

DOI: <http://dx.doi.org/10.18203/2319-2003.ijbcp20203632>

Original Research Article

## Complementary and alternative medicines usage in elderly patients in tertiary care teaching hospital of North India

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**Received:** 03 August 2020

**Accepted:** 19 August 2020

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### ABSTRACT

**Background:** Complementary and alternative medicine (CAM) is defined as a group of diverse medical health care systems, practices and products that are not presently considered to be part of conventional medicine. Its use is highly prevalent in elderly population because of presence of chronic diseases. So, present study was planned to assess CAM usage in elderly patients.

**Methods:** This observational, questionnaire-based study was conducted at department of pharmacology, in association with department of medicine and included all adult patients of more than 60 years of age who have taken any CAM therapy. Demographic data, name of CAM preparation, its characteristics and behavioral pattern for its usage were recorded.

**Results:** Out of 200 patients of more than 60 years attending medicine outpatient department, 115 were found to be CAM users. CAM usage was more in females (59.1%); age group of 60-69 years (49.57%); rural residents (66.08%); low socioeconomic status (81.73%). Most common CAM preparations used were dietary supplements (61.7%) and vitamins and minerals (56.52%) for indications such as chronic pain and endocrine disorders because it was thought to be safe. 76.52 % of CAM users did not discuss CAM with their health care provider.

**Conclusions:** CAM use is highly prevalent in elderly patients and more so in females of low socioeconomic status. Most common CAM therapy used was dietary supplements. Continuous educational efforts are needed to enhance the awareness of patients and healthcare providers regarding the CAM therapy.

**Keywords:** Complementary medicine, Alternative medicine, Elderly, Complementary and alternative medicine

### INTRODUCTION

Complementary and alternative medicine (CAM) is defined by the national center for complementary and alternative medicine (NCCAM) as a group of diverse medical health care systems, practices and products that are not presently considered to be part of conventional medicine.<sup>1</sup> There is rapid increase in use of CAM with prevalence more than 53% among those aged 50 years and above in a joint survey by American Association of Retired People (AARP) and National Center for Complementary and Alternative Medicine (NCCAM).<sup>2</sup>

There are five categories of CAM as defined by NCCAM natural products, mind-body medicine, manipulative and body-based practices, movement therapies and whole medical systems. Natural products refer to nutritional and dietary supplements such as vitamin B complex, ginseng, herbs, soyabean paste etc.<sup>1</sup>

Most people use CAM for opposite ends of the disease spectrum: either for chronic, minor illnesses (for example, back pain) or for devastating, life threatening conditions (for example, cancer).<sup>3</sup> Other chronic conditions were osteoarthritis, rheumatoid arthritis, cognitive disorder, depression, anxiety, sleep disturbance, hypertension, stroke and other cardiovascular disorders.<sup>4</sup>

Scientific studies are currently underway to study the effect of vitamins and nutritional supplements in diseases such as Alzheimer's disease and benign prostatic hypertrophy.<sup>5,6</sup>

Elderly populations are more susceptible to chronic health conditions due to natural ageing process and so high prevalence of CAM in them.<sup>7</sup> Older adults use CAM for various reasons, including lower costs, more concern about adverse effects of conventional medicines, dissatisfaction with their medical care, their subjective feeling of health improvement with use of CAM, the search for more effective therapies, improving the quality of life and for pain relief.<sup>8</sup> CAM therapies are generally more "natural" and safer than conventional medicine and provide greater relief of symptoms and CAM being consistent with their beliefs and philosophical orientation toward health and illness as well.<sup>9,10</sup> Many elders' CAM choices were affected by their ethnic and cultural origins.<sup>11</sup>

Polypharmacy is problem in geriatric population because of several reasons. Elderly people are at a greater risk for adverse drug reactions because of the metabolic changes and reduced drug clearance associated with ageing; this risk is further more exacerbated by increasing the number of drugs used.<sup>12</sup> CAM using older adults are susceptible to drug-herb or drug-supplement interactions similar to drug-drug interactions which occurs on taking herb or supplement with prescribed medicine.<sup>13</sup>

There is lack of data on use of complementary and alternative medicines by elderly patients in India especially in our institution. So, this study was planned to evaluate CAM usage in elderly patients attending medicine outpatient department of a tertiary care teaching hospital.

### **Aims and objectives**

To evaluate use of complementary and alternative medicine by older adults of more than 60 years of age. Characteristics and behavioral patterns behind use of complementary and alternative medicine.

## **METHODS**

This prospective, observational, questionnaire-based study was conducted in the department of pharmacology in collaboration with department of medicine of tertiary care teaching hospital for period of 24 weeks i.e. from March to August 2019.

Ethics committee permission (No. I<sub>12</sub>C/2018/562<sub>A</sub>) was obtained before starting the study. Participation was anonymous and voluntary. Participants gave their consent by completing questionnaire.

"Elderly persons" were defined as those who were of 60 years of age and above.<sup>14</sup> The questionnaire was

structured and modeled based on similar surveys conducted earlier.<sup>15-17</sup>

### **Inclusion criteria**

Inclusion criteria were older adults above 60 years of age who have taken any complementary and alternative medicine attending medicine outpatient department during the study period and patients of either sex were included in the study.

### **Exclusion criteria**

Exclusion criteria were anyone associated with the business of alternative medicine, such as practitioners, shopkeepers, or complementary medicine manufacturing unit workers, anyone with dementia and anyone with speech problem.

The questionnaire included demographic data such as age, gender, educational level, socioeconomic status and system affected. Systems affected were classified into central nervous system, cardiovascular system including hypertension, gastrointestinal system, respiratory system and other systems. In this study, we included non-medical health promoting substances such as vitamins or teas under CAM. We recorded name of CAM preparation, reason for usage, disease for which CAM was used, reasons behind use of CAM, experience towards CAM and perceived effects and risks with use of CAM and generally preferred treatment. Patients were also asked whether they informed their doctor regarding CAM usage.

### **Statistical analysis**

The answers from questionnaires were analyzed by entering the data into microsoft excel sheet and analyzed. The data were expressed as n (%).

### **Ethical approval**

The study was approved by the Institutional Ethics Committee of Government Medical College Jammu, India (vide no. I<sub>12</sub>C/2018/562<sub>A</sub>).

## **RESULTS**

A total of 200 elderly patients were interviewed in the medicine department during the study period. Among the interviewed patients, 115 (57.5%) were found to be complementary and alternative medicine user. The demographic details of the CAM using patients are presented in Table 1. Majority of patients (49.57%) were of age group 60-69 years and 59.1% patients were females. Patients educated below high school reported higher use of CAM therapy. Also 66.08% CAM using patients were residents of rural area and 33.91% were of low socio-economic status.

CAM preparations most frequently used by patients were dietary supplements (61.7%); followed by vitamins and minerals (56.52%), yoga (51.3%) and herbal remedies (42.6%). Other CAM therapies used were massage, green tea, acupuncture, meditation and homeopathy. Various herbs and natural products taken by patients include fennel tea, peppermint tea, turmeric powder, ginger powder, garlic, St John’s wort, grapefruit juice and unspecified vegetable juice. Vitamins B, C, D, E, folic acid and minerals such as iron, calcium were also consumed by patients (Figure 1).

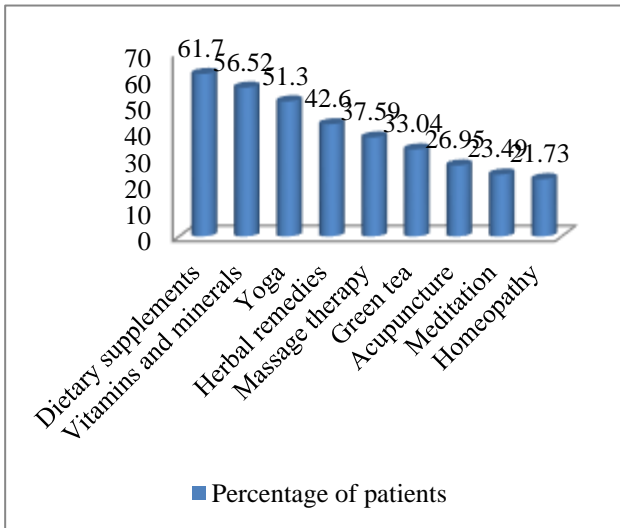


Figure 1: Types of CAM therapy used by patients.

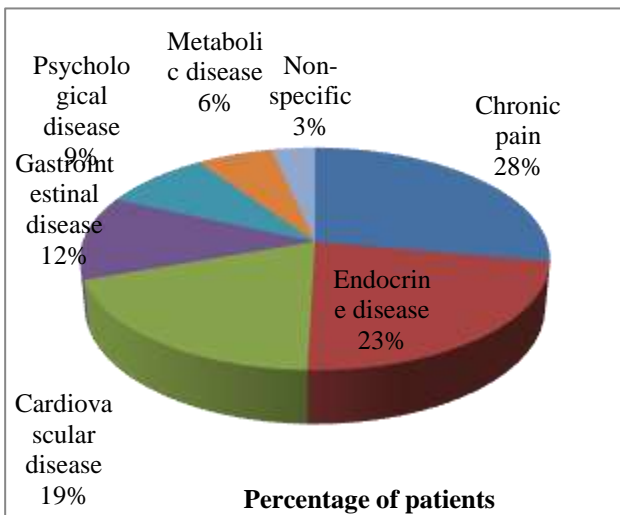


Figure 2: Indications for which CAM was used.

Most common indication for which patients took CAM was chronic pain (28 %). 23 % patients reported CAM use for endocrine disorder which included diabetes, Thyroid disorder. Other indications were cardiovascular disease, gastrointestinal disease, psychological disease, metabolic disease and some non-specific indications such as general well-being (Figure 2).

Table 1: Demographic profile of patients using CAM.

Parameter	Number of patients N (%)
<b>Age group (years)</b>	
60-69	57 (49.57)
70-79	48 (33.04)
>80	20 (17.39)
<b>Sex</b>	
Females	68 (59.1)
Males	47 (40.87)
<b>Education</b>	
Below high school	82 (71.3)
High school or above	33 (28.69)
<b>Residence</b>	
Rural	76 (66.08)
Urban	39 (33.91)
<b>Socio-economic status</b>	
Low income	94 (81.73)
High income	21 (18.26)
<b>Indication</b>	
Chronic pain	32 (27.82)
Endocrine disease	26 (22.60)
Cardiovascular disease	22 (19.13)
Gastrointestinal disease	14 (12.17)
Psychological disease	10 (8.69)
Metabolic disease	7 (6.08)
Non-specific	4 (3.47)

CAM usage was in 56.5 % based on recommendations (22.6 % by friends, 13.91 % by pharmacists, 12.17 % by family and 7.82 % by doctor) or as a result of one’s own initiative by medium of Internet, TV, radio (43.47%). More than half of patients (57.39 %) were using more than 1 CAM therapy. 70.43 % patients preferred both conventional and CAM therapy together. Most common reason (30.43 %) for CAM use was that the patients felt it natural and so safe. Other reasons given were adverse effects to conventional therapy, increased benefit than conventional, lesser cost and promote good health (Table 1).

Of all the older adults enrolled in the study, more than half (56.52 %) stated that they could neither assess whether or not their CAM preparations would have side effects. 25.21 % reported no harmful effects. 11.30 % reported mild adverse effects with CAM reparations which were stomach upset and rashes. Only 6.95 % were aware of possibly harmful drug interactions (Table 2).

More than three-fourth (76.52 %) of CAM users did not discuss CAM with their health care provider. Most common reason (28.69 %) given for that was the health care provider had never asked them about CAM. Another common reason was that they were not comfortable discussing it with health care provider (Table 2).

**Table 2: Characteristics and behavioural patterns behind use of CAM.**

Characteristic and behavioral pattern		N* (%)
<b>Reason for cam use</b>	Felt natural and so safe	35 (30.43)
	Increased benefit than conventional medicine	17 (14.78)
	Adverse effects to conventional therapy	28 (24.34)
	Promote good health and well-being	19 (16.52)
	Lesser cost	16 (13.91)
<b>General treatment preference</b>	Cam and conventional	81 (70.43)
	Conventional	12 (10.43)
	Cam	22 (19.13)
<b>Channel of use</b>	Family	14 (12.17)
	Friends	26 (22.6)
	Doctor	9 (7.82)
	Pharmacist	16 (13.91)
	Media (internet, TV, radio)	50 (43.47)
<b>Use of cam treatment</b>	1 cam treatment	49 (42.60)
	≥2 cam treatment	66 (57.39)
<b>Participant's assessment of side effects</b>	Cannot assess	65 (56.52)
	No harm	29 (25.21)
	Mild	13 (11.30)
	Harmful in combination with other	8 (6.95)
<b>Adverse effects with cam</b>	Stomach upset	7 (6.08)
	Rashes	4 (3.47)
<b>Was cam discussed with their health care provider?</b>	Yes	27 (23.47)
	No	88 (76.52)
<b>Reason for not discussing cam with health care provider</b>	Healthcare provider never asked	33 (28.69)
	Not enough time	15 (13.04)
	Don't think healthcare provider knows about the topic	18 (15.65)
	Health care provider should have been dismissive or told you not to do it	20 (17.39)
	Weren't comfortable discussing it with health care provider	29 (25.21)
<b>Current use</b>	Yes	96 (83.47)
	No	19 (16.52)
<b>Reason for discontinuation of cam</b>	Negative opinion of physician	7 (6.08)
	Distrust of treatment effect	3 (2.60)
	Fear of adverse effects	5 (4.34)
	Expensive	2 (1.73)
	Far distance	2 (1.73)

\*Number of patients.

When asked about current use of CAM therapy, it was found that 16.52% of patients had discontinued CAM therapy due to negative opinion of physician (6.08%), fear of adverse effects (4.34%), distrust of treatment effect (2.6%), expensive treatment (1.73%) and CAM provider is located at far distance (1.73%) (Table 2).

## DISCUSSION

Our study in elderly patients adds to the existing reports of CAM use in elderly patients. Out of 200 patients interviewed in the medicine outpatient department, 57.5 % were found to be CAM users. Number of other studies also has shown that CAM is very prevalent.<sup>7,18</sup>

Demographic profile can affect CAM use. Women were more likely to use CAM interventions than men in previous studies.<sup>15,19</sup> This was found in our study also as 59.1% patients were females. Majority of patients (49.57%) were of age group 60-69 years in our study; whereas in similar study by Cohen et al, 26 % of CAM users were of age group 65-74 years.<sup>20</sup> Lower socioeconomic status and education below high school were associated with increased usage of CAM. This is in contrast to that reported in previous study where Increased CAM use was associated with increased income and education qualifications more than high school.<sup>19</sup> Difference in demographic profile between studies might be responsible for difference in CAM use.

In the present study, dietary supplements were used most commonly followed by vitamins and minerals, yoga, herbal remedies and other CAM therapies. In a similar study by Schnabel et al, dietary supplement and herbal remedies were most commonly used.<sup>15</sup> In another study by Ness et al, 65% of CAM users were taking dietary supplements and also massage therapy was used more commonly than acupuncture.<sup>19</sup> The CAM therapy selected by patients depends on accessibility, affordability, indication for which CAM was used, knowledge about CAM, beliefs and behavioral patterns.

Several studies have reported CAM use in disorders such as arthritis, diabetes, cardiovascular disorders and depression.<sup>18,19,21-23</sup> Most common indications for CAM usage in our study were found to be chronic pain, cardiovascular disease and endocrine disease.

Majority of patients (30.43%) felt that CAM therapy is natural and so safe. 24.34 % patients used CAM because of adverse effects to conventional therapy. In previous study by Jaiswal et al, it has been found that 52.17% patients used CAM because of good previous experience.<sup>17</sup> More than half of patients (57.39%) were using more than one CAM therapy.

One of the important findings in our study is that the majority of CAM users (76.52%) did not discuss CAM with their healthcare provider, but used it on recommendation of friends, pharmacist, family and some took CAM on its own by medium of Internet, TV, radio. The common reasons given for that were Healthcare provider never asked them and some patients were not comfortable discussing it with healthcare provider. This information gap could be detrimental for patients as patients were attending medicine outpatient department, so there are chances that patients were using CAM and conventional medicine at the same time. Also, 70.43% patients preferred combined CAM and conventional therapies. Hence, the possibility of side-effects and drug herb interactions increases especially in elderly where polypharmacy is common. Similar findings were found in previous studies where majority of patients used CAM based on some recommendation and also majority did not inform their healthcare provider about CAM.<sup>15,20</sup> This is in contrast to study by Cheung et al where 53 % disclose CAM with their general physician.<sup>18</sup>

In study by Schnabel et al, 57.9% of patients cannot assess whether CAM was associated with side-effects or not and 23.5% reported mild adverse effects.<sup>15</sup> Similar results were found in our study also. It has been found that majority of patients were still using CAM therapy whereas 16.52 % had discontinued CAM. Of those who were not currently using CAM, major reasons given were negative opinion of physician and fear of adverse effects. In contrast, more percentage of patients had discontinued in another study and reason given was distrust of treatment effect.<sup>16</sup>

Based on findings of our study and those of others, it is evident that use of complementary and alternative medicine is widespread in elderly population. So, proper clinical history regarding CAM use is important while treating elderly patients to reduce drug interactions.

In the present study, we could not include patients attending outpatient departments of oncology, obstetrics and gynecology, orthopedics. So more extended studies are required to comment on these conditions.

## CONCLUSION

The findings of our study concluded that CAM use is highly prevalent in elderly patients and majority of patients were females of low socio-economic status and residents of rural area.

Most common CAM therapy used was dietary supplements and most common indication for which CAM was used was chronic pain. Majority of patients felt that CAM therapy is natural and free of adverse effects and did not inform their healthcare provider about CAM usage. So, continuous educational efforts are needed to enhance the awareness of patients and healthcare providers regarding the implications, benefits and risks of various complementary and alternative therapies.

## ACKNOWLEDGEMENTS

Authors are thankful to Department of Pharmacology, Government Medical College Jammu.

*Funding: No funding sources*

*Conflict of interest: None declared*

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

## REFERENCES

1. Institute of Medicine (US) Committee on the Use of Complementary and Alternative Medicine by the American Public. Complementary and Alternative Medicine in the United States. Washington (DC): National Academies Press (US); 2005. 1, Introduction. Available at: <https://www.ncbi.nlm.nih.gov/books/NBK83804/>. Accessed on June 2020.
2. AARP and NCCAM Survey Report: U.S. National Institute of Health: Department of Health and Human Services, National Institute of Health; 2011. Complementary and Alternative Medicine: What People Aged 50 and Older Discuss with their Health Care Providers.
3. Ernst E, Berman FA. Complementary and alternative medicine: what is it all about. *Occup Environ Med.* 2002;59(2):140-84.
4. Siddiqui MJ, Min CS, Verma RK, Jamshed SQ. Role of complementary and alternative medicine in



- geriatric care: A mini review. *Pharmacogn Rev.* 2014;8(16):81-7.
5. Cremonini AL, Caffa I, Cea M, Nencioni A, Odetti P, Monacelli F. Nutrients in the Prevention of Alzheimer's Disease. *Oxid Med Cell Longev.* 2019;2019:9874159.
  6. Keehn A, Lowe FC. Complementary and alternative medications for benign prostatic hyperplasia. *Can J Urol.* 2015;22(1):18-23.
  7. Sharma E, Dubey AK, Malhotra S, Manocha S, Handu S. Use of complementary and alternative medicines in Indian elderly patients. *Natl J Physiol Pharm Pharmacol.* 2017;7(9):929-34.
  8. Gaylord S, Crotty N. Enhancing function with complementary therapies in geriatric rehabilitation. *Top Geriatr Rehabil.* 2002;18:63-80.
  9. Anderson EZ. Complementary therapies and older adults. *Top Geriatr Rehabil.* 2009;25:320-28.
  10. Roy V, Gupta M, Ghosh RK. Perception, attitude and usage of complementary and alternative medicine among doctors and patients in a tertiary care hospital in India. *Indian J Pharmacol.* 2015;47:137-42.
  11. Sackett K, Carter M, Stanton M. Elders' use of folk medicine and complementary and alternative therapies: an integrative review with implications for case managers. *Prof Case Manag.* 2014;19(3):113-25.
  12. Dagli RJ, Sharma A. Polypharmacy: a global risk factor for elderly people. *J Int Oral Health.* 2014;6(6):1-2.
  13. Elmer GW, Lafferty WE, Tyree PT, Lind BK. Potential interactions between complementary/alternative products and conventional medicines in a Medicare population. *Ann Pharmacother.* 2007;41(10):1617-24.
  14. Dongre AR, Deshmukh PR. Social determinants of quality of elderly life in a rural setting of India. *Indian J Palliat Care.* 2012;18(3):181-89.
  15. Schnabel K, Binting S, Witt CM, Teut M. Use of complementary and alternative medicine by older adults: a cross-sectional survey. *BMC Geriatr.* 2014;14:38.
  16. Choi B, Han D, Na S, Lim B. Factors related to the parallel use of complementary and alternative medicine with conventional medicine among patients with chronic conditions in South Korea. *Integr Med Res.* 2017;6(2):223-29.
  17. Jaiswal K, Bajait C, Pimpalkhute S, Sontakke S, Dakhale G, Magdum A. Knowledge, attitude and practice of complementary and alternative medicine: A patient's perspective. *Int J Med Public Health.* 2015;5:19-23.
  18. Cheung CK, Wyman JF, Halcon LL. Use of complementary and alternative therapies in community-dwelling older adults. *J Altern Complement Med.* 2007;13(9):997-1006.
  19. Ness J, Cirillo DJ, Weir DR, Nisly NL, Wallace RB. Use of complementary medicine in older Americans: results from the Health and Retirement Study. *Gerontologist.* 2005;45(4):516-24.
  20. Cohen RJ, Ek K, Pan CX. Complementary and alternative medicine (CAM) use by older adults: a comparison of self-report and physician chart documentation. *J Gerontol A Biol Sci Med Sci.* 2002;57(4):223-7.
  21. Kaboli PJ, Doebbeling BN, Saag KG, Rosenthal GE. Use of complementary and alternative medicine by older patients with arthritis: a population-based study. *Arthritis Rheum.* 2001;45(4):398-403.
  22. Sadiq S, Khajuria K, Khajuria V. Complementary and alternative medicine use among type-2 diabetes patients in a tertiary care hospital. *Int J Basic Clin Pharmacol.* 2017;6:2561-5.
  23. Grant SJ, Bin YS, Kiat H, Chang DH. The use of complementary and alternative medicine by people with cardiovascular disease: a systematic review. *BMC Public Health.* 2012;12:299.

**Cite this article as:** Mehra A, Khajuria V. Complementary and alternative medicines usage in elderly patients in tertiary care teaching hospital of North India. *Int J Basic Clin Pharmacol* 2020;9:1434-9.