



Prevalence of Complementary and Alternative Medicine Use among General Population in South India - A Cross-Sectional Study

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ABSTRACT

Complementary and alternative medicine (CAM) refers to a wide range of clinical therapies outside of conventional medicine used along with the physician prescribed drugs to complement the treatment. It is widely accepted and used across the globe. The aim of this study was to assess the prevalence of use of CAM among the general population and to determine the acceptability, extent and pattern of CAM use. This cross-sectional questionnaire-based study was done among the general population in South India. 300 participants aged >18 years were included in the study irrespective of their genders. An interviewer-administered questionnaire with 20 questions was used to assess CAM usage. The statistical analysis was done by Chi-square test using SPSS version 25. The mean age was 50.39 (\pm 15.67) years. CAM usage was significantly influenced by age, educational qualification, occupation, geographical area and accessibility to a health care facility. The prevalence of CAM usage was found to be 62%. Homeopathy/Herbal medicine (34%) was the most commonly used CAM. About 35% had used CAM without the knowledge of their treating physician. More than 60% believe that CAM is safe with fewer side effects and around half of them had symptomatic relief following CAM usage. Our study results indicate the need for more studies testing various CAM modalities exploring their uses, adverse effects & interactions with other drugs, which in turn can guide the physicians in their treatment.

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INTRODUCTION

Complementary and alternative medicine (CAM) refers to a wide range of clinical therapies outside of conventional medicine. The term “complementary” refers to therapies that are used concomitantly

with conventional medicine, whereas “alternative” medicine includes therapies that are used instead of conventional medicine. The different CAM modalities include acupuncture, folk medicine, ayurveda, biofeedback, chelation therapy, energy healing therapy, chiropractic care, hypnosis, yoga, massage, natural herbs, homeopathic treatment, special diets, reiki, vitamin therapy, tai chi, relaxation techniques, naturopathy, and prayer/spiritual healing. (NCCIH, 2020)

Many of these complementary treatments are not based on scientific facts and are still prevalent and have survived to date solely based on tradition. CAM treatments like homeopathy are now officially recognized. (Pearson and Chesney, 2007; Bodeker and Ong, 2005) The prevalence of CAM treatments are different between various countries for poorly understood reasons. (Mathew *et al.*, 2013) Though not yet proven to cure the disease, the accept-

ability of CAM, especially in the rural sector, is increasing. (Offit, 2012) Even though there is a lack of proper information on the clinical efficacy of CAM, the CAM industry remains profitable, with the annual market approaching around US\$60 billion. (Kaushik, 2004)

There are a large number of studies that assessed the use of CAM worldwide. They are either based on the general population or in association with specific diseases like diabetes, liver diseases, arthritis, dementia, fatigue and cancer. (Otoom *et al.*, 2006) Most of these studies had a common finding of the high prevalence of CAM among their targeted population. The use of CAM may be influenced by various factors like financial status and economic factors, culture, availability of therapists, belief, knowledge, and perception, health policies of that particular place or country, insurance, effectiveness and safety.

The patients might not know the importance of discussing their CAM practices with physicians. As some of the complementary treatments can be associated with drug-induced side effects, drug interactions or polypharmacy, it becomes the responsibility of the physicians to enquire about the same. (Ceylan *et al.*, 2009) Simultaneously, physicians should respect the patients' choice of treatment while substantiating with evidence-based information about the safety and efficacy or the lack thereof. Hence, it has become a necessity for the physician to know about CAM, the opportunities available to make effective use and decisions on which CAM to consider. (Birdee and Yeh, 2010) The purpose of this study was to assess the prevalence of use of CAM among the general population and to determine the acceptability, extent and pattern of CAM use. This, in turn, would help the physicians with respect to the treatment options and to make timely decisions that would dramatically affect the progression, type and intensity of the treatment to be given, which in turn would improve the overall well-being of the patient.

MATERIALS AND METHODS

This cross-sectional questionnaire-based study was done among the general population in South India. 300 participants aged >18 years who consented were included in the study irrespective of their genders. There were no specific exclusion criteria. An interviewer-administered validated questionnaire was used to assess the prevalence and pattern of CAM usage. The questionnaire had 2 sections - section 1 collected information regarding the socio-demographic details of the participants, and section 2 consisted of 20 questions pertaining to

CAM Usage. Before administering the questionnaire, the study participants were briefed about the CAM modalities.

Ethical consideration

The study was approved by the Institutional Ethics Committee (IEC). Participants were well explained about the purpose of the study, and informed consent was sought prior to the study. The participation was purely voluntary, and confidentiality was maintained throughout the study.

Data analysis

The baseline characteristics of the participants (age, sex, educational status, occupational status, etc.) were expressed descriptively. The correlation between the age of the participants and usage of CAM was determined using Point biserial correlation (r_{pb}). The influence of other parameters like sex, education, marital status, place, occupation, accessibility to a health care facility and presence of pre-existing chronic disease on the usage of CAM was assessed using the Chi-square test (χ^2). The statistical analysis was done using SPSS statistical software version 25. A p value of < 0.05 was considered statistically significant.

RESULTS

About 342 participants were approached for the conduct of the study, and 300 consented to the same. The response rate was 87.7%.

Table 1 depicts the age distribution of participants. The mean age was 50.39 years (± 15.67). Majority of the participants (44.6%) were between 31 and 50 years of age. Our study showed a statistically significant positive correlation between age and CAM use among respondents ($p = 0.007$). The usage of CAM was more among participants >30 years of age.

Table 2 shows the baseline demographic details of the respondents. The majority of them were females (55.3%), and gender was not found to influence CAM usage significantly ($p = 0.10$). Nearly half of the study participants were graduates (45.6%) and educational qualification had a significant influence on CAM usage ($p = 0.03$). Marital status was not found to have any association with the usage of CAM ($p = 0.0973$).

More than half of the respondents (56.3%) were from an urban area, with 45.6% of them living <5 km from a health care facility, both the geographical area and the accessibility to healthcare facility was having a significant influence on CAM usage ($p = 0.0104$ & $p = 0.001$ respectively).

54.3% of respondents were among the non-working

Table 1: Age distribution of CAM users

Age (years)	CAM usage (N =300)		Point biserial correlation (r_{pb})	p-value
	Yes (%) (n = 186)	No(%) (n = 114)		
18-30	09 (03)	16 (5.3)	0.15572	0.00688
31-50	78 (26)	56 (18.6)		
51-70	64 (21.3)	31 (10.3)		
>70	35 (11.6)	11 (3.6)		

*CAM – Complementary & Alternative Medicine

Table 2: Baseline Characteristics

Parameters	CAM usage (N =300)		Chi-Square (χ^2)	p-value
	Yes (%) (n = 186)	No(%) (n = 114)		
Sex				
Male	81 (27)	53 (17.6)	0.2477	0.1039
Female	105 (35)	61 (20.3)		
Education				
Elementary	07 (2.3)	11 (3.6)	8.749	0.0328
High School	69 (23)	35 (11.6)		
Graduate	90 (30)	47 (15.6)		
Postgraduate	20 (6.6)	21 (07)		
Marital Status				
Married	95 (31.6)	58 (19.3)	0.0011	0.0973
Unmarried	91 (30.3)	56 (18.6)		
Place				
Rural	88 (29.33)	43 (14.33)	2.6439	0.0104
Urban	98 (32.66)	71 (25.66)		
Occupation				
Not working	89 (29.66)	74 (24.66)	15.0425	0.0005
Non-healthcare related work	85 (28.66)	27 (09)		
Healthcare-related work	12 (04)	13 (4.33)		
Accessibility to a Health care facility				
< 5 Km	69 (23)	68 (22.66)	19.0639	0.0001
5 – 15 Km	72 (24)	37 (12.33)		
> 15 Km	45 (15)	09 (03)		
Presence of Chronic disease				
Yes	35 (11.66)	04 (1.33)	14.652	0.0046
No	151 (50.33)	110 (36.66)		

*CAM – Complementary & Alternative Medicine

Table 3: Responses of the study participants

Questions	Response (n =300)	
	Yes (%)	No (%)
Do you use any form of CAM?	186 (62%)	114 (38%)
Do you support the use of CAM over Conventional medicine?	198 (66%)	102 (34%)
Do you think CAM is safe?	181 (60%)	119 (40%)
Do you feel that the side effects of CAM are less when compared to conventional medicine?	189 (63%)	111 (37%)
Do you find it is easy to understand how CAM therapy works?	168 (56%)	132 (44%)
Do you think the use of CAM can alter the effects of Conventional treatment side effects?	127 (42%)	173 (58%)
Do you suggest your friends or neighbours to use CAM?	231 (77%)	69 (23%)

*CAM – Complementary & Alternative Medicine

Table 4: Types of CAM used

CAM Type	No. of Patients (n = 186) (%)
Homeopathy/Herbal medicine	64 (34%)
Ayurveda	13 (07%)
Siddha	31 (17%)
Unani	04 (02%)
Dietary Supplements like Vitamins, Minerals etc.	34 (18%)
Physical methods like Acupuncture, Massage therapy etc.	19 (10%)
Self-help practices like Yoga, Meditation etc.	21 (11%)

*CAM – Complementary & Alternative Medicine

population. The prevalence of CAM usage was more among them, showing a statistically significant influence on occupation ($p = 0.0005$). Though only 13% of the participants had a chronic disease, the presence of chronic disease was found to influence the use of CAM ($p = 0.0046$).

Of the 300 study participants, though 198 (66%) of them supported the CAM usage over conventional treatment, 186 (62%) reported using some form of CAM. More than 60% felt CAM is safe with fewer side effects and easy to understand its usage. Nearly three-fourths of the respondents wanted to suggest some form of CAM to their friends and neighbours. (Table 3)

Table 4 depicts the different types of CAM modalities used by the participants. Homeopathy/Herbal medicine (34%) was the most commonly used CAM, followed by Dietary supplements (18%) and Siddha (17%).

Most of the participants used CAM for chronic diseases (51%), among which skin conditions like eczema (18%) was most common, followed by respiratory diseases like COPD, Bronchial Asthma, etc.

(15%).

When asked about using home remedies, 46% of participants reported it rarely, while 32% sought home remedies on several occasions. Nearly half of them (46%) followed the instructions of the practitioner to decide on the dose and duration of usage, and 32% decided on their own. The majority of the respondents stated that they came to know about CAM through their friends and relatives (71%).

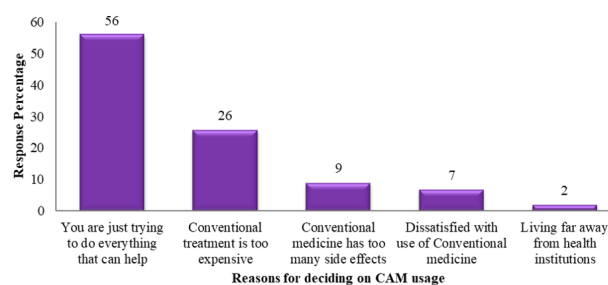
**Figure 1: Reasons for CAM usage**

Figure 1 depicts the reasons quoted by study participants for using complementary and alternative medicine. The majority (56%) stated that they were just trying everything that could help relieve symp-

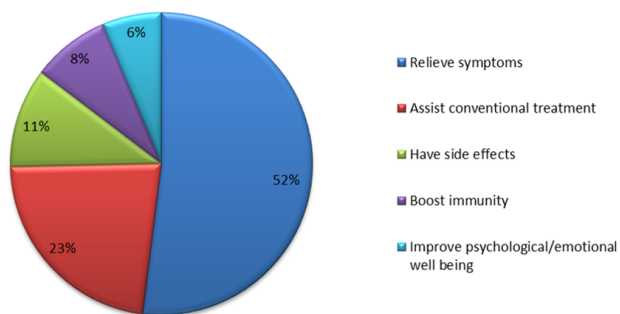


Figure 2: Beliefs about CAM usage

toms, while 26% felt that conventional treatment was too expensive.

More than 75% of CAM users had taken some form of CAM in the past 6 months, and almost half of them (45%) used it as and when needed.

Among the CAM users, 65% have made their primary healthcare provider aware of their CAM usage. It was surprising to find that 60% had never experienced any side effects, and a whopping 76% reported that their health condition improved dramatically following CAM usage. 57% of CAM users agreed that they will always consult a physician when CAM was ineffective.

Figure 2 reflects the participant's beliefs about CAM usage. When asked about their belief about using CAM, more than half of the respondents were of the opinion that it gave symptomatic relief, while 23% felt that it assists the conventional treatment. A very few (11%) quoted that it will have side effects.

DISCUSSION

While analyzing the socio-demographic factors, it was found that CAM usage was significantly influenced by most of the factors like age, education, occupation, geographical area and accessibility to a health care facility which was consistent with most of the studies done previously. (Barnes *et al.*, 2004; Rao *et al.*, 2016) Presence of chronic disease was also found to influence CAM usage, which was consistent with studies done by Shmueli and Shuval (2006); Shannahoff-Khalsa (2005)

Homeopathy and herbal medicine were found to be the most commonly used system of medicine among our study participants, which was similar to the studies from Middle East countries. (Ali-Shtayeh *et al.*, 2011; Omeish *et al.*, 2011) More than 60% of respondents believed CAM was safe with fewer side effects which was consistent with the study done by Khalaf and Whitford (2010). It was surprising to note that only 35% had used CAM without the treating physician's knowledge. This finding, in spite of

being low when compared to other studies, needs to be addressed since it might lead to drug interactions. WHO has stressed the importance of educating the clinicians in this regard and also has come up with a method for physicians to elicit CAM history. (X Zhang and World Health Organization, 2002)

The studies addressing CAM usage in India are very few. Almost all the available studies were done among patients with chronic diseases like Cancer, Diabetes, Rheumatoid arthritis, etc. (Kumar *et al.*, 2016; Vishnu *et al.*, 2017; Chandrashekara, 2011) Our study mainly focused on the usage of CAM among the general population.

A study done among physicians by Nitin *et al.* reported that the majority of them recommended CAM to their patients and also reported self-use. However, the lack of scientific evidence was a major disadvantage. (Joseph *et al.*, 2019) Integrating complementary and alternative medicine with allopathic medicine and including it as a part of the undergraduate medical curriculum should be considered in future after exploring their uses and interactions with the help of larger randomized control studies.

Limitations

The scope of our study is limited because of a smaller sample size confined to the South Indian population, which cannot be extrapolated. The problems of interviewer bias, recall bias and respondent bias cannot be disregarded as it is based on an interviewer-administered questionnaire. Further studies with a larger sample size done at multiple centers throughout India may be needed to get the exact picture.

CONCLUSION

CAM usage was more than expected (62%) in spite of the advances in modern medicine. However, 35% of them were using CAM without the knowledge of their treating physicians. The majority believe that CAM is safe with fewer side effects which warrant the conduct of more studies testing various modalities exploring their uses, adverse effects & interactions with other drugs, which in turn can guide the physicians in their treatment.

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Conflict of Interest

The authors declare that they have no conflict of interest.

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