinics in the Kashan city from June to September 2015. Inclusion criteria included: agreeing to participate in the study, having had a diagnosis of type II diabetes for at least 6 months, aged over 18 years, able to speak and read in Farsi language. In a previous study, Badreldin et al. reported that 58% of patients with diabetes used herbs [27]. Using this data a sample size was calculated and it was estimated that of 375 patients would be required ($z = 1.96$, sampling error = 0.05, $P = 0.58$). However, 500 people were recruited into the study in case of dropout and to allow for incomplete questionnaires and ensure the validity of the results. A systematic random sampling method was used to select the 500 people (every 5th patient) from the list of 2500 patients who were registered at the abovementioned clinics.

2.1. The study instrument

A two-part questionnaire developed and validated by the researcher was used for data collection. The first part included 10 questions on patients' demographic characteristics and disease-related information including age, gender, education level, place of residence, marital status, income, disease duration, type of medical treatments, complications experienced due to the disease, and the frequency of blood glucose checking. The second part included questions about using herbal medicine (i.e. the history of using herbal medicine, type of herbs used, the reason for using the herbs, duration and frequency of usage, the perceived effectiveness of the herb used, likeyhood of using herbs in the future, and informing the doctor about using herbs. A five-point Likert scale question (1 = very little to 5 = very much) also asked about the patients' satisfaction of the herbs used. The patients were also asked if they have used and then discontinued using herbs, and if so, they were asked to write the reason. The questionnaire was designed through literature review, and its content validity was confirmed by 10 nursing and medical faculty members in Kashan University of Medical Sciences. The reliability of the instrument was also assessed through test-retest method. To this end, fifteen patients with type II diabetes answered the questionnaire twice in two weeks interval. Then, the Kappa agreement coefficient was calculated as 0.86.

After obtaining ethical approval for the study and permission from the hospital authorities, the files of diabetic patients who were registered either in the Golabchi outpatient diabetes center or in the diabetes clinic of Naqavi hospital were reviewed and a list was prepared from the names and the telephone numbers of type II diabetic patients matching the inclusion criteria. Then, using a systematic random sampling method and an electronic random number table, 500 patients were randomly selected to be invited to participate in the study. Telephone contact with the selected patients was made and after explaining the study objectives, they were invited to participate in the study. If there was no response left, and the call repeated three times a day, for up to four consecutive days. If possible, a message (including a telephone number) was left and the patient was asked to contact the researcher if interested. If a patient did not agree to participate or if they did not respond to the calls, another patient with inclusion criteria was replaced using the same method. A total of 570 patients were contacted. Patients who agreed to participate in the study were invited to attend the concerned clinic to respond to the questionnaire. All patients answered the questionnaire in a private setting in the concerned clinic. If a patient was illiterate or semi-literate the questionnaire was completed through an interview. The third researcher read the questions to each patient and then recorded the patient's answers in the questionnaire.

2.2. Ethical considerations

The study protocol and its ethical considerations were approved by the institutional review board and the research ethics committee of the Kashan University of Medical Sciences (Grant No: 9451, Ethical approval code: IR.KAUMS.REC.1393.51). Permissions were also sought from the authorities in the study settings. All patients were briefed about the study aims and they all signed a written informed consent before participation. They were also assured of their anonymity, data confidentiality, voluntary nature of their participation, and the right to withdraw from the study at any time. Moreover, to observe the patients' confidentiality, all copies of the questionnaire were kept anonymous and no personal details of any patient included in any part of the article and in any supplemental materials. Researchers were also committed to observing the participants' rights in accordance with the principles explained in the Declaration of Helsinki.

2.3. Data analysis

Data analysis was performed using SPSS version 11.5. Descriptive statistics (mean, standard deviation, percentage, frequency) were computed for all variables. Chi-square and Fisher's exact tests were also used to examine the relationship between using herbal medicines and patients' characteristics such as age categories, gender, marital status, income, education level, and place of residence.

3. Results

Of the 570 patients contacted, a total of 500 agreed to participate giving a response rate of 87.7%. Of these patients, most were women (71.2%), married (89%), illiterate (37.8%), urban

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