

Expanding Horizons: The use of AYUSH System of Medicine in India

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"I wonder if we should share what we have learned: that we must hold our medical knowledge lightly and with humility, with confidence rather than certainty, and that we need constantly to be asking questions of our preferred epistemological theories."

- James May, Michael Baum & Susan Bewley

Introduction

Medicine is a revered discipline and a sacred vocation. Human civilizations always had rich engagement with alternative cures and practices that boost health and longevity. However, with evolving scientific benchmarks, much of the traditional and indigenous knowledge is lost or is endangered. As summarized by Karl R. Popper, the scientific status of a theory [including medicine] is its falsifiability, or refutability, or testability. Modern medicine that evolved alongside such epistemic principles of empiricism quickly established its effectiveness and dominance. Epistemic biases such as testimonial and hermeneutical injustice have further undermined the relevance of traditional systems. These biases are now challenged across various disciplines. Appreciating perspectives on medical pluralism has further rejuvenated global interest in traditional medicine. The Traditional Medicine Strategy of the World Health Organization takes cognizance of this dynamism across countries. The strategy calls for: a) harnessing the potential contribution of traditional medicine to health, wellness and people-centred health care, and b) fostering its appropriate integration, regulation, and supervision.

India is an important stakeholder championing the cause of traditional medicine. These engagements are government-led and is apparent from milestones such as establishment of Department of Indian Systems of Medicine and Homeopathy in 1995 to its recognition as a full-fledged Ministry of Ayush in 2014. Worldwide celebration of International Day of Yoga (June 21) is a testimony of increasing global recognition. The AYUSH sector in India comprises of more than 750 thousand registered practitioners spread across seven systems namely: ayurveda, yoga, naturopathy, unani, siddha, sowa rigpa (amchi) and homoeopathy. Among these, Ayurveda – translated as the study of life – has a dominant presence. The integration of AYUSH systems in mainstream health sector initiatives such as National Health Mission and Ayushman Arogya Mandirs is seen instrumental to achieve the vision of universal health coverage in India. Such unprecedented policy momentum is likely to positively contribute toward the use of traditional systems of medicine in India. We use the first exclusive nationally representative Sample Survey on AYUSH (2022-23) to present the salient features in utilization of AYUSH care in India.

Data and Methods

The 79th round of the National Sample Survey on AYUSH (June 2022 - July 23) uses stratified multi-stage sampling to recruit a nationally representative sample of 752,477 households (and 333,104 individuals). The survey elicits information on various medical services utilized by household members, including prenatal, postnatal, inpatient, and outpatient care. The questionnaire also assessed household familiarity with AYUSH systems, including the use of medicinal plants. We integrate data from both inpatient and outpatient patients to analyse the average AYUSH spending across demographic and socioeconomic categories viz. age, gender, education, monthly per capita consumption expenditure (MPCE), social group, and place of residence. Use of AYUSH and associated costs for various illnesses and medical conditions are also presented.

Table 1: Use of AYUSH system, India (2022-23)

Systems	Rural	Urban	All
Ayurveda	40.5	45.5	41.9
Yoga	1.0	3.4	1.6
Naturopathy	1.9	1.7	1.8
Unani	0.5	0.9	0.6
Siddha	0.8	2.3	1.2
Sowa Rigpa	0.0	0.0	0.0
Homeopathy	5.6	5.2	5.5
AYUSH	46.3	52.9	48.1

Figure 1: Percentage use of AYUSH system (in last 365 days)
Indian states and Union Territories, 2022-23

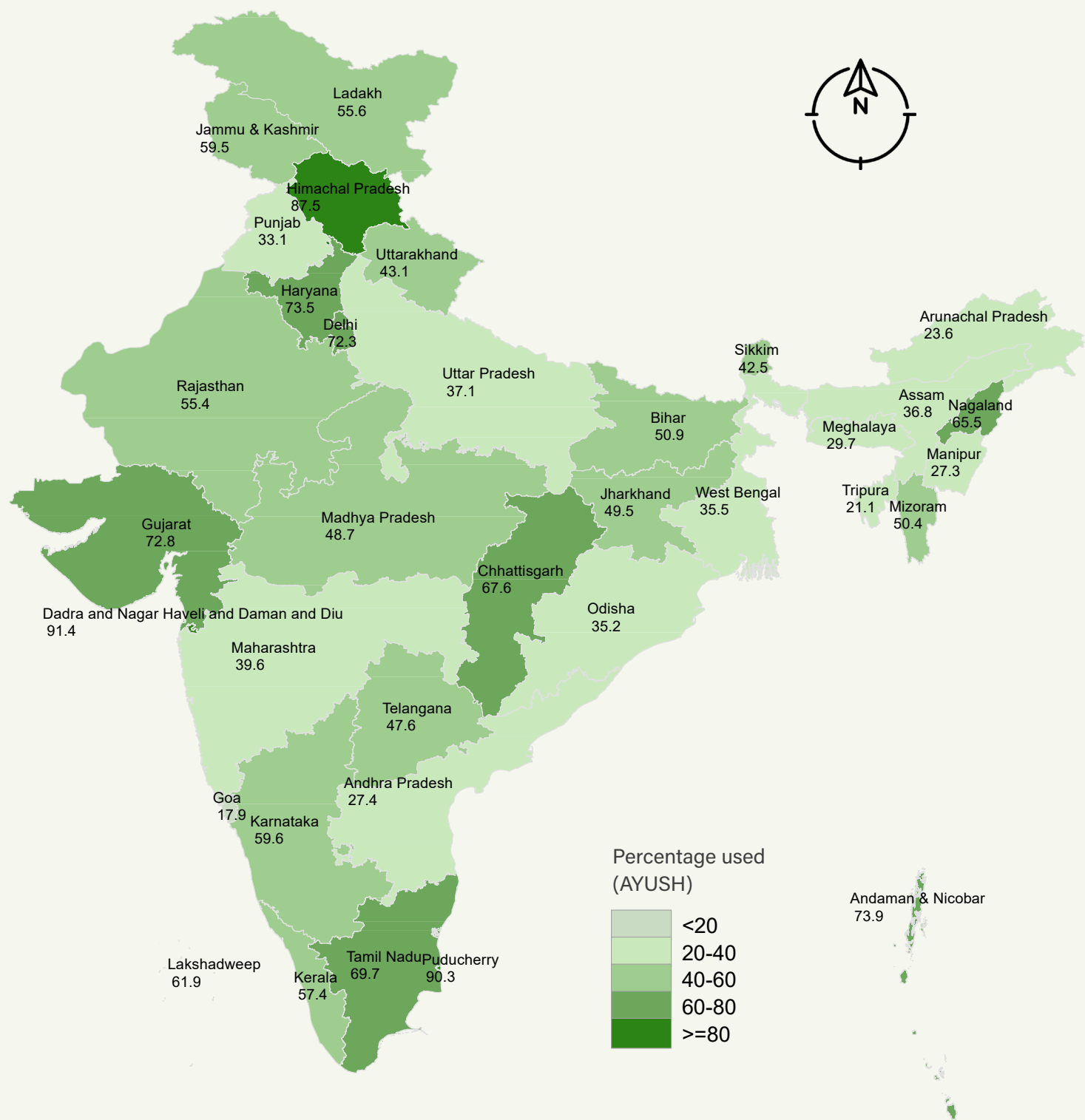


Table 2: Use of AYUSH system by background characteristics, India (2022-23)

Background Characteristics	Ayurveda	Yoga	Naturopathy	Unani	Siddha	Sowa-Rigpa	Homeopathy	AYUSH
Age								
0-14	27.9	1.2	1.4	1.4	0.6	0	4.7	33.3
15-29	39.7	1.9	1.7	1.7	1.1	0	3.9	44.8
30-44	47.3	1.7	2	2	1.3	0	6.1	54.2
45-59	51.9	1.9	2.1	2.1	1.7	0	7.1	59.3
60+	55.2	1.8	2.3	2.3	1.8	0	8.1	62.4
Education								
Illiterate	39.4	0.6	1.7	0.6	0.8	0	5.3	44.8
Primary	41.3	1.3	1.9	0.6	1.1	0	5.5	47.2
Secondary	44.4	2.2	1.8	0.6	1.4	0	5.7	50.9
Higher	47	5	1.9	0.6	2.2	0	5.9	55.3
Place of Residence								
Rural	40.5	1	1.9	0.5	0.8	0	5.6	46.3
Urban	45.5	3.4	1.7	0.9	2.3	0	5.2	52.9
Gender								
Male	39.8	1.9	1.7	0.6	1.1	0	5.3	45.8
Female	44.3	1.4	2	0.6	1.3	0	5.8	50.7
Others	23.1	0	0	0	0	0	0.9	24
Social Group								
ST	41.9	1.2	3.9	0.6	0.1	0.1	3.3	45.3
SC	39.9	1.2	1.3	0.2	1.1	0	5.7	45.7
OBC	44.3	1.4	1.6	0.6	2	0	4.7	50.4
Others	39.2	2.7	1.9	1	0.2	0	7.8	47.1
MPCE Quintile								
Lowest	35.1	0.6	1.5	0.3	0.3	0	5.5	40.5
Second	38.2	1	1.8	0.6	0.4	0	5.6	44
Middle	41.5	1.4	1.9	0.7	0.8	0	5.8	47.2
Fourth	45.6	1.8	2	0.8	1.8	0	5.2	51.7
Highest	50.1	3.8	1.8	0.7	2.8	0	5.6	58.1
Pregnant Women								
Non-pregnant	41.8	1.7	1.8	0.6	1.2	0	5.5	48
Pregnant	60	1.6	3.1	1	1.4	0.1	6.2	65.5
All India	41.9	1.6	1.8	0.6	1.2	0	5.5	48.1

Main Findings

The survey reveals that 48.1% of the Indian population has used AYUSH system of medicine for prevention or treatment of ailments, during last 365 days. Ayurveda is the most widely used system, accounting for 41.9% of all treatments whereas homeopathy system is used by 5.5%. The use of AYUSH is relatively higher in urban areas (52.9%) than rural areas (46.3%).

There are considerable variation in the use AYUSH across Indian States and Union Territories (UTs). Among states, the highest usage is in Himachal Pradesh (87.6%) whereas the lowest is in Goa (17.9%). Use of Ayurveda is relatively low in north-eastern states. Homeopathy users are more in West Bengal (23.1%) and Bihar (13.0%). In West Bengal, homeopathy users are greater than ayurveda users and comprise of 65% of total AYUSH users. Higher proportion of Siddha medicine users are in Puducherry (11.2%).

The utilisation of AYUSH services increased with higher age, education levels, and income levels. Additionally, urban populations exhibited higher rates of AYUSH utilization (52.9%) compared to rural populations (46.3%). Among social groups, the Other Backward Class (OBC) population demonstrated the highest utilization of AYUSH, while Scheduled Tribes (ST) had the lowest. Notably, pregnant women exhibited significantly higher rates of AYUSH utilization, exceeding 65%.

An analysis of average expenditure among individuals using AYUSH treatments in India revealed a mean expenditure of slightly over INR 500. Among the AYUSH systems, most expenditure was directed towards Ayurveda (INR 372), followed by Homeopathy (INR 111). Other systems had significantly lower average expenditures. Analysis of demographic factors indicated that the individuals with higher age, education, social status, and income demonstrated greater spending on AYUSH treatments. Notably, women exhibited slightly higher expenditures than men, with pregnant women reporting the highest average expenditure, exceeding INR 1000.

An analysis of AYUSH utilization and expenditure across various health conditions revealed a significant preference for outpatient care among patients seeking AYUSH treatments. Respiratory system ailments accounted for over half of all AYUSH consultations, followed by general immune boosting. Inpatient utilization was notably low. Furthermore,

Figures 2: Use of AYUSH for selected background characteristics India (2022-23)

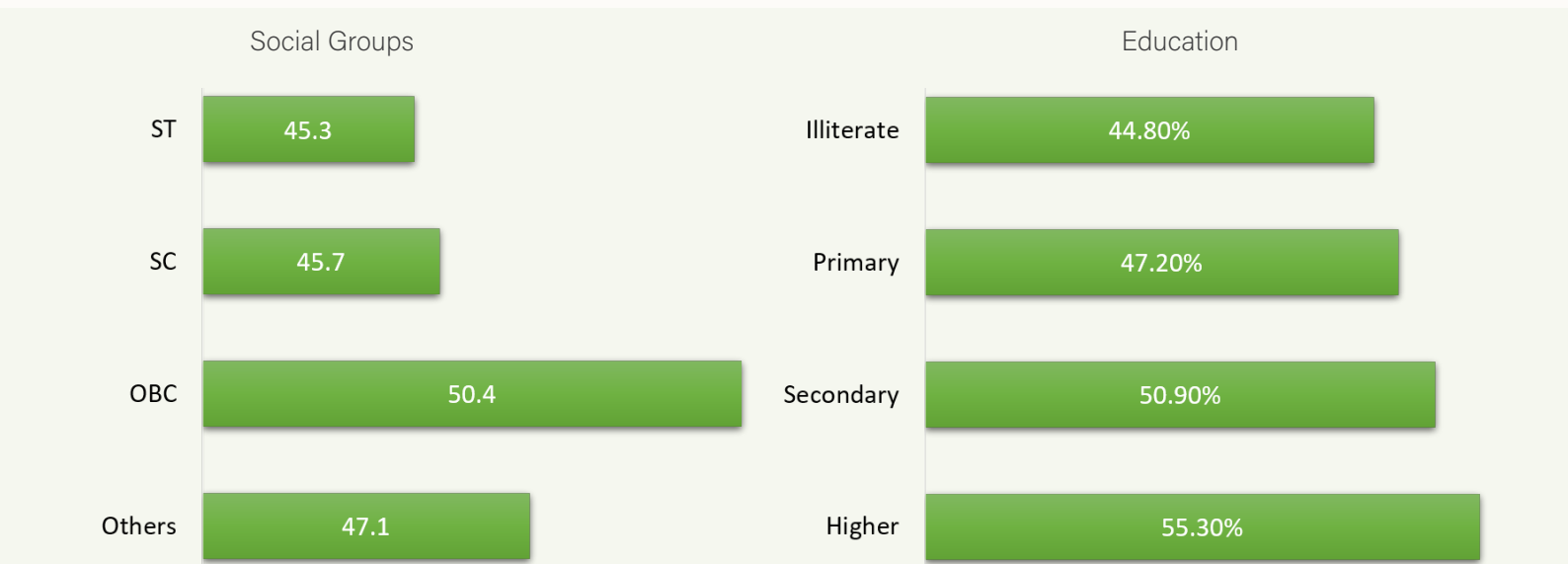
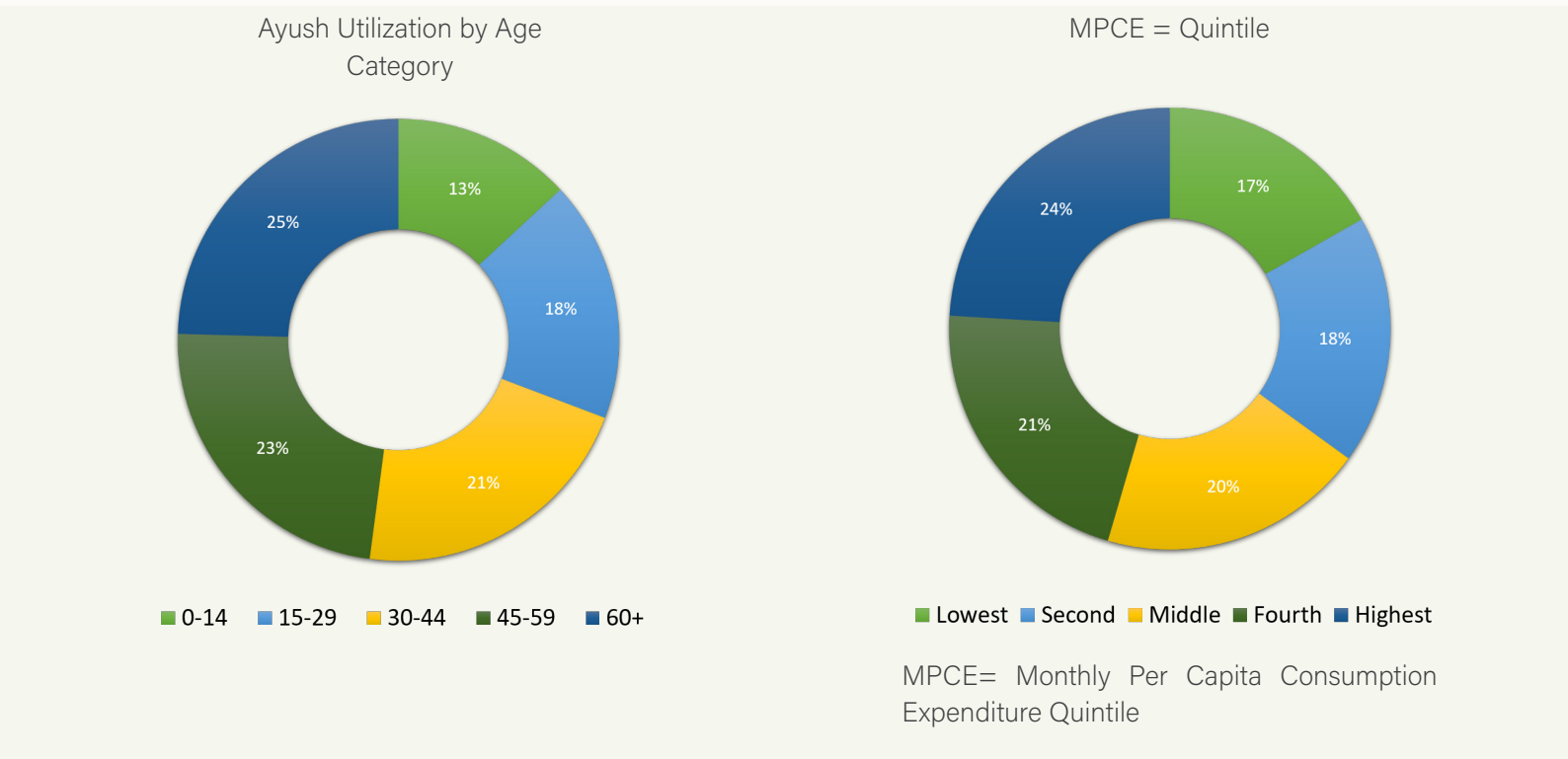
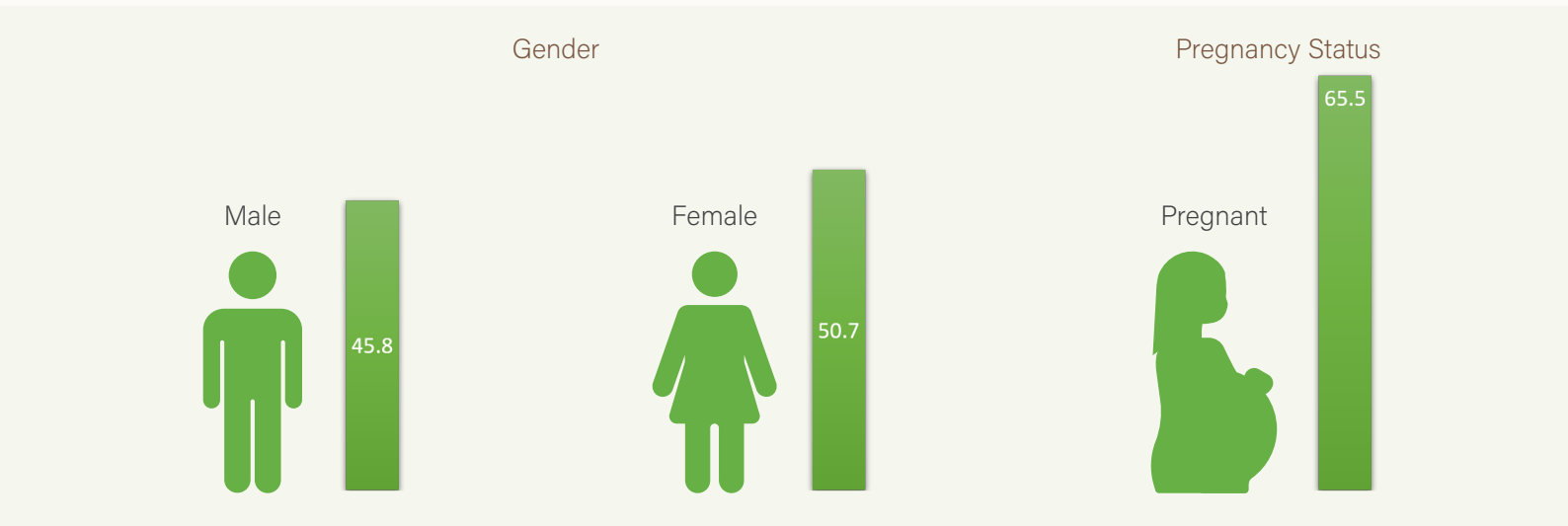


Table 3: Use of AYUSH system and out of pocket expenditure by nature of ailment, India (2022-23)

Disease	AYUSH Use		AYUSH Out of pocket expenditure	
	In-Patients	Out-Patients	In-Patients	Out-Patients
Musculoskeletal system	0.1	12.4	504	504
Nervous system	0.0	1.7	17821	1835
Integumentary system	0.0	0.8	8079	1154
Geriatric problems	0.0	0.4	4921	1030
Respiratory system	0.1	58.5	6266	352
ENT and ophthalmic	0.0	1.9	5039	850
Dental	0.0	3.3	3591	613
Gastrointestinal system	0.0	9.3	8072	594
Anorectal	0.0	0.7	8515	1870
Female reproductive system	0.0	1.6	6061	960
Pediatrics	0.0	1.2	7443	522
Genitourinary system	0.0	0.4	7413	1801
Hepato-biliary system	0.0	0.6	12512	1376
Cardiovascular	0.0	0.8	35914	2397
Prediabetes / Diabetes / Thyroid disease	0.0	2.0	8112	1925
Obesity / Slimming	0.0	0.6	1793	933
Psychiatric	0.0	0.9	12434	948
Cosmetics	0.0	13.0	4694	596
Acute conditions	0.0	29.1	10543	412
Cancer	0.0	0.1	144332	4825
Others- bone setting, bites, burns, wounds, etc.a	0.0	5.6	5491	753
General Immune boosting	0.0	38.3	6437	400
Poorvakarma (snehana, svedana), thokkanam, etc.	0.0	0.1	8968	966
Panchakarma, regimental therapy, yogic shatkriya	0.0	0.2	29957	1091

inpatients incurred higher expenditures than outpatients across all health conditions. Inpatients incurred particularly high expenditures for cancer treatments, averaging INR 1.4 lakh. Cardiovascular disease treatments followed at INR 35,914. Outpatient expenditures were significantly lower, with cancer treatments averaging over INR 4,800.

Discussion

We analyse the first nationally representative full-fledged survey on AYUSH sector use in India and identify the following salient findings. Ayurveda emerged as the most widely used component of AYUSH, followed by homeopathy. The elderly and pregnant populations incurred the highest expenditures on AYUSH treatments, primarily seeking ayurvedic care. Moreover, AYUSH services were more

frequently utilized by outpatients for respiratory and acute conditions. However, the inpatients incurred higher expenditures, predominantly for cancer treatments. The distribution of AYUSH utilization was very high in UTs. Among states, Himachal Pradesh showed the highest user prevalence of AYUSH services. Interestingly, Himachal Pradesh also had the lowest average expenditures on AYUSH care. Notably, Goa, Meghalaya, and Tripura exhibited the least utilization of AYUSH services, despite Goa having the highest expenditure among states.

However, the findings may not be interpreted as causal association as these are based on cross-sectional data that may not be suitable to draw causal inferences. Besides, the self-reported data also may be recall errors and bias.

Table 4: Out of Pocket expenditure on AYUSH by background characteristics, India (2022-23)

Background Characteristics	Ayurveda	Homeopathy	Others	AYUSH
Age				
0-14	187.1	67	12.3	266.4
15-29	288.3	69.7	17.3	375.4
30-44	345.8	113.1	19.9	478.8
45-59	472.2	142.3	25.7	640.3
60+	671.6	194.9	36.3	902.8
Education				
Illiterate	326.1	104.4	19.4	449.9
Primary	359.6	99.5	15.6	474.7
Secondary	396.6	116.6	23.9	537.1
Higher	467.5	142.4	33.4	643.3
Place of Residence				
Rural	345.1	110.1	16.7	471.9
Urban	429.8	112.7	31.2	573.7
Gender				
Male	363.2	108.7	22.2	494.1
Female	380.7	113.1	20.4	514.2
Others	236	106.4	0	342.4
Social Groups				
ST	262.1	39.6	14.1	315.8
SC	323	102.3	14.5	439.7
OBC	374.9	106.9	22.2	504
Others	449.1	153.5	27.7	630.4
Wealth Quintile				
Lowest	250.9	121.9	13.3	386.1
Second	285.4	85.9	14	385.3
Middle	338	95.3	17.9	451.2
Fourth	399.2	101.5	21.3	522
Highest	533.5	144	35.7	713.2
Pregnancy				
Non-Pregnant	365.6	111.2	20.4	497.1
Pregnant	845.8	95.7	86.2	1027.6
All India	372.1	110.9	21.2	504.3

Nevertheless, such wide use of AYUSH in India is an important insight. The AYUSH system of medicine offers potential therapeutic benefits for a range of non-communicable diseases, including diabetes, hypertension, cardiovascular diseases, neurological disorders, chronic pain, and bone and joint diseases. Among the various modalities within AYUSH, drug therapy holds a significant position. Natural-based drug formulations, characteristic of AYUSH practices, are often noted for their enhanced absorption and utilization by the human body which in turn, can lead to therapeutic effects without the adverse drug reactions frequently associated with synthetic molecules.

The present study demonstrated that approximately half of the Indian population utilizes AYUSH treatments, with nearly 42% specifically resorting to Ayurveda, while interest in other traditional systems like Yoga, Unani, Siddha, and Homeopathy remains limited. A primary factor contributing to these pattern includes widespread use of modern allopathic system of medicine and also a lack of awareness concerning the potential of traditional knowledge systems to enrich medical pluralism in India.

It is worth mentioning that the traditional ayurvedic practice of Panchakarma therapy is increasingly recognized as a valuable component of modern healthcare. Given the often chronic nature of many diseases and the necessity for long-term management and lifestyle modifications, Ayurveda's emphasis on healthy eating, regular exercise, adequate sleep, and stress management aligns closely with the lifestyle modifications strongly recommended in modern medicine for chronic disease management.

Moreover, a systematic review identified factors influencing the preference for AYUSH medicines in India. These factors included dissatisfaction with conventional medicine, cost-effectiveness, ease of access, and the perception of fewer side effects associated with AYUSH treatments. Additionally, the review highlighted the influence of geographical location and community on AYUSH utilization patterns. The study finds that AYUSH treatments were more utilized by vulnerable population groups, such as the elderly and pregnant women, findings that align with existing literature. Ayurvedic interventions have demonstrated significant efficacy in addressing cognitive decline and slowing the aging process among the elderly population, thereby enhancing quality of life. For women, factors such as socioeconomic status, type of healthcare coverage, and geographic location consistently highlight the

urgent need for increased maternity benefits and government investment in public healthcare in India. The AYUSH system offers a holistic approach to healthcare, emphasizing the correction of imbalances and the preservation of natural bodily functions, especially during critical life stages like pregnancy.

A cross-sectional study conducted in Himachal Pradesh revealed a notable increase in women's utilization of Ayurvedic services following improved accessibility and awareness campaigns about the benefits of hospital deliveries. Moreover, vulnerable social groups, such as Scheduled Tribes, have exhibited a higher propensity to seek AYUSH care. This could potentially be due to limited access to conventional healthcare resources and lower out-of-pocket expenditure associated with integrated public healthcare services. Furthermore, the prevalence of the AYUSH system of medical care in India exhibits significant geographical and regional disparities. Existing literature suggests that traditional tribal medicine maintains greater popularity among indigenous groups in Meghalaya compared to the AYUSH system, resulting in lower coverage of AYUSH treatment systems in these tribal-dominated regions. This divergence suggests a potential avenue for future integration of regional medical practices with AYUSH, fostering a pluralistic approach to healthcare.

This study demonstrated that while AYUSH expenditures were incurred primarily by elderly population groups and pregnant women, the individuals from the lowest MPCE quintiles incurred the least expenditures. Consequently, there is mixed evidence regarding the socioeconomic determinants of traditional medicine use in India. An earlier study examining data from the 71st round observed that AYUSH use was relatively low among patients in the

middle per capita consumption expenditure (MPCE) quintiles. It is observed that despite lower per-facility costs to the government for AYUSH facilities compared to allopathic facilities, the low utilization of AYUSH facilities results in higher costs per visit. Insights from review of the costs associated with healthcare services, programs, and conditions within both public and private sector note that although AYUSH therapies are generally less expensive than conventional medicine, they frequently require longer treatment durations and emphasize lifestyle management and preventive care.

Ayurvedic tourism is also an important evolving concept. A closer look at state trends revealed that ayurveda flourishes in Kerala, while, Uttarakhand and Haryana emphasize yoga, another integral component of AYUSH. Conversely, due to limited healthcare access and historical factors, Uttar Pradesh and Bihar exhibit a strong preference for Unani medicine. While Siddha medicine is deeply rooted in Tamil Nadu, homeopathy finds widespread usage in West Bengal as well as in metropolitan areas like Delhi and Mumbai.

As income inequality widens, it becomes imperative to prioritize initiatives that address the healthcare needs of economically disadvantaged segments of the population. To mitigate the financial burden of health expenditures, it is essential to implement financial risk protection strategies. Further research on the topic can provide valuable insights for capturing the multifaceted aspects of AYUSH care. The NSS survey presently does not facilitate an analysis of the eligibility and qualifications of healthcare providers, thereby hindering inferences regarding healthcare providers. Consequently, holistic inferences regarding factors necessitating such a program are valuable in guiding its effective implementation and strengthening its foundation.

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