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Original Research Article

Complementary and alternative medicine use among type 2 diabetes patients in a tertiary care hospital

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ABSTRACT

Background: Complementary and alternative medicine (CAM) use is prevalent among chronic diseases like Diabetes mellitus (DM). Therefore, the aim was to study the pattern of CAM use among Type2DM in our set up.

Methods: The study was done in diabetic patients attending OPD of Government medical college hospital over a period of 2 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 280 patients enrolled in the study, 110 admitted being CAM users along with conventional Anti-Diabetic treatment. The CAM users were mostly females (56.36%) and were from rural background (70.90%). CAM was prevalent in educated patients (90.90%) more than illiterates (9.09%). Ayurveda (44.54%) was the most common type of CAM used and relatives (58.18%) provided main source of CAM information. 32.72% patients thought that CAM is safe, effective (20.90%) and less costly (19.09%). Only 16.36% patients disclosed regarding their CAM usage to the attending physician while majority (83.63%) were non-revealers. The results suggest that patients should be encouraged to reveal to their physician regarding CAM as it can avoid possibility of interactions.

Conclusions: CAM is prevalent in T2DM and more so in females from rural areas. Ayurveda was the most widely type of CAM used and majority of patients did not disclose to the treating physician regarding CAM usage.

Keywords: Anti diabetic drugs, Complementary and alternative medicine, CAM, Diabetes mellitus, Tertiary care

INTRODUCTION

Complementary and alternative medicine (CAM) use is prevalent globally among patients and is much higher in the developing countries. Complementary medicine refers to the use of non-conventional therapy, in conjunction with regular treatment, while alternative medicine refers to the use of non-conventional treatment. CAM comprises over 100 forms of treatment.[1]

The chronic diseases require prolonged therapy and these patients usually seek alternative medicines. Diabetes mellitus (DM) a chronic debilitating condition is associated with significant morbidity and mortality as it cannot be permanently cured and requires lifelong medicines. The modern medicines alone may not meet the needs of these patients and consequently some patients adopt CAM with addition to modern therapy.[2,3] DM patients are 1.6 times more likely to use CAM.[4] India too has many religious and spiritual beliefs and these are more likely to influence the usage of CAM. India is the birth place of one of the oldest systems of medicine, Ayurveda, which had its origin around 2000 years back and is the most commonly practiced form of CAM. About 80% Indian patients use ayurvedic drugs particularly in chronic illnesses. Besides, Ayurveda, Yoga, Naturopathy, Unani, Sidda and Homeopathy are other forms of CAM practised

in India. According to studies conducted in different states of India CAM is prevalent 63%-68% in patients with DM.[1,5,6]

The efficacy of CAM in these diseases is still not validated and some type of CAM may be ineffective and pharmacologically incompatible with patient's anti-diabetic medications or may even can cause interactions. This situation is further compounded by the fact that many of these patients do not disclose their CAM use to their physicians putting them at risk of ADRs and interactions.[7-9] Therefore, it is of utmost importance that there should be clarity among the physicians so that they can make safe choices and avoid interactions with CAM. Thus, the present trial was undertaken to evaluate the usage of CAM in patients of Type 2 diabetes mellitus (T$_2$DM) and factors influencing CAM usage.

METHODS

The current study was conducted amongst patients of T$_2$DM attending the OPD of Govt Medical College, Hospital Jammu. The study was reviewed and approved by the Institutional ethics committee vide order number IEC/Thesis/Research/I$_{53}$-C/2015/232 dated 4th November 2015. 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 280 patients of DM over a period of 2 months on conventional treatment were screened and 110 patients were found to be using CAM. These 110 patients were evaluated for CAM parameters and were subjected to the questionnaire. Results obtained were tabulated in percentage. A patient was termed a CAM user if he/she had ever tried CAM for DM till the time of the study. A CAM non-user was defined as one who had never used any CAM therapy.

The questionnaire consisted of 2 parts: The first part pertained to a collection of socio-demographic information of the patient (age, gender, residence, occupation, marital status, education, socio economic status, duration of disease, use of anti-diabetic drugs) and number of CAM user and non-users.

The second part addressed questions related to CAM its type and pattern, which included knowledge of CAM, initiation of CAM use, type of CAM satisfaction/dissatisfaction related to its use, reason for use, duration of disease in relation to CAM, side effects. Patients were also asked about the source of their CAM awareness, who advised use of CAM and whether they informed their doctor regarding CAM usage.

Inclusion criteria

Patients who were above 40 years of age having T$_2$ DM with minimum duration of one year and gave informed consent. Patients using CAM along with conventional anti-diabetic medications.

Exclusion criteria

- Patients who could not complete the questionnaire process.
- Patients who did not give informed consent.

Statistical analysis

Analysis was carried out and the data was expressed in n (%). Chi-sq test was applied for some of the parameters to prove their statistical significance. P-value <0.05 was considered significant.

RESULTS

Total 280 T$_2$DM patients consented to participate in the study of which 110 were CAM users (39.28%) and 170(60.71%) were Non-CAM users. Out of the total 280 patients 48.21% were females and 51.78%were males. Most of CAM users belonged to rural areas (70.90%), having low socioeconomic status (89.09%), leading an active life (92.72%) and between 40 to 59 years (52.72%) of age. Maximum CAM users were between 40 to 59 (52.72%) years of age (Table 1).

The patterns of CAM use among patients of diabetes revealed that majority of the patients (91.81%) were aware about CAM. Females were predominantly CAM users (56.36%). Patients with less than eight years duration of disease (56.36%) were more prone to use CAM. Most of the patients (92.72%) started using CAM after their anti-diabetic treatment. Ayurveda (44.54%) was the most common CAM modality used followed by Naturopathy (10.09%). Relatives (58.18%) were the main source for providing information regarding CAM. Only (16.36%) CAM users admitted using CAM to their physicians while mostly (83.63%) users did not disclose. The most common reason (41.81%) stated for not revealing CAM use was the fear of disapproval by the physician (Table 2).

The most common reason for using CAM as reported by 32.72% users was its safety. Effectiveness (20.90%) and low cost (19.09%) of CAM were the other reasons stated for using CAM (Table 3).

DISCUSSION

CAM is quite prevalent in the developing countries particularly in the chronic diseases which usually require prolonged therapy with conventional medicines. Chang HYA et al has shown that majority of the Type 2 diabetic patients in Taiwan use both conventional and CAM in management of their illness.[10] Diabetes is one of the most common disease in India according to recent reports its prevalence ranges from 5-17% and is a major health problem that requires regular medications. India will be home to 69.1million people with DM, the second highest

number of cases after China and will be aptly described as the capital city of Diabetes.[11,12] This situation mostly encourages the patients to seek alternative therapy mostly in addition to conventional medicines influenced by their socio-cultural beliefs.

In this backdrop numbers of the studies have been done to evaluate the prevalence of CAM in DM in different cities of India like Uttar Pradesh, Kerala, Maharashtra where the incidence ranges as high as 63%-68%.[5,6,12] In the current study out of total 280 patients, 39.28% patients were CAM users which is consistent with the observations reported in number of studies those reported CAM users to be 29%, 39% and 40% respectively.[2,12,13] However, our observation was inconsistent with the results of other researchers where CAM users were higher.[5,6] The frequency of CAM users before Anti-diabetic treatment were 7.27% and after

conventional treatment CAM usage increased to 92.72% in our study which is almost similar to observations made by others.[10,14]

Females (56.36%) used CAM more in our setup than males probably the reason being that females are easily influenced by cultural beliefs, social beliefs, relatives etc. Our results are in concurrence to the results of earlier studies.[10,13,15,16] In the present study, nearly 71% patients were from rural background who used CAM. People in rural areas mostly seek CAM because of their cultural and holistic beliefs and most of them have joint families which are more prone to be influenced by their near relatives. In our study also, relatives (59%) were the main source of information regarding use of CAM.

Table 1: Socio-demographic profile of patients of T$_2$DM (n=280).

Parameter		CAM users n = 110	Non-CAM users n =170	CAM users P value	Non-CAM users P value
Use of CAM		110(39.28%)	170(60.71%)	x^2=25.714; df=1; p <0.0001	
Sex	Females	62(56.36%)	73(42.94%)	x^2=12.291; df=1; p <0.0005	x^2=6.776; df=1; p=0.0092
	Males	48(43.63%)	97(57.05%)		
Residence	Rural	78(70.90%)	105(61.76%)	x^2=38.47; df=1; p <0.0001	x^2=18.824; df=1; p <0.0001
	Urban	32(29.09%)	65(38.23%)		
Age (in years)	40-59	58(52.72%)	60(35.29%)		
	60-69	42(38.18%)	86(50.58%)		
	70-79	08(7.27%)	15(8.82%)		
	>80	02(1.81%)	09(5.29%)		
Marital status	Married	106(96.36)	160(94.11%)	x^2=189.164; df=; p<0.0001	x^2=264.706; df=1; p <0.0001
	Unmarried	04(3.63%)	10(5.88%)		
Religion	Hindus	77(70%)	109(64.11%)		
	Muslims	28(25.45%)	40(23.52%)		
	Others	04(3.63%)	21(12.35%)		
Occupation	**Females-**				
	Non-working	54(49.09%)	62(36.47%)		
	Working	14(12.72%)	11(6.47%)		
	Male -				
	Non-working	0	08(4.70%)		
	Working	42(38.18%)	89(52.35%)		
Education	>high school	48(43.63%)	71(41.76%)		
	<high school	52(47.27%)	96(56.47%)		
	Illiterate	10(9.09%)	12(7.05%)		
Socioeconomic status	<10,000	98(89.09%)	101(59.41%)	x^2=134.473; df=1; p <0.0001	x^2=5.378; df=1; p=0.0204
	≥10,000	12(10.90%)	79(46.47%)		
Life-Style	Active life	102(92.72%)	149(87.64%)	x^2=160.655; df=1; p <0.0001	x^2=192.753; df=1; p<0.0001
	Sedentary life	08(7.27%)	21(12.35%)		
Daily routine affected by disease	No	102(92.72%)	143(84.11%)	x^2=160.655; df=1; p <0.0001	x^2=158.306; df=1; p <0.0001
	Yes	08(7.27%)	27(15.88%)		
Co-morbidity	No	62(56.36%)	73(42.94%)	x^2=3.564; df=1; p=0.0591	x^2=6.776; df=1; p=0.00092
	Yes	48(43.63%)	97(57.05%)		
Conventional medication for T$_2$DM	Oral hypoglycaemic	107(96.63%)	160(94.11%)		
	Insulin injections	02(1.81%)	08(4.70%)		
	Both	01(4.54%)	02(1.17%)		

Table 2: Pattern of CAM in diabetic patients (n=110).

Parameter		n (%)	p-value
Knowledge or awareness about CAM	Present	101(91.81%)	x^2=153.89; DF=1; p<0.0001
	Absent	09(8.1%)	
Gender of CAM users	Females	62(56.36%)	x^2=3.564; DF=1; p=0.0591
	Males	48(43.63%)	
Initiation CAM use	After using Anti-diabetic treatment	102(92.72%)	x^2= 160.65; DF =1; p<0.0001
	Before using Anti-diabetic treatment	08(7.27%)	
Duration of disease in relation to CAM use	< 8year	62(56.36%)	x^2=3.564; DF=1; p=0.0591
	>8 year	48(43.63%)	
Type of CAM used	Ayurveda	49(44.54%)	
	Naturopathy	12(10.90%)	
	≥2types of CAM modalities	12(10.90%)	
	Herbal medicines	10(9.09%)	
	Bittergourd	10(9.09%)	
	Fenugreek seeds	09(8.18%)	
	Yoga	08(7.27%)	
Source of information regarding CAM use	Relatives	64(58.18%)	
	Friends	22(20 %)	
	Neighbours	16(14.54%)	
	Media	08(7.27%)	
CAM Provider	Self	98(89.09%)	
	Homeopath	08(7.27%)	
	Yoga instructor	04(3.63%)	
CAM revealers	To ensure proper relief	10(9.09%)	x^2=0.444; DF=1; p=0.5050
	Physician enquired	08(7.27%)	
CAM non- revealers	Fear of disapproval by the physician	46(41.81%)	
	They feel CAM is safe, no need to discuss its use	22(20%)	
	Didn't find necessary to tell physician	17(15.45%)	
	Not enquired by physician	07(6.36%)	
Outcome of CAM use	Blood sugar controlled	108(98.18%)	x^2= 0.000; DF=1; p= 1.000
	Failure to control blood sugar	02(1.81%)	

Table 3: Reasons for starting CAM (n=110).

Reasons	n%
CAM is safe	36(32.72%)
Effective	23(20.90%)
Less costly	21(19.09%)
To improve body health	13(11.81%)
Dissatisfaction from conventional medicines	7(6.36%)
≥2 reasons for starting CAM	10(9.09%)

Evaluation of the type of CAM use revealed Ayurveda was the most common CAM modality used by 44.54% patients followed by Naturopathy 10.09%, herbal medicines and bitter gourd 9.09% each and fenugreek seeds 8.18%. This is due to the much acceptance of these alternative pathies in rural areas than urban. The current study had maximum CAM users from rural background (71%). The Ayurveda dispensaries those provide free medicines are more concentrated in the rural areas. Our observations are consistent with the results obtained from studies done by other researchers who in their studies reported Ayurveda and Naturopathy to be the most common CAM modalities used followed by herbal medicine, bitter gourd and fenugreek seeds.

Relatives were the main source of information regarding CAM use while ineffectiveness of the conventional medicines and thinking CAM to be more safe and effective were the prime reasons cited for initiation of CAM therapy.[6,12,17,18] The participants of the current study revealed that most important reasons for using CAM was the expectation that CAM will reduce their symptoms, avoid complications besides being safe. Among CAM users only small proportions of the patients (2%) 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.[2,5,15,19]

In the present study most of the patients (83.63%) did not reveal to their health care professional about CAM usage. Only 16.36% of the patients disclosed the use of CAM to their physician. Among the non-revealers 41.8% feared

disapproval of CAM use by the physician which was their main concern while 22% thought CAM was safe so need not to disclose to the physician. This is quite expected as numbers of patients were more from the rural background and of lower literacy rates.

Monica et al 2016 in their study observed that most of the CAM users belonged to rural background (67%) and started using CAM to get quick and additional relief (86%) from their symptoms. 91% patients in their study did not disclose CAM use fearing discouragement by their doctor and believing CAM to be safe and effective. These findings are almost similar to the results of present study.[2]

However, contrary to the beliefs as depicted in the current study, the CAM is not absolutely safe as there is always a potential risk of interactions with the conventional Anti-diabetic medications as they can lead to life threatening hypoglycaemia.

CONCLUSION

The current study revealed CAM is prevalent (39.28%) in diabetics. CAM was more in females and patients with rural background. Ayurveda was the most widely used type of CAM. Relatives were the main source of CAM information but the main highlight of the study was that only 16.36% patients revealed to the treating physician regarding their CAM use. This underscores that physicians should take a detailed history and must explore the usage of CAM as such can lead to interactions with conventional Anti-diabetic medications.

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