



Spread of Traditional Medicines in India: Results of National Sample Survey Organization's Perception Survey on Use of AYUSH

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Abstract

For the first time, we have a comprehensive database on usage of AYUSH (acronym for Ayurveda, naturopathy and Yoga, Unani, Siddha, and Homeopathy) in India at the household level. This article aims at exploring the spread of the traditional medical systems in India and the perceptions of people on the access and effectiveness of these medical systems using this database. The article uses the unit level data purchased from the National Sample Survey Organization, New Delhi. Household is the basic unit of survey and the data are the collective opinion of the household. This survey shows that less than 30% of Indian households use the traditional medical systems. There is also a regional pattern in the usage of particular type of traditional medicine, reflecting the regional aspects of the development of such medical systems. The strong faith in AYUSH is the main reason for its usage; lack of need for AYUSH and lack of awareness about AYUSH are the main reasons for not using it. With regard to source of medicines in the traditional medical systems, home is the main source in the Indian medical system and private sector is the main source in Homeopathy. This shows that there is need for creating awareness and improving access to traditional medical systems in India. By and large, the users of AYUSH are also convinced about the effectiveness of these traditional medicines.

Keywords

AYUSH, traditional medicine, alternate medicine, access to medicine, opinion survey, effectiveness of medicine, sources of medicines

Every society has its own medical system, which is deeply rooted in its culture and guided by its philosophy of life. The religious bearing on such medical systems is also inevitable, as in Unani. At the same time, we cannot brush aside the scientific aspects of these medicines. Though they may not be codified as the modern Allopathic medicine is, their scientific basis of diagnosis, cure, and care is still a subject of study. The institution of specialized colleges for learning and research in traditional medicines in India is an outcome of the efforts of state and society in this regard. India, being a culturally and linguistically diverse country, developed several types of traditional medicines in different regions. The Ayurveda in Kerala, Siddha in Tamil Nadu and other types of Indian medicines stand testimony for the prevalence of diverse medical systems in India.

The 200 years of British rule in India not only changed the art of state craft but also other public institutions like education and health care. The introduction of modern Allopathic medicine and wide network of hospitals, dispensaries, medical colleges, nursing and paramedical institutions completely changed both primary and tertiary medical care. Of course, for a country of continental size in land and population the success of Allopathic medical system in addressing most its medical

needs is commendable. Dependence on one medical system is undesirable and traditional medical systems should be leveraged for addressing region-specific medical issues. The efforts of both union and state governments in India in encouraging Indian medical systems and Homeopathy are well known. Recently, during the 12th plan period, the union government implemented a scheme called "AYUSH" for encouraging the spread of traditional medical systems in India.* Now we have a separate Department of AYUSH in the union government and similar administrative divisions in states.

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*AYUSH is the acronym for the Government of India's health project for the promotion of different types of traditional systems of medicine prevalent in India, namely, Ayurveda, Naturopathy and Yoga, Unani, Siddha, and Homeopathy.

For the first time, we have a comprehensive database on usage of AYUSH in India at the household level. This article aims at exploring the spread of the traditional medical systems in India across states and the perceptions of people on the access and effectiveness of these medical systems using this database. The article is organized in 4 sections; the first gives an introduction to the AYUSH program being implemented in India, as a context for the data analysis to follow. The second section explains the new database, and the third section analyzes the tabulation of unit level data about the spread, access, and efficacy of traditional medical systems across states in India. The final section provides the conclusion.

AYUSH: An Introduction

India is known to have several medical systems, which are alternatives to Allopathy. The Government of India, realizing their potentials to address both public health and curative needs, started the Department of Indian Systems of Medicine and Homeopathy in 1995 under the Ministry of Health and Family Welfare, and this was renamed as the Department of AYUSH in 2003.

The department has, over the years, developed a broad institutional framework to carry out its activities. The National Medicinal Plants Board functions under the department to coordinate activities relating to conservation, cultivation, marketing, export, and policy making for the development of the medicinal plants sector. There are 2 statutory regulatory bodies, namely the Central Council of Indian Medicine and the Central Council of Homoeopathy for laying down minimum standards of education, recommending recognition of medical qualifications, registering the practitioners, and laying down of ethical codes. Four research councils, for Ayurveda and Siddha, Unani, Yoga and Naturopathy, and Homeopathy are responsible for the officially sponsored research activities. So far, 8 national institutes for teaching, research, and clinical practices in Indian medicines have been established.

Average annual growth rate of 6.3% was realized in AYUSH hospitals during 1980 to 2013. Average annual growth rates of 7.1%, 8.2%, 4.0%, and 3.0% has been observed in the hospitals of Ayurveda, Unani, Siddha, and Homoeopathy, respectively, during 1980-2013. Maximum annual increase of 38.2% and 44.2% were registered in 1981-1982 and 1980-1981 in case of Siddha and Homoeopathy hospitals, respectively. Average annual growth rate of 2.3% was realized in the bed strength of AYUSH hospitals during 1991-2013. The maximum annual growth rate of 36.9% was registered in the bed strength of AYUSH hospitals in 1999-2000. After the launch of the National Rural Health Mission in 2005, AYUSH was integrated with National Rural Health Mission to strengthen delivery of health care services by leveraging its potential to its fullest use as well as mainstreaming AYUSH.

The first and most important consideration expressed in the Draft Health Policy 2015 with respect to AYUSH is ensuring

that persons who so choose have access to these remedies.¹ The strategy of colocation in public facilities providing Allopathic care as well will continue. Another strategy increasing public expenditure on production of AYUSH medicines as well as standardizing drugs and treatment protocols. A third is good propagation of the potential of AYUSH remedies in a number of specific ailments. Further disciplines like Yoga would be introduced much more widely in the schools and in work places as part of promotion of good health. These latter strategies are brought together in the recently adopted National AYUSH Mission.

The Draft Health Policy 2015 is committed to move the stand-alone AYUSH to a 3-dimensional mainstreaming. The mainstreaming would involve nurturing

these individual system of medicines through development of infrastructural facilities of teaching institutions, improving quality control of drugs, capacity building of institutions and professionals, building research and public health skills of practical utility and initiating community-based AYUSH interventions for preventive and promotive healthcare.

The second important meaning of mainstreaming, which is accelerated with the implementation of the National Rural Health Mission, is training of AYUSH professionals to help them take part in the national health programs. Simultaneously, continuing education for upgrading of knowledge and skills in their own medical systems as regular in-service capacity strengthening programme would be instituted, just as for the Allopathic doctors.

Promotion of further research in this field will be actively pursued, and application of available integrative knowledge through development of appropriate clinical protocols for primary, secondary, and tertiary levels will be part of this approach. The policy recognizes the need to standardize and validate Ayurvedic medicines.

National Sample Survey Organization and Consumer Expenditure Survey Database[†]

The National Sample Survey Organization, Government of India conducts one of the largest sample surveys in the world to collect data on consumer expenditures at the household level. Though the household level consumption expenditure data are collected every year through a small sample survey by the National Sample Survey Organization, the quinquennial survey is a relatively larger sample survey, which forms the basis for policy decisions regarding poverty alleviation and food distribution in the country. The latest of such a quinquennial Consumer Expenditure Survey was conducted in 2011-2012 and it was the 68th round of National Sample Survey Organization's surveys. The Consumer Expenditure Survey

[†]This section is drawn from National Sample Survey Organization's Report "Level and Pattern of Consumer Expenditure 2011-12."²

Table 1. Reference Periods Used for Collection of Consumption Data in Schedule 1.0, Type 1 and Type 2.

Category	Reference Period for	
	Schedule Type 1	Schedule Type 2
I Clothing, bedding, footwear, education, medical (institutional), durable goods	Past 30 days and past 365 days	Past 365 days
II Edible oil; eggs, fish, and meat; vegetables, fruits, spices, beverages and processed foods; <i>paan</i> (betel leaf), tobacco, and intoxicants	Past 30 days	Past 7 days
III All other food, fuel and light, miscellaneous goods and services, including noninstitutional medical; rents and taxes	Past 30 days	Past 30 days

2011-2012 explored the use of AYUSH among Indian households through an opinion survey. Though the Consumer Expenditure Survey 2011-2012 measured the various types of medical expenses pertaining to Allopathic medicine, it was only an opinion survey for the use of AYUSH. Nevertheless, this being a pioneering attempt to understand the spread of the traditional medical systems in India, we can analyze the data generated from this opinion survey, including the correlation with the other characteristics of households and particularly with expenditure on Allopathic medicine.

This opinion survey is based on 10 questions ranging from the use of AYUSH to the reasons for using or not using it and effectiveness of the major forms of traditional medicines. The unit level data of this survey can be used to understand the spread of these traditional medicines in the country across states and the reasons therefor. Two types of consumer expenditure schedules were used in the Consumer Expenditure Survey 2011-2012—Type 1 and Type 2. Usually, respondents are asked to recall the expenses on various items over the past 30 or 365 days from the date of interview, this is called as the reference period. The 2 types of schedules have different reference periods for various items as given in Table 1.

The different reference periods enable calculation of different types of household level monthly consumer expenditure as given below

1. Monthly Consumption Expenditure Uniform Recall Period (MCE_URP) is based on 30-day recall for the 3 categories in Schedule Type 1.
2. Monthly Consumption Expenditure Mixed Recall Period (MCE_MRP) is based on 365 days recall for category I and 30 days recall for categories II and III in Schedule Type 1.
3. Monthly Consumption Expenditure Modified Mixed Recall Period (MCE_MMRP) is based on 365 days recall for category I, 7 days recall for category II, and 30 days recall for category III in Schedule Type 2.

The monthly consumer expenditure is then converted into a per capita measure (monthly per capita consumption expenditure) by dividing the monthly consumer expenditure for each household by the household size.

We need to underline the fact that the recall period was with reference to the quantifiable responses to the questions in the

Table 2. Classification of Households Using AYUSH by Location.

Category	All States, n (%)	Rural, n (%)	Urban, n (%)
Yes	57 808 (28.4)	34 523 (28.9)	23 285 (27.7)
No	1 45 491 (71.6)	84 847 (71.1)	60 644 (72.3)
Total	2 03 299 (100)	1 19 370 (100)	83 929 (100)

2 types of schedules, such as consumption expenditures on various consumables. As the respondents were not given any reference period for giving responses to the questions in the opinion survey, the responses to the same set of questions about AYUSH in the 2 types of schedules could be combined to get a larger sample.

These 3 measures of consumption expenditures along with appropriate measures of medical expenses will be taken for this analysis. Since the opinion survey is included in both the schedules, we combine the data generated from the 2 schedules and we use the 3 measures of monthly consumer expenditure appropriately.

Some Preliminary Results

Interview Schedule Type 1 was administered for 1 01 662 households and Schedule Type 2 was administered for 1 01 651 aggregating to 2 03 313 observations for each of the variables under consideration. We should also note that there are many missing data in the opinion survey and we have not imputed any value for such missing data. The first question was about the use of AYUSH with the binary answer of “Yes” and “No.” We present the results in Table 2.

Less than 30% of the respondents have reported using AYUSH. This is a very low spread of traditional medical systems in the country that has a very long history of more than 20 centuries in these traditional medical systems. Moreover, the difference in the usage of AYUSH between rural and urban areas is very small; rather its usage is slightly higher in rural areas.

To understand the socio-economic characteristics of households that use AYUSH, we take 4 prominent indicators, namely, type of occupation of head of household, community of the household, education of the head of household, and religion of the household.

Table 3. Socio-economic Characteristics of Households Using AYUSH.

Characteristics	Rural		Urban	
	No. of Households Using AYUSH	% to Total Rural Households	No. of Households Using AYUSH	% to Total Urban Households
1. By major occupation of head of household				
1A. Self-employed in agriculture	10 470	31.3	Not applicable	
1B. Self-employed in other sectors	9004	29.6	8977	28.8
1C. Regular salary or wage earner	6301	29.6	9243	28.3
1D. Casual labor in agriculture	2392	24.2	Not applicable	
1E. Casual labor in other sectors	4542	25.6	2584	23.9
1F. Other occupations	1805	27.9	2476	27.0
Total	34 514	28.9	23 280	27.7
2. Social groups				
2A. Schedule tribe	4679	23.5	1543	21.2
2B. Schedule caste	5721	28.1	2819	25.5
2C. Other backward classes	14 368	30.4	9230	28.6
2D. Other communities	9753	30.7	9689	29.1
Total	34 521	28.9	23 281	27.7
3. Education of head of household				
3A. Illiterate	9093	26.3	3175	24.5
3B. Literate without formal schooling	251	31.7	120	31.6
3C. Primary schooling (5 years)	8665	28.5	3954	25.9
3D. Secondary schooling (10 years)	10 500	30.0	7250	27.4
3E. Higher secondary schooling (12 years)	2998	31.1	3251	27.9
3F. Graduate and above (>12 years)	3014	33.8	5531	32.1
Total	34 520	28.9	23 281	27.7
4. Religion				
4A. Hindu	27 580	30.3	18 189	28.9
4B. Muslim	3752	26.5	3024	24.8
4C. Christian	1971	23.0	1302	23.7
4D. Other religions	1220	61.3	770	38.7
Total	34 523	28.9	23 285	27.7

The households are classified into 6 types of occupations, as shown in Table 3, of which self-employed in agriculture and casual labor in agriculture are mainly rural occupations, hence they do not find a place in the urban occupational classification. The educational levels are arranged in ascending order of number for years required to complete a level of education. Indian society is socially arranged in a hierarchical caste system. The schedule tribes are communities generally found in forests and hills, and have distinct cultural objects. These communities are considered as the most marginalized ones; hence they face severe social and other forms of suppression and marginalization. Next are the schedule castes, who have a long history of social and other forms of oppression in Indian society. The other backward classes are next in the hierarchy of social structure in India. Other communities mainly represent the upper castes who are at the top of the caste hierarchy in India. Thus, the communities are arranged in the ascending order of social hierarchy in India. The religious groups are many and the arrangement here is in terms of relative size of each religious group.

In Table 3, we find differences in terms of occupational characteristics of head of the household do not change the extent of AYUSH usage in both rural and urban areas. The

proportion of households using AYUSH is marginally higher if the head of the household is self-employed or a regular salary earner. This may be due to the higher affordability of these households to use AYUSH. But we also find higher levels of education of head of household coexist with higher proportion of households using AYUSH. Hence, occupational status and education, that is, higher affordability and knowledge may be important to increase the use of AYUSH. This is also corroborated by the fact that higher the social status of a community, higher the use of AYUSH. We find that the use of AYUSH is less in Muslim and Christian households compared with households from Hindu and other religions. The religious background for various traditional medicines could be one of the reasons of this behavior. Among Hindus there are different forms of traditional medicines like Ayurveda, Siddha, and Yoga, and this would have increased the use of AYUSH among Hindus, so too for Muslims who have Unani as a traditional medicine. Christians in India have not developed any particular type of traditional medicine, hence they must be using the Indian medical systems.

The AYUSH is divided into 3 broad categories, namely, all the Indian medical systems, Homeopathy, and Yoga and Naturopathy. Tables 4 and 5 give the characteristics of

Table 4. Socio-economic Characteristics of Rural Households Using 3 Types of AYUSH.

	No. of Households Using Indian System of Medicine	% to Total Rural Households	No. of Households Using Homeopathy	% to Total Rural Households	No. of Households using Naturopathy and Yoga	% to Total Rural Households	Total Rural Households
I. By major occupation of head household							
1A. Self-employed in agriculture	8624	73.7	2302	19.7	774	6.6	11 700
1B. Self-employed in other sectors	6743	66.6	2653	26.2	722	7.1	10 118
1C. Regular salary or wage earner	4952	68.7	1552	21.5	704	9.8	7208
1D. Casual labor in Agriculture	1930	75.9	547	21.5	67	2.6	2544
1E. Casual labor in other sectors	3816	78.9	855	17.7	166	3.4	4837
1F. Other occupations	1457	69.7	463	22.1	171	8.2	2091
Total	27 522	71.5	8372	21.7	2604	6.8	38 498
2. Social groups							
2A. Schedule tribe	3929	80.0	962	18.6	282	5.5	5173
2B. Schedule caste	4570	73.2	1356	21.7	314	5.0	6240
2C. Other backward classes	11 899	74.4	3032	19.0	1073	6.7	16 004
2D. Other communities	7131	64.3	3023	27.2	938	8.5	11 092
Total	27 529	71.5	8373	21.7	2607	6.8	38 509
3. Education of head of household							
3A. Illiterate	7622	78.1	1718	17.6	414	4.2	9754
3B. Literate without formal schooling	197	72.4	61	22.4	14	5.2	272
3C. Primary schooling (5 years)	6878	72.7	2125	22.5	458	4.8	9461
3D. Secondary schooling (10 years)	8246	69.7	2746	23.2	835	7.1	11 827
3E. Higher secondary schooling (12 years)	2321	65.5	842	23.8	380	10.7	3543
3F. Graduate and above (>12 years)	2263	62.0	882	24.2	506	13.9	3651
Total	27 527	71.5	8374	21.7	2607	6.8	38 508
4. Religion							
4A. Hindu	22 285	72.0	6348	20.5	2338	7.6	30 971
4B. Muslim	2572	62.8	1388	33.9	133	3.3	4093
4C. Christian	1671	78.8	406	19.2	43	2.0	2120
4D. Other religions	1001	75.9	233	17.6	93	7.0	1327
Total	27 529	71.5	8375	21.7	2607	6.8	38 511

households that use 3 types of traditional medicines. We find that Indian medical systems are predominantly used by households from self-employed and casual labor in agriculture and other sectors, schedule tribes and schedule castes and other backward classes, illiterates, literates without formal schooling and primary schooling, and Hindus and Christians. Thus, the predominance of Indian medical systems among poor and socially and educationally backward communities compared with other households in both rural and urban areas. This is in contrast to the conclusion

derived in the previous passage about the use of AYUSH at the aggregate level.

Just like Allopathy, Homeopathy is not a traditional Indian medical system. Hence we find in both rural and urban areas, households with higher levels of education and self-employed, from upper castes (meaning other communities) and Muslims use Homeopathy more than other households. The use of Yoga and Naturopathy is the least among the 3 types described here. In this variety also, the educated and upper castes households and Hindus are the predominant users. In

Table 5. Socio-economic Characteristics of Urban Households Using 3 Types of AYUSH.

	No. of Households Using Indian System of Medicine	% to Urban Households	No. of Households Using Homeopathy	% to Total Urban Households	No. of Households Using Naturopathy and Yoga	% to Total Urban Households	Total Urban Households
I. By major occupation of head of household							
IA. Self-employed in agriculture	0	0	0	0	0	0	0
IB. Self-employed in other sectors	6603	63.6	2650	25.5	1133	10.9	10 386
IC. Regular salary or wage earner	6716	61.5	2667	24.4	1537	14.1	10 920
ID. Casual labor in Agriculture	0	0	0	0	0	0	0
IE. Casual labor in other sectors	2101	75.4	571	20.5	115	4.1	2787
IF. Other occupations	1743	60.1	715	24.7	441	15.2	2899
Total	17 163	63.6	6603	24.5	3226	12.0	26 992
2. Social groups							
2A. Schedule tribe	1201	67.4	417	23.4	165	9.3	1783
2B. Schedule caste	2165	67.9	723	22.7	300	9.4	3188
2C. Other backward classes	7424	71.6	2055	19.8	892	8.6	10 371
2D. Other communities	6374	54.7	3410	29.3	1870	16.1	11654
Total	17 164	63.6	6605	24.5	3227	12.0	26 996
3. Education of head of household							
3A. Illiterate	2595	75.9	674	19.7	148	4.3	3417
3B. Literate without formal schooling	87	65.4	36	27.1	10	7.5	133
3C. Primary schooling (5 years)	3080	70.8	1009	23.2	263	6.0	4352
3D. Secondary schooling (10 years)	5440	65.9	1985	24.1	828	10.0	8253
3E. Higher secondary schooling (12 years)	2288	58.9	1027	26.4	570	14.7	3885
3F. Graduate and above (>12 years)	3673	52.8	1875	27.0	1406	20.2	6954
Total	17 163	63.6	6606	24.5	3225	12.0	26 994
4. Religion							
4A. Hindu	13 252	62.2	5243	24.6	2827	13.2	21 322
4B. Muslim	2304	69.1	869	26.1	163	4.9	3336
4C. Christian	1072	75.8	269	19.0	74	5.2	1415
4D. Other religions	531	57.7	226	24.6	163	17.7	920
Total	17 159	63.6	6607	24.5	3227	12.0	26 993

general, the penetration of Indian medical systems is more among the poor households compared with other traditional medicines like Homeopathy and Yoga and Naturopathy.

We use the per capita expenditures as proxy for the economic status of the households who use or do not use AYUSH. 30-day and 365-day recall periods are used for the calculation of institutional and noninstitutional medical expenses, and 3 different monthly consumption expenditures are used.

We have given the appropriate measures of various expenditures calculated from Type 1 and Type 2 schedules in Table 6. All the different measures of expenditures are higher for the “No” category compared with the “Yes” category in both the schedules, that is, Type 1 and Type 2. If we take monthly per capita consumption expenditures as a proxy for the economic status of households, then it is the relatively richer households that use AYUSH. The institutional and noninstitutional medical expenses are primarily for

Table 6. Monthly per Capita Expenses (in Indian Rupees) of Households Classified by the Use of AYUSH.^a

Expenses	Type 1		Type 2		
	Yes	No	Expenses	Yes	No
Inst_Med_30 (N = 743)	1219 (N = 743)	1071 (N = 801)	Inst_Med_365	3985 (N = 5221)	3161 (N = 10 910)
Noninst_Med_30	129 (N = 24 404)	114 (N = 53 408)	Noninst_Med_30	129 (N = 24 553)	111 (N = 52 545)
Inst_Med_365	3934 (N = 5011)	3338 (N = 10998)	MPCE_MMRP	2066.71 (N = 29 066)	1929.96 (N = 72 581)
MPCE_URP	1893.79 (N = 28742)	1757.62 (N = 72910)			
MPCE_MRP	1915.47 (N = 28 742)	1775.99 (N = 72 910)			

Abbreviations: Inst_Med_30, institutional medical expenditure in past 30 days; Noninst_Med_30, noninstitutional medical expenditure in past 30 days; Inst_Med_365, Institutional medical expenditure in past 365 days; MPCE, monthly per capita consumption expenditure; URP, uniform recall period; MRP, mixed recall period; MMRP, modified mixed recall period.

^aN refers to number of observations in each entry.

Allopathic treatments.[‡] These medical expenses, measured by different reference periods, are higher for users of AYUSH than those who do not use AYUSH. Taking the cue from the relatively higher consumption expenditures and medical expenditures of the AYUSH users, we can conclude that those who spend more on Allopathic treatment and those who are relatively on a higher economic status use AYUSH, which obviously leads to the conclusion that AYUSH is costly and is affordable only by the rich. Alternatively, the monthly per capita consumption expenditures includes the medical expenses, hence, higher medical expenses means greater need for medical care for such households and they also try traditional medical systems either because they are cheaper or that they provide better relief and cure. Since we are unable to establish any causality between consumption and medical expenses with the use of AYUSH we could not be conclusive about it.

The Spread of AYUSH Across States and Union Territories

The spread of AYUSH is not uniform across the states and union territories of India. The standard deviation of percentage of households reported “Yes” for AYUSH across states and union territories is 11.4. The highest percentage of use of AYUSH was reported in Himachal Pradesh, where 57.2% of households have reported using the traditional medical systems and the lowest usage (5%) is among the households in Chandigarh (Table 7). Among the major states, Karnataka had the lowest (21.4% of households) and Bihar had the highest (38.2% of households) percentage of the use of AYUSH. Given the wide variation in the use of AYUSH across states, we have categorized the states in the lower, middle, and higher ranges of the use

of the AYUSH. The states in the “middle range” are the states within half of the standard deviation on either side, that is, ± 5.7 of the average of 28.4% reported for all India. All the states and union territories below the middle range are categorized as “low range” and all the states above the middle range are categorized as “high range.”

From Table 7 we can infer that the entries in low range are mostly union territories, northeastern states, and smaller states, whereas the larger states are in the middle and high ranges. The entire hilly terrain of northeastern region, and Himalayan region of Jammu and Kashmir, Haryana, and Chandigarh are in the low range. The notable exceptions in these regions are Nagaland and Himachal Pradesh, which are in the high range. Maharashtra in the west, Chattisgarh in the north, and Karnataka in the south are also in the low range. The states and union territories in the middle range are fairly distributed over the 4 regions in the country and there is no geographical contiguity of these states, unlike the ones of low range. Though the states and union territories in the high range are distributed in the 4 regions of the country, there is also some amount of contiguity of these states in the respective regions. There is some spatial pattern about the spread of AYUSH in the country. Beyond this, we need to probe the institutional spread of AYUSH in different regions to understand their usage, which is not within the scope of this article.

The change in the use of AYUSH across states and union territories should be further probed using the reasons for using or not using them. In a close-ended question, respondents, who have reported *using* AYUSH, were asked to pick 1 out of 5 reasons for using them. Similarly, respondents who have reported *not using* AYUSH have been asked to pick 1 out of 7 reasons for not using them. Table 8 gives the relative importance of reasons stated by respondents who have used AYUSH.

On the whole, 48.8% of the respondents have been using AYUSH because they found them very effective and the relative importance of this reason does not significantly change across the states and union territories in the 3 ranges. Hence this is the most important reason for their use across the country; the perceptions like such medicines have negligible side effects and are well known to neighbors, relatives, and friends are the next important reasons in order. AYUSH medicines are perceived to be inexpensive only by 10.7% of the respondents and it is still lower at 8.5% for the respondents

[‡]The definition of “medical expenses” does not explicitly differentiate between Allopathy and AYUSH. But the examples for such expenses include only Allopathy related expenses, such as expenses on X-rays, ECG, pathological tests. Of course these tests could also be used by medical professionals in AYUSH, but the public knowledge is that they are mainly used in Allopathy. Similarly the institutional and non-institutional expenses also do not distinguish between Allopathy and AYUSH. Since, such expenses have not been classified by type of medicines, we take them as expenses on Allopathy.

Table 7. Use of AYUSH Across States and Union Territories.

Low Range (5% to 22.7%)		Middle Range (22.8% to 34.1%)		High Range (more than 34.1%)	
States and UTs	Yes %	States and UTs	Yes %	States and UTs	Yes %
Chandigarh (UT)	5.0	Madhya Pradesh	27.0	Nagaland (NES)	34.2
Manipur (NES)	7.5	Punjab	28.0	Tamil Nadu	34.4
Arunachal Pradesh (NES)	8.0	Orissa	29.1	Uttar Pradesh	34.7
Pondicherry (UT)	9.1	Dadra and Nagar Haveli (UT)	29.3	Gujarat	35.6
Tripura (NES)	14.7	Rajasthan	30.6	Kerala	36.4
Sikkim (NES)	15.4	Goa	30.9	Bihar	38.2
Haryana	16.1	Lakshadweep (UT)	30.9	Assam (NES)	39.5
Andaman and Nicobar Islands (UT)	18.4	West Bengal	32.0	Delhi (NCR)	40.3
Jammu and Kashmir	18.7	Andhra Pradesh	32.1	Daman and Diu (UT)	42.2
Jharkhand	19.2	Uttaranchal	32.8	Himachal Pradesh	57.2
Mizoram (NES)	19.7				
Maharashtra	19.8				
Karnataka	19.9				
Chattisgarh	22.0				
Meghalaya (NES)	22.5				
Total	17.4	Total	30.4	Total	37.3

Abbreviations: UT, union territory; NES, northeastern state; NCT, National Capital Region.

Table 8. Reasons for the Use of AYUSH.

States and Union Territories	AYUSH Medicines Are Effective, n (%)	Negligible Side Effects, n (%)	Medicines Are Inexpensive, n (%)	Well Known to Neighbors and Relatives, n (%)	Other Reasons, n (%)	Total, n (%)
Low range	5581 (47.2)	3056 (25.8)	1006 (8.5)	1830 (15.5)	357 (3.0)	11 830 (100)
Middle range	9470 (49.1)	3741 (19.4)	2242 (11.6)	3486 (18.1)	347 (1.8)	19 286 (100)
High range	13 126 (49.4)	5453 (20.5)	2944 (11.1)	4467 (16.8)	592 (2.2)	26 582 (100)
All states and union territories	28 177 (48.8)	12 250 (21.2)	6192 (10.7)	9783 (17.0)	1296 (2.2)	57 698 (100)

from the states in the low range. This could possibly be one of the reasons for the low penetration of these medical systems across the country.

Strong belief in the efficacy of Allopathic medicine should be the single most important reason for the people not using AYUSH. Hence we find 48.8% of respondents have reported "Need did not arise" for the use of AYUSH. This could also be due to the greater access to Allopathic medicine through expansion of government and private hospitals throughout the country. The states in the high range have larger usage of AYUSH and the households who have not used AYUSH in such states have strongly felt that such a need did not arise for them. More than one-fifth of the respondents who have not used AYUSH have not been aware of the existence of such systems. This lack of awareness increases the nonuse of AYUSH because the percentage of unaware households is the highest in the low range, where the percentage of nonusers of AYUSH is the highest. Even the ineffectiveness of traditional medicines (possibly due to quacks) and nonavailability of such hospitals, doctors, and medicines put together have been the reasons for another 25% of the nonusers of AYUSH. Thus, the reasons for the nonusage of AYUSH are tilted toward the larger presence of Allopathic medicine, followed by lack of awareness, and nonavailability of AYUSH.

Relative Importance of Indian, Homeopathic, and Naturopathy Medical Systems

The AYUSH program is basically to promote all the traditional medical systems to Allopathic medicine. For this sample data collection 3 traditional systems have been identified, namely, Indian medical systems (Ayurveda, Siddha, Unani, etc), Homeopathy, and Yoga and Naturopathy. The respondents were asked to give "Yes" or "No" for the use of each of these 3 systems of traditional medicines. Table 9 shows the percentage of AYUSH users in each of these 3 types of traditional medicines.[§] Aggregating the user of 3 types of traditional medical systems is more than the total number of AYUSH users because some the users may simultaneously use more than one type of traditional medical systems.

The states and union territories are arranged in the descending order of the percentage of the use of Indian medicines. We could infer as the importance of Indian medicine declines the importance of 2 other traditional medicines

[§]We have already discussed the socio-economic characteristics of households using these three types of traditional medicines, here we take up only the geographical distribution of such users.

Table 9. Use of 3 Traditional Medical Systems by States and Union Territories.

Serial No.	States and Union Territories	Indian Medical Systems, n (%)	Homeopathy, n (%)	Yoga and Naturopathy, n (%)	Users of AYUSH, n
1	Tamil Nadu	4389 (96.1)	159 (3.5)	104 (2.3)	4569
2	Gujarat	2317 (95.1)	240 (9.8)	203 (8.3)	2437
3	Himachal Pradesh	2190 (93.8)	68 (2.9)	465 (19.9)	2335
4	Jammu and Kashmir	1183 (93.7)	65 (5.1)	128 (10.1)	1263
5	Andhra Pradesh	4121 (93.0)	314 (7.1)	131 (3.0)	4433
6	Daman and Diu	100 (92.6)	5 (4.6)	7 (6.5)	108
7	Rajasthan	2335 (92.3)	217 (8.6)	202 (8.0)	2531
8	Nagaland	645 (92.1)	106 (15.1)	29 (4.1)	700
9	Karnataka	1487 (90.9)	141 (8.6)	150 (9.2)	1635
10	Madhya Pradesh	2310 (90.6)	325 (12.7)	344 (13.5)	2550
11	Dadra and Nagar Haveli	98 (87.5)	5 (4.5)	11 (9.8)	112
12	Chattisgarh	834 (87.1)	123 (12.9)	89 (9.3)	957
13	Goa	240 (87.0)	49 (17.8)	18 (6.5)	276
14	Mizoram	522 (86.4)	104 (17.2)	1 (0.2)	604
15	Meghalaya	485 (85.5)	117 (20.6)	16 (2.8)	567
16	Uttar Pradesh	5293 (84.7)	1290 (20.6)	534 (8.5)	6250
17	Puducherry	88 (83.8)	18 (17.1)	6 (5.7)	105
18	Punjab	1429 (81.8)	318 (18.2)	92 (5.3)	1748
19	Uttaranchal	939 (80.5)	214 (18.3)	286 (24.5)	1167
20	Haryana	666 (79.9)	112 (13.4)	146 (17.5)	834
21	Sikkim	184 (78.0)	43 (18.2)	66 (30.0)	236
	All India	44 695 (77.3)	14 982 (25.9)	5834 (10.1)	57 808
22	Andaman and Nicobar Islands	159 (76.8)	61 (25.9)	7 (3.4)	207
23	Maharashtra	2396 (75.2)	716 (22.5)	669 (21.0)	3186
24	Kerala	2434 (75.0)	937 (28.9)	70 (2.2)	3244
25	Delhi	571 (74.7)	205 (26.8)	197 (25.8)	764
26	Lakshadweep	84 (71.2)	51 (43.2)	0	118
27	Manipur	271 (70.6)	103 (26.9)	52 (13.6)	383
28	Bihar	2290 (65.4)	1911 (54.6)	581 (16.6)	3502
29	Orissa	1489 (63.4)	1048 (44.6)	191 (8.1)	2349
30	Chandigarh	18 (58.1)	11 (35.5)	10 (32.3)	31
31	Assam	1486 (54.8)	1430 (52.7)	353 (13.0)	2714
32	Jharkhand	523 (49.6)	491 (46.6)	226 (21.4)	1054
33	Arunachal Pradesh	104 (39.0)	181 (67.8)	72 (27.0)	267
34	Tripura	182 (33.5)	442 (81.3)	26 (4.8)	544
35	West Bengal	833 (20.7)	3362 (83.5)	352 (8.7)	4028

increases. On an average a little more than one-fourth of the AYUSH users use homeopathic medicine. But the last 3 entries show that higher percentage of AYUSH users use homeopathic medicine. Moreover, larger percentage of the AYUSH users in the eastern and northeastern states and union territories use homeopathic medicine compared with others. In absolute number, the people of Uttar Pradesh, Bihar, Assam, and West Bengal show larger usage of homeopathic medicine compared with other states. The use of Naturopathy and Yoga is greater than that of homeopathic medicine in states and union territories such as Himachal Pradesh, Jammu & Kashmir, Madhya Pradesh, D&N, Uttaranchal, Haryana and Sikkim and many of these states are geographically contiguous. On the whole, there is regional pattern in the use of traditional medical systems in the country, which could be attributed to the regional character of the origin and development of these traditional medical systems.

Effectiveness of AYUSH

The Consumer Expenditure Survey 2011-2012 also solicited opinion from the respondents about the effectiveness of the AYUSH. Let us begin with the sources of information about different medical systems in AYUSH. The respondents were asked to pick 1 out of 6 sources of advice to take AYUSH and the tabulated information is given in Table 10.

The medical fraternity and the government hospitals are not the major sources of information and advice to the people about these traditional medical systems. One's own effort, family, and friends have been the source of advice, and strikingly, Yoga and Naturopathy has effectively used media to give advice about this medical system compared with others. For the knowledge of these medical system to be scientific and authentic, the private practitioners and government hospitals should step in, otherwise, quacks are likely to exploit other informal channels, which may destroy the growth of these time-tested medical systems.

Table 10. Sources of Advice to Take AYUSH.

Sources of Advice	Indian Medical Systems, n (%)	Homeopathy, n (%)	Yoga and Naturopathy, n (%)
On your own	15914 (35.7)	4378 (29.5)	1297 (22.7)
Family members and relatives	18596 (41.7)	5189 (35.0)	915 (16.0)
Friends and neighbors	6065 (13.6)	2345 (15.8)	627 (11.0)
Private practitioners	1691 (3.8)	2243 (15.1)	240 (4.2)
Government hospitals	827 (1.9)	508 (3.4)	121 (2.1)
Media	1467 (3.3)	159 (1.1)	2515 (44.0)
Total	44 560	14 822	5715

Table 11. Sources of Medicines.

Sources of Medicines	Indian Medical Systems, n (%)	Homeopathy, n (%)
Homemade; from home produce, free collection	10 607 (23.8)	—
Homemade; from purchased ingredients	10 837 (24.3)	—
Government hospitals	2908 (6.5)	1551 (10.6)
Private hospitals and practitioners	6576 (14.8)	9700 (66.3)
Local shops/Medical store/(other sellers—only for Indian medicine)	13 600 (30.5)	2497 (17.1)
Other sources	—	884 (6.0)
Total	44 528 (100)	14 632 (100)

Allopathic medicines can be purchased only from medical shops and hospitals and many of them can be obtained only on the basis of a prescription from a registered medical practitioner. Unlike this, the traditional medical systems offer different sources of medicines. In some of the Indian medical systems, the method of cure is orally passed on to the next generation and many of them are part of the regular food habits. Hence homemade medicines are common here. Table 11 gives the tabulated information with regard to the sources of medicines for both Indian medical systems and Homeopathy. Homeopathic medicines cannot be prepared at home; hence it is excluded from the relevant response items. The predominance of homemade production of Indian medicines with home-grown or purchased ingredients shows the extent of household knowledge of these medical systems. In Homeopathy, there are few government hospitals as sources of medicine. In all, 66.3% of the respondents have reported to have obtained homeopathic medicines from private hospitals and practitioners; in this context, there could be problems of standardization of medicines, which needs careful investigation. Government hospitals and private practitioners are not the major sources of Indian medicines; this also needs further investigation, particularly the need to expand public sector presence and to standardize the medicines.

The respondents were also asked to give their opinions about the frequency of visits to these hospitals, availability of medicines, and effectiveness of medicines in curing the diseases during such visits. Nearly 84% of respondents have visited 2 to 3 times. More than half of the respondents have obtained medicines on every occasion they visited the hospitals and about 47% of them have found the medicines effective. By and large, the respondents have been regularly using the

traditional medical systems and the systems are also effective in addressing their medical problems.

Conclusion

The opinion survey on the use of AYUSH in India shows that less than 30% of Indian households use the traditional medical systems. But the variation in the usage of these medicines is large between states and union territories. There is also a regional pattern in the usage of particular type of traditional medicine, reflecting the regional aspects of the development of such medical systems. The strong faith in AYUSH is the main reason for its usage; lack of need for AYUSH and lack of awareness about AYUSH are the main reasons for not using it. We also find a regional pattern in the usage of different types of traditional medicines in the country. With regard to source of medicine, home is the main source in Indian medical system and private sector in the case of Homeopathy. This shows the scope of public sector in creating awareness and improving access to these medical systems. By and large, the users of AYUSH are also convinced about the effectiveness of these traditional medicines.

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Author Contributions

RS analyzed the data and wrote the interpretation in consultation with VRS. RS also edited the final draft of the manuscript.

VRS wrote the section “AYUSH: An Introduction” and was involved in conception of the study theme in collaboration with RS.

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Ethical Approval

The primary data were collected by a Government agency, National Sample Survey Organization, and such data collection is backed by suitable legislations in India. Furthermore, the tabulated unit level data

were purchased and used in this study. Therefore, need for ethical approval does not arise in this case.

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