Complementary and alternative medicine use by diabetic patients in rural Bengaluru

Vidya K. R.¹, Lohit K.²*

¹Department of Community Medicine, ²Department of Pharmacology, Sri Sidhartha Institute of Medical Sciences, T. Begur, Bangalore, Karnataka, India

ABSTRACT

Background: Complementary and alternative medicine (CAM) use is common among patients with chronic diseases in developing countries. The rising use of CAM in the management of diabetes is an emerging public health concern given the potential adverse effects, drug interactions and benefits associated with its use. The main objective of this study is to determine the prevalence regarding complementary and alternative medicines among diabetic patients and to assess the perception and factors influencing use of complementary and alternative medicines among diabetic patients.

Methods: A community based cross sectional study including diabetic subjects aged more than 18 years was conducted in the rural area of Bengaluru Expecting the prevalence of CAM use to be 67% as with Kumar et al, a minimum of 136 subjects were required to conduct study. Data from 150 diabetic subjects were collected during house to house visit in rural area by using a pre structured questionnaire. Diabetic subjects were randomly selected using multi stage random sampling method.

Results: Most of the participants (80%) were aware of CAM and prevalence of CAM use was 54.6%. Significantly the use of CAM was more among females, literates, with diabetic complications and with family history of DM. The common source of information on CAM was friends (45.8%) and neighbors (25.8%). Desire for the quick and additional relief, low cost and easy availability was the prime factors influencing use of complementary and alternative medicines.

Conclusions: The prevalence of CAM use among diabetic patients is high. Physicians need to understand CAM better and communicate more with patients.

Keywords: Complementary and alternative medicine, Diabetes mellitus, Rural Bengaluru

INTRODUCTION

Diabetes is a major health problem worldwide and the burden is increasing globally, particularly in developing countries. The use of complementary and alternative medicine (CAM) is widespread with a major reason for use being chronic conditions like diabetes mellitus. CAM is defined as a group of diverse medical and healthcare systems, practices, and products that are not generally considered part of conventional western medicine.¹,² CAM use can be divided into five categories: biological based therapies like herbal and dietary supplement; alternative medical systems like acupuncture or ayurveda; energy therapies like Reiki; manipulative and body-based systems like chiropractic or massage; and mind-body interventions like tai chi or yoga.³
The rural population in India is heavily dependent on traditional medical system. Since there is limited number of studies on the use of CAM among patients with diabetes mellitus (DM), particularly in rural settings, our study was conducted with the objectives such as to determine the prevalence regarding complementary and alternative medicines among diabetic patients and to assess the perception and factors influencing use of complementary and alternative medicines among diabetic patients.

METHODS

A community based cross sectional study was conducted in the rural area of Bengaluru, Ittamadu, after obtaining the institutional ethics committee approval. Expecting prevalence of CAM use to be 67% as with Kumar et al and to get 95% confidence level and relative precision of 12%, design effect of 1.5, a minimum of 136 subjects were required. Data was collected from the diabetic subjects by interview method during house visit in rural area by using a pre structured questionnaire. Study was conducted from May 2014 to August 2015.

All individuals aged more than 18 years of age, permanent residents, who were present on the day of survey were included in the study. Those individuals who were not willing to participate in the study were excluded. Multistage Random Sampling Technique was done to select participants. The rural field practice area covering a population of 10,911 (Primary Health Care (PHC) record 2014) with 19 villages was selected. For the required sample size of 136 people from entire population, a minimum of 136 subjects were required. Most of the participants (80%) were aware of CAM and prevalence of CAM use was 38%. The common source of information on CAM was friends (45.8%) and neighbours (25.8%) (Figures 1 and 2).

Villages in each stratum were arranged according to alphabetical order. Using lottery method, one village was selected by random in each stratum. From the center of the village using a currency note the street was selected. In that street by tossing a coin, side of the street was selected. Houses were numbered in that selected side of street. Then the first house was selected using a random number from currency note, then selected house in that particular street was visited and adults in that house were included in the study and the process was continued till the required sample from that particular stratum was reached.

Once the household was selected, study subject was explained about the purpose of the study, an informed consent was obtained from each individual prior to administering the semi-structured questionnaire using Interview method. Ethical clearance was obtained before conducting the study from the institutional Ethical Committee.

Data collected was entered in Microsoft excel sheet and analysed using Statistical Package for Social Sciences software version 20.0.0.

RESULTS

A total of 150 diabetic subjects were included and the mean age of the study participants was 55.55±10.8 years. Majority of the study subjects (54%) were females and 86% were Hindu by religion (Table 1).

Most of the participants (80%) were aware of CAM and prevalence of CAM use was 38%. The common source of information on CAM was friends (45.8%) and neighbours (25.8%) (Figures 1 and 2).

Table 1: Socio demographic characteristics of study subjects (n=150).

| Characteristics       | Frequency | %     |
|-----------------------|-----------|-------|
| Gender                |           |       |
| Male                  | 69        | 46    |
| Female                | 81        | 54    |
| Educational status    |           |       |
| Not literate          | 36        | 24.0  |
| Primary               | 26        | 17.4  |
| Secondary             | 40        | 26.6  |
| High school           | 10        | 06.7  |
| Intermediate          | 37        | 24.6  |
| Graduate              | 01        | 00.7  |
| Religion              |           |       |
| Hindu                 | 129       | 86    |
| Muslim                | 21        | 14    |

Most of the participants (80%) were aware of CAM and prevalence of CAM use was 38%. The common source of information on CAM was friends (45.8%) and neighbours (25.8%) (Figures 1 and 2).
Others included Television, radio, news paper.

Herbs and dietary products were the most commonly used CAM followed by ayurveda. Majority of the diabetic patients were using CAM along with allopathy and 15.8% of patients were using CAM alone for their diabetes management (Table 2).

Desire for the quick and additional relief was the most common reason for the use of CAM followed by low cost and easily availability of CAM (Figure 3).

Among all users, 50 (41.6%) were willing to recommend these therapies to others. Disappearance of symptoms was perceived by 40% of CAM users, followed by 35.8% perceived no changes in their symptoms. Use of CAM perceived by 40% of CAM users, followed by 35.8%

| Characteristic                  | UOR 95% CI |
|--------------------------------|------------|
| Age                            |            |
| <50 years                      | Ref 0.32-1.63 |
| >50 years                      | 0.73       |
| Gender                         |            |
| Male                           | Ref 1.09-3.89 |
| Female                         | 2.39       |
| Education                      |            |
| Not literate                   | Ref 1.12-4.32 |
| Literate                       | 1.79       |
| Family history of DM           |            |
| Absent                         | Ref 1.08-3.24 |
| Present                        | 1.89       |
| Complications                  |            |
| Absent                         | Ref 1.09-3.04 |
| Present                        | 1.89       |
| Duration of DM                 |            |
| <10 years                      | Ref 0.01-2.04 |
| >10 years                      | 0.69       |

UOR: unadjusted odds ratio; CI: confidence interval; DM: diabetes mellitus.

*Difference b/w groups found to be significant.

DISCUSSION

Complementary and alternative medicine (CAM) is a very broad term encompassing what has variously been described as “indigenous”, “natural”, “traditional”, “oriental”, “holistic”, “unconventional”-essentially what is not “allopathic”, “mainstream”, “orthodox” or “western”.1

India has a very vast history of multiple system of health care practice. It is known for its diversity in religious practices. The rural India which comprise of majority of the diabetes patients are known to get affected by their beliefs, traditional approach for their health management. There is a prime importance to know the various CAM practiced by them which will help the policy makers in targeting the policies and also assisting the DM patients with health care needs.

In this study, the diabetic patients of all ages and socioeconomic groups were considered. The majority of the patients were from lower and middle class family and it is as expected in rural area.

In our study, 54.6% of the patients ever used CAM and 38% of patients were currently on CAM. Disappearance of symptoms for which they use CAM were perceived by 40% of the users and 35.8% perceived no changes in their symptoms. Bulk of the patients 56.7% used CAM for their desire to quick and additional relief. The perceived benefits from the CAM and for which symptoms it was used needs to be investigated. Similar to Nahin et al, 21.7% used CAM because of low cost and easily availability and 19% used CAM because their perceived belief of no side effects. Interestingly 2.3% of them lost hope in the conventional medicines and used CAM. This finding is contrary Nahin et al where 20.13% believed conventional treatments did not help. These findings...
The use of CAM was significantly more among females, literate subjects with diabetic complications and with family history of DM. Similar findings were found in south Carolina study that Individuals with high school education and higher were 2.4 times more likely to use CAM than those who had not completed high school. Most patients preferred to take advice regarding CAM use from their friends, neighbours and relatives. The finding is similar to Singapore study and this could be due to the fact that most allopathic medical practitioners either discouraged CAM or were unaware of its benefits. The influence of media is minimal. Interestingly 41.6% were willing to recommend these therapies to others because of their beneficial effects. The effectiveness of these CAM need to be tested as around 40% felt benefits from CAM and are willing to recommend others. Similar findings found in Malaysia study that 44.7% believed that they had attained good or very good health status because of CAM use.

The majority of patients used Herbs and dietary products followed by ayurveda, naturopathy and homeopathy. The least used CAM was acupressure. These findings were contrary to Singapore study. Acupressure use at lower rate is justifiable as it is not commonly practiced in India.

**CONCLUSION**

This study results demonstrate that diabetics with more complications and family history are more likely to use CAM independent of sociodemographic factors. The common reason to use CAM is quick and additional relief from diabetes complications. Modifications in diet, food habits, ayurveda and naturopathy are the most preferred CAM in rural India.

**Recommendations**

**Investigators**

Further studies are required to determine if CAM therapy, either alone or in combination with conventional approaches, actually improve clinical outcomes of diabetes. Knowledge of these specific patterns of use may contribute to tailoring health education programs for diabetes.

**For policy makers**

General awareness and education regarding the different types of CAM practice pertaining to that region, reduction of the cost and easy availability of medicines will help the people to utilize evidence based medicines.

**For health care providers / medical practitioners**

The conventional/allopathy therapy can be further improved by targeting the patients additional symptoms other than blood sugar management and patient counselling regarding benefits and harm of CAM.

**Funding:** RSSDI

**Conflict of interest:** None declared

**Ethical approval:** The study was approved by the Institutional Ethics Committee

**REFERENCES**

1. What Is Complementary and Alternative Medicine? Available at http://cim.ucdavis.edu/clubs/camsig/whatiscam.pdf. Accessed 8th January 2016.

2. Traditional Medicine Growing Needs and Potential - WHO Policy Perspectives on Medicines, No. 002, May 2002. Accessed on 8th January 2016 Available at http://apps.who.int/medicinedocs/en/d/Js2293e/. Accessed 8th January 2016.

3. Barnes PM, Powell-Griner E, McFann K, Nahin RL. Complementary and alternative medicine use among adults. United States, 2002. Adv Data. 2004;343:1–19.

4. Kumar D, Bajaj S, Mehrota R. Knowledge, attitude and practice of complementary and alternative medicines for diabetes. J Royal Institute Public Health. 2006;12(2):705-11.

5. Lim MK, Sadarangani P, Chan HL, Heng JY. Complementary and alternative medicine use in multiracial Singapore. Complement Ther Med. 2005;13:16-24.

6. Nahin RL, Byrd-Clark D, Stussman BJ, Kalyanaraman N. Disease severity is associated with the use of complementary medicine to treat or manage type-2 diabetes: data from the 2002 and 2007 National Health Interview Survey. BMC Complement Altern Med. 2012;12:193.

7. Egede LE, Ye X, Zheng D, Silverstein MD. The Prevalence and Pattern of Complementary and Alternative Medicine Use in Individuals With Diabetes. Diabetes Care. 2002;25(2):324-9.

8. Shahzad SH, William CW, Keivan A, Syed IA, Nadeem IB. Reasons, perceived efficacy and factors associated with complementary and alternative medicine use among Malaysian patients with diabetes mellitus. Br J Diabetes Vascular Dis. 2011;11:92-8.

**Cite this article as:** Vidya KR, Lohit K. Complementary and alternative medicine use by diabetic patients in rural Bengaluru. Int J Community Med Public Health 2019;6:4863-6.