

Ayurveda: Reflections On Challenges And Opportunities In India And Across The Globe

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ABSTRACT

With the establishment of Ministry of AYUSH in India in 2014, there has been a renewed interest in alternative medicine in general and Ayurveda in particular. The existing literature focuses on the many aspects of scientization, education reform, and pharmacological standardization required for Ayurveda, but certain key aspects of regulation, integration with other systems, advanced research, legislation, soft power strategies, and nationalism surrounding Ayurveda are not dealt with adequately. Further, a comprehensive paper that discusses the many themes surrounding Ayurveda, is not available. The main objective of this paper was to isolate the key themes around challenges and opportunities for Ayurveda at (a) socio-psychological level (b) economic level, and (c) policy level. Using N=8 interviewees - which included besides practitioners of Ayurveda, Allopathy and Homeopathy, researchers, herbal medicine entrepreneurs and policy makers/influencers- were selected using judgmental sampling for qualitative analysis. Further, a convenience sample (N=50) was included in an online survey was developed along A-B-C (Attitude-Behavior-Cognition) socio-psychological model for an empirical analysis to triangulate certain qualitative research questions. Empirical analysis suggests that, as regards Ayurveda, India is socio-psychologically split right down the middle attitudinally. Phenomenological approach was adopted for analyzing the data of Interviewees, and quantitative analysis (Percentage and Chi-square) was computed for N=50 participants.

In the current study Ayurveda was reported as an individualized and multi-factorial system, and that the future of medicine is an integrated system. Growing awareness of its many benefits both within and without India represents another factor that will make Ayurveda an attractive to large pharmaceuticals and indigenous manufacturers alike. As a policy, it is imperative that integrative medicine be promoted for a variety of diseases, prophylaxes and emergencies. The study accentuates that plant-based medicines need to be "scientized," pharmacologically evaluated, and standardized, and that this process needs to be accelerated. The research broadens the discourse surrounding Ayurveda, and would inform policymakers, Ayurveda practitioners and herbal medicine entrepreneurs alike. After generating a range of recommendations, the paper concludes that India needs a multi-pronged strategy through multiple ministries in a WOG - like involvement for taking Ayurveda to the next level in India, and across the globe.

INTRODUCTION:

Ayurveda is an ancient Indian system of medicine which, since Vedic times, has served millions (Kanagarathinam, 2019; Jaiswal and Williams, 2017). The arrival of the British brought Western medicine into the Indian subcontinent, a phenomenon that resulted in the subjugation of traditional medical systems within government policies and public sphere (Kanagarathinam, 2019). Bruchhausen (2020) and Kanagarathinam

(2018) linked colonialization to Ayurveda's current neglected status and contended that bias against Ayurveda continues to remain in the Indian society.

Rhoda (2014 and Patel (2019) explain how Ayurveda offers a comprehensive approach ("Chikitsa") to both physiological and psychological health. Existing literature presents a binary view of medicine's future: either precision medicine will supplant race-based medicine, or race-based medicine will persist despite advances in genetic research and genomic medicine (Chaussabel and Pulendran, 2015; Smart, 2008; Sun, 2020). All these trends afford threats as well as opportunities for Ayurveda.

Though ethnic medicine systems are widely used throughout the world, Ayurveda attracts many people with its metaphysical underpinnings. While its concepts are eternal, it is essential to become contemporary by adhering to current scientific trends, integrating technology, and spreading Ayurveda to the global mainstream through research globally (Maria Niemi & Goran Stahle, 2016; Chauhan, 2015; Krishna 2015). For instance, Kshara-sutra has also been extensively studied and practised in hospitals in Japan (Gupta et al., 2011; Yoshimitsu et al., 2005). More international acceptance is in evidence; for instance, Hungary successfully integrated Ayurveda with its natural medical system (Wele, 2018).

To revive Ayurveda, some researchers have identified impediments to Ayurveda's scientization, and other challenges to Ayurveda in the national and global context (Sherwood, 2004; Chandola, 2012; Binorkar et al., 2018, Crozier, 1970; Wahlberg, 2008; Rao, 2017; Sen et al., 2011). A key impediment is that the scientific publications on Ayurveda in international peer-reviewed journals have been disappointing (Patwardhan, 2012). While attracting foreign medical tourists is an important source of FOREX for India, there is a dearth of studies that measure attitude of Ayurveda within India (Akram, 2015). The present research will also attempts to do a survey of such attitudes to partly fill that gap.

Research questions:

The qualitative& quantitative investigation of this paper seeks to determine the challenges Ayurveda is facing and opportunities it can leverage at (a) at socio-psychological level (b) economic level(c) policy level. Within challenges faced at socio-psychological level, overall perceptual issues in India surrounding Ayurveda are also investigated through an ABC attitude model (affective-Behavioral-Cognitive) survey. The hypotheses is:

Males in India will have positive attitude((a) affectively Positive (b)Behaviorally Positive (c) Cognitively Positive dimensions)owards Ayurveda than females, Besides gender, age and income level will also be studied.

Theoretical Framework

Ayurveda and Western biomedicine have a philosophies, logic, terminologies, metaphors, theories an treatments also different. Western medicine views the body as "structures". whereas Ayurveda understands it with three concepts Vata, Pitta and Kapha,(Ayurveda,2006). Due to these epistemological differences, the Ayurvedic approach is systemic and holistic(Patberdhan,2014) whereas biomedical approach is structural and reductionist.

Scientization and keeping pace

Despite the advent of precision medicine, medical profession continues to rely on preconceived notions and race-based medicine due to convenience (Sun, 2019). Thus, for Ayurveda to be successful, it should further scientifically validate its individualized approach, so that other medical professionals trust it more (Ginsburg & Phillips, 2018; Vogenberg, 2010). Katoch (2018) asserted the need to make it more "scientized", while

Kanagarathinam (2018) has argued that it is already scientifically validated. The significant gaps in Ayurvedic literature can be evidenced by a lack of publications, insufficient lab infrastructure, limited talent and budgetary constraints (Katoch, 2018; Sharma, 2010).

Opportunities Globally / Locally

India is rapidly growing as a medical tourism destination because of its excellent low-cost medical care, easy accessibility, and picturesque locations (Muralidhar & Karthikeyan, 2016; Haseena & Mohammed, 2011). Indian systems of medicine are among the most well-known traditional systems of medicine (Prasad, 2002). The introduction of NABH standards for the wellness market could differentiate India from regional/global competitors (Vision 2022 Roadmap for Ayurveda, 2020).

Safe and effective use of traditional health products by regulating, researching, and integrating, is encouraged by the WHO (2013).

Since around 85% of the herbs are collected from the wild. Efforts have been made to increase standardization and increase medicinal plants availability in many Indian states (CCRAS , 2018). Patwardan (2014) suggests that Ayurveda can follow in Chinese medicine's footsteps and adopt epistemologically sensitive approaches before developing empirical research data to validate clinical judgment and therapeutics.

Other Challenges:

India has officially recognized that traditional medicine systems are scientifically established (Samal and Dehury, 2016). However, the current unequal power relationship between different medical systems is crucial to India's medical pluralism (Prasad, 2007; Gangadharan & Shankar, 2007; Minocha, 1980). After decades of co-existing, alternative practitioners remain oblivious to other AYUSH practitioners' principles and capabilities. (Annual Report on Health, 2011).

Narayana and Durg (2020)and Sharma (2010) evaluated the economic challenges; the easy accessibility of Ayurvedic medicines does not make it attractive for pharmaceutical giants. Bodeker and Grundy (2005; before the creation of AYUSH) suggest that government did not think that Ayurveda justified funding. .

Significance:

The paper seeks to offer strategic solutions and insights for policy actions for the promotion of Ayurveda. It accentuates that plant-based Ayurvedic medicines need to be "scientized," pharmacologically evaluated, and standardized, and that this process needs to be accelerated. The research would inform policymakers, Ayurveda practitioners and herbal medicine entrepreneurs. It seeks to broaden the discourse surrounding Ayurveda.

METHODOLOGY:

These kinds of issues are best explored through phenomenological approach to capture "common or shared experiences", an approach deployed by Sun (2019) also. Based on an extensive review of published journal articles, institutions reports, and conference proceedings, and information from AYUSH, NMPB , and CCRAS), some most important themes for further investigation were identified to develop an interview schedule for a 30minute semi-structured interview (Annexure-I) with Ayurvedic, other complimentary medicine, and biomedicine practitioners; with researchers in healthcare and medicine, with policy makers/influencers, and with Ayurvedic firm owners. Eighteen potential respondents were cherry-picked based on their Linked-in profiles,

out of which eight (including three respondents who were “snowball” suggestions) consented (Table 1 provides Interviewee characteristics; almost all interviewees asked that their identities be anonymized; that was done through a set of 2-3 letters used as pseudonyms). “Duke (1984) recommends three to eight subjects for phenomenological studies(Sun, 2019)

Due to paucity of time, the audio recordings were not transcribed but the ideas and themes noted and coded after repetitive listening. Themes emerging from the analysis of the interviews were further explored in Literature and other sources; this iteratively going back-and-forth between literature to file to literature made the methodology compelling and affords opportunities for triangulation, qualification and even refutation.

Methodological Literature reveals that attitude (A-B-C) is a powerful technique to measure belief (Henerson, Morris & Fitz-Gibbon, 1987). Annexure – II was developed to measure attitude for Ayurveda

RESULT ANALYSIS, FINDINGS AND DISCUSSION:

Most of the points raised about by the interviewees found adequate support in Literature as well.

Almost all respondents hailed Ayurveda’s comprehensive and individualized therapeutic approach. SP remarked that “It considers physical, mental, emotional and spiritual characteristics of the patient” an idea echoed by Zimmermann (1988) when he described “Chikitsa”, that “it uses a uniquely personalized and multifactorial rather than the one-targeted methodology of biomedicine”.

As many as seven respondents pointed to a need for promoting integrative medicine for a variety of diseases, even in emergencies and surgeries, though DA and DJ contented that in surgeries (except endo-rectal surgeries) and in emergency medicine, Ayurveda actually lags. Also, the growing epidemics of chronic diseases cannot be fully addressed by modern biomedicine alone (Reban, 2017; George, 2015; Hankey, 2010).

On the position that “Changes in health expenses and disease profiles offer Ayurveda an opportunity to position itself as the preferred medical non-emergency treatment within an integrated medicine regime (Vision 2022 Roadmap for Indian Ayurveda Industry, 2020)”, there was unanimity among respondents.

Gunathilaka (2019) asserts the importance of the biopsychosocial approach, a point echoed by SP who practices Ayurvedic for mental health as well.

Ironically, the significant obstacle is Ayurveda’s key strength as well: its reliance on Prakriti: that every individual has a unique constitution. (Jaiswal and Williams, 2017; Rotti et al., 2014), which, in turn, means that administering a study drug to a target population with varying constitutions would not achieve best results (Dahanukar & Thatte, 1997).

To make Ayurveda even more comprehensive requires exploring “Ayurgenomics”, said RS (an expert of genetic research). It bridges Ayurveda and genome studies and explores inter-individual differences in therapeutic responses (Jaiswal & Williams 2017; Gupta, 2015).

Worldwide acceptance of Yoga and Ayurveda, partly due to government’s soft power push, represents a global opportunity. The State of California, U.S.A., introduced Yoga as a subject in schools (Butzer, 2015; Semple, 2015). Japan studied the neurological benefits of Shirodhara several years ago (Rajan et al., 2021; Dhuri et al., 2013, Gupta et al., 2011), and Jaluka is now approved by the U.S. FDA (U.S.F.D.A., 2021). DA, DL and TJ accentuated the point that scientization is happening even outside India. Several countries like Hungry, Germany, Switzerland, and the United States have established centers dedicated to Ayurveda knowledge of Sanskrit. (Wele, 2018; Patwardan 2014). PS and DA claim that other Ayurveda’s heritage is under threat from neighboring countries like Sri Lanka, which claim it their own. Due to numerous countries offering therapies

incorporating Ayurveda, India's "geographical indication" USP is eroding. (Ayurveda Vision 2020 Roadmap) DL, an Ayurvedic business owner, suggested that clinical trials do not represent immediate benefits to manufacturers. The manufacturers showed reluctance to conduct such studies considering the high costs (Rao, 2017; Sharma 2010).

PS pointed that UGC guidelines for conducting research are important. Wujastyk & Smith, (2013) claim that even though South Asia has produced a wealth of research, many clinical trials are not easily accessible in peer-reviewed journals.

RS and PS claimed that digitizing of records by AYUSH and the ICMR will not only help spawn quality publications but even ward off IPR challenges that India has lost in WIPO fora. However, numerous databases are not "open" (Anantha Narayana, & Sharanbasappa Durg, 2020).

RS, PS and GG claim that many practitioners are themselves bringing a bad name (improper diagnosis, no transparency in formulations prescribed, etc...) to Ayurveda and existing legislation needs to be enforced. Ayurvedic medicines should be produced under license from the recipes stated in a schedule of the Drugs and Cosmetics Act of 1940 (Katoch et al., 2017).

DL pointed to workforce and quality raw materials issues, which was corroborated by The Economic Times 2018).

GG contends that Health should be a national subject and not a state subject. Clancy (2015) avers that legislation has been passed regarding "cross-practice" especially in rural areas; however, many states have found ways to circumvent them. DL claims that the current health insurance market only provides in-patient coverage presenting an opportunity for AYUSH.

As regards A-B-C attitudinal survey results, as shown in Annexure-III, 52% male respondents and 48% female respondents (exactly 50% of total) had a positive attitude towards Ayurveda. Similar responses across age groups and income levels suggests that attitudes towards Ayurveda did not differ much with any of those variables, suggesting strongly that India is "really" split right down the middle in this regard. Pharmacy students held favorable attitude and beliefs about AYUSH, as studied by Akram, Bandari Kumar, Rodriguez, Patel(2015). Almost all respondents refuted the claim that Ayurveda, an ancient science, has found resurgence because of the recent rise in "nationalism" alone. .

CONCLUSION:

To tap the many opportunities of Ayurveda, a multi-pronged strategy is needed. Extensive digitization of dosages, trails, publications and patient events will accelerate adoption.

A few asserted Ayurveda industry must be positioned as a root cause- precision- diagnosis therapeutic system and its "unmatched" preventive and prophylactic aspects can position it even internationally as a compelling option. The development of the sub-field of Ayurgenomics could help Ayurveda in future. AYUSH and MoT must integrate medical tourism messages with "Incredible India" messages.

The issue of standardization has been legislatively addressed but needs enforcement. A future market for medicinal herbs will also facilitate the sustainable collection of natural resources.

In this paper, Ayurvedic surgery and psychotherapy were not fully discussed. The survey results were interesting and warrant further research. Transcription of interviews could have led to better coding and analysis. Survey sample size does not warrant adequate generalizability, and its sampling may have been more rigorous. NABH -accreditation standards for wellness/wellbeing centres can spur medical tourists attracted to natural health solutions. However, the rise of other "alternative" medicine systems may cannibalize some of Ayurveda's

growth.

In sum, AYUSH needs to focus on scientization, regulation, integration, advanced research, legislation, education reform, standardization, social marketing and soft power strategies through multiple ministries in a WOG - like involvement.

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The assurance of privacy, confidentiality and anonymity was given. EACH respondent was asked to introduce himself/herself and first speak on challenges and opportunities facing Ayurveda in whichever way he/she wants. Points raised by the respondents were explored. Interviews ended with anything that he/she wanted to ask/tell. The points below were later used as a check-list to see whether these points have already been touched upon. Questions on medical pluralism, efficacy, effectiveness and nationalism were posed to everyone.

A. Ayurveda doctor

- i) Is Ayurveda precision medicine?
- ii) Do you think it has an advantage over race-based medicine?
- iii) Ayurveda is already a known form of therapy in India. Why do Indians continue to stay away from it?
- iv) Despite years of Independence, why do you think Ayurveda continues to lag behind allopathy?
- v) How likely are you to suggest Ayurveda treatment and/or medicine to patients? (Ayurveda doctor practising as RMP)

B. Bio-Medical Doctor

- i) Do you think one is above the other, or can Ayurveda co-exist with "regular" medicine? (It was asked to both; Medical doctor and Ayurveda doctor)
- ii) Can it substitute the race-based heuristic that doctors have come to rely upon? How?
- iii) Can Ayurveda surpass race-based clinical training?
- iv) Do you think there is an availability of substantial research to validate the Ayurveda treatment results?
- v) How Ayurveda practices can become more popular and reliable?

C. Ayurveda Pharma Company Executive

- i) How can research on Ayurveda be standardized?
- ii) Should the formula for making Ayurveda medicines be given to a licensed few individuals and/or companies?
- iii) If yes, then what should be the terms of this license?
- iv) Should research literature on Ayurveda become more accessible?

D. Policymaker

- i) What are the challenges that AYUSH faces in the promotion of Ayurveda?
- ii) Do you think all Indian doctors should be taught Ayurveda along with regular medical science?
- iii) How do you think Ayurveda can be promoted internationally?
- iv) Genome research is being given much attention worldwide. How can Ayurveda explore this?
- v) What can the government do to change it?
- vi) Do you think about improving the scope of medical tourism targeting wellness in India?

ANNEXURE II: Survey Questionnaire:

Instructions: This questionnaire about measurement of attitudes surrounding Ayurveda in India requires less than 5 minutes of your time.

Name (Optional):

Gender :

Age (in completed years):

Income in Rupees (in lakhs or hundreds of thousands of rupees per annum; last fiscal):

Email address: (optional):

1-Affective Dimension

Q-1 Do you personally feel better while opting Ayurveda treatment for your illness over other medicine systems?

(a)Yes (b)No

Q-Is Ayurvedic medicine linked to your national Identity?

(a) Yes (b) No

Q- Do you feel Ayurveda medicine system should be preferred to bio medicine in India?

(a) Yes (b) No

2-Cognitive dimension

Q- 1-Do you think Ayurvedic medicines are cheaper than allopathic medicines?

(a)Yes (2) No

Q-2 Do you think Ayurveda Doctors (Vaidyas) are more effective than Bio-medicine doctor in diagnosing, treating and providing overall healthcare?

(a) Yes (b) No

Q-3 Do you think Ayurveda medicines heal deeply ("at source") rather than only treating/managing symptoms?

(a) Yes (b) No

3-Behavioral

Q- Do you seek Ayurveda Treatment / Doctors even they are not available in your nearby locality?

(a) Yes (b) No

Q-Do you prefer even costly Ayurvedic treatment to cheaper allopathic alternatives for the same disease/condition?

(a) Yes (B) No

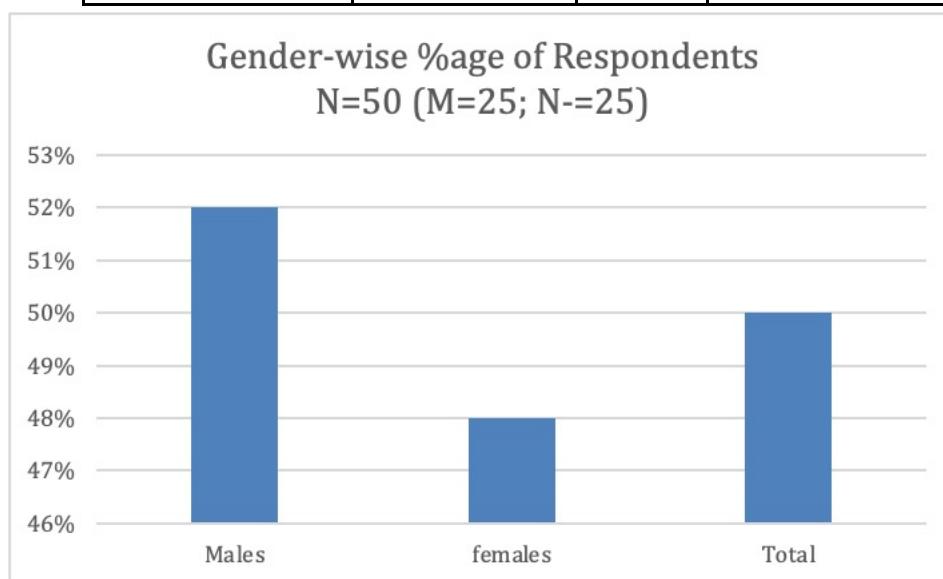
Q- Do you persuade /motivate others to take Ayurvedic treatment?

(a) Yes (B) No

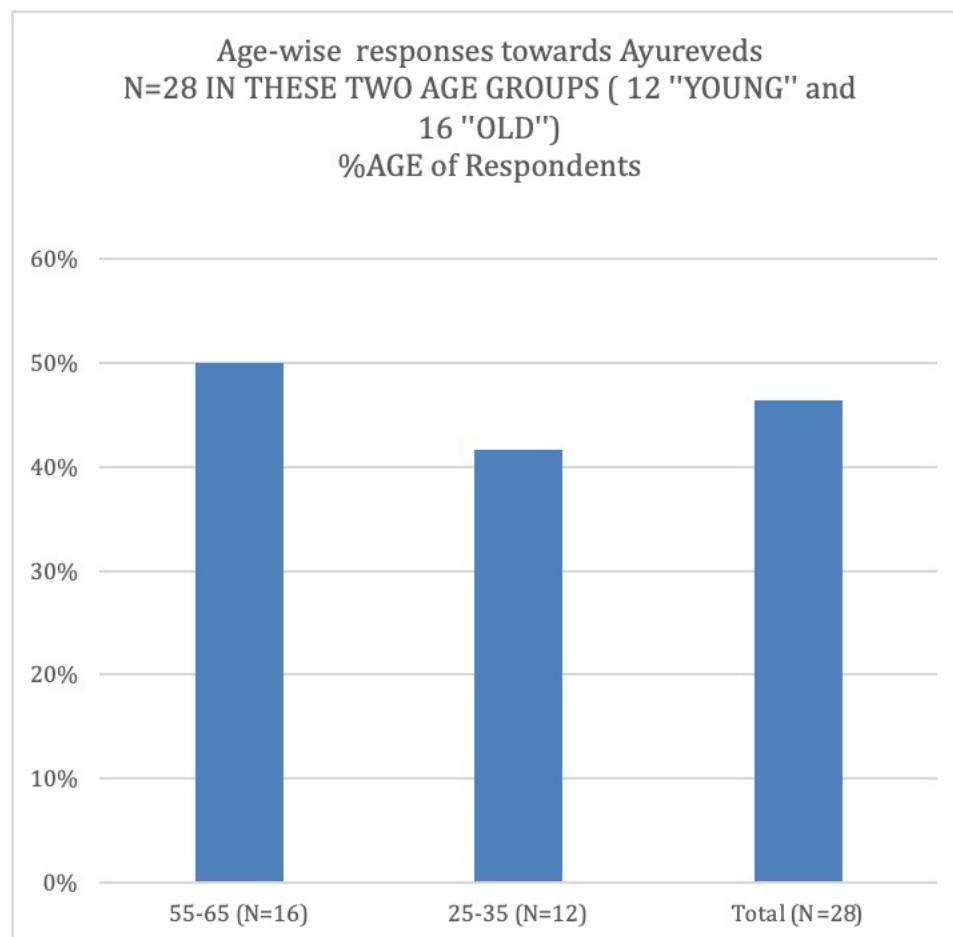
Analysis key: Each Y/N response was coded as either positive or negative towards Ayurveda. If a respondent responded 5 or more positive out of 9, he was considered having an overall positive attitude towards Ayurveda, otherwise with an overall negative attitude. N=50 respondents has N=25 males and N=25 females. For age-wise analysis, two groups 25-35 (both inclusive) completed years and 55-65 (both inclusive) completed years were created to create meaningfully different age group to measure difference in attitudes across "generations". For income analysis, an income of averagely Rs. 1,00,000 per month was created as the split for two groups ("High Income" with N=22 and "Low Income" with N=28).

Annexure- III: Graphs and Tables of Attitudinal Survey Results:

Gender	Responses	Chi square	Level of Sig
Male	48% (12)	0.0173	.005
Female	56% (13)		
Total	50% (25)		



GRAPH 2 and TABLE 2 : Age-wise analysis



Age	Responses (+VE)	Chi-square	Significance level
55-65 (N=16)	50% (8/16))	0.0178	.005
25-35 (N=12)	41.66% (5/12)		
Total (N=28)	46.42% (13/28)		

GRAPH and TABLE 1 : Income-wise analysis

INCOME	Positive Responses	Chi-square	Sig level
>Rs, 12,00,000 P.A.	11/22 or 50%	0.229	.05
<Rs, 12,00,000 P.A.	13/28 or 46.42%		
TOTAL	24/50 or 50%		

TABLE 1: LIST OF INTERVEIWEES AND KEY CHARACTERISTICS***TABLE 1: LIST OF INTERVEIWEES AND KEY CHARACTERISTICS***

Serial No.	Coded Name	Profession	Treating patients?	Any other comments...
1	RS	Genomic Resaerch	No; but has an M.D. and a P.h.D.	Heads a prestigious genomic research center. Has over 100 UGC and International publications. And book chapters to her credit
2	PS	Teaching, Research and Consulting	B.A.M.S., M.D., Ph.D., three post-graduate diplomas	Besides teaching and prolific research, she consults with governments (India and abroad)
3	SP	Ayurved Practitioner with a reputed Ayurvedic Center	Masters' degree in Ayurveda	Over 25 years of experience; coaches NGOs and Charitable Organizations in Ayurveda delivery
4	DS	Ophthalmologist	Yes; M.B.B.S., M.D., D.M. (Ophthalmology)	An allopathic doctor who hails from a family of successful doctores who practice with a variety of medicine systems.

5	DA	Homeopath and a prolific researcher	Yes; advanced degrees in Homeopathy	Consultant with the Ministry of AYUSH and a key policy influencer.
6	DL	Part-owner of a mid-sized Ayurvedic firm	Trained in Ayurveda	Besides managing his business, is active in conferences and Ayurveda Industry Body
7	TJ	Teaching and palliative cure using Integrated medicine	M.B.B.S. with a masters degree from KCL (London) in Palliative Healthcare.	A senior practitioner and administrator in a well-known geriatric palliative care facility
8	GG	Teaching, Research, Consulting and Ayurveda Practice	B.A.M.S. followed by masters in Surgery in Ayurveda; Ph.D.	A throughbred Ayurveda practitioner with convincing credentials and a compelling resume vis--a-vis Ayurveda

Notes: Almost all interviewees wanted their identities to be anonymized

ANNEXURE IV: Clarification on Methodology:

An introductory message and the schedule (in English) was sent through Whatsapp in advance and interviews conducted telephonically; sending schedules in advance offer many advantages (Paul Hanna, 2012). Some Ayurvedic practitioners expressed themselves in both Hindi and English; the author of this paper is fluent in both languages. The initial questions were open-ended to capture the full range of clinical experiences, living experiences, anecdotes, opinions, judgments and evidence-backed facts proffered. Subsequently, secondary and tertiary ideas were explored on the themes raised by the interviewee.

Many respondents provided additional valuable sources of secondary information. On a few occasions, follow-up conversations were held for clarification and elaboration.

For the survey, N=50 were further divided into N=25 males; N= 25 Females; Age range- 18 to 65 completed years; minimum income Rs. 100,000 per annum). An online survey (a convenience sample of people the author knows) was done. Many survey items were influenced by in-class discussions. Descriptive statistics and Pearson's chi-square tests were applied to measure differences in attitude with gender, age, and income.