



ORIGINAL ARTICLE

Health Care Seeking Behaviour and Utilization of Ayush Services in Urban Puducherry

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Accepted: 21-October-2025 / Published Online: 10-November-2025

Abstract

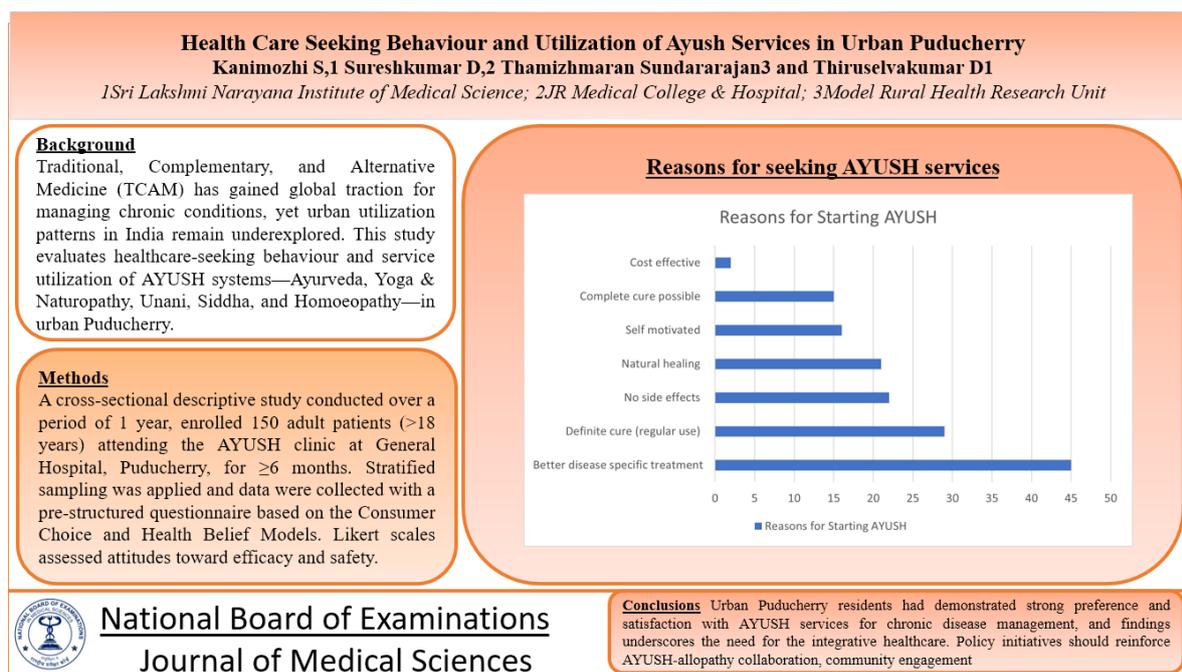
Background: Traditional, Complementary, and Alternative Medicine (TCAM) has gained global traction for managing chronic conditions, yet urban utilization patterns in India remain underexplored. This study evaluates healthcare-seeking behaviour and service utilization of AYUSH systems—Ayurveda, Yoga & Naturopathy, Unani, Siddha, and Homoeopathy—in urban Puducherry. **Methods:** A cross-sectional descriptive study conducted over a period of 1 year, enrolled 150 adult patients (>18 years) attending the AYUSH clinic at General Hospital, Puducherry, for ≥6 months. Stratified sampling was applied and data were collected with a pre-structured questionnaire based on the Consumer Choice and Health Belief Models. Likert scales assessed attitudes toward efficacy and safety. **Results:** Participants had sought AYUSH for management of diabetes (27%), hypertension (16%), followed by osteoarthritis (12%). The primary reasons for choosing AYUSH included symptom relief (60.4%), followed by the absence of side effects (29.9%), and holistic care. Patients reported benefits such as symptom subsidence (32.5%) and improved well-being (31.1%). High mean Likert scores (>5.8/6) indicated strong agreement that AYUSH treatments were safer than allopathy. **Conclusions:** Urban Puducherry residents had demonstrated strong preference and satisfaction with AYUSH services for chronic disease management, and findings underscores the need for the integrative healthcare. Policy initiatives should reinforce AYUSH-allopathy collaboration, community engagement.

Keywords: Traditional, Complementary, and Alternative Medicine (TCAM), Health-care seeking behaviour, Non-communicable diseases, Puducherry

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Graphical Abstract



Introduction

Traditional, Complementary, and Alternative Medicine (TCAM) includes a wide range of indigenous health practices that are widely practised worldwide [1,2]. Nearly 80% of the world's population has used any form of TCAM, often in conjunction with conventional medicine, during their lifetime. Further, its adoption is influenced by alignment with the traditions and easy accessibility, and integration of physical, mental, and spiritual well-being [3,4]. The World Health Organisation (WHO) acknowledged the role of TCAM's in attaining universal health coverage and suggested its evidence-based integration into national level health programs. Hence, countries were developing the regulatory frameworks and policies to ensure the safety and quality of TCAM practices in chronic disease management, prevention, and public health initiatives [1,2,5]. The AYUSH system, represents the Ayurveda, Yoga & Naturopathy, Unani, Siddha, and Homoeopathy, in India, an officially recognised traditional and complementary

medical disciplines, with their distinct historical and theoretical foundations, have long been practiced in the nation's health traditions. To formalize into the mainstream healthcare infrastructure, the Indian government established the Ministry of AYUSH in 2014 [6,7].

The National AYUSH Mission (NAM), aim to integrate AYUSH services into exiting Healthcare system, thereby enhancing public access and affordability. This pluralistic approach ensures adherence between the allopathic and AYUSH systems thereby promoting the comprehensive and diverse healthcare service for the Indian population [8,9].

Puducherry faces a notable public health challenge mainly due to the Non-Communicable Diseases (NCDs) exhibiting a range of NCD risk factors [10,11]. This high prevalence is further intensified by detrimental lifestyle factors, including improper food practices and low physical activity [12].

Healthcare-seeking behavior for AYUSH is influenced by various factors.

AYUSH is being utilized as primary care for routine ailments and also as a complementary treatment alongside allopathy for chronic conditions. This dual characteristics of AYUSH, underscores its integration into the modern healthcare, thereby ensuring synergistic benefits and a patient-centered approach to well-being. However, a notable gap exists in the understanding of AYUSH service utilization among the urban population. Hence, the current study aims to address this knowledge gap by assessing the healthcare-seeking behaviors, the factors influencing the choice of AYUSH systems, and their integration with conventional allopathic care.

Materials and Methods

This facility-based analytical cross-sectional study was conducted over one year at the AYUSH clinics under the General Government Hospital, Puducherry, among the adult patients (≥ 18 years), seeking treatment for various chronic and degenerative conditions, including diabetes, hypertension, osteoarthritis, and bronchial asthma for more than six months. The minimum sample size of 150 was calculated using the single proportion formula for cross-sectional studies by assuming an expected AYUSH utilization prevalence of 50%, a margin of error 8%, and 95% confidence level ($Z_{\alpha/2}=1.96$), and to ensure generalizability a stratified random sampling technique was employed. The sampling frame encompassed all eligible patients meeting the above said criteria, which was then stratified by the three primary AYUSH disciplines offered at the facility, that were Ayurveda, Siddha, and Homeopathy. From each stratum, 50 eligible patients were selected by simple

random sampling to achieve an estimated sample size of 150 participants.

The study was approved by the Institutional Ethics Committee, and written informed consent was obtained from participants before enrollment. Data were collected using a pre-tested, structured questionnaire developed from the "Consumer Choice Model" and the "Health Belief Model". The questionnaire included two sections: 1) an interview-based component on the reasons for initiating, continuing, or discontinuing treatment, and 2) a self-administered Likert scale to quantify patients' agreement with AYUSH services and safety. The clarity and relevance of the questionnaire were validated through a pilot study involving 15 individuals at a Siddha clinic in a Primary Health Centre in Koodapakkam, and the study was conducted with administrative approval from the Directorate of Indian Systems of Medicine and Homeopathy, Puducherry.

Operational definitions

'Long-term use' was defined as continuous AYUSH treatment for ≥ 6 months. 'Symptom subsidence' was considered when participants reported a Likert score ≥ 4 for symptom improvement.

Statistical Analysis

Data captured via Epicollect-5 software were analyzed using the R statistical environment. Descriptive statistics summarized the cohort, using means and standard deviations for continuous variables and frequencies with percentages for categorical data. The normality of continuous variables was assessed using the Shapiro-Wilk test to select appropriate inferential tests. Missing data (<5% per variable) were addressed

with the multiple imputation under the missing at random assumption.

Results

The study included 152 adult patients and predominantly females in

Siddha and Homeopathy, whereas Ayurveda had approximately equal representation. Also, most of the patients were homemakers, pensioners/dependents (Table 1).

Table 1. Demographic characteristics of the study population

Characteristics	Ayurveda (N=51)	Siddha (N=50)	Homeopathy (N=51)
Gender			
Male	25	18	34
Female	26	32	17
Occupation			
Professionals	2	1	0
Associate professionals	6	4	1
Clerks	4	0	3
Service/sales workers	2	2	3
Elementary (e.g. housemaids, peons)	0	7	5
Daily household chores/homemaker	18	16	25
Pensioners/dependents	12	18	5

Disease profile and Health conditions treated

The most documented illness were diabetes mellitus (n=41) followed by hypertension (n=24), and osteoarthritis (n=18). Other notable conditions included bronchial asthma (n=17), sinusitis, cervical spondylosis, and low back ache, each accounting for 12 cases. The services also addressed a wide range of other chronic ailments, such as psoriasis, renal calculi, rheumatoid arthritis, and menstrual irregularities.

Reasons for Initiating and Preferring AYUSH Care

Most of the participants (94%) had treatment history allopathic medications for their chronic illness, but only 13.8% had continued it along with AYUSH. The primary reasons for this shift was dissatisfaction with conventional medicine and other leading reasons were the ineffectiveness of allopathic treatments (36.7%) and the occurrence of unwanted side effects (33.2%). A notable portion of patients were motivated by a desire to explore alternative systems (6.3%), a preference for natural remedies (5.9%), or specific concerns like fear of surgery (5.1%) and drug allergies (5.1%) (Figure 1).

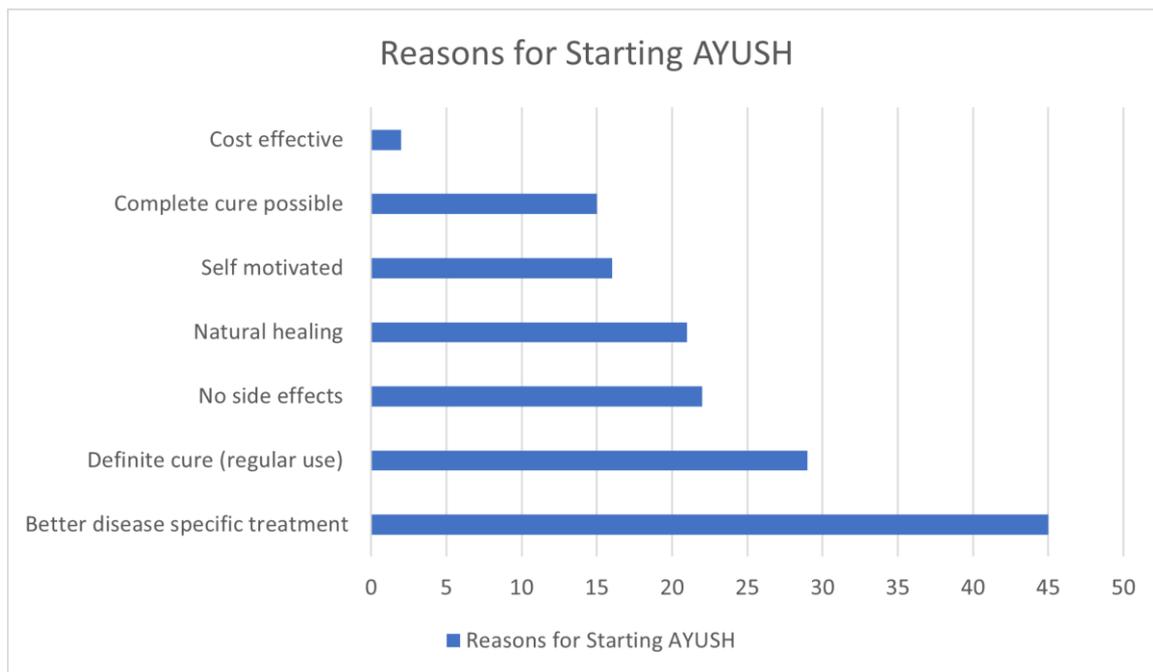


Figure 1. Reasons for seeking AYUSH services

Factors Influencing Continuing Utilization of AYUSH

Subsiding of symptoms (60.4%), and absence of side effects (25.9%)

continues to be a major motivators for continuing AYUSH treatment, other prominent factors were listed in the Table 2.

Table 2. Reasons for adherence to AYUSH treatment modalities

Reasons	n (%)
Early period	
Symptoms started subsiding	125 (60.4)
No side effects compared to allopathy	62 (29.9)
Medicine easier to use	13 (6.3)
Cost effective	7 (3.4)
Long-term follow-up (>6 months)	
Gradual relief from all symptoms	135 (35.7)
No side effects	98 (25.9)
Disease under control	75 (19.8)
Appreciation of holistic approach	26 (6.9)
Pleasant treatment experience	25 (6.6)
Cost effective	8 (2.1)

Perceived Benefits of AYUSH Therapy

Further, the study population had reported significant improvements,

primarily citing that their symptoms had subsided (32.5%) and they felt healthier than before (31.1%) (Figure 2).

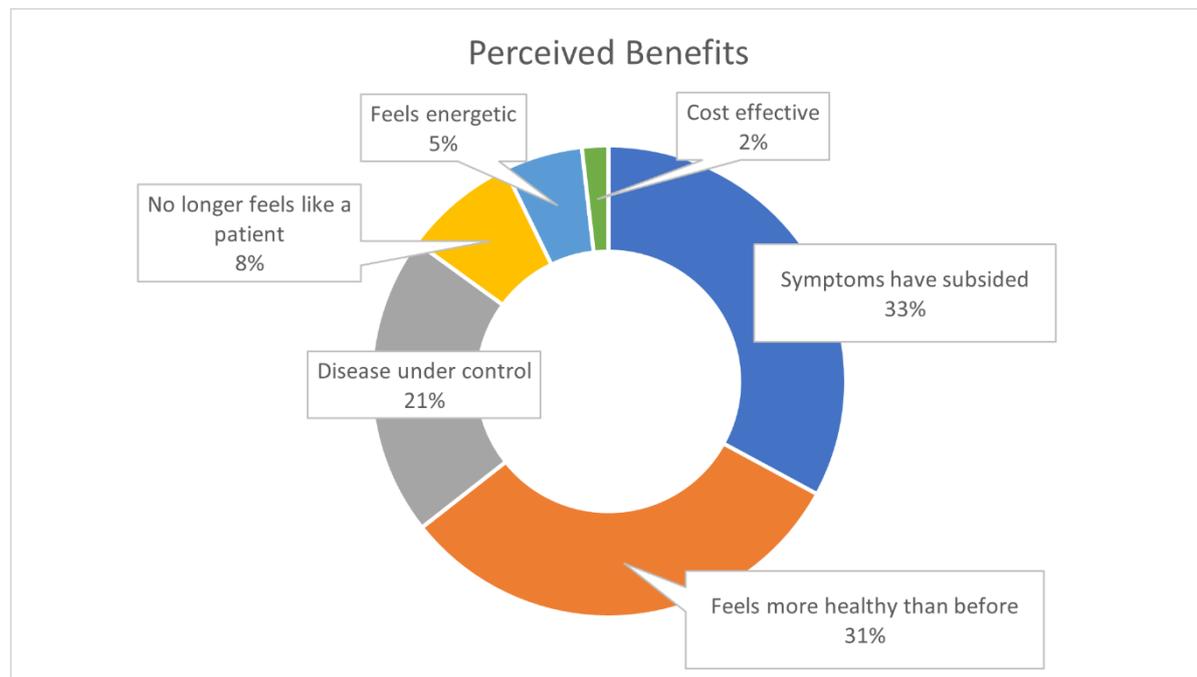


Figure 2. Perceived Benefits of AYUSH Therapy

Discussion

The current study reveals a significant insight into the integration of traditional and complementary medicine in contemporary healthcare systems. Our findings demonstrate that most patients had history of allopathic treatment, however only 13.8% continued concurrent allopathic therapy, which denotes a significant change towards AYUSH-based care.

The service utilization of AYUSH for chronic conditions, especially for diabetes mellitus (27%), hypertension (16%), and osteoarthritis (12%), aligns with existing literatures demonstrating the global patterns of TCAM use. Existing international studies had reported higher TCAM utilization among patients with chronic diseases, for instance Hasan et al. [13] reported 63.9% CAM utilization

among chronic disease patients, and some studies from lower Mekong countries documented TCAM prevalence rates of 47.8% among diabetic patients and up to 60% among cancer patients [14]. Our findings contribute to this evidences, by demonstrating that urban Indian populations exhibit similar patterns of seeking traditional medicine for chronic disease management [15].

The primary motivators for AYUSH preference identified in our study were perceived absence of side effects and symptomatic improvement, which is similar to the findings from published studies. A systematic review of TCAM use in Sub-Saharan Africa reported that patients sought traditional medicine due to dissatisfaction with conventional healthcare, perceived effectiveness, and

cultural alignment [16]. Similarly, a multicentric study in Bangladesh found that 55.5% of CAM users reported less adverse effects as their primary reason, and also Nigerian study had identified the absence of side effects as the reason of CAM preference [17,18].

Our findings align with the reported patterns of AYUSH utilization found through the in national surveys. Findings from the Longitudinal Aging Study in India (LASI) data reported that one in 14 older adults had utilized AYUSH services, where majority were seeking treatment for chronic conditions, including hypertension and diabetes. Our study's demographic profile, showing predominant utilization among homemakers (39.3%) and pensioners/dependents (23%), supported by national patterns [15,19].

The Likert scale responses in our study, with mean scores above 5.8 for statements regarding AYUSH causing fewer adverse effects and providing more empathetic care compared to allopathy, reflect strong patient satisfaction levels. These findings were supported by the reports of Pengpid et al, where they documented 88.7% satisfaction rates with AYUSH consultations and 85.6% of patients rating treatment outcomes as positive. The high satisfaction levels observed in our study indicate integration of patient-centred care principles within AYUSH practice [15].

Regional variations in AYUSH utilization across India have been documented, with states like Uttar Pradesh (18.7%), Maharashtra (13.8%), and Kerala (7.7%) showing different adoption patterns. Our study from Puducherry, a region with strong Siddha and Ayurveda traditions, provides valuable insights into utilization patterns in South India [20].

The predominant use of AYUSH for non-communicable diseases in our study reflects broader epidemiological transitions occurring in urban India. Puducherry's high burden of NCD risk factor, combined with lifestyle factors such as inadequate physical activity and poor dietary patterns, creates a condition where holistic, lifestyle-focused interventions offered by AYUSH systems become more relevant and suitable for welfare of the community [11].

Our finding that only 13.8% of participants used concurrent allopathic treatment, differs from some international studies reporting higher rates of concurrent use. For instance, Seelamantula et al., has documented complementary use rates of 38.6%, indicating potential variations in integration patterns across different healthcare systems and cultural contexts [20].

The strong preference for natural healing approaches and the perception of AYUSH reflects existing beliefs on traditional medicine. The current findings demonstrated the need for health system planning, and including the AYUSH services as both primary care options and alternative pathways for patients dissatisfied with conventional treatment outcomes.

The facility-based design and use of a stratified sampling strategy across the three major AYUSH systems enhanced the representativeness of the study population within the formal sector. Furthermore, the development and employment of the assessment tool based on theoretical frameworks (the Consumer Choice Model and Health Belief Model), ensures the robustness. Recall bias was minimized by restricting the questions to last six-month period. However, the absence of

longitudinal follow-up prevents causal inference on treatment outcomes.

Conclusion

The study highlights a significant shift toward AYUSH services among urban Puducherry residents with chronic non-communicable diseases, influenced by perceived effectiveness, safety, and holistic care. High patient satisfaction and symptom relief suggest AYUSH's potential as both primary and complementary therapy. Integration of AYUSH into mainstream health systems needs strengthening, with emphasis on collaborative care models. Future longitudinal and cost-effectiveness studies are to be carried out to provide evidence-based policy and optimize integrative healthcare delivery.

Author's Contribution

KS: Involved in conceptualization, data curation, formal analysis, methodology, project administration, resources, software, supervision, validation, visualization, and edited the manuscript; SD: Involved in conceptualization, data curation, methodology, project administration, resources, software, supervision, validation, and edited the manuscript; TS: Involved in data curation, formal analysis, methodology, validation, visualization, wrote the original draft and review, and edited the manuscript; TD: Involved in project administration, supervision, validation, visualization, wrote the original draft and review and edited the manuscript.

Ethical Approval

Before initiating the study, the Institute Human Ethical Committee approval was obtained

Conflicts of interest

The authors declare that they do not have conflict of interest.

Funding

No funding was received for conducting this study.

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