

APPRAISAL OF COMPLEMENTARY AND ALTERNATIVE MEDICINE UTILIZATION AMONG DOCTORS FOR THEIR WEIGHT REDUCTION: A PILOT SURVEY

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ABSTRACT

Objectives: To study the appraisal of complementary and alternative medicine (CAM) utilization among doctors for their weight reduction.

Methods: This present cross-sectional, questionnaire-based observational study was conducted in the department of pharmacology of a tertiary care teaching hospital in Rajasthan, India. All the doctors of various specialties were included in the study. The validated questionnaire had three separate segments consisting of items regarding demographic profile, items regarding knowledge of CAM, and items regarding CAM utilization by the medical professionals.

Results: Out of total 222 respondents, 63 (28%) doctors used CAM for their weight reduction. 19 (8.6%) male and 44 (19.8%) female doctors used CAM for weight reduction. CAM practice among the postgraduate doctors was highly significant in comparison to other qualifications ($p < 0.001$). The association between clinical years of practice and use of CAM was statistically significant ($p < 0.05$). CAM use with respect to body mass index of doctors was statistically significant ($p < 0.001$). 183 (82%) doctors were aware of the term CAM and 144 (65%) believed in CAM.

Conclusion: This study concluded that 28% doctors used CAM for themselves for weight reduction. A substantial number of doctors are using CAM themselves and also recommending to others in spite of being trained in modern medicine.

Keywords: Allopath, Body mass index, Ayurveda, Acupuncture, Herbology.

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INTRODUCTION

Complementary and alternative medicines or therapies (CAMs/CATs) refer to “a group of varied medical and healthcare systems, practices, and products that are not considered to be a part of any conventional medicine in the healthcare system” [1]. A classification given by the National Center for CAM for CATs includes 5 categories: biologically based therapies, energy therapies, manipulative and body-based therapies, mind-body therapies, and whole medical systems [1].

The term Allopath is derived from the Greek word allos (against) and pathos (suffering), given by Joseph Hahnemann. It is currently known as modern medicine which is subsequent to discoveries resulting after rigorous research and with substantial evidence. New medicines, surgeries, vaccines, and cancer therapies are capable of subsiding symptoms as well as providing effective cure and prevention of a large number of diseases [2].

In spite of so many advantages of modern medicine, CAM is now being used by various persons due to adverse effects and ineffectiveness of conventional medicines, especially for chronic diseases, where lifelong treatment is required. There has been an inclination toward the usage of CAM for a variety of ailments like cardiovascular diseases and diabetes [3,4]. Nowadays, it is being used even for weight reduction and obesity [1,5]. Overweight and obesity are chronic diseases that have become global epidemics according to the World Health Organization (WHO) fact sheet [6].

The terms “overweight” and “obesity” as coined by the WHO signify a body mass index (BMI) that exceeds or equals 25 and 30, respectively [6]. Obesity and weight gain have become more prevalent in the modern era due to sedentary lifestyle, unhealthy eating habits, overeating, task

automation and lack of physical activity. These factors also contribute to life-threatening cardiovascular diseases, diabetes, musculoskeletal disorders, chronic kidney disease, sleep apnea, poor attention, arthritis, lung disease and few cancers (e.g. breast and prostate).

Imbalance of caloric intake and consumption gives rise to obesity. Therefore, treatment comprises increased physical activity along with diet modifications. CAMs utilized for weight reduction embrace biologically based therapies such as diet and nutritional supplements, homeopathy, body-based (acupuncture and acupressure) and mind-body therapies (hypnotherapy), relaxation techniques, natural herbs, massage, chiropractic medicine, and tai chi. These are practiced widely in spite of incomplete evidence of their effectiveness [1].

Doctors are also no exception to busy schedules and sedentary lifestyles for the same reasons discoursed above. It is the known fact that these days, doctors are overburdened and compelled to follow unhealthy dietary habits. Hence, exploring utilization of complementary and alternate therapies to fight against overweight and the abundant availability of CAM-related therapies and products in the market unfolds intrigue for CAM usage among doctors. Therefore, this study was planned targeting modern doctors, to appraise the respondents' use of CAM for weight reduction.

METHODS

This cross-sectional, questionnaire-based observational study was conducted in the department of pharmacology of a tertiary care teaching hospital in Rajasthan, India. All the doctors of various specialties were included in the study. Doctors who did not responded to Google Forms were excluded from the study.

Sample size

The sample size was calculated using the formula $4PQ/r^2$, where p was prevalence of CAM use among doctors which was 58% as per previous study [7] and r was absolute error which was considered as 7.5%. After putting the values in the formula, the required minimum sample size was 185.

Procedure

Initially, the questionnaire was drafted with the help of information obtained from literature search regarding various CAMs available and its usage in general population and doctors [5,8]. Then, it was presented to medical professionals of specialized fields like medicine, surgery, and endocrinologists and was modified based on their responses, and the final version of the questionnaire was prepared.

The validated questionnaire had three separate segments consisting of items regarding demographic profile, items regarding knowledge of CAM, and items regarding CAM utilization by the medical professionals.

This study was conducted after taking permission from the Institutional Ethics Committee (Ethical Committee reference no.; GU/HREC/EC/2022/2157). The structured and validated questionnaire was delivered to the medical professionals through Google Forms. Doctors were explained the nature and purpose of the study through information sheet which also explained that doctors unwilling to complete the questionnaire or any particular question(s) can refuse to do so. Anonymity and confidentiality were ensured. Completion of the questionnaire was implied as consent for participation.

BMI was considered as primary measure of obesity of the participants. Weight in kilograms divided by height in meters squared is known as BMI. BMI was calculated from self-reported data on height and weight measurements. Participants were categorized according to the classification of weight by BMI [9]: (i) underweight ($<18.5 \text{ kg/m}^2$), (ii) normal weight ($18.5\text{--}24.9 \text{ kg/m}^2$), (iii) overweight ($25\text{--}29.9 \text{ kg/m}^2$), and (iv) obese ($\geq 30 \text{ kg/m}^2$).

Statistical analysis

The data were collected and analyzed using Microsoft Excel 2010. Descriptive statistics was used to describe the study participants in

relation to relevant variables. The data were presented in number or percentage of the responses provided by the doctors. Chi-square test was used to analyze the qualitative data. $p < 0.05$ was considered statistically significant.

RESULTS

The total number of study population was 222, of which 99 (44.6%) respondents were male and 123 (55.4%) were female. Out of all, 19 (8.6%) male and 44 (19.8%) female doctors used CAM for weight reduction. The use of CAM was significantly higher ($p < 0.001$) in females as compared to male doctors. The age of doctors varied between 24 and 77 years, and the mean age was 43.63 ± 9.32 years.

201 (90.54%) doctors had postgraduate qualification and 15 (6.75%) doctors had superspecialization and 6 (2.7%) doctors were graduate only. 3 (1.35%) graduate, 57 (25.7%) postgraduate, and 3 (1.35%) superspecialist doctors used CAM for their weight reduction. CAM practice among the postgraduate doctors was highly significant ($p < 0.001$) in comparison to other qualifications.

Clinical experience of the doctors ranged between <5 years and more than 20 years, and the association between clinical years of practice and use of CAM was statistically significant ($p < 0.05$) (Table 1).

The mean weight and height of the participants were calculated as $69.2 \pm 10.06 \text{ kg}$ and 1.61 ± 0.25 meters, respectively. 92 (41.44%) doctors had normal weight; 100 (45.05%) doctors were overweight; and 30 (13.51%) doctors were obese. CAM use with respect to BMI of doctors was statistically highly significant ($p < 0.001$) (Table 1).

Out of 222 respondents, 61 (27.48%) had coexisting diseases, with predominance of hypertension in 24 (10.8%) and diabetes in 21 (9.46%) doctors. Out of 61 respondents having comorbidities, 21 (9.46%) had used CAM therapy themselves (Table 1).

55 (24.77%) doctors opted friends and journals each as the source of information about CAM, followed by books (19.82%) and news 20 (9.01%) (Fig. 1).

Table 1: Demographic characteristics and its correlation with uses of CAM (n=222)

Demographic characteristics	n (%) or mean \pm SD	Number of doctors using CAM for weight reduction	p
Age (years)	43.63 ± 9.32	-	-
Gender			
Male	99 (44.6)	19 (8.6)	0.000*
Female	123 (55.4)	44 (19.8)	
Qualification			
Graduate (M.B.B.S.)	6 (2.7)	3 (1.35)	0.000*
Postgraduate (MD/MS/DNB)	201 (90.54)	57 (25.7)	
Superspeciality (DM/MCh/DNB)	15 (6.75)	3 (1.35)	
Clinical experience (years)			
≤ 5	29 (13.06)	9 (4.05)	0.002*
6–10	36 (16.22)	6 (2.70)	
11–15	75 (33.78)	18 (8.11)	
16–20	24 (10.81)	9 (4.05)	
> 20	57 (25.67)	21 (9.45)	
Weight (kg)	69.2 ± 10.06	-	-
Height (m)	1.61 ± 0.25	-	-
BMI (kg/m^2)			
Underweight (<18.5)	0	0	0.000*
Normal weight ($18.5\text{--}24.9$)	92 (41.44)	29 (13.06)	
Overweight ($25\text{--}29.9$)	100 (45.05)	27 (12.16)	
Obese (≥ 30)	30 (13.51)	7 (3.13)	
Comorbid conditions			
Hypertension	24 (10.80)	10 (4.50)	> 0.05
Diabetes	21 (9.46)	6 (2.70)	
Thyroid disorder	6 (2.70)	2 (0.90)	
Other disorders	10 (4.50)	3 (1.35)	

*Significant. CAM: Complementary and alternative medicine, BMI: Body mass index, SD: Standard deviation

183 (82%) doctors were aware of the term CAM and 144 (65%) believed in CAM. 120 (54%) participants recommend CAM to friends, relatives, and patients, and 72 (32%) participants considered that CAM is more effective than allopathic treatment. 24 (11%) study participants disclosed that they have used conventional therapies like drugs or surgical procedures for weight control, whereas the number of doctors who acknowledged that they exercise for weight control was 186 (84%) (Table 2).

63 (28%) doctors have used CAM for their weight reduction. 50 (22.5% of the total) participants accepted that CAM has benefited in reducing their weight (Table 2).

Among the suggested CAM therapies in the questionnaire, utilization of green tea was found in 66 (29.7%) doctors, followed by yoga and meditation practicing by 51 (22.9%) and 48 (21.6%) doctors, respectively. 18 (8.1%) doctors used Ayurveda as CAM, whereas other fiber dietary supplement were used by 11 (4.95%) doctors. Among the other suggested CAM therapy, massage was adopted by 9 (4.05%) and utilization of glucomannan was found by 6 (2.70%) doctors (Fig. 2).

DISCUSSION

This study was aimed at assessing the knowledge and attitude of the doctors regarding CAM utilization and practice of CAM for reducing their own weight. The sample of doctors drawn in the present study had higher number of female doctors in comparison to males, and this could be probably due to more inclination of females toward CAM usage, which is also reported by earlier studies [10,11]. Besides this, perhaps, females are attracted more toward filling such kind of Google Forms. However, this difference was not observed in the study by Vishnu *et al.*, in which the number of males and females using CAM was found to be similar [4].

In the present study, CAM utilization was significantly more with respect to number of years of clinical experience. A statistically significant association was also observed between increasing year of practice and awareness of the term "CAM" ($p < 0.05$) by Kong *et al.* [5].

Approximately half of the study population were overweight in the present study, which is nearly the same (58%) as encountered by Bertisch *et al.* [12].

One-third of the respondents of this study had comorbidities, out of which around one-third had used CAM therapy. According to Vishnu *et al.*, four times greater number of persons without any existing disease use CAM therapy in comparison to persons with comorbidity.

Table 2: Analysis of questionnaire items

Serial number	Questionnaire items	Yes, n (%)	No, n (%)
1	Are you aware of the term CAM?	183 (82)	39 (16)
2	Do you believe in CAM?	144 (65)	78 (35)
3	Do you recommend CAM to friends, relatives and patients?	120 (54)	102 (46)
4	Do you consider CAM more effective than allopathic treatment?	72 (32)	150 (68)
5	Have you ever used conventional therapies like drugs or surgical procedures for weight control?	24 (11)	198 (89)
6	Do you exercise for weight control?	186 (84)	36 (16)
7	Have you ever used CAM yourself for weight reduction?	63 (28)	159 (72)
8	If yes, do you think CAM has benefited in reducing your weight?	50 (22.5)	-

CAM: Complementary and alternative medicine

Vishnu *et al.* concluded that potential users of CAM were primarily individuals without comorbid conditions and in the early stages of their illness but these findings were not statistically significant [4]. This could be explained on the basis of the fact that most CAM practices emphasize on disease prevention and health promotion, rather than treating the disease itself [13,14]. Contradictory to this study, Bertisch *et al.* encountered that 40% of adults used CAM for the treatment of a specific medical condition [12].

In the present study, more than 80% of the respondents were aware of the term CAM and two-third of the doctors believed in CAM. Similar results were found in the study by Kong *et al.*, in which 92% of doctors were aware of the term CAM, and two-third of the respondents admitted that they believed in CAM [5]. The reason for this could be that the utilization of Ayurveda, acupuncture, herbology, and many others are beneath the umbrella of CAM. Across the globe, now, CAM is contemporary with modern medicines and their practice is escalating day by day, which might be due to more cognizance, ease of availability, and self-consciousness among the population. CAM practices are deep rooted in the Indian population and can be tracked back to 5,000 years when Ayurveda was the most common practice and fulfills 80% of the medical needs of the population [15]. Poverty, lack of resources, and less efficient modern medicine facility for those residing in rural areas are also the possible factors promoting CAM therapies. All the above-stated facts could also be held responsible for recommending CAM to friends, relatives, and patients and for considering CAM more effective than allopathic treatment. According to the study by Kong *et al.*, a significant proportion of those who believed in CAM considered it better than allopathic treatment ($p = 0.0001$) in diseases like psychological/psychiatric disorders and other chronic illnesses, and a significant number of respondents ($p = 0.0001$) felt that integrative medicine is more effective than allopathic treatment alone. In the present study also, one-third of the study population with comorbidities used CAM therapy.

11% of the present study participants disclosed that they have used conventional therapies like drugs or surgical procedures for weight control. Predilection for conventional therapies was lesser in our study because the existing procedures including non-invasive body contouring techniques, the cosmetic plastic surgery like liposuction and pharmacotherapy are not reassuring enough. There are concerns

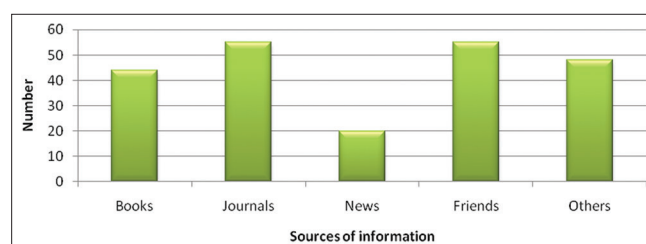


Fig. 1: Common sources of information about complementary and alternative medicines

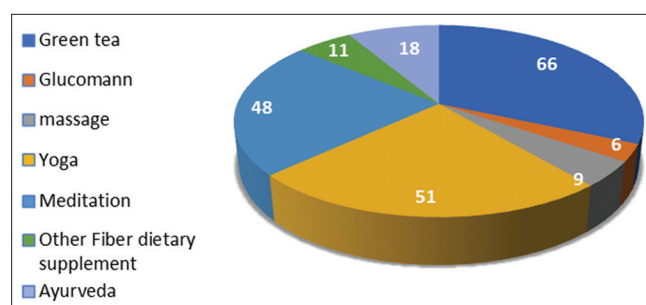


Fig. 2: Most common types of complementary and alternative medicines used for weight reduction

regarding their safety and possible post-operative complications like swelling, bruising, and numbness, thrombophlebitis, and pulmonary embolism [16]. Although bariatric surgery can lead to positive results but it is expensive and carries the risk of long-term health issues and complications, making it suitable only for patients with obesity [17]. Non-invasive body contouring techniques are not helpful for severely obese patients as they cause moderate reductions of 2–4 cm in limb or waist circumference though regarded safer [18]. Moreover, the current non-invasive body contouring techniques like high-intensity focused ultrasound, low-level laser therapy, cryolipolysis, and radiofrequency have not undergone systematic evaluations for their efficacy, safety, and patient satisfaction [19]. Pharmacotherapy for obesity is also disheartening with meager efficacy. Most of antiobesity drugs have been withdrawn from the market because of adverse effects.

Exercise practice preponderance was found for weight control measure by the doctors in this study, and around one-fourth of the doctors admitted that they have used CAM for weight reduction and found it beneficial. This could be explained on the basis of the fact that there is a generalized consensus in people including doctors that increased physical activity is necessary for weight control. As a matter of fact, doctors are involved in controlling and advising patients who are obese, diabetic, etc., for exercising regularly. The National Institutes of Health issued guidelines in 1998 recommending that healthcare professionals should advise obese patients to lose weight [20]. Doctor's involvement is necessary for multidisciplinary obesity treatment. Obese patients who receive counseling and weight management from doctors are significantly more likely to undertake weight management programs than those who do not [21].

The number of doctors practicing exercise for weight control was much higher in this study in comparison to CAM usage for weight reduction. There is a possibility that among these doctors, there must be a considerable number of doctors performing yoga, which is also under the shelter of CAM therapy and might be referring as doing exercise.

A study by Kong *et al.* discovered lower use of CAM by the doctors on themselves akin to this study [5]. The lower use of CAM among doctors could be because of their comprehensive knowledge of modern medicine and availability of insufficient data regarding efficacy and safety of CAM therapy.

In the present study, doctors with normal weight accepted that they have used CAM themselves for reducing their weight. After reviewing the literature, a higher use of CAM among obese doctors was found [12]. Plausible explanation for less utilization of CAM therapies in obese doctors in the present study may be their unwillingness to adhere to healthy lifestyle. Exercising and yoga are not easy to execute by obese individuals, and therefore, such individuals are indulged in self-doubt, discomfort, and embarrassment [22].

The present study reports maximum usage of green tea as CAM by the doctors. Green tea is considered a remedy for obesity popularly [18,23]. This could be due to easy availability, wide promotion, and nowadays recommendation by dieticians. The number of studies conducted to prove the beneficial effects of green tea like appetite reduction and energy consumption have failed to authenticate its remedial effects [24-27]. However, some studies have concluded that mechanisms like increased energy expenditure may help reduce body weight by its consumption [25,28,29].

After green tea, yoga and meditation were next in row to be practiced by doctors. Yoga (including breathing techniques) was the most used therapy followed by meditation and massage as stated in the study by Kong *et al.* and Sharpe *et al.*, which is in congruence to the present study [5,8]. With respect to the reasons for practicing yoga and meditation, the explanation could be based on their age-old existence and their probable genesis in India. Another reason for their wide practice could be that these are devoid of any interventions and are considerably safer [30].

Less usage of glucomannan and fiber dietary supplement suggests that probably, doctors are aware of the incomplete evidence in support of their effectiveness and having negligible effect [31]. Considering their potential side effects and the absence of evidence regarding their long-term safety, the use of dietary supplements is minimized. As a qualified person, a doctor is well versed with the fact that a new dietary supplement is marketed without undergoing any experimentation. The new, experimental, or unregulated herbal ingredients are marketed, and many supplements contain ingredients or contaminants responsible for adverse effects and interactions [32].

Limitations

One of the major limitations of this study is that the data were drawn out from the information reported by the doctors themselves; hence, if the given weight is incorrect, it can lead to inappropriate estimation of obesity and also the duration of CAM utilization was not correlated with weight reduction in this study. Further, interpretation for arriving to conclusion can be hampered by smaller sample size.

CONCLUSION

This study showed that approximately one third doctors are using complementary and alternative medicine (CAM) for themselves for weight reduction. In spite of being trained in modern medicine and being well versed with the loopholes regarding production and marketing of CAM therapies, a substantial number of doctors are using CAM themselves and also recommending to others.

AUTHORS' CONTRIBUTIONS

All authors have reviewed the final version to be published and agreed to be accountable for all aspects of the work. Concept and design: Arvind K. Yadav, Sakshi Singh, Meenu Pichholiya, Sangita Gupta. Acquisition, analysis, or interpretation of data: Arvind K. Yadav, Sakshi Singh, Meenu Pichholiya. Drafting of the manuscript: Arvind K. Yadav, Sakshi Singh, Meenu Pichholiya. Critical review of the manuscript for important intellectual content: Arvind K. Yadav, Sakshi Singh, Meenu Pichholiya, Sangita Gupta. Supervision: Sangita Gupta.

CONFLICT OF INTEREST

Nil.

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None.

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