Original Article

Journal of Evidence-Based Complementary & Alternative Medicine
2017, Vol. 22(2) 251-259

DOI: 10.1177/2156587216650116
journals.sagepub.com/home/cam
SAGE

Patients' Preference for Integrating Homoeopathy Services within the Secondary Health Care Settings in India: The Part 3 (PPIH-3) Study

Rajkumar Manchanda, MD (Hom), MBA[1], Munmun Koley, BHMS, MSc[2], Subhranil Saha, BHMS, MSc[3], Debabrata Sarkar, BHMS[2], Ramkumar Mondal, BHMS[4], Prosenjit Thakur, Internee[5], Debjyoti Biswas, Internee[5], Birendra Singh Rawat, MD (Hom)[6], Bhuvaneswari Rajachandrasekar, MD (Hom)[7], and Renu Mittal, MD (Hom)[1]

Abstract

Indian patients' preference for integrated homoeopathy services remains underresearched. Two earlier surveys revealed favorable attitude toward and satisfaction from integrated services. The objectives of this study were to examine knowledge, attitudes, and practice of homoeopathy and to evaluate preference toward its integration into secondary-level health care. A cross-sectional survey was conducted during May to October 2015 among 659 adult patients visiting randomly selected secondary-level conventional health care setups in Kolkata, Mumbai, Kottayam, and New Delhi (India) using a self-administered 24-item questionnaire in 4 local vernaculars (Bengali, Marathi, Malayalam, and Hindi). Knowledge and practice scores were compromised; attitude scores toward integration and legal regulation were high. Respondents were uncertain regarding side effects of homoeopathy and concurrent use and interactions with conventional medicines. A total of 82.40% (95% confidence interval = 79.23, 85.19) of the participants were in favor of integrating homoeopathy services. Preference was significantly higher in Delhi and lower in Kottayam. Probable strategic measures for further development of integrated models are discussed.

Keywords

homoeopathy, integrative medicine, India, patients' preference, attitude

Received January 20, 2016. Received revised April 14, 2016. Accepted for publication April 20, 2016.

Integrative medicine is not simply the combination of conventional medicine with complementary and alternative medicine. The Consortium of Academic Health Centers for Integrative medicine defines it as

> the practice of medicine that reaffirms the importance of the relationship between practitioner and patient, focuses on the whole person, is informed by evidence, and makes use of all appropriate therapeutic approaches, healthcare professionals and disciplines to achieve optimal health and healing.[1(p5)]

Integration of conventional and unconventional medicine may lead to improved outcomes, patient satisfaction, and treatment cost/effectiveness.[1] Naturally, the growing popularity of complementary and alternative medicine has resulted in an ongoing debate on integrating such systems into mainstream health

[1] Central Council for Research in Homoeopathy, Ministry of AYUSH, New Delhi, India
[2] Dr Anjali Chatterji Regional Research Institute for Homoeopathy, Kolkata, West Bengal, India
[3] Independent Researcher, Howrah, West Bengal, India
[4] Mahesh Bhattacharyya Homoeopathic Medical College and Hospital, Howrah, West Bengal, India
[5] Netai Charan Chakraborty Homoeopathic Medical College and Hospital, Howrah, West Bengal, India
[6] Regional Research Institute (Homoeopathy), Navi Mumbai, Maharashtra, India
[7] Central Research Institute for Homoeopathy, Kottayam, Kerala, India

Corresponding Author:
Munmun Koley, BHMS, MSc, Dr. Anjali Chatterji Regional Research Institute for Homoeopathy, 50, Rajendra Chatterjee Road, Baranagar, Kolkata 700 035, West Bengal, India.
Email: dr.mkoley@gmail.com

care.[2] The World Health Organization encouraged their integration into national health care to ensure its rational use.[3] The World Health Organization Traditional Medicine e-Strategy 2014-2023 assessed the levels of global use of complementary and alternative medicine, investment in research, establishment of the necessary targets for expansion, the characteristics of drug use, and its institutionalization in health services in the past decade. This document revealed substantial growth in the use of complementary and alternative medicine, and it was estimated that more than 100 million Europeans and an even greater number of people in Africa, Asia, Australia, and the United States are users of complementary and alternative medicine.[4] The reasons listed for this growth were increased demand caused by chronic diseases, the rising costs of health care, dissatisfaction with existing health services, the resurgence of interest in holistic and preventive care, and treatments that offer quality of life in incurable states.[5]

India does not meet the recommended standards/norms for the number of health care professionals per head of population, especially doctors.[6,7] On the other hand, a recent survey showed that less than 30% of Indian households use the traditional medical systems, quite higher than 14% usage as reported by an earlier National Sample Survey Organization survey a decade ago,[8] and even much higher than the 8% reported usage by the National Council of Applied Economic Research survey during the early 1990s.[9] The strong faith in AYUSH (Ayurveda, Yoga, Unani, Siddha, Homoeopathy, and last introduced Amchi/Sowa Rigpa/Tibetan Medicine) was the main reason for its usage. Average annual growth rate of 6.3% was realized in all AYUSH hospitals during 1980 to 2013 and 3.0% in the hospitals of homoeopathy.[10-12] So, during the 12th plan period, the national policy on medical pluralism in India encouraged mainstreaming of AYUSH systems and the revitalization of local health traditions through the National Rural Health Mission to help overcome the shortage of health care professionals and to strengthen the service. It was envisaged that all primary, block, and community health centers would provide AYUSH treatment in one place.[11,13,14] Eventually, the Department of AYUSH evolved into the Ministry of AYUSH.[15] The AYUSH services began to be colocated within the existing dispensaries.[14,16,17] To ensure accessibility and availability of health care services to all, policymakers started implementing strategies to facilitate the mainstreaming of the AYUSH system with stringent monitoring.[18] Different strategies are brought together in the recently adopted National AYUSH Mission,[15] called as multidimensional mainstreaming, nurturing infrastructural facilities of teaching AYUSH institutions, increasing production of AYUSH medicines, improving standardization and quality control of drugs, propagation of the potential of AYUSH remedies in specific ailments, capacity building of professionals, building research and public health skills of practical utility, and initiating community-based AYUSH interventions for preventive and promotive health care.[15]

Incorporating public views in the development of integrated AYUSH models in India seems to be a pivotal and reasonable precedence in the formulation of future strategies. However, patients' preference for the integrated services remains underresearched in India. Earlier, PPIH-1 and PPIH-2 studies were undertaken in West Bengal assessing preference for integrated services of the patients already availing services from homoeopathy hospitals (PPIH-1)[19] and evaluating satisfaction of patients from integrated services (PPIH-2).[20] The PPIH-1 survey revealed favorable attitude toward integrating homoeopathy into conventional health care settings among the patients attending the homoeopathic hospitals in West Bengal, India. In the northern districts of West Bengal, majority of the patients were found to be satisfied from availing integrated services and consultation with homoeopathic doctors in the PPIH-2 survey.

The present study (PPIH-3) is designed to examine the preference for integration where integrated homoeopathic services are still not available across India. Our objective is to examine the knowledge, attitudes, and practice of patients toward homoeopathy and to assess their preference for its integration.

Participants and Methods

A cross-sectional survey was conducted in 4 different states in India on patients visiting as outpatients of secondary-level hospitals providing exclusive allopathic private care with no integration either with homoeopathy or any other AYUSH system. We selected randomly 4 major cities/towns in 4 states considering feasibility—Kolkata (West Bengal), Mumbai (Maharashtra), Kottayam (Kerala), and Delhi (Union Territory)—representing eastern, western, southern, and central/northern zone populations, respectively, to get representative samples. Homoeopathy has already been and being integrated in different models in different government and private health setups in the aforementioned cities. We opted for secondary-level health care setups with an objective of obtaining patients' preferences for integrating homoeopathy at grassroots levels. We targeted secondary-level private hospitals for the convenience of filling up of survey forms. The study was conducted during the months of May to October 2015 (see Annexure 1, available online at http://chp.sagepub.com/supplemental).

Inclusion criteria were patients aged 18 years and older, giving written informed consent, and being ready to participate in the survey. Exclusion criteria were patients who were too sick physically for consultation as judged clinically by the surveyors, unable to read patient information sheets, unwilling to cooperate or participate, and not giving consent to participate in the survey. Convenient sampling method was used. Considering margin of error of 5%, confidence level of 99%, population size unknown, and response distribution estimated to be 50%, sample size was estimated to be 644, that is, 161 in each center.

The study protocol was in compliance with the international and national guidelines for biomedical research. The survey in no way intended to intervene in the treatment provided by the hospital. Necessary approval was obtained from the competent authority where the study was undertaken. Patient information sheet elaborating study objectives in local vernacular were distributed. Voluntary written informed consent was taken from all participants prior to their participation in the study. All information collected in this study was kept strictly confidential as no participant-identifiable information was required, thus protecting privacy.

A self-administrated questionnaire in regional languages (Bengali, Marathi, Malayalam, and Hindi) was used. The questionnaire was originally developed by Allam et al.[21] It was translated and

back-translated in standard procedure in local vernaculars. The Bengali questionnaire was already available and has been used earlier.[19] It included 2 sections: sociodemographic information and 25 questions assessing the patient's knowledge, attitudes, and practice of homoeopathic medicine and its integration into the existing hospital services. Sociodemographic data sought information regarding age, sex, marital status, employment status, monthly household income, and educational level. The knowledge part included 7 questions about homoeopathic medicine use, side effects, interactions, local and international governing regulations, and awareness of a Western model of integration. The attitude part included 12 questions divided into 2 groups: 8 questions about the regulations and the safety of homoeopathic medicine and 4 questions about the preference for integrated services. The practice part included 6 questions about one's experience using homoeopathic medicine and its integration. All the 24 questions were provided with 3 answering options: "yes," "no," and "not sure." The questionnaire took 5 to 7 minutes to complete. All survey forms were collected by the research assistants and were sent for data analysis. Data were recorded and managed on an Excel spreadsheet. The complete response sheets acted as source document.

Descriptive data are presented through as frequencies and percentages for categorical data and means ± standard deviations (SDs) for continuous data. Scores were calculated from the knowledge, attitudes, and practice questions. A point was given for the "yes" answer and a zero for the "no" and "not sure" answers. Patients answering "yes" to Question 16 were considered demanding the integration. To detect predictors of the preference for the integration, we ran univariate analysis (independent *t* test and one-way analysis of variance) considering individual potential predictors. All *P* values were 2-tailed. *P* values less than .05 were considered as significant.

Table 1. Sociodemographic Characteristics of the Study Sample (N = 659).

Features	N	% (95% CI)
Age group (years)		
18-30	270	40.97 (37.20, 44.84)
31-50	262	39.76 (36.02, 43.62)
51-70	110	16.69 (13.97, 19.81)
More than 70	17	2.58 (1.56, 4.18)
Gender		
Male	382	57.97 (54.09, 61.76)
Female	277	42.03 (38.24, 45.91)
Marital status		
Married	497	75.42 (71.91, 78.63)
Unmarried and others	162	24.58 (21.37, 28.09)
Occupation		
Student and dependent	273	41.43 (37.65, 45.31)
Self-employed	206	31.26 (27.76, 34.98)
Service	180	27.31 (23.97, 30.91)
Monthly household income (Rs)		
Less than 10 000	344	52.20 (48.31, 56.07)
10 000-30 000	202	30.65 (27.18, 34.35)
More than 30 000	113	17.15 (14.39, 20.30)
Education		
10th standard or less	200	30.35 (26.89, 34.04)
12th standard	161	24.43 (21.23, 27.93)
Graduate or above	298	45.22 (41.38, 49.11)
Cities		
Kolkata	161	24.43 (21.23, 27.93)
Mumbai	162	24.58 (21.37, 28.09)
Kottayam	177	26.86 (23.54, 30.45)
Delhi	159	24.13 (20.95, 27.62)

Abbreviation: CI, confidence interval.

Table 2. Knowledge Attitude Practice Scores (N = 659).

Characteristics	Mean ± SD	95% CI	Percentage of Maximum Score
Knowledge score	2.60 ± 1.7	−0.73, 5.93	37.1
Attitude score toward regulations	6.30 ± 2.0	2.38, 10.22	78.8
Attitude score toward integration	2.65 ± 1.4	−0.09, 5.39	66.3
Practice score	2.29 ± 1.4	−0.45, 5.03	45.8

Abbreviations: SD, standard deviation; CI, confidence interval.

Results

Mean age of the survey respondents was 37.6 years (SD 14.4; 95% confidence interval [CI] = 9.38, 65.82). Majority of the respondents spanned the 18 to 30 years and the 31 to 50 years age groups—40.97% (95% CI = 37.20, 44.84) and 39.76% (95% CI = 36.02, 43.62), respectively. Male patients constituted of 57.97% (95% CI = 54.09, 61.76) of the sample. Most of the respondents were students and employed (41.43%; 95% CI = 37.65, 45.31); married (75.42%; 95% CI = 71.91, 78.63); have monthly household income of less than Rs 10 000 (52.20%; 95% CI = 48.31, 56.07); and education level of graduate or above (45.22%; 95% CI = 41.38, 49.11). Almost equal numbers of responses were obtained from study sites; Kottayam contributed slightly higher (26.86%; 95% CI = 23.54, 30.45) than others (Table 1).

Mean values of knowledge score, attitude score toward regulations and toward integration, and practice score were 2.60 (SD 1.7; 37.1% of the maximum score), 6.30 (SD 2.0; 78.8% of the maximum score), 2.65 (SD 1.4; 66.3% of the maximum score), and 2.29 (SD 1.4; 45.8% of the maximum score), respectively (Table 2).

A total of 46.13% (95% CI = 42.28, 50.02) participants considered that homoeopathic medicines might be used along with standard therapy; 74.51% (95% CI = 70.97, 77.76) believed that homoeopathic medicines did not have any side effect; and 50.53% (95% CI = 46.65, 54.41) thought that homoeopathic medicines do not interact with other medicines. A total of 68.29% (95% CI = 64.56, 71.80) were aware of license for homoeopathic practitioners and only 31.71% (95% CI = 28.20, 35.44) knew about existence of laws to regulate homoeopathic practices in India. A total of 31.41% (95% CI = 27.91, 35.13) respondents, as they claimed, were aware of existence of laws regulating homoeopathic practices and existence of integrative homoeopathic consultations within conventional care settings in developed countries like the United States, Canada, and Germany (Table 3).

Table 3. Patients' Knowledge, Attitudes, and Practice Toward Integrated Health Care (N = 659).

Questionnaire	Yes	% (95% CI)	No	% (95% CI)	Not Sure	% (95% CI)
Knowledge						
1. Homeopathic medicines may be used along with standard therapy.	304	46.13 (42.28, 50.02)	223	33.84 (30.26, 37.61)	132	20.03 (17.08, 23.34)
2. Homeopathic medicines may cause side effect.	76	11.53 (9.24, 14.28)	491	74.51 (70.97, 77.76)	92	13.96 (11.45, 16.90)
3. Homeopathic medicines may interact with other medications.	114	17.30 (14.53, 20.46)	333	50.53 (46.65, 54.41)	212	32.17 (28.64, 35.91)
4. There is license for homeopathic practitioners in Indian system of health.	450	68.29 (64.56, 71.80)	80	12.14 (9.79, 14.94)	129	19.58 (16.66, 22.86)
5. There is law to regulate homeopathic practices in India.	352	53.41 (49.52, 57.26)	132	20.03 (17.08, 23.34)	175	26.56 (23.26, 30.14)
6. There is law to regulate homeopathic practices in developed countries like the United States, Canada, and Germany.	209	31.71 (28.20, 35.44)	123	18.66 (15.80, 21.89)	327	49.62 (45.74, 53.50)
7. There is integrative homeopathic consultation within hospitals in developed countries like the United States, Canada, and Germany.	207	31.41 (27.91, 35.13)	136	20.64 (17.65, 23.98)	316	47.95 (44.08, 51.84)
Attitude questions: Regulations of practicing and safety of homeopathic medicine						
8. Homeopathic practitioners should have degree in this profession.	566	85.89 (82.94, 88.41)	50	7.59 (5.74, 9.95)	43	6.53 (4.82, 8.76)
9. The homeopathic practitioners should be certified and licensed from the Ministry of Health.	571	86.65 (83.76, 89.10)	38	5.77 (4.17, 7.91)	50	7.59 (5.74, 9.95)
10. The production and selling of homeopathic medicines should be regulated by the government.	546	82.85 (79.70, 85.61)	63	9.56 (7.48, 12.13)	50	7.59 (5.74, 9.95)
11. The homeopathic medicine container should have a license and registration number.	527	79.97 (76.66, 82.92)	70	10.62 (8.42, 13.29)	62	9.41 (7.34, 11.96)
12. The homeopathic medicine container should be labeled with the expiry date.	574	87.10 (84.24, 89.51)	53	8.04 (6.13, 10.45)	32	4.86 (3.40, 6.87)
13. The homeopathic medicine container should have a warning of possible side effect and interaction with other medications.	511	77.54 (74.12, 80.63)	79	11.99 (9.66, 14.78)	69	10.47 (8.29, 13.12)
14. The homeopathic medicine container should have a clear note of approval by the government drug control authority.	541	82.09 (78.90, 84.90)	60	9.10 (7.07, 11.62)	58	8.80 (6.80, 11.29)
15. Homeopathic pharmacist can give useful advice regarding use of homeopathic medicines.	315	47.80 (43.93, 51.69)	229	34.75 (31.14, 38.54)	115	17.45 (14.67, 20.61)
Attitude toward integration: Preference for integration of homeopathy within conventional settings						
16. Would like to visit a licensed and qualified homeopathic practitioner within the allopathic hospital setting.	543	82.40 (79.23, 85.19)	75	11.38 (9.11, 14.11)	41	6.22 (4.55, 8.42)
17. Integrating homeopathic practice within allopathic hospital would make feel safer to use homeopathic medicines.	439	66.62 (62.85, 70.19)	128	19.42 (16.51, 22.69)	92	13.96 (11.45, 16.90)
18. Allopathic doctors can monitor health better if they know what homeopathic medicines are being used.	370	56.15 (52.26, 59.97)	157	23.82 (20.65, 27.30)	132	20.03 (17.08, 23.34)
19. Allopathic doctors should give advice about safe use of homeopathic medicines.	391	59.33 (55.46, 63.09)	163	24.73 (21.52, 28.24)	105	15.93 (13.26, 19)
Practice questions						
20. Use homeopathic medicines in any illness (acute/chronic).	410	62.22 (58.38, 65.91)	223	33.84 (30.26, 37.61)	26	3.95 (2.65, 5.81)
21. Use homeopathic medicines for children.	362	54.93 (51.04, 58.76)	271	41.12 (37.35, 44.99)	26	3.95 (2.65, 5.81)
22. Self-medicate with homeopathic medicines.	146	22.15 (19.07, 25.56)	495	75.11 (71.59, 78.33)	18	2.73 (1.67, 4.37)
23. Would ask allopathic doctors about homeopathic medicines when wants to use them.	314	47.87 (43.79, 51.54)	304	46.13 (42.28, 50.02)	41	6.22 (4.55, 8.42)
24. Would ask homeopathic pharmacists about homeopathic medicines when wants to use them.	280	42.49 (38.70, 46.37)	322	48.86 (44.99, 52.75)	57	8.65 (6.67, 11.13)

Abbreviation: CI, confidence interval.

Vast majority of the participants were in favor of regulating practice of homoeopathy; 85.89% to 86.65% preferred to visit qualified practitioners, certified and licensed from the Ministry of Health. The respondents also preferred regulation of safety issues related to homoeopathic products. A total of 82.85% (95% CI = 79.70, 85.61) opined that the production and sale of homoeopathic medicines should be regulated by the government. Many affirmative views were obtained regarding standardization of information mentioned on the containers of homoeopathic medicines. Majority of the participants were in favor mentioning license and registration number on the containers (79.97%; 95% CI = 76.66, 82.92), expiry date (87.10%; 95% CI = 84.24, 89.51), probable side effects and interaction with other medicines (77.54%; 95% CI = 74.12, 80.63), and clear note of approval by the government drug control authority (82.09%; 95% CI = 78.90, 84.90). While 47.80% (95% CI = 43.93, 51.69) participants thought that the homoeopathic pharmacists are able to give useful advice regarding use of homoeopathic medicines, 34.75% (95% CI = 31.14, 38.54) had a negative attitude toward it (Table 3).

Interestingly, 82.40% (95% CI = 79.23, 85.19) respondents preferred to visit a licensed and qualified homoeopathic practitioner in a conventional care setup; one main reason probably was that this integration would make them feel safer (66.62%; 95% CI = 62.85, 70.19). However, 56.15% (95% CI = 52.26, 59.97) respondents felt that allopathic doctors can monitor health better after knowing about homoeopathic medicines and 59.33% (95% CI = 55.46, 63.09) thought that they can advise about safe use of homoeopathic medicines (Table 3).

A total of 62.22% (95% CI = 58.38, 65.91) replied that they use homoeopathic medicines in any acute or chronic illness. While 54.93% (95% CI = 51.04, 58.76) admitted of its usage for children, only 22.15% (95% CI = 19.07, 25.56) confessed of self-medication with homoeopathic medicines. Almost half of the participants would ask their allopathic doctors (47.87%; 95% CI = 43.79, 51.54) and/or homoeopathic pharmacists (42.49%; 95% CI = 38.70, 46.37) before taking homoeopathic medicines (Table 3).

While evaluating the influence of sociodemographic factors over the knowledge score, if any, none of the suspected variables were found to do so significantly: age groups ($F_{3,658}$ = 0.47; P = .701), gender (t = 1.58; P = .115), marital status (t = 1.58; P = .115), occupation ($F_{2,658}$ = 0.71; P = .490), monthly household income ($F_{2,658}$ = 1.51; P = .221), education ($F_{2,658}$ = 2.28; P = .103), and study centers ($F_{3,658}$ = 1.67; P = .171; Table 4).

Practice scores were also seemed to be unvaried across the suspected factors: age groups ($F_{3,658}$ = 2.45; P = .063), gender (t = −1.90; P = .058), marital status (t = 0.78; P = .439), occupation ($F_{2,658}$ = 1.78; P = .170), monthly household income ($F_{2,658}$ = 0.56; P = .574), education ($F_{2,658}$ = 1.16; P = .315), and study centers ($F_{3,658}$ = 2.23; P = .084; Table 4).

Attitude scores toward regulation were not influenced significantly by age groups ($F_{3,658}$ = 0.14; P = .936), gender (t = −0.13; P = .90), marital status (t = −0.47; P = .638), and occupation ($F_{2,658}$ = 2.81; P = .061) but significantly by the higher income group ($F_{2,658}$ = 19.13; P < .0001), higher educational status ($F_{2,658}$ = 8.93; P < .0001), and study centers apart from Kolkata ($F_{3,658}$ = 58.97; P < .0001; Table 4).

Among the studied factors, attitude scores toward integration were significantly lower in Kottayam (1.85 ± 1.2) and higher in Delhi (3.13 ± 1.1) ($F_{3,658}$ = 34.66; P < .0001). Other factors did not seem to influence the same: age groups ($F_{3,658}$ = 1.28; P = .280), gender (t = 0.28; P = .777), marital status (t = −0.53; P = .597), occupation ($F_{2,658}$ = 2.91; P = .055), monthly household income ($F_{2,658}$ = 2.09; P = .124), and education ($F_{2,658}$ = 0.92; P = .400; Table 4).

The internal consistency measure (Cronbach's α) of the overall questionnaire in 4 different languages and individual 4 parts are shown in Table 5. Though most of the measures were acceptable (>.7), few were problematic (<.5).

Discussion

Overall, knowledge and practice scores were compromised; still attitude scores toward integration and regulation were relatively high. Contradictory viewpoints were obtained regarding side effects of homoeopathic medicines and concurrent use and interactions with allopathic medicines. However, knowledge about the existing laws concerning practice of homoeopathy and license of practitioners in India and abroad were negotiated. Majority of the respondents preferred to consult qualified and licensed practitioners and desired for legal regulation of sale of homoeopathic products. The respondents were mostly in favor of integrating homoeopathy into allopathic hospitals. However, the participants were in equipoise whether to consult homoeopathic pharmacists or conventional therapists regarding homoeopathic medication.

Use of homoeopathic medicines was widespread in acute, chronic, and children's diseases. Relatively less number of participants admitted of self-medication. Suspected sociodemographic features like age, sex, marital status, employment, monthly household income, education, and study sites did not seem to affect knowledge and practice scores significantly; however, attitude scores toward regulation were significantly influenced by higher income group, higher educational status, and study sites; and attitude scores toward integration by study sites.

This study did not incorporate the perspectives of health care professionals; rather, it relied solely on the opinions of patients. The cross-sectional design of the study also did not allow us to draw any causative conclusions. This demands cautious interpretation of the study results. The study identified the probable association of study sites with the attitude scores toward regulation and toward integration, but needs further evaluation. Despite the above-mentioned limitations, the study has some evident strength. To increase the generalizability of the study findings, the study sites were selected using a simple random method and respondents by convenience sampling. Since no other self-administered questionnaires measuring the same construct were either available or could be administered simultaneously, concurrent validity

Table 4. Variables of Knowledge, Attitude, and Practice Scores.

Variables	Knowledge Score, Mean ± SD	*P*	Attitude Score Toward Regulation, Mean ± SD	*P*	Attitude Score Toward Integration, Mean ± SD	*P*	Practice Score, Mean ± SD	*P*
Age group (years)[a]								
18-30	2.52 ± 1.7	.701	6.26 ± 2.0	.936	2.64 ± 1.3	.280	2.15 ± 1.5	.063
31-50	2.69 ± 1.6		6.29 ± 2.1		2.74 ± 1.4		2.47 ± 1.4	
51-70	2.58 ± 1.8		6.36 ± 2.0		2.49 ± 1.4		2.26 ± 1.4	
More than 70	2.53 ± 1.5		6.53 ± 2.0		2.29 ± 1.6		2 ± 1.5	
Gender[b]								
Male	2.69 ± 1.8	.115	6.29 ± 2.0	.90	2.66 ± 1.4	.777	2.21 ± 1.4	.058
Female	2.48 ± 1.6		6.31 ± 2.0		2.63 ± 1.3		2.42 ± 1.4	
Marital status[a]								
Married	2.66 ± 1.7	.088	6.28 ± 2.1	.638	2.63 ± 1.4	.597	2.32 ± 1.5	.439
Unmarried and others	2.42 ± 1.5		6.36 ± 1.8		2.69 ± 1.2		2.22 ± 1.4	
Occupation[a]								
Student and dependent	2.51 ± 1.6	.490	6.12 ± 2.1	.061	2.56 ± 1.3	.055	2.30 ± 1.4	.170
Self-employed	2.64 ± 1.9		6.29 ± 2.3		2.83 ± 1.4		2.16 ± 1.5	
Service	2.69 ± 1.5		6.58 ± 1.5		2.56 ± 1.3		2.43 ± 1.3	
Monthly household income (Rs)[a]								
Less than 10 000	2.49 ± 1.7	.221	5.84 ± 2.3	<.0001*	2.57 ± 1.4	.124	2.33 ± 1.4	.574
10 000-30 000	2.72 ± 1.6		6.74 ± 1.6		2.65 ± 1.3		2.31 ± 1.4	
More than 30 000	2.71 ± 1.7		6.90 ± 1.6		2.87 ± 1.3		2.17 ± 1.5	
Education[a]								
10th standard or less	2.44 ± 1.9	.103	5.93 ± 2.4	<.0001*	2.61 ± 1.4	.400	2.18 ± 1.6	.315
12th standard	2.51 ± 1.6		6.08 ± 2.1		2.55 ± 1.4		2.29 ± 1.3	
Graduate or above	2.75 ± 1.6		6.66 ± 1.7		2.72 ± 1.3		2.38 ± 1.4	
Cities[a]								
Kolkata	2.58 ± 1.9	.171	4.66 ± 2.5	<.0001*	2.73 ± 1.5	<.0001*	2.27 ± 1.4	.084
Mumbai	2.36 ± 1.8		6.86 ± 1.8		2.94 ± 1.2		2.08 ± 1.6	
Kottayam	2.71 ± 1.3		6.77 ± 0.9		1.85 ± 1.2		2.36 ± 1.1	
Delhi	2.72 ± 1.6		6.86 ± 1.7		3.13 ± 1.1		2.47 ± 1.5	

Abbreviation: CI, confidence interval.
[a]One-way analysis of variance.
[b]Independent *t* test.
*$P < .05$ (2-tailed) considered as statistically significant.

Table 5. Measure of Internal Consistency (Cronbach's α) and 95% CI of Different Parts of the Used Questionnaire in Different Languages.

Questionnaire Language	Knowledge	Attitude Toward Practice and Regulation	Attitude Toward Integration	Practice Part
Bengali	0.7 (0.6, 0.8)	0.8 (0.8, 0.9)	0.8 (0.8, 0.9)	0.6 (0.5, 0.7)
Marathi	0.7 (0.6, 0.8)	0.8 (0.8, 0.9)	0.6 (0.5, 0.7)	0.7 (0.7, 0.8)
Malayalam	0.5 (0.4, 0.6)	0.2 (0.04, 0.4)	0.6 (0.5, 0.7)	0.4 (0.3, 0.5)
Hindi	0.6 (0.5, 0.7)	0.8 (0.7, 0.8)	0.6 (0.5, 0.7)	0.6 (0.5, 0.7)
Overall	0.6 (0.5, 0.6)	0.8 (0.7, 0.8)	0.7 (0.6, 0.7)	0.6 (0.5, 0.6)

Abbreviation: CI, confidence interval.

could not be tested. The variable measure of Cronbach's α reflects the scope of some readjustments in the questionnaire items in future. While a high value indicates good internal consistency of the items in the scale, it does not mean that the scale is unidimensional. Specific factor analyses (Rasch) need to be carried out for testing the psychometric properties of the questionnaire, and thereby evaluating the validity and reliability of the same.

Results of this study was quite similar with the previously conducted PPIH-1 survey, especially in respect of knowledge scores (PPIH-3 [n = 659] mean ± SD: 2.6 ± 1.7 vs PPIH-1 [n = 1352] mean ± SD: 2.7 ± 1.5; *t* score [−1.29]; $P = .199$) and practice scores (PPIH-3: 2.3 ± 1.4 vs PPIH-1: 2.2 ± 1.1; *t* score 1.45; $P = .148$). But attitude score toward regulation (PPIH-3: 6.3 ± 2 vs PPIH-1: 5.6 ± 1.6; *t* score 7.84; $P < .0001$) and toward integration (PPIH-3: 2.65 ± 1.4 vs PPIH-1: 2.4 ± 1.2; *t* score 3.93; $P < .0001$) were significantly higher in PPIH-3 than in PPIH-1.

Different integrative complementary and alternative medicine models have been developed in different countries for

treatment of different conditions, for example, pain and stress disorders in Sweden[22]; musculoskeletal disorders in the Royal London Hospital for Integrative Medicine, UK[23,24]; geriatric disorders in Berlin, Germany[25]; cancer treatment in Vienna, Austria[26,27]; treating various health issues in Tuscany, Italy[28]; psychological trauma and chronic disease in Australia[29]; rheumatoid arthritis in Maharashtra, India[30]; and so on. As has been suggested by the special panel at the Third International Research Congress on Integrative Medicine and Health in Portland, Oregon, in 2012, on different perspectives on Comparative Effectiveness Research, the same recommendations apply to improve integrated complementary and alternative medicine research, for example, need for innovation and controlling costs in large-scale studies, need to gather the input of stakeholders in shaping the framework for more informative, more decision maker–driven research, importance of balancing rigor and pragmatism, several examples of cost-effectiveness analyses, questions concerning the translation of evidence into practice, the effect of pragmatic trials on funding or policy, evidentiary distinctions between and among pragmatic trials and traditional randomized clinical trials, and the multiple roles of stakeholders, particularly in generating new information and knowledge. The presentations and discussions showed that more development of methods is needed, especially in study design and statistical approaches, as well as methods for stakeholder involvement and mechanisms to bring these results into practice.[31] Recommendations were given for general strategic dimensions (definition of the medical model, motivation for integration, clarification of the available resources, development of the integration team, and development of a communication strategy) and to overcome cultural differences (the clinic environment, the professional language, the professional image, and the implementation of evidence-based medicine).[32]

As reported by the CAMbrella consortium, between January 2010 and December 2013, prevalence rate of homoeopathy usage was 2% to 27% and homoeopathy was the only second most frequently consulted complementary and alternative medicine therapy just after herbal medicine in the European Union.[33] This growing popularity of complementary and alternative medicine and its use by the general public have increased dramatically over the past 2 decades,[34] and it necessitates the inclusion of these subjects into medical education from the preclinical years through residency and beyond.[35] A research on current attitudes among physicians toward complementary and alternative medicine revealed that although most physicians believed that some types of complementary and alternative medicine therapies look promising, nearly 80% of them never refer their patients to a complementary and alternative medicine specialist.[36] Still, in recent years, there has been a steady increase in the number of medical schools that have included complementary and alternative medicine in their curriculum. However, there is a lack of uniformity in content and format of the complementary and alternative medicine courses offered by different universities.[37] There is necessity to integrate complementary and alternative medicine into the medical curriculum due to current trends of integrative medicine and holistic attitude toward patient care. Taking expectations and feedbacks of medical students into consideration would help us take newer approaches in the improvement of the existing curriculum and apply them in educational regulations.[38]

Available details of the existing infrastructure and ongoing initiatives of integrating homoeopathy at the state and national levels in India are elaborated in our earlier articles. As has also been stressed to incorporate public views in the development of integrated complementary and alternative medicine models in India as a crucial precedence in the formulation of future strategies, time has also come to include the expertise of health care professionals as well for arriving at a consensus on the ideal, effective, and appropriate model of integrated homoeopathic treatment addressing needs and expectations of the people and serving them at its best. Our earlier study detected that in the northern districts of West Bengal, India, the patients had high level of satisfaction after availing integrated services; however, the in-house referrals were seriously compromised.[20] Thus, in spite of integration, lack of awareness and coordination prevailed among the therapists. The main probable reason behind is that, until now, in the Indian perspective, ''integration'' has meant ''colocation'' only by simply adding ''unconventional'' to ''conventional'' care rather than developing and testing models of integrated health care tailored to a patient's needs, including all conventional and appropriate complementary and alternative medicine approaches. This issue need further discussion and rigorous exploration. Besides, it needs to be remembered that satisfaction from and preference for integrated services do not necessarily address the ''efficacy'' or ''effectiveness'' issues related to a therapy. Preliminary findings suggest promising role of add-on homoeopathy in drug resistance, lifestyle disorders, and irreversible stages of communicable and noncommunicable epidemics.[39] These are, in fact, positive indications for further integration and further research.

Conclusion

Though the knowledge and practice scores were compromised regarding integrated services, majority of the survey respondents revealed a favorable attitude toward obtaining knowledge. Earlier studies revealed high level of patient satisfaction and better outcomes from availing integrated services. So well-planned strategic initiatives should be undertaken for further establishment of integrated health care setups and development of appropriate integrated treatment models in the Indian perspective.

Acknowledgments

The authors would like to acknowledge the respective institutional authorities for permitting us to conduct the study in their institutions. The authors are grateful to Dr Divya Taneja, Dr Uttam Singh, Dr Sandhya Kashyap, Mr Vinay Kumar Sharma, and Ms Preeti for their sincere efforts in data collection and compilation. The authors are also thankful to the patients for their participation in this study.

Author Contributions

RKM, MK, SS: Concept, design, literature search, data interpretation, statistical analysis, and manuscript preparation. DS, RM, PT, DB, BSR, BR, RM: Study and data acquisition. All the authors edited, reviewed, and approved the final draft of the article.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

Ethical Approval

The institutional ethics committees of respective institutions approved the study prior to its initiation (Approval Number 1-3/2014-15/tech; Dated 10 December 2014).

Supplemental Material

The online [appendices/data supplements/etc.] are available at http://journals.sagepub.com/doi/suppl/10.1177/2156587216650116.

References

1. Bellavite P. Homeopathy and integrative medicine: keeping an open mind. *J Med Person*. 2015;13:1-6.
2. Thomas KJ, Coleman P, Weatherley-Jones E, Luff D. Developing integrated CAM services in primary care organisations. *Complement Ther Med*. 2003;11:261-267.
3. World Health Organization. Legal status of traditional medicine and complementary/alternative medicine: a worldwide review. http://apps.who.int/medicinedocs/pdf/h2943e/h2943e.pdf. Published 2001. Accessed November 1, 2015.
4. World Health Organization. *WHO Traditional Medicine Strategy: 2014-2023*. http://apps.who.int/iris/bitstream/10665/92455/1/9789241506090_eng.pdf?ua=1. Accessed November 1, 2015.
5. Contatore AO, de Barros NF, Durval MR, et al. The use, care and policy of complementary and integrative practices in primary health care [in Portuguese]. *Cien Saude Colet*. 2015;20:3263-3273.
6. Statistics Division, Ministry of Health and Family Welfare. Rural health statistics in India in 2012. http://nrhm.gov.in/images/pdf/publication/RHS-2012.pdf. Accessed November 1, 2015.
7. Park K. Health care of the community. In: Park K, ed. *Textbook of Preventive and Social Medicine*. 20th ed. Jabalpur, India: Banarsidas Bhanot; 2009:800-802.
8. Singh P, Yadav RJ, Pandey A. Utilization of indigenous systems of medicine & homoeopathy in India. *Indian J Med Res*. 2005;122:137-142.
9. National Council of Applied Economic Research. *Household Survey of Health Care Utilization and Expenditure*. New Delhi, India: National Council of Applied Economic Research; 1993.
10. Ministry of Health and Family Welfare, India. Seventh common review mission Meghalaya. New Delhi, India: National Rural Health Mission, Ministry of Health and Family Welfare; 2013.
11. Priya R, Shweta AS. *Status and Role of AYUSH and Local Health Traditions Under the National Rural Health Mission*. New Delhi, India: National Health Systems Resource Centre; 2010.
12. Pandey V.Short of doctors, Nagaland turns to traditional healers. *DNA*. http://www.dnaindia.com/india/report-dna-special-short-of-doctors-nagaland-turns-to-traditional-healers-1658931. March 6, 2012. Accessed May 9, 2016.
13. Gopichandran V, Satish Kumar Ch. Mainstreaming AYUSH: an ethical analysis. *Indian J Med Ethics*. 2012;9:272-277.
14. Albert S, Porter J. Is ''mainstreaming AYUSH'' the right policy for Meghalaya, northeast India? *BMC Complement Altern Med*. 2015;15:288.
15. Srinivasan R, Sugumar VR. Spread of traditional medicines in India: results of National Sample Survey Organization's Perception Survey on Use of AYUSH [published online October 4, 2015]. *J Evid Based Complement Altern Med*. doi:10.1177/2156587215607673.
16. Kumar D, Raina SK, Bhardwaj AK, Chander V. Capacity building of AYUSH practitioners to study the feasibility of their involvement in non-communicable disease prevention and control. *Anc Sci Life*. 2012;32:116-119.
17. Chandra S. Status of Indian medicine and folk healing: with a focus on integration of AYUSH medical systems in healthcare delivery. *Ayu*. 2012;33:461-465.
18. Shrivastava SR, Shrivastava PS, Ramasamy J. Mainstreaming of ayurveda, yoga, naturopathy, unani, siddha, and homeopathy with the health care delivery system in India. *J Tradit Complement Med*. 2015;5:116-118.
19. Koley M, Saha S, Arya JS, et al. Patients' preference for integrating homeopathy (PPIH) within the conventional healthcare settings in West Bengal, India: the part 1 (PPIH-1) study [published online]. *J Tradit Complement Med*. doi:10.1016/j.jtcme.2015.03.001.
20. Saha S, Koley M, Arya JS, et al. Patient preference for integrating homeopathy (PPIH) and attitude and satisfaction following integration within mainstream healthcare settings in West Bengal, India: the part 2 (PPIH-2) study. *Focus Altern Complement Ther*. 2015;20:81-88.
21. Allam S, Moharam M, Alarfaj G. Assessing patients' preference for integrating herbal medicine within primary care services in Saudi Arabia. *J Evid Based Complement Altern Med*. 2014;19:205-210.
22. Sundberg T, Falkenberg T. Using hospital data and routines to estimate costs and effects of integrative care programmes for chronic pain and stress disorders—a feasibility study. *Forsch Komplementmed*. 2014;21:164-170.
23. Hu X, Lorenc A, Hughes J, Fisher P, Robinson N. Integrative medicine for musculoskeletal disorders: a qualitative study of pathways to treatment and patients expectations. *Eur J Integr Med*. 2014;6:610-611.
24. Hu XY, Lorenc A, Hughes J, Fisher P, Robinson N. Exploring patients' expectations of seeking integrative medical treatment for musculoskeletal disorder: a qualitative study. *Integr Med Res*. 2015;4(1):32.
25. Teut M, Schnabel K, Baur R, et al. Effects and feasibility of an integrative medicine program for geriatric patients—a cluster-randomized pilot study. *Clin Interv Aging*. 2013;8:953-961.

26. Frass M, Friehs H, Thallinger C, et al. Influence of adjunctive classical homeopathy on global health status and subjective well-being in cancer patients—a pragmatic randomized controlled trial. *Complement Ther Med*. 2015;23:309-317.
27. Gaertner K, Müllner M, Friehs H, et al. Additive homeopathy in cancer patients: retrospective survival data from a homeopathic outpatient unit at the Medical University of Vienna. *Complement Ther Med*. 2014;22:320-332.
28. Bernardini S, Cracolici F, Ferreri R, Rinaldi M, Pulcri R. Integration between orthodox medicine, homeopathy and acupuncture for inpatients: three years experience in the First Hospital for Integrated Medicine in Italy. *J Tradit Complement Med*. 2015;5: 234-240.
29. Singer J, Adams J. Integrating complementary and alternative medicine into mainstream healthcare services: the perspectives of health service managers. *BMC Complement Altern Med*. 2014;14:167.
30. Kundu TK, Shaikh AF, Jacob SM. To evaluate the role of homoeopathic medicines as add-on therapy in patients with rheumatoid arthritis on NSAIDs: a retrospective study. *Indian J Res Homoeopathy*. 2014;8:24-30.
31. Witt CM, Withers SR, Grant S, Lauer MS, Tunis S, Berman BM. What can comparative effectiveness research contribute to integrative health in international perspective? *J Altern Complement Med*. 2014;20:874-880.
32. Witt CM, Pérard M, Berman B, et al. Using the framework of corporate culture in ''mergers'' to support the development of a cultural basis for integrative medicine—guidance for building an integrative medicine department or service. *Patient Prefer Adherence*. 2015;9:113-120.
33. Hegyi G, Petri RP Jr, di Sarsina PR, Niemtzow RC. Overview of integrative medicine practices and policies in NATO participant countries. *Med Acupunct*. 2015;27:318-327.
34. Majeed K, Mahmud H, Khawaja HR, Mansoor S, Masood S, Khimani F. Complementary and alternative medicine: perceptions of medical students from Pakistan. *Med Educ Online*. 2007;12:11.
35. Wetzel MS, Kaptchuk TJ, Haramati A, Heisenberg DM. Complementary and alternative medical therapies: implications for medical education. *Ann Intern Med*. 2003;138:191-196.
36. Wahner-Roedler DL, Vincent A, Elkin PL, Loehrer LL, Cha SS, Bauer BA. Physicians' attitudes toward complementary and alternative medicine and their knowledge of specific therapies: a survey at an academic medical center. *Evid Based Complement Altern Med*. 2006;3:495-501.
37. Mousavizadeh K, Ansari H. Complementary/alternative medicine and medical education. *Payesh*. 2008;7:329-336.
38. Sadeghi M, Rabiepoor S, Forough AS, Jabbari S, Shahabi S. A survey of medical students' knowledge and attitudes toward complementary and alternative medicine in Urmia, Iran [published online September 21, 2015]. *J Evid Based Complement Altern Med*. doi:10.1177/2156587215605751.
39. Manchanda RK. Antibiotic resistance: homoeopathic perspective. *Ind J Res Homeopathy*. 2015;9:219-222.