

Utilization of Complementary and Alternative Medicine (CAM) among Chronic Disease Patients in a Government Hospital Outpatient Department in Hyderabad

Sobia Noor*, Afrah Begum, Sidra Amara Siddiqua, Ghouse Qhasim Maula Bakshi

Department of Pharmacy Practice, Anwarul Uloom College of Pharmacy, Hyderabad, Telangana, INDIA.

ABSTRACT

Background: Complementary and Alternative Medicine (CAM) use is prevalent among patients with Non-Communicable Diseases (NCDs). Understanding the factors driving CAM use in this population is essential for improving chronic disease management and patient care. This study aimed to assess the prevalence and factors associated with CAM use among patients with NCDs and to explore the types of CAM practices commonly utilized within this group. **Materials and Methods:** The study surveyed 245 participants, gathering data on their CAM usage, types of CAM practices, conditions treated, and influential factors in their CAM choices. The study also analyzed the demographic and disease-specific preferences for CAM practices, particularly focusing on usage by condition and patient demographics. **Results:** A high prevalence of CAM usage (72.6%) was found among participants, with diabetes mellitus and arthritis patients showing notable usage rates of 13% and 11%, respectively. Common CAM practices included herbal remedies, physician-recommended treatments, supplements, prayer, and walking. The study revealed a preference among male and higher-educated individuals for combining allopathic and herbal treatments. Friends and family were significant influences on CAM choices, affecting 65.3% of cases. Notably, many participants did not disclose their CAM use to their primary healthcare providers. **Conclusion:** The findings highlight a substantial engagement with CAM among NCD patients, underscoring the need for healthcare providers to incorporate CAM considerations into chronic disease management. Enhanced communication regarding CAM can improve patient care by aligning healthcare approaches with patient preferences and needs.

Keywords: Alternative Medicine, Chronic Disease Management, Herbal Remedies, Non-communicable Diseases, Patient Communication, Patient Care.

Correspondence:

Dr. Sobia Noor

Research Scholar and Associate Professor,
Department of Pharmacy Practice,
Anwarul Uloom College of Pharmacy,
Hyderabad, Telangana, INDIA.
Email: sobianoor76@gmail.com

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INTRODUCTION

Chronic disease management has become increasingly challenging, with a rising number of individuals turning to complementary and Alternative Medicine (CAM) as a means to supplement or replace conventional treatments. CAM encompasses a variety of therapeutic modalities, including alternative medical systems, mind-body interventions, biologically based therapies, manipulative practices, and energy therapies, offering patients additional options for symptom relief, enhanced quality of life, and management of needs unmet by traditional medical approaches (Ernst & Cassileth, 1998; National Center for Complementary and Integrative Health (NCCIH, 2021;). Understanding the prevalence, types, and factors influencing CAM use among chronic disease patients is

crucial, as these insights can help healthcare providers develop strategies that consider patients' holistic needs while promoting safe, effective care.

Global studies have reported CAM usage rates among chronic disease patients ranging from 30% to 70%, influenced by factors such as demographic characteristics, dissatisfaction with conventional treatment outcomes, perceived CAM effectiveness, cultural beliefs, and accessibility to CAM services (Eisenberg *et al.*, 1998; World Health Organization, 2005). Notably, CAM use is particularly common among patients with Non-Communicable Diseases (NCDs), where long-term symptom management and quality-of-life improvements are significant concerns. However, the increasing adoption of CAM also introduces potential risks, including herb-drug interactions, allergic reactions, and adverse effects from manipulative therapies, underscoring the need for cautious, informed CAM integration into patient care (Bell *et al.*, 2015; Bishop & Lewith, 2010).

A significant concern is the lack of standardized guidelines and evidence-based protocols governing CAM practices, which can



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lead to unregulated use and insufficient communication with healthcare providers. This can result in adverse health outcomes and suboptimal treatment efficacy (Kotsirilos *et al.*, 2011; Miller *et al.*, 2009). Recognizing these risks, this study investigates CAM's prevalence, specific types, influencing factors, and associated adverse effects among patients with chronic diseases. By doing so, it aims to support informed decision-making and patient-centered strategies in healthcare that prioritize safety and efficacy.

This study aims to assess the prevalence of CAM usage among patients with NCDs, identifying the types of CAM modalities commonly employed; examine demographic and disease-specific factors influencing CAM utilization in this population; and evaluate the potential risks and adverse effects associated with CAM use to inform safe and effective integration within chronic disease management strategies.

MATERIALS AND METHODS

Study Design and Setting

This cross-sectional observational study was conducted at a district hospital from September 2022 to February 2023 to evaluate CAM usage among chronic disease patients. The study population included individuals aged 18 years or older with a chronic disease diagnosis of at least six months, recruited from diverse caste and class backgrounds to ensure varied representation. Exclusion criteria included incomplete survey responses, unwillingness to participate, pregnancy, psychiatric illness, and critical health conditions. A total of 245 eligible participants provided verbal and written informed consent to join the study as shown in Figure 1. All procedures were conducted in compliance with ethical standards, with approval obtained from the hospital's ethics committee.

Data Collection: A self-designed questionnaire was developed, consisting of four sections, each structured to capture relevant aspects of CAM usage:

Demographic Details: This section recorded participants' age, gender, educational level, occupation, socioeconomic status, and caste background.

Clinical Characteristics: Participants' chronic disease types, duration of illness, and history of conventional treatments were documented to understand the clinical profile of the sample.

CAM Usage Assessment: CAM usage was assessed using an adapted version of the Integrative Complementary and Alternative Medicine Questionnaire (ICAMQ). This section gathered information on the type, frequency, and duration of CAM practices, as well as participant satisfaction with these methods.

Herbal Medicine and CAM-Related Factors: This section focused on herbal remedies and other CAM factors, including

influences on CAM choice (such as family, friends, or healthcare providers), perceived benefits, and self-reported adverse effects.

Statistical Analysis: Data were entered into Microsoft Excel and subsequently analyzed using IBM SPSS Statistics software. Descriptive statistics (mean, standard deviation, frequencies, and percentages) summarized study variables. Pearson's Chi-square test was used to assess associations between demographic variables and CAM usage, with statistical significance set at $p < 0.05$.

RESULTS

Our study involved 245 participants, revealing a considerable prevalence of CAM usage at 72.6%. A balanced gender distribution was noted in our findings. The analysis indicated that age significantly influenced CAM usage, with a higher prevalence (37.02%) observed among participants over 60 years old. Education level emerged as a significant factor affecting CAM usage, with lower education levels correlating with higher adoption rates. Income also played a crucial role in shaping CAM practices, particularly in the utilization of modalities such as visits to spiritual healers and self-help practices. A notable trend was the combination of allopathic and herbal medicines, especially among males and individuals with higher education.

Popular CAM practices identified in our study included prayer, walking, and dietary supplements. The usage rates for specific modalities were as follows: cupping therapy (7.62%), homeopathy (8.64%), acupuncture (1.39%), herbal remedies (5.17%), spiritual healing (2.0%), and no usage of leech therapy. The prevalence of various CAM categories was reported as follows: herbs (53.04%), vitamins/minerals (78.47%), alternative systems (58.48%), and other therapies (57.93%) (Table 1).

Factors influencing CAM usage included the perception that CAM has fewer side effects (56.7%) and its preventive potential (53.4%). Additionally, 31.4% acknowledged successful past usage, while 48.6% perceived beneficial health effects from CAM. A substantial portion (65.3%) relied on recommendations from family and friends, and 50.2% valued the affordability and accessibility of CAM therapies. Moreover, 36.3% expressed a lack of trust in allopathic medicines (Table 2). The study revealed a significant discrepancy in the disclosure of herbal medicine usage to physicians, with only 34% reporting such information (Table 3). Approximately 70% of physicians actively inquired about patients' CAM usage.

In terms of adverse effects attributable to herbal medicine, 6.53% of participants reported experiencing them rarely, 7.34% on several occasions, while 58.7% reported never experiencing adverse effects (Table 4). Information sources regarding CAM primarily included family and friends (50.2%), books and magazines (11.0%), and the internet (10.2%). Among the total respondents, 60% (147 individuals) reported using CAM in conjunction with

allopathic medicines, whereas 12.65% (31 participants) indicated they did not combine CAM with allopathic treatments (Table 5).

Our study showed that among the total respondents, 147 individuals, representing 60% of the sample, reported using CAM in conjunction with allopathic medicines. Conversely, 31 participants, constituting 12.65% of the sample, indicated that they did not combine CAM with allopathic treatments (Table 6). Motivators for CAM usage included references from family and friends (65.3%), perceived fewer side effects (56.7%), and beliefs in its role in disease prevention (53.4%). Other influential factors included its perceived role in disease prevention (53.4%), its ready availability and affordability (50.2%), its perceived health benefits (48.6%), and its natural synthesis (35.1%) (Table 7). Our study revealed compelling associations between higher income levels and the utilisation of CAM therapies. Notably, participants with greater income demonstrated a statistically significant inclination towards engaging in various CAM practices. Specifically, higher income levels were markedly correlated with visits to spiritual healers (p value=0.007), as well as the adoption of self-help modalities such as meditation (p value=0.001), walking (p value=0.005), and participation in traditional healing ceremonies (p value=0.000) (Table 8).

Significantly, our study identified a correlation between age and the utilisation of meditation and traditional healing as CAM practices, supported by a significant p value (Table 9). Our study comprised 20% illiterate participants, 24% with primary education, 38% with secondary education, and only 18% with higher education. Notably, individuals with lower education levels showed a significant preference for CAM, strongly correlated with physician visits (p value=0.000) (Table 10).

The study showed the highest usage of meditation in the age group of 18-30 years, followed by 30-45 years. Conversely, traditional healing was used the most by participants aged 45-60 years, highlighting a correlation between age and the utilization of CAM practices.

DISCUSSION

Our study provides insights into the complex landscape of CAM usage, revealing notable patterns and correlations across various demographic and socioeconomic factors. The high prevalence of CAM usage at 72.6% highlights the importance of understanding the diverse factors influencing patient preferences and practices. Nailwal *et al.*, (2020) reported a male predominance in CAM utilization, while our study had a more balanced gender distribution. Ray *et al.*, (2018) and Shahjalal *et al.*, (2020) reported lower CAM prevalence rates, suggesting variability across

Table 1: Utilization of CAM therapies by Type.

Types Of CAM Therapies	Frequency	Percentage (%)
Cupping Therapy	19	7.62
Homeopath	26	8.64
Leech Therapy	0	0
Acupuncture	5	1.39
Spiritual Healer	5	2.0
Herbs	153	58.21
Vitamins/Minerals	191	78.47
Unani/Ayurvedic	140	58.48
Others	141	58.14

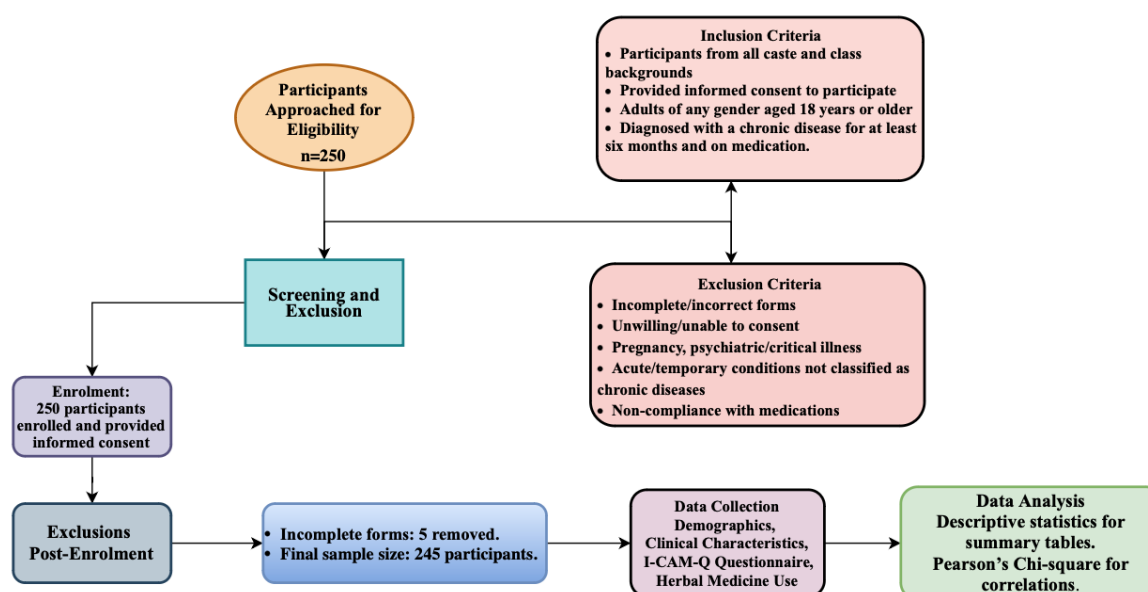


Figure 1: Flowchart illustrating participant recruitment, enrolment of Participants.

demographics and regions. The significant age-related findings suggest that older individuals, particularly those managing chronic diseases, are more inclined toward CAM. This finding contrasts with the study by Ray *et al.*, (2018), which emphasized younger populations as primary users of CAM. The increased prevalence among older adults may be due to their chronic health conditions, necessitating alternative therapeutic options.

Education level also emerged as a significant determinant of CAM usage. Our findings align with Shahjalal *et al.*, (2020), who noted that lower education correlates with higher CAM adoption. This trend underscores the need for targeted health education initiatives to improve understanding and utilization of evidence-based practices, particularly among less educated populations. Income played a critical role, with higher earners demonstrating a pronounced inclination toward engaging in diverse CAM practices. Our results echo findings from previous research, indicating that socioeconomic status influences access to and preferences for CAM modalities, particularly spiritual healing and self-help practices (Nailwal, Venkateshiva, & Gupta, 2021).

The importance of familial and social networks as primary sources of CAM information underscores the necessity for healthcare providers to engage with these networks in treatment discussions. While around 70% of physicians in our study inquired about patients' CAM usage, existing literature points to physicians' discomfort in discussing CAM due to limited familiarity with these therapies. This contrasts with findings from Metcalfe *et al.*, (2010), where 58.5% of patients disclosed CAM use to their physicians. This highlights the need for enhanced training and resources for healthcare providers to foster open discussions about CAM.

Participants predominantly obtained information about CAM from social networks, with family and friends accounting for about 50.2% of responses. This highlights the significant role personal

connections play in understanding CAM practices. Secondary sources included books and magazines (11.0%) and the internet (10.2%). These findings are consistent with Devashish Nailwal *et al.*, (2021), who reported that friends (26.6%) and family (33.1%) were key information sources. Health professionals contributed 16.9%, while mass media accounted for 27.4%. This suggests that healthcare providers should engage with patients and their support systems to improve access to accurate CAM information, empowering patients to make informed choices.

Findings from Shahjalal *et al.*, (2020) found that 55.5% of patients in Bangladesh turned to CAM to avoid adverse effects. In comparison, 41.6% used it for managing chronic diseases, and approximately 38.8% cited its easy availability and affordability as critical reasons for usage. A study by Nailwal *et al.*, (2020) revealed that patients' desire to explore different treatment options (39.5%), concerns about adverse effects from allopathic medicine (21.8%), and the high cost of allopathic treatment (14.5%) were among the primary reasons for CAM usage in Non-Communicable Disease (NCD) patients. Our study comprised 20% illiterate participants, 24% with primary education, 38% with secondary education, and only 18% with higher education. Notably, individuals with lower education levels showed a significant preference for CAM, strongly correlated with physician visits (p value=0.000). This trend mirrors Shahjalal *et al.*, (2020) study in Bangladesh, which indicated that patients with lower literacy levels favoured CAM. Conversely, those with higher education levels tended to combine CAM with conventional medicine. Similarly, Kebede *et al.*, (2021) also noted a higher proportion of patients visiting physicians.

In conclusion, our study sheds light on the complex landscape of CAM usage, revealing notable patterns and correlations across various demographic and socioeconomic factors. We found a considerable prevalence of CAM usage, with age, education level, income, and gender emerging as significant determinants of CAM preferences and practices. The study underscores the influence of age on CAM utilization, particularly highlighting the higher prevalence among older individuals managing chronic diseases. Additionally, education level significantly impacted

Table 2: Percentage of Herbal Medicine usage across different Health conditions.

Health Condition	Herbal Medicine Usage	Percentage (%)
Diabetes	32	13
Pain/Arthritis	28	11
Respiratory	24	9
Hypertensive	22	8
Heart	18	7
Kidney	6	6
Brain	3	3
Stomach	3	3
Skin/Wound Infections	4	4
Psychiatry	1	1

Table 3: Disclosure of complementary and alternative medicine (CAM) usage to primary care providers.

Informed Physician about CAM use	Frequency	Percentage (%)
Yes	83	34
No	95	39

Table 4: Frequency of Adverse effects associated with Herbal Medicine usage.

Adverse Effects	Frequency	Percentage (%)
Rarely	16	6.53
On several Occasions	18	7.35
Never	144	58.77

Table 5: Sources of Information influencing Herbal Medicine usage.

Sources of Information	Frequency	Percentage (%)
Family/Friends	123	50.2%
Books/Magazines	27	11.0%
Internet	25	10.2%
Others	3	1.22%

Table 6: Combination Utilization of Complementary and Alternative Medicine (CAM) with allopathic medicine.

Combined Use of CAM and Allopathic Medicines	Frequency	Percentage (%)
Yes	147	60
No	31	12.65

Table 7: Factors for the use of CAM.

Factors	Disagree	Neither Agree Nor Disagree	Agree	Not used
CAM has fewer side effects	23 (9.4%)	16 (6.5%)	139 (56.7%)	67 (27.3%)
Allopathy has strong side effects	56 (22.9%)	55 (22.4%)	67 (27.3%)	67 (27.3%)
Allopathy treatment failure	73 (29.8%)	60 (24.5%)	45 (18.4%)	67 (27.3%)
Suggestion of doctor	104 (42.4%)	37 (15.1%)	37 (15.1%)	67 (27.3%)
Successful use in the past	59 (24.1%)	42 (17.1%)	77 (31.4%)	67 (27.3%)
Beneficial effect on health	28 (11.4%)	31 (12.7%)	119 (48.6%)	67 (27.3%)
Better than allopathy	61 (24.9%)	69 (28.2%)	48 (19.6%)	67 (27.3%)
Naturally synthesized	50 (20.4%)	42 (17.1%)	86 (35.1%)	67 (27.3%)
Aid in the prevention of disease	24 (9.8%)	23 (9.4%)	131 (53.4%)	67 (27.3%)
Lack of trust in allopathic medicines	89 (36.3%)	40 (16.3%)	49 (20.2%)	67 (27.3%)
Reference from family/friends	13 (5.3%)	5 (2.0%)	160 (65.3%)	67 (27.3%)
Easily available and cheaper	33 (13.5%)	23 (9.4%)	123 (50.2%)	67 (27.3%)

Table 8: Correlation between Income levels and Utilization of Complementary and Alternative medicine (CAM) therapies.

CAM Therapy	Monthly Income	<10 K	10 K-50 K	50 K-100 K	>100 K	p-Value
Spiritual Healer	Yes	2.85%	3.67%	0%	1.63%	0.007
	No	38.77%	35.95%	13.46%	3.67%	
Other Healthcare Provider	Yes	0.86%	1.22%	0%	0.81%	0.03
	No	40.81%	38.36%	13.46%	4.48%	
Herbs	Yes	23.67%	21.22%	6.58%	4.89%	0.047
	No	17.95%	18.36%	6.93%	0.40%	
Homeopathy	Yes	26.53%	20.81%	5.71%	4.08%	0.052
	No	15.10%	18.77%	7.75%	1.25%	
Other Supplements	Yes	24.89%	21.22%	6.12%	4.70%	0.02
	No	19.00%	18.36%	5.31%	0.40%	
Self – Help Practices						
Meditation	Yes	15.51%	5.71%	5.71%	0.81%	0.00
	No	26.12%	33.87%	7.79%	4.48%	
Walking	Yes	29.79%	34.69%	11.83%	5.31%	0.00
	No	11.83%	4.89%	1.66%	0%	
Traditional Healing	Yes	3.26%	5.30%	0%	2.90%	0.00
	No	38.36%	34.28%	13.46%	2.44%	

Table 9: Correlation between age and utilization of CAM practices: Meditation and Traditional healing.

Age (Years)		18-30	30-45	45-60	>60	P-Value
Meditation	Yes	10.61%	9.00%	5.71%	2.46%	0.044
	No	16.32%	22.85%	25.71%	7.34%	
Traditional Healing	Yes	0.81%	1.67%	6.53%	2.44%	0.000
	No	26.12%	30.20%	24.89%	7.34%	

Table 10: Correlation between Education levels and CAM therapy preferences.

CAM Therapy	Education	Illiterate	Primary Education	Secondary Education	Higher Education	p-Value
Visit to provider						
Physician	Yes	19.18%	23.26%	37.94%	14.28%	0.000
	No	15.51%	21.22%	36.33%	17.55%	
Bone setter	Yes	4.08%	2.86%	2.04%	0.41%	0.007
	No	15.51%	21.22%	36.33%	17.55%	
Use of herbs/dietary supplements						
Herbs	Yes	14.28%	15.91%	16.73%	9.38%	0.003
	No	5.30%	8.16%	21.63%	8.61%	
Self-help practices						
Meditation	Yes	3.67%	2.86%	14.69%	6.53%	0.001
	No	15.92%	21.22%	24%	11.44%	
Music therapy	Yes	3.67%	1.22%	2.86%	0.82%	0.004
	No	15.92%	22.86%	35.51%	17.14%	
Traditional healing	Yes	4.90%	4.49%	1.22%	0.82%	0.000
	No	14.69%	19.59%	37.14%	17.14%	

CAM adoption, with lower education levels correlating with higher CAM usage, a trend consistent with prior research. Income level also played a pivotal role, with higher-income earners demonstrating a pronounced inclination toward engaging in diverse CAM practices, notably spiritual healing and self-help modalities like meditation and walking. Furthermore, our findings underscore the importance of familial and social networks in shaping CAM decisions, with family and friends as primary sources of information and motivation for CAM usage. While our study reveals intriguing insights into CAM utilization patterns, it also highlights challenges, including discrepancies in disclosing CAM usage to physicians and limited familiarity among healthcare providers with CAM therapies. Our findings highlight the need for tailored healthcare approaches accommodating diverse patient practices. Further research and collaboration between traditional and allopathic healthcare systems are warranted to enhance patient-centered care and promote holistic well-being.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

ABBREVIATIONS

CAM: Complementary and Alternative Medicine; **NCDs:** Non-Communicable Diseases; **NCCIH:** National Center for Complementary and Integrative Health; **ICAMQ:** Integrative Complementary and Alternative Medicine Questionnaire; **SPSS:** Statistical Package for the Social Sciences; **WHO:** World Health Organization.

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