



Research Article

**KNOWLEDGE, ATTITUDE AND PERCEPTION TOWARDS INTEGRATIVE APPROACH OF
SIDDHA SYSTEM AND ALLOPATHY AMONG CRRI STUDENTS OF TIRUNELVELI MEDICAL
COLLEGE - A CROSS-SECTIONAL STUDY**

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ABSTRACT

According to the Draft Regulations for compulsory rotating internship 2021 passed by the National Medical Commission (NMC) 2021 on July 7 2021, the MBBS students have to undergo AYUSH training in the MBBS Internship. It says that a week's training should be a part of the rotational schedule of any of the Indian systems of medicine as an elective. NMC emphasizes the importance of integrative healthcare in medical education. So, the aim of this study is to assess the knowledge, attitude and perception towards integrative approach of siddha system and allopathy among CRRI students of Tirunelveli Medical college. A cross-sectional study was conducted among 100 MBBS interns (2023-2024) of Tirunelveli medical college. A convenient sampling and a self-structured questionnaire was used for collecting data. The data obtained were statistically analysed through SPSS. A likert based statistics were analysed as mean±SD. This study illustrated that MBBS interns have moderate knowledge (mean 9.81±2.177), good attitude (mean 32.76±7.482) and good perception (mean 23.31±4.790) towards integrative approach. Higher mean scores in both attitude and perception, indicates a shift towards a more integrative approach and a limited knowledge that needs to be addressed.

INTRODUCTION

According to the Draft Regulations for compulsory rotating internship 2021 passed by the National Medical Commission (NMC) 2021 on July 7 2021, the MBBS students have to undergo AYUSH training in the MBBS Internship. It says that a week's training should be a part of the rotational schedule of any of the Indian systems of medicine as an elective. In addition to, The NMC has made it compulsory for all medical colleges to have a Department of Integrative medicine research. It is an attempt to integrate modern medicine with other medical systems that comes under AYUSH. The aim and objective of training period conducted by NMC are to gain awareness and respect for other system of medicines, introduce medical students about basic concepts, basis of diagnosing

diseases and treatment modalities of AYUSH disciplines, understand, drug interaction, contraindication, adverse effects and precautions in use of different modalities of AYUSH treatments, develop an orientation of medical students towards integration of evidence based AYUSH and other alternative systems with modern medicine practice and sensitize and motivate medical students about the need of generating evidences in AYUSH / alternative therapies through systematic research with internationally accepted standards.^[4,6,7]

The National Medical Commission (NMC) emphasizes the importance of integrative healthcare in medical education. Despite growing evidence supporting the effectiveness of integrative healthcare, conventional medical education often fails to notice this approach. MBBS interns, as future healthcare providers, lack exposure to and understanding of integrative healthcare principles leading to some issues such as limited knowledge of complementary therapies (e.g., Ayurveda, Yoga, Siddha) may results in missed opportunities for preventive healthcare, inadequate attitude towards patient- centered care.

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Furthermore, there is inadequate lifestyle modifications and dietary changes, inefficient resource utilization, limited treatment options, high healthcare costs and poor accessibility of healthcare services are the challenges experienced by the community.

Assessing the interns' knowledge about integrative approach can identify the knowledge gaps and their understanding towards this approach. Evaluating attitudes can disclose the flexibility and curiosity of the study subjects to revolutionize the healthcare landscape. Positive attitudes may demonstrate the willingness of the study participants to adopt integrative approaches. Examining perception can provide the recommendations for educational needs, curriculum development and policy changes. Identifying the challenges associated with integrative approach will be helpful to promote this field.^[1,2,3,5] By embracing integrative approach, we can create a more comprehensive, effective and patient centric health care system.

MATERIALS AND METHODS

After getting proper approval from Institutional Ethical Committee, the study was initiated. A cross-sectional study was conducted among 100 MBBS interns (2023-2024) of Tirunelveli Medical College, Tirunelveli. A descriptive, non-random sampling method (convenient sampling) was employed for the study. Data collection was carried out at the following institutions: Government Siddha Medical College, Palayamkottai and Tirunelveli Medical College, Tirunelveli. The study covered the period from June 2024 to September 2024. A self-structured questionnaire was used, and its content validity was verified by experts. Following this, field visits were conducted among interns; those who expressed interest in participating were included, while those unwilling to participate were excluded. The study was explained to the participants, questionnaires were distributed, and completed forms were collected after they were filled out.

The questionnaire comprised demographic details, 10 knowledge questions, 12 attitude questions and 11 perception questions. The demographic data such as their name, age, gender and native was included. Knowledge part consists of 10 questions. Out of 10, 8 questions were dichotomous questions, frequency question, rating question and likert question and 2 questions were multiple choice question on first learn about siddha medicine and primary sources of information in integrating siddha and allopathy. Out of 10 questions, 8 questions were taken to calculate score and 2 questions (multiple choice) were not taken. The mean score was calculated for 8 questions excluding the multiple-choice questions. In Knowledge section, for Dichotomous questions, the values given as 0 for

No and 1 for Yes, for 5 point Likert type question, the values assigned as 5 for strongly agree, 4 for agree, 3 for neutral, 2 for disagree, 1 for strongly disagree, for rating question the values given as 4 for extensive, 3 for moderate, 2 for basic, 1 for none, for the frequency determination question, the values assigned as 4 for always, 3 for often, 2 for sometimes and 1 for never. The total mean score 18 was calculated and categorised into three grades such as GOOD KNOWLEDGE: 13 to 18, moderate knowledge: 7 to 12, poor knowledge: 0 to 6.

Likewise in Attitude section, For 5-point likert questions, the values assigned as 5 for strongly agree, 4 for agree, 3 for neutral, 2 for disagree and 1 for strongly disagree. For Positive dichotomous question, the values given as 0 for NO and 1 for YES. For Negative dichotomous question, the magnitude given as 1 for NO and 0 for YES. For the degree of importance assessing question, the magnitude given as 4 for Very important, 3 for important, 2 for somewhat important and 1 for not important. For nominal level question, the value assigned as 2 for yes, 1 for maybe and 0 for no. For the level of trust in the efficacy of siddha medicine question, the value given as 4 for completely, 3 for moderately, 2 for somewhat and 1 for not at all. For 12 attitude questions, total mean score (47) was calculated. And the score was categorised into three grades such as Good Attitude: 33 To 47, Moderate Attitude: 18 To 32, Poor Attitude: 0 to 17.

Out of 11 questions in perception section, 9 questions were closed ended such as dichotomous and likert questions which were taken to calculate the mean score and 2 questions were multiple choices about the suggestions for improving integrative approach and potential challenges associated with integrative approach which were not taken to calculate the mean score. For 3-point likert questions, the magnitude given for comfortability assessment as 3 for comfortable, 2 for neutral and 1 for uncomfortable and in the confidence assessment, the values assigned as 3 for confident, 2 for neutral and 1 for unconfident. For level of likeness question, the value given as 3 for likely, 2 for neutral and 1 for unlikely. For 5 points level of confidence question, the value assigned as 5 for very confident, 4 for somewhat confident, 3 for neutral, 2 for somewhat unconfident and 1 for not at all confident. For 5 points likert questions, the values given as 5 for strongly agree, 4 for agree, 3 for neutral, 2 for disagree and 1 for strongly disagree. For dichotomous question, YES was given as 1 and NO was given as 0. For overall perception question, the value assigned as 3 for positive, 2 for neutral and 1 for negative. The total mean score (33) was calculated and categorised into three grades such as Good Perception:

23 To 33, Moderate Perception: 12 To 22, Poor Perception: 0 to 11.

Data analysis: Data was collected and coded in excel, exported coded data in SPSS software. Both descriptive and Inferential statistic analysed for correlation between knowledge, attitude and Perception and some variables. Pearson correlation was performed.

RESULTS

The demographic data of the study was represented in table 1. The knowledge scores were shown in table 2. The attitude scores were illustrated in table 3. The perception scores were demonstrated in table 4.

Table 1: Demographic Details

Characteristics		Values (%)
Age	20 years	7 %
	21 years	6 %
	22 years	17%
	23 years	40%
	24 years	26%
	25 years	3%
	26 years	1%
Gender	Male	52%
	Female	48%
Natives	Ariyalur, Aruppukottai, Coimbatore, Cuddalore, Haryana, Hyderabad, Marthandam, Namakkal, Perambalur, Puliyanakudi, Rajasthan, Ramanathapuram, srivilliputhur, Sivaganga, Telengana, Tirukoilur, Thisayinvilai, Valliyur, Vellore, Virudhunagar	20% (each 1%)
	Karur, Kovilpatty, Nagercoil, Rajapalayam, Sankarankovil, Tenkasi	12% (each 2%)
	Tirunelveli	27%
	Trichy, Kanyakumari, Kallakurichi	12% (each 4%)
	Kerala	5%
	Tirupur, Tuticorin, Theni, Salem, Erode, Chennai, Villupuram, rest of Tamilnadu.	24% (each 3%)

Table 2: Knowledge Questions

Dichotomous Questions	Yes	No
KQ1 Awareness on integration of Allopathy and AYUSH	70%	30%
KQ2 Awareness of integrative courses	30%	70%
KQ3 Training or Educational sessions received on integrative approach	42%	58%
KQ4 Level of familiarity with Siddha system of medicine	55%	45%
KQ5 Awareness of integrative hospitals or clinics	22%	78%

Rating Question	None	Basic	Moderate	Extensive
KQ6 Level of Knowledge on Siddha system	19%	72%	8%	1%

Frequency Question	Never	Sometimes	Often	Always
KQ7 Information-seeking frequency on siddha or Integrative approach	18%	76%	4%	2%

Likert Question	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
KQ8 Goal of Integration-Combining the strengths of both systems	16%	49%	21%	5%	9%

Multiple Choice Question	Siddha Medical Institutions	Allopathic Institutions	Media	Others
KQ9 first place to learn about Siddha medicine	37%	18.50%	44.40%	0.10% (Friends, Family, Relatives, School education, Family doctors, Local Siddha Practitioners, and some had treatment during childhood)
KQ10 Chief sources of information on Integration	32.30%	22.20%	44.40%	1.1% (Journals)

KQ1 =Knowledge Question number 1, KQ2 =Knowledge Question number 2, KQ3 =Knowledge Question number 3, KQ4 =Knowledge Question number 4, KQ5 =Knowledge Question number 5, KQ6 =Knowledge Question number 6, KQ7 =Knowledge Question number 7, KQ8 =Knowledge Question number 8, KQ9=Knowledge Question number 9, KQ10 =Knowledge Question number 10.

Table 3: Attitude Questions

Likert Question	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
AQ1 Willingness to learn about integration	21%	44%	20%	6%	9%
AQ2 Integration enhances health care quality	18%	38%	34%	2%	8%
AQ3 Integrative approach combines the strength of both systems of medicine	18%	43%	28%	3%	8%
AQ4 Integrative approach enhances treatment outcome for chronic diseases	16%	43%	29%	5%	7%
AQ5 Integrative approach reduces treatment costs	8%	43%	30%	9%	10%
AQ6 Integrative approach bridges the gap between two systems of medicine	11%	46%	33%	1%	9%
AQ7 Willingness to participate in workshops or seminars on integrative approaches	5%	50%	34%	4%	7%

Nominal Level Question	Yes	Maybe	No
AQ8 Consideration of Siddha-Allopathy combined Treatment.	66%	34%	Nil
Positive Dichotomous Question	Yes	No	
AQ9 Willingness to try an integrative approach for a specific health condition	69%	31%	

Negative Dichotomous Question	No	Yes
AQ10 Skepticism about Integration	64%	36%

Level of Trust Question	Not At All	Somewhat	Moderately	Completely
AQ11 Trust in the efficacy of Siddha medicine	10%	50%	33%	7%

Table 4: Perception Questions

Level of Comfort Question	Comfortable	Neutral	Uncomfortable
PQ1 Comfort with integration	42%	47%	11%

Level of Confidence Question	Confident	Neutral	Unconfident
PQ2 Confidence in applying integrative approaches	20%	61%	19%

Level of Confidence- Question	Very Confident	Some What Confident	Neutral	Somewhat Unconfident	Not at all Confident
PQ3 Confidence in ability to discuss alternative therapies with patients	13%	40%	33%	6%	8%

Dichotomous Question	Yes	No
PQ4 Personal experience of successful outcomes on Integration	81%	19%

Likert Question	Likely	Neutral	Unlikely
PQ5 Likeness to recommend integrative approach	36%	49%	15%

Multiple Choice Question	Interdisciplinary Training Programs	Research	Public Awareness Campaigns	Others
PQ6 Ideas to improve collaboration	31.70%	50%	17.30%	1%

Likert Question	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
PQ7 Willingness to refer patients to Siddha medicine	9%	44%	29%	12%	6%
PQ8 Medical curriculum includes more alternative medical practices	5%	49%	31%	8%	7%
PQ9 Further research required to validate the efficacy of the integrative approach.	34%	44%	19%	Nil	3%

The total mean score of knowledge, attitude and perception of interns were calculated and it was found to be moderate knowledge, good attitude and good perception. The mean score was mentioned in table 5.

Table 5: Total Mean Score

	Range	Mean & SD	Ranking Score
Knowledge Score	Maximum – 18	9.81± 2.177	Moderate knowledge
	Minimum – 2		
Attitude Score	Maximum- 47	32.76± 7.482	Good attitude
	Minimum – 9		
Perception Score	Maximum-33	23.31± 4.790	Good perception
	Minimum -8		

SD= Standard Deviation

Descriptive statistic analysed for correlation among Knowledge, Attitude and Perception were mentioned in Table 6.

Table 6: Mean Ranking Score

KAP Mean Ranking Score		
Knowledge Ranking	0-6 Poor knowledge	9.81 ± 2.177 Moderate knowledge
	7-12 Moderate knowledge	
	13-18 Good knowledge	
Attitude Ranking	0-17 Poor attitude	32.76±7.482 Good attitude
	18-32 Moderate attitude	
	33-47 Good attitude	
Perception Ranking	0-11 Poor perception	23.31±4.790 Good perception

Moderate knowledge, good attitude and good perception of integrative approach were found in this study. The mean value of the consolidated scores were used to grade these attributes as tabulated in this table 6. The total KAP score was found to be 65.88 out of 83 (18K+47A+ 33P) which was graded as good score.

Hypothesis were made to find out the correlation significance between knowledge, attitude, perception and training sessions. On this, there was highly significant correlation among knowledge and attitude, knowledge and perception, perception and attitude. And, there was significant correlation between attended training sessions and perception. The correlation relationship was shown in table.7

Table 7: Pearson Product Correlations

Variable 1	Variable 2	r Value	p Value	SIGNIFICANCE
Knowledge	Attitude	0.549	<0.001	Highly significant
Knowledge	Perception	0.486	<0.001	Highly significant
Perception	Attitude	0.750	< 0.001	Highly significant
Training Sessions	Perception	0.246	0.013	Significant

Multiple choice question	Lack of standardized guidelines	Lack of understanding and acceptance from patients	Legal and regulatory issues	Others
PQ10 Challenges on integrative approach	42.30%	38.70%	18.90%	0.10%

Perception Question	Negative	Neutral	Positive
PQ11 Perception on integrating Siddha and Allopathy	8%	55%	37%

PQ1= Perception Question number 1, PQ2= Perception Question number 2, PQ3= Perception Question number 3, PQ4= Perception Question number 4, PQ5= Perception Question number 5, PQ6= Perception Question number 6, PQ7= Perception Question number 7, PQ8= Perception Question number 8, PQ9= Perception Question number 9, PQ10 = Perception Question number 10, PQ11= Perception Question number 11.

Degree of Importance Question	Very Important	Important	Somewhat Important	Not Important
AQ12 Importance of health care providers to offer integrative treatment options	14%	40%	40%	6%

AQ1=Attitude Question number 1, AQ2=Attitude Question number 2, AQ3=Attitude Question number3, AQ4=Attitude Question number4, AQ5=Attitude Question number5, AQ6=Attitude Question number6,

AQ7=Attitude Question number7, AQ8=Attitude Question number8, AQ9=Attitude Question number9, AQ10=Attitude Question number 10, AQ11=Attitude Question number11, AQ12=Attitude Question number 12.

DISCUSSION

Non-random sampling method (Convenient sampling) was used in selection of interns for the study and data collected from an MBBS interns (2023-2024 batch) of Tirunelveli medical college to assess knowledge, attitude and perception towards integrative approach of siddha and allopathy.

The familiarity assessment of siddha system evaluated participants' prior learning and highlighted areas needing further education. While more than half (55%) of participants were familiarized with the Siddha system of medicine, the majority (72%) possessed only basic knowledge. Additionally, 76% of the study subjects sought information about Siddha or integrative medicine only occasionally, leading to 70% of interns being unaware of integrative courses offered by institutions like NIMHANS and NCIM. Moreover, 78% of the population was unfamiliar with integrative hospitals or clinics. Media (44.40%) significantly influenced learning about the Siddha system, more so than Siddha and allopathy medical institutions. 0.1% of other sources of information mentioned included family, relatives, school education, friends, family doctors, local Siddha practitioners, and some who received treatment during childhood. As media served as the primary source for integrating of Siddha and allopathy, many individuals lacked a comprehensive understanding of this integration. This could be resulted in positive (or) negative outcomes, sometimes leading to misinformation and disinformation. Additionally, 1.1% of the other sources included journals.

More than half of the population (around 65%) had expressed a positive interest in learning about integration. The overall willingness to adopt an integrative approach had been slightly higher, at 69%. Only about 10% had disagreed with the idea that integrative medicine combined the strengths of both systems, such as Western medicine's diagnostic capabilities and AYUSH's preventive and curative approaches. A significant willingness (56%) to learn about integrative methods had likely explained the high interest in participating in seminars or workshops on Integrative Medicine. Nearly half of the participants (50%) had believed it was important for healthcare providers to offer integrative treatment options for developing personalized treatment plans and monitoring patient outcomes. Despite 50% of the population had moderate trust in the efficacy of Siddha medicine, 66% had been open to using Siddha treatments alongside allopathic medicine. Additionally,

about 64% of the population had not expressed skepticism toward integrative approaches, indicating growing acceptance. This trend had highlighted the increasing recognition of integrative medicine as a viable treatment option, encouraging further research, education, and policy changes.

Although only few people (11%) felt uncomfortable with an integrative approach, their confidence in using it remained neutral (61%) and positive (20%). Minority (18%) of the interns were willing to refer patients to Siddha practitioners showed a shift towards more inclusive and cooperative healthcare, with growing recognition of Siddha medicine's effectiveness. Nearly half (49%) of the population agreed that medical curriculums should include more alternative medical practices. One intern who disagreed said that the current curriculum was already too busy and adding more would be overwhelming for students. Only 3% felt very confident in discussing alternative therapies with patients, indicating a need for more knowledge about integrative approaches. Around 80% believed more research was needed to prove the effectiveness of integrating Siddha and allopathy in medical practices. Over 80% (81%) had personally seen successful outcomes from integrative approaches. One person mentioned that platelet count was increased during a case of dengue fever due to this approach. Half of the population (50%) acknowledged that collaboration could be enhanced through research, while only one person expressed disagreement with the potential for integration. Some of the challenges in adopting an integrative approach were the nearly equal emphasis on the lack of standardized guidelines (42.30%) and the lack of patient acceptance (38.70%). And the other responses (0.1%) of the challenges suggested that this approach lacked grounding in evidence-based medicine, potentially resulting in unnecessary delays and causing more harm than benefit. This raised ethical concerns within the medical community. Furthermore, the high cost of treatment rendered it unaffordable for low-income individuals, creating obstacles to compliance with Siddha medicines.

Moderate knowledge, good attitude and good perception of integrative approach were found in this study. Increased knowledge about integrative approach led to more positive attitudes on integrative approach. High knowledge about the integrative approach led to positive perceptions on integrative approach. Interns who had good perceptions about the integrative approach had good attitudes on integrative approach. Attending training sessions significantly improved perceptions on integrative approach.

SUGGESTIONS

With the growing acceptance towards integrative approach among interns suggests some initiatives such

as establishing integrative clinics and hospitals, developing standardized treatment protocols, creating job opportunities in integrative healthcare, conducting clinical trials on integrative approaches, encouraging policy makers and funding, educating integrative medicine to undergraduates and graduates shall be proposed.

CONCLUSION

This study illustrated that MBBS interns have moderate knowledge with the mean 9.81 ± 2.177 , good attitude with the mean of 32.76 ± 7.482 and good perception with the mean of 23.31 ± 4.790 towards integrative approach of siddha and allopathy. The interns exhibited higher mean scores in both attitude and perception, indicating a shift towards a more integrative approach. Though there was a limited knowledge among the interns that needs to be addressed.

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