Original Research Article

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Complementary and alternative medicine use by diabetic patients in rural Bengaluru

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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.⁴ 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, all the villages coming under primary health center of Ittamadu were enlisted, then villages were divided into three different strata based on sub-center. Using stratified random sampling method, sample to be studied from each stratum was calculated.

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).

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

Characteristics	Frequency	0/0
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).

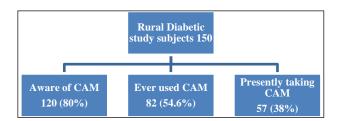


Figure 1: Distribution of study subjects based on complementary and alternative medicine use.

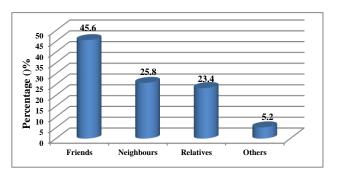


Figure 2: Source of knowledge regarding complementary and alternative medicine.

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 was more among females, literates, with diabetic complications and with family history of DM and the difference between proportions of the participants using CAM was found to be statistically significant (Table 3).

Table 2: Type and method of complementary and alternative medicine use (multiple answers) (n=82).

	Frequency	%
Type of CAM		
Herbs and dietary products	82	68.3
Naturopathy	32	26.6
Ayurveda	72	60.0
Acupressure	01	00.8
Homeopathy	25	20.9
Method of use		
Only CAM	19	15.8
CAM + allopathy	88	73.3
CAM + diet control + exercise	11	09.2
CAM+ diet control + exercise + allopathy	2	01.7

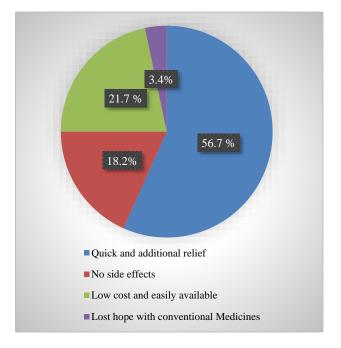


Figure 3: Reasons for using complementary and alternative medicine.

Table 3: Factors affecting complementary and alternative medicine use

Characteristics		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
	>10years	0.69	

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

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".

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

^{*}Difference b/w groups found to be significant.

suggest that the patients of rural India believes in the usefulness of conventional therapy and it is required to further evaluate the type and usefulness of CAM with respect to each clinical features by targeting the patients additional symptoms other than blood sugar management, reducing the cost and easy availability of medicines.⁶

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.⁷ 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.⁵ 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.8

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.⁵ 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 reliefs 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.

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Conflict of interest: None declared

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

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