



## USE OF COMPLEMENTARY AND ALTERNATIVE MEDICINE AMONGST DIABETICS: A CROSS-SECTIONAL STUDY IN A TERTIARY CARE HOSPITAL

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### ARTICLE INFO

### ABSTRACT

#### Key Words

Complementary and alternative medicine, CAM, Diabetes mellitus.

**Background:** Diabetes mellitus is a major cause of morbidity and mortality worldwide. Despite advances in the management of diabetes, therapeutic targets are often not met. People dissatisfied with conventional medicine often turns to non-traditional alternatives. Complementary and Alternative Medicines (CAM) are a group of remedies that is fast gaining acceptance among individuals. Therefore; the aim was to study the pattern of CAM use amongst Diabetes. **Methods:** The study was done in patients attending diabetic OPD of a Tertiary care hospital over a period of 6 months. Patients who gave consent were subjected to a pre-structured questionnaire which consisted of two parts pertaining to socio-demographic profile and CAM usage details. **Results:** Out of 250 patients enrolled in the study, 106(42.4%) admitted being CAM users along with conventional Anti-Diabetic treatment. The CAM users were mostly males (58.49%). CAM was prevalent in educated patients (94.33%) in comparison to illiterates 5.66%. Ayurveda (29.24%) was the most common type of CAM used and relatives (50%) provided main source of CAM information. Patients (30.18%) thought that CAM is safe, 19.81% felt it is effective. Amongst CAM users 19 (17.92%) patients considered CAM less expensive and effective. **Conclusions:** The results suggest that incidence of CAM users is not as prevalent. However, these patients should inform their consulting physician as there are chances of drug interactions.

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### INTRODUCTION

India is the second largest country in the world after China with an estimated 69.2 million adults with type-2 diabetes.<sup>1</sup> Diabetes is a chronic disease that reduces the quality of life, increases the risk of mortality and morbidity, and has no cure.<sup>2</sup> during the virtually life-long therapy; many patients are tempted to look for “alternative” remedies to this disease. It is a general view among the population that being natural, herbal remedies are totally safe. The major reasons for using CAM for the treatment of diabetes were fear about side effects, dissatisfaction with healthcare providers and higher costs of modern medicine.<sup>3,4</sup> Other

reasons were higher level of medication adherence along with better understanding of the need for lifestyle changes for diabetes management during CAM treatment<sup>5</sup> and easy availability of CAM without the prescription of a doctor.<sup>6</sup> There is an emerging trend worldwide for patients to use complementary and alternative medications (CAM) in an attempt to improve the outcomes of their illnesses as well as to improve general well-being. In addition, CAMs have gained academic, industrial and economic interest due to its high prevalence of use. The National Centre for Complementary and Alternative Medicine of the United States defines CAM as

“a group of medical and health care systems, practices and products that are not presently considered to be part of conventional medicine”. These agents seem to have become an attractive option because of the lesser-perceived adverse reactions in comparison to prescription medications. CAM incorporates herbal remedies and other forms of therapy like acupuncture, faith healing, massage therapy, hypnosis and music therapy.<sup>7</sup> Diabetes mellitus is an illness, where a wide array of CAMs has been used with varying success. DM patients are 1.6 times more likely to use CAM.<sup>8</sup> India has a rich tradition of use of ayurvedic medicines and has a government department for CAM which is named as ‘AYUSH’ (Ayurveda, Yoga, Naturopathy, Unani, Siddha and Homeopathy). According to studies conducted in different states of India CAM is prevalent 63%-68% in patients with DM.<sup>9,10</sup> This preliminary study was planned with the objective to study the consumption of complementary and alternative medicine remedies in patients with DM in a tertiary care teaching hospital.

**Methods:** The current study was conducted amongst patients of DM attending the OPD. The participants were informed about purpose, procedure and their rights. They were also assured that information will be strictly confidential and an informed consent was taken prior to commencement of the study. A total of 250 patients of DM over a period of 6 months on conventional treatment were screened and 106 patients were found to be using CAM. These 106 patients were evaluated for CAM parameters and were subjected to the questionnaire. Results obtained were tabulated in percentage.

**Inclusion and exclusion criteria:** Age (18 years and above), DM with minimum duration of one year, and ability to give informed consent to participate in the study while exclusion criteria included age below 18 years, patients with intellectual disabilities, and patients with chronic debilitated illnesses such as cerebrovascular accidents and renal failure.

**Study design:** The diabetic patients who visited this centre for the first time or for follow-up during the time of data collection were asked to participate in the study after explaining the subject of this study; their verbal approval was

obtained; then, when they agreed, they were interviewed. CAM use for our study was defined as use of alternative medicines or treatment practices, including Ayurveda, homeopathy, yoga, naturopathy, acupuncture and herbal medicines. Question was asked on the presence of any co-morbidity such as cardiovascular disease, kidney disorders, neurological problem, high blood pressure, vision impairment, liver disease and other noncommunicable diseases.

**Statistical Analysis:** The frequency of CAM usage is given in percentage in relation of age, gender, socioeconomic status, educational status, occupation, exercise, diet and comorbidities. The Parameters like Knowledge or awareness about CAM, Initiation CAM use and outcome of CAM use were assessed using the Chi-square test.  $P < 0.05$  was considered statistically significant.

**Table 1** depicts the sociodemographic details of the study patients. Total 250 DM patients consented to participate in the study of which 106 were CAM users (42.4%) and 144 (57.6%) were Non-CAM users. Out of the total 250 patients 40.8% were females and 59.2% were males. Most of the CAM users were male (58.5%). Maximum CAM users were more than 55 (60.37%) years of age. The educational background of most of the CAM users was high school certificate 26.41% and 28.30% of the study patients were unemployed and CAM usage was higher in Class 3 people (lower middle), and among those having no co-morbidity.

**Table 2:** represents that Ayurveda was the most common CAM modality used by 29.24% patients followed by Naturopathy 12.26%, fenugreek seeds 11.32% and bitter gourd 10.37%. Homeopathy, Acupuncture and some marketed herbal products are least used by the study participants.

**Table 3** illustrates that the most common reason for using CAM as reported by 30.18% users was its safety. Some patients’ preferred CAM therapy due to effectiveness (19.81%) and less cost compared to traditional medicine (17.92%); meanwhile, some patients chose CAM therapy because they were dissatisfied with existing conventional medicine patterns (7.54%).

**Table 1: Sociodemographic details of the study patients (n=250)**

Variables	CAM Users		Non-CAM Users	
	n	%	n	%
Gender				
Male	62	58.49	86	59.72
Female	44	41.50	58	40.27
Age in years				
25-34	7	6.6	27	18.75
35-44	12	11.32	31	21.52
45-55	23	21.69	42	29.16
> 55	64	60.37	44	30.55
Educational background				
Profession or honors	6	5.66	16	11.11
Graduate or postgraduate	7	6.60	17	11.80
Intermediate or post-high school diploma	25	23.58	27	18.75
High school certificate	28	26.41	31	21.52
Middle school certificate	24	22.64	26	18.05
Primary school certificate	10	9.43	11	7.6
Illiterate	6	5.66	16	11.11
Occupation				
Profession	9	8.6	13	9.02
Semi-profession	9	8.6	14	9.72
Clerk/shop owner	19	17.92	31	21.52
Skilled worker	21	19.8	32	22.22
Unskilled worker	18	16.98	23	15.97
Unemployed	30	28.30	31	21.52
Socioeconomic status				
Class 1 upper	15	14.15	18	12.5
Class 2 upper middle	15	14.15	21	14.58
Class 3 lower middle	25	23.58	35	24.30
Class 4 upper lower	26	24.52	36	25
Class 5 lower	23	21.69	34	23.61
Doing regular exercise for control of diabetes YES/ NO	39	36.79	56	38.88
	67	63.20	88	61.11
Presence of co-morbidity - Yes	35	33.01	23	15.97
NO	71	66.98	121	84.02
Following specific diet for the control of diabetes- YES	85	80.18	108	75
NO	21	19.81	36	25

**Table 2: Type of CAM therapy used by the study patients (n=106)**

Type of CAM	Number of patients (n)	%
Ayurveda	31	29.24
Naturopathy	13	12.26
Fenugreek seeds	12	11.32
Bitter Gourd	11	10.37
Yoga	10	9.43
Homeopathy	8	7.54
Acupuncture	6	5.6
Herbal products	4	3.7
≥2 types of CAM modalities	11	10.37

**Table 3: Reasons for starting CAM (n=106).**

Reasons	Number of patients (n)	%
CAM is safe	32	30.18
Less costly	19	17.92
Effective	21	19.81
To improve body health	11	10.37
Dissatisfaction from conventional medicines	8	7.54
≥2 reasons for starting CAM	15	14.15

**Table 4: Pattern of CAM in diabetic patients (n=106).**

Parameter		n (%)	p-value
Knowledge or awareness about CAM	Present	98 (92.45%)	X <sup>2</sup> =97.21, DF=1; p<0.05
	Absent	08 (7.54%)	
Initiation CAM use	After using Anti-diabetic treatment	99 (93.39%)	X <sup>2</sup> =12.86, DF=1; p<0.05
	Before using Anti-diabetic treatment	07 (6.60%)	
Source of information regarding CAM use	Relatives	53 (50%)	-----
	Friends	29 (27.35%)	
	Neighbours	20 (18.86%)	
	Media	04 (3.77%)	
Outcome of CAM use	Blood sugar controlled	103(97.16%)	X <sup>2</sup> =3.26, DF=1; p<0.07
	Failure to control blood sugar	3 (2.83%)	

**Table 4** describes the patterns of CAM use among patients of diabetes that majority of the patients (92.45%) were aware about CAM. Most of the patients (93.39%) started using CAM after their antidiabetic treatment. Relatives (50%) were the main source for providing information regarding CAM. Though 97.16% of CAM users had well controlled blood sugars but results were not statistically significant  $p>0.05$ .

#### DISCUSSION:

In this study, the estimated prevalence of CAM use among diabetic patients was 42.4%, which is relatively high in comparison to a study at Saudi Arabia where the prevalence of CAM use was 30.5% while it is considered low in comparison to the prevalence of CAM use among diabetics from Sri Lanka and India.<sup>11</sup>The use of CAM in our study was lower than that reported among diabetes patients in Mumbai (63%).<sup>12</sup>There could be various reasons attributed. We found that men are receiving more CAM therapies for diabetes when compared with women; however, in a recent study carried out by Naja et al. 2014 in Lebanon population and reported the same.<sup>13</sup>

Patients above the age of 55 years are extensively using CAM therapy, their ultimate intention is to reduce the blood glucose level and further complications. This observation is supported by the previous research carried out by Wanchai and Phrompayak.<sup>14</sup> Another major factor associated with CAM use was the practice of regular exercise for the control of diabetes. CAM users felt that exercise would help to regulate their blood sugars in contrast to Non-CAM users. A similar finding was reported among Australian women.<sup>15</sup>Patients without any co-morbidity were more likely to use exclusive CAM compared with patients with co-morbidity indicating that exclusive CAM use was preferred by milder or patients without co-morbidities. There is a possibility that these patients may be afraid of the side effects of modern medicine and a perception of comparatively safer feeling toward CAM. According to literature survey, adjunct use of fenugreek seeds improves glycaemic control and decreases insulin resistance in mild type-2 diabetic patients. There is also a favourable effect on hypertriglyceridemia.<sup>16</sup> Seeds of fenugreek act in the pancreas and improve the availability of insulin.<sup>17</sup> In this present study,

most of the patients learn about CAM therapies from their family and friends. The most common reason for using CAM users was its safety. Some patients' preferred CAM therapy due to effectiveness. Dissatisfaction with existing conventional treatment was the other reason to start using CAM therapies. Most of the people belong to the middle class and lower class, it indicates that patients choosing alternative medicine widely because alternative therapies were found to be less cost effective when compared to conventional therapy.<sup>18</sup> Among CAM users only small proportions of the patients (2.83%) did experience difficulty in controlling their blood-sugar levels inspite of addition of CAM modality to their conventional Anti-diabetic medications. These findings are in concurrence with previous studies those also observed CAM use to be safe, effective, cheap and prevent complications.<sup>10,19,20</sup>

**Limitations:** One of the limitations of our study was self-reported information. The findings of our study may not be generalizable to the entire population since only one Tertiary care hospital was studied.

**CONCLUSION:**

The results suggest that incidence of CAM users is not as prevalent. However, these patients should inform their consulting physician as there are chances of drug interactions. By knowing the common risk factors, further complications can be minimized to improve the patient quality of life.

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