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Knowledge level of Ayurveda practitioner on public health

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Abstract

Background: Looking at the current scenario of shortage of public health professionals on one hand and intense demand of community health services on the other it is imperative that the contribution of Ayurveda practitioners is increased in the field of public health. However, the updating of the knowledge of public health issues and concepts will ultimately decide whether they can be successfully integrated into the community health arena or not. **Aim:** This study was conducted to assess the knowledge level of Ayurveda practitioners about public health Issues with the aim find out the competence of Ayurveda practitioners regarding knowledge of public health issues. **Materials and Methods:** Cross-sectional study was conducted in the union territory, Chandigarh and two districts each of the states of Haryana and Punjab. Public health knowledge assessment tool comprising a questionnaire was used to collect information from the respondents who were registered Ayurveda doctors and interns. The data was analyzed with the help of IBM SPSS (Statistical Product and Service Solutions). **Results:** The respondents scored between 5 and 17 points out of a total of 19 points and majority (82%) of the respondents fell in the category of "having average knowledge". The mean score was 8.42 ± 2. **Conclusion:** Curriculum and training of Ayurveda education need to have more public health related inputs and hence that the Ayurveda practitioners are well-versed with the public health concepts and could contribute in the public health field meaningfully.

Key words: Ayurveda practitioners, public health, public health professionals, public health skills

Introduction

The concept and discipline of public health has seen a revival in the past decade.[1] The 11th five year plan includes several strategies to make available benefits of knowledge and skills of modern public health at all levels.[2] A gradual shift of focus from curative to preventive is being discernible. It is estimated that there will be a huge increase in need of public health professionals day by day. This would require human resources from diverse disciplines, fields and backgrounds.[3-8]

On realizing the need of public health professional and availability of fairly large infrastructure Ayurveda, Yoga and Naturopathy, Unani, Sidha and Homoeopathy (AYUSH) in our country, several health policy recommendations have directed the health care planners to integrate AYUSH practitioners within mainstream health delivery system including the activities related to public health initiatives.[9-13]

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Planning commission report also supported this on the background that "When national health programs can be administered by Auxiliary Nurse Midwife (ANM) there is no reason why AYUSH doctors should not be utilized to strengthen the nation-wide implementation of these programs?"[14,15]

As an outcome of all these recommendation under the National Rural Health Mission (NRHM) strategy of "Mainstreaming AYUSH and Revitalizing Local Health Traditions" 7692 AYUSH doctors and 3143 paramedical were added to the main system and 10,872 health facilities have co-located AYUSH services.[13]

In addition to this, many states have planned activities that strengthen AYUSH services well beyond merely the contractual appointment of AYUSH doctors. Some of these activities are: Formation of AYUSH epidemic cells (Tamil Nadu and Kerala); establishment of a resource center or a separate cell for AYUSH to strengthened the management and technical support to the AYUSH services (Rajasthan, Chhattisgarh, Kerala); introduction of AYUSH health programs (Orissa, Punjab, Andhra Pradesh, Rajasthan and Tripura).[15]

However, there have been instances where public health institutes have barred students with background in AYUSH for admission to public health courses and/or position in the public health realm. Questions are also being raised about their

competency in delivery of public health services. Yet it would be interesting to find out the level of knowledge of Ayurveda practitioners regarding different aspects of public health.

Against this background the present study was undertaken with the aim to find out the competence of Ayurveda practitioners regarding knowledge of public health issues in order to understand any conspicuous lag and the strategies required for their smooth integration in to public health sector. The objective of this study was to assess the knowledge level of Ayurveda practitioners about public health issues.

Subjects and Methods

Tool development and validation

For assessment of level of knowledge of Ayurveda practitioners regarding public health, a public health knowledge assessment tool comprising a questionnaire of 19 multiple choice questions related to different aspects of public health was designed. Multiple choice questions were selected from various text books of post-graduation level in the area of social and community medicine. Apart from these questions the respondents were also asked to furnish some demographical details such as age, gender, institutional affiliation etc. Each correct answer was awarded with one mark and there was no negative mark for giving a wrong answer. Maximum score a respondent could get was 19. Depending on their scores the respondents were categorized into four categories-having excellent knowledge (score 16-19), having good knowledge (score 10-15), having average knowledge (score 6-10) and less than that as having poor knowledge (score 0-5). The tool was validated and pilot tested in Chandigarh by taking a sample of 15 respondents. Depending upon the feedback received from respondents, some corrections were done in the language and pattern of questionnaire [Annexure 1]. The ethical consents were taken from the respondents by stating the purpose of study and assuring strict confidentiality of the respondents.

Respondents

This was a cross-sectional study conducted in the union territory of Chandigarh and two districts each of the states of Haryana and Punjab. District Sirsa was chosen from Haryana and district Patiala from Punjab by using lottery method. Provisionally registered Ayurveda (BAMS) intern doctors and registered Ayurveda doctors were the respondents. A total of 30 respondents were chosen for the study from each district/union territory adding to a total sample size of 90. The total sample comprises 42 Ayurveda interns and 48 Ayurveda doctors. The participants were selected on the basis of availability (convenient approach). The concept of rural internship and demarcation between the urban and rural residential status of respondents were not considered in this study.

Data collection

The questionnaires were got filled by the first author of this paper. Each respondent had to answer all the questions. The study was conducted during February 2010 to April 2010. Consent of the respondents was taken and it was conveyed that all the information provided by the respondents during the study will remain confidential.

Data analysis and interpretation

The data was analyzed with the help of SPSS version 15 and Microsoft Excel 2007. Frequencies, percentages, mean and standard deviation were used to draw inferences.

Results

On analysis of the data categories-wise composition of the total sample was found to be 46.7% (42/90) Ayurveda intern doctors and 53.3% (48/90) Ayurveda doctors. The representation of male and female was found 53.3% (48/90) and 46.7% (42/90) respectively. The mean age for Ayurveda intern, Ayurveda doctor and total sample was 23, 41 and 32 respectively. The range between the ages of respondents was found from 22 to 49 years.

Analysis of responses showed that the minimum score obtained by respondents was 5 and the maximum was 17 across the two districts and one union territory. The mean score was 8.42 with a standard deviation of 2.52. A comparison was also done of public health knowledge level of Ayurveda interns with that of Ayurveda doctors who had completed their BAMS degree. It was found that the mean score of interns was more than that of the doctors [Table 1].

Majority of respondents (82%) had average knowledge of public health discipline while 14.4% had good knowledge; 2.2% had excellent knowledge while only one respondent had poor knowledge [Figure 1].

Independent samples *t*-test was applied to test the difference between the knowledge of Public Health Issues of Ayurveda interns and Ayurveda doctors. The result of analysis is shown in Table 2 ($t = 3.799$ and $P < 0.05$, where $P < 0.0001$). It shows that there was significance difference in the knowledge of public health concepts of Ayurveda interns and Ayurveda doctors.

The difference between the knowledge level of public health issues of male and female Ayurveda practitioners were subjected to *t*-test

Table 1: Comparison of the score in relation to area and category

Characteristics	Number (*n*)	Percentage of total	Mean score	Standard deviation	Minimum score	Maximum score
Score state						
Haryana	30	33.3	8.37	2.593	5	15
Punjab	30	33.3	8.20	2.427	6	16
Chandigarh	30	33.3	8.70	2.602	6	17
Total	90	100.0	8.42	2.522	5	17
Score category						
Ayurveda intern	42	46.7	9.43	2.661	6	17
Ayurveda doctor	48	53.3	7.54	2.042	5	14
Total	90	100.0	8.42	2.522	5	17

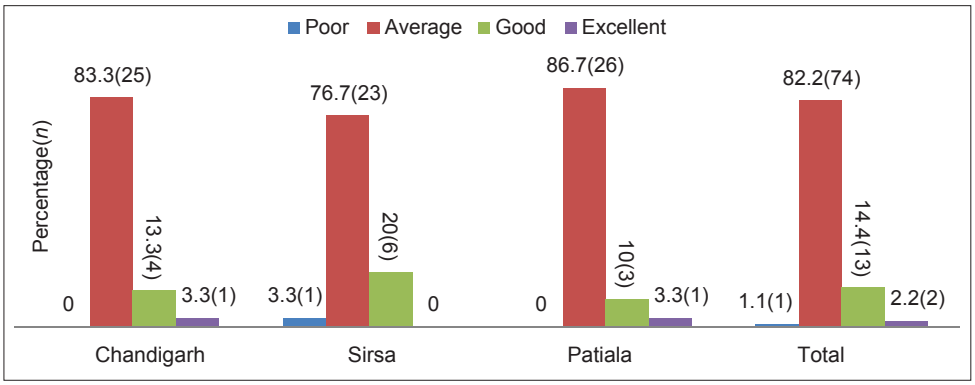

Figure 1: Public health knowledge scorecard of Ayurveda practitioners

analysis which showed $t = 0.228$ and $P > 0.05$, where $P = 0.820$. No significant difference was found in the knowledge of public health issues of male and female Ayurveda practitioners [Table 3].

The mean score of knowledge of public health issues of Ayurveda practitioner from different areas was subjected to one-way ANOVA analysis. The results of the analysis show that there was no significant difference. As F (2, 87) =0.301 and $P > 0.05$, therefore the location of one's residence does not influence the level of knowledge of Ayurveda practitioners [Table 4].

To determine the relationship between knowledge and age of respondents Pearson Product Moment Correlation was used. Results shows $r = -0.301$ and $P = 0.004$. As $P < 0.05$, a significant negative correlation has been found with reference to the age of the respondent where younger respondent have better knowledge in comparison to their older counterparts [Table 5].

Discussion

In this study, we found that an overwhelming number of Ayurvedic graduates had only an average knowledge of public health. Only one respondent scored less and fell into "poor knowledge" category while less than 15% respondents had "good knowledge" of public health. In our study it surfaced that though Ayurveda practitioners are equipped with a basic needful knowledge of public health, however it needs to be focused and sharpened to jump from the category of average knowledge to category of good knowledge which only a minor percentage possessed.

Medical student's priorities toward clinical subjects may also be considered as one of the contributing factor for the low score. This fact is also supported by the findings of similar type of study on awareness of community health in medical graduates conducted by Rangan and Uplekar. In their study they found that there was a lack of basic health information among recent allopathic medical graduates and apathy toward matters of public health importance.[16]

On comparison, a significant difference in the knowledge of Public Health issues of Ayurveda interns and Ayurveda graduates was found. The interns were found more knowledgeable in public health issues in comparison to Ayurveda graduates. The main causative factors for the significant difference could be the recent curriculum up-gradation with more emphasis on disease prevention, health promotion and more frequent use of new educational techniques such as internet, media etc., by the interns.

Table 2: Difference in the knowledge of Ayurveda interns and Ayurveda doctors on public health issues

Levene's test for equality of variances		*t* test for equality of means						
F	*P*	Mean diff.	Std. error mean	df	95% confidence interval of the diff.		*t*	*P*
					Lower	Upper		
3.122	0.081	1.887	0.497	88	0.900	2.874	3.799	0.0001

Table 3: Difference between the knowledge of public health issues of male and female Ayurveda practitioner

Levene's test for equality of variances		*t* test for equality of means						
F	*P*	Mean diff.	Std. error mean	df	95% confidence interval of the diff.		*t*	*P*
					Lower	Upper		
1.638	0.204	0.122	0.536	88	−0.943	0.228	0.228	0.820

Table 4: Result of one-way ANOVA test for the determination of difference in the knowledge of public health issues of Ayurveda practitioner from different areas

Score	df	*F*	*P*
Between groups	2	0.301	0.741
Within groups	87	-	-
Total	89	-	-

ANOVA: Analysis of variance

A significant negative correlation has been found between age and knowledge level of the participants. This difference in knowledge level was also confirmed by significant negative correlation found with reference to the age of the respondent where younger respondent have better knowledge in comparison to their older counterparts. Since the older respondents were more likely to be Ayurveda graduates and the young ones the

Table 5: Relationship between the knowledge score and age of the respondents (*n*=90)

Variable	Score	Age
Score		
Pearson correlation	1	–0.301**
P	-	0.004
Age		
Pearson correlation	–0.301**	1
P	0.004	-

**Correlation is significant at the 0.01 level (2-tailed)

interns, this difference was expected and is supporting our first observation. Again impact of Ayurveda graduates being into practice of curative medicine for a fair length of time, could account for their lack of good knowledge of public health issues. This indicates that there is an urgent need of add-on programs to continue sensitize the graduates toward public health issues.

Due to equal access of information about the public health issues to both male and female practitioners, no significance difference was found in the knowledge level of public health issues of both groups. Similarly it is found that the location of one's residence does not influence the level of knowledge of Ayurveda practitioner. The reason behind this may be the same as in case of male and female practitioners, i.e., due to equal access of information about the public health issues.

Conclusion

Our study indicates the need to focus on public health aspects of health care in Ayurveda teaching and training. To provide quality community health care, which the government is presently contemplating, focused attempts will have to be taken up to enhance the knowledge and skills of Ayurveda graduates in public health discipline. It will, therefore, be wise for stakeholders, policy makers, Ayurveda practitioners and Ayurveda academicians to recognize and exploit this opportunity by inculcating in the Ayurvedic graduates a sound theoretical and practical base of public health knowledge. Patwardhan *et al*., (2011) while commenting on Ayurveda education has given some suggestions such as change in policy model, strict implementation of regulatory norms to improve the present situation, these are equally applicable in this case.[17] Various types of workshops and continuing education programs should be organized for the enhancement of knowledge of Ayurveda graduates about the public health issues. However, the knowledge level of interns should be increased by adding the practical aspects of public health education.

Recommendations

There is a need to put more emphasis on the preventive and promotive aspects of Ayurveda system. The interns as well as Ayurveda students should be made more familiar with public health concepts by adding more practical aspects in teaching and training. The continuing education programs and workshops should be included in the routine practices of the health system to enhance the capacity of Ayurveda practitioner as public health professionals.

Limitation of study

The sample size was small. Some other factors like queries about the rural internship of Ayurveda practitioner and the demarcation between the urban and rural residential status were not considered in this study.

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ANNEXURE

Questionnaire to evaluate the competency of ayurveda intern/ayurvedic medical officer regarding public health work

1. Endemic disease means that a disease-
   a. Occurs clearly in excess of normal expectancy
   b. Is constantly present in a given population group
   c. Exhibits seasonal pattern
   d. Is prevalent among animals

2. Iron and Folic Acid supplementation forms-
   a. Health Promotion
   b. Specific Protection
   c. Primordial Prevention
   d. Primary Prevention

3. Under the National Programme for Control of Blindness, who is suppose to conduct the vision screening of school students-
   a. School teacher
   b. Medical Officer of Health Centre
   c. Ophthalmologist
   d. Health Assistant

4. Number of new cases occurring in a defined population is known as.
   a. Incidence
   b. Prevalence
   c. Standardization
   d. Propagation

5. Select the ascending order of diseases according to their average incubation period-
   a. Diphtheria, Mumps, Hepatitis B, Staphylococcal Food poisoning
   b. Staphylococcal Food poisoning, Diphtheria, Mumps, Hepatitis B
   c. Staphylococcal Food poisoning, Hepatitis B, Diphtheria, Mumps
   d. Mumps, Hepatitis B, Staphylococcal Food poisoning, Diphtheria

6. Which one of the following is the correct chronological order in which the given committees came into existence in India-
   a. Bhore committee, Mukerji committee, Chadah Committee, Mudaliar committee
   b. Mukerji committee, Mudaliar committee, Chadah Committee, Bhore committee
   c. Bhore committee, Mudaliar committee, Chadah Committee, Mukerji committee
   d. Bhore committee, Mukerji committee, Mudaliar committee, Chadah Committee

7. Arrange the causes of Maternal mortality in India in ascending order-
   a. Haemorrhage, Obstructed labour, Sepsis, Abortion, Hypertension
   b. Obstructed labour, Hypertension, Abortion, Sepsis, Haemorrhage
   c. Hypertension, Sepsis, Abortion, Haemorrhage, Obstructed labour
   d. Abortion, Haemorrhage, Obstructed labour, Sepsis, Abortion

8. Select the chronological order of renaming of the National Programme for Control of Malaria-
   a. National Malaria Control Programme, National Malaria Eradication Programme, National Anti-Malaria Programme
   b. National Malaria Eradication Programme, National Anti-Malaria Programme, National Malaria Control Programme
   c. National Anti-Malaria Programme, National Malaria Control Programme, National Malaria Eradication Programme

9. According to ICMR (Indian Council of Medical Research) the most common cause of Infant Mortality in India is:
   a. Prematurity
   b. Diarrhoeal diseases
   c. Congenital anomalies
   d. Acute respiratory infection

10. Match List 1(dust) with list 2(pneumoconiosis) and select the correct answer using the codes given in the list below

List 1 (Type of Dust)	List 2 (Type of Pneumoconiosis)
a. Coal dust	(1) Siderosis
b. Iron dust	(2) Byssinosis
c. Cotton dust	(3) Bagassosis
d. Cane fibre	(4) Anthracosis

Codes:	(a)	(b)	(c)	(d)
A	4	1	2	3
B	4	2	1	3
C	2	3	4	1
D	2	4	3	1

11. Match List 1(Age) with list 2(Vaccine) and select the correct answer using the codes given in the list below

List 1 (Age in weeks/months/years)	List 2 (Vaccine)
a. At Birth	(1) DPT
b. 10 weeks	(2) Measles
c. 9 months	(3) BCG

Codes:	(a)	(b)	(c)
A	3	2	1
B	1	2	3
C	3	1	2

12. Match List 1(Policy) with list 2(Year of formulation) and select the correct answer using the codes given in the list below

List 1 (Policy)	List 2 (Year of formulation)
a. National Policy for Older persons	(1) 2001
b. National Policy for Empowerment of Women	(2) 2000
c. National Blood Policy	(3) 2002
d. Policy on ISM and H	(4) 1999

Codes:	(a)	(b)	(c)	(d)
A	3	2	1	4
B	1	2	4	3
C	2	1	3	4
D	4	1	2	3

13. Match List 1(Colour coding) with list 2(Biomedical Waste Category) and select the correct answer using the codes given in the list below

List 1 (Colour coding)	List 2 (Biomedical Waste Category)
a. Yellow	(1) Cotton
b. Red	(2) Human Tissues/Organs
c. Blue/White	(3) Discarded Medicines
d. Black	(4) Needles

Codes:	(a)	(b)	(c)	(d)
A	3	2	4	1
B	1	2	3	4
C	2	1	4	3
D	4	3	1	2

14. Match List 1(Disease) with list 2(Risk Factor) and select the correct answer using the codes given in the list below

List 1 (Disease)	List 2 (Risk Factor)
a. Diabetes	(1) Congenital
b. Cancer	(2) Obesity
c. Haemophilia	(3) Radiation Exposure

Codes:	(a)	(b)	(c)
A	2	3	1
B	1	2	3
C	3	1	2

Direction: Given below are some pairs in Q. 15, select the correct pairs

15. (A) Endemic Syphilis -Human Louse
(B) Relapsing Fever - Hard Tick
(C) Lyme Disease - Direct contact
(D) Leptospirosis -Infected animal Urine

16. Primary prevention does not include-
a. Early diagnosis and treatment
b. Health Promotion
c. Specific Protection
d. Health Education

17. Which of the following is not targeted in the Millennium development Goals?
a. Eradicating Extreme Poverty
b. fostering global partnership for development
c. Reducing Child Mortality
d. Improving Health care delivery

18. Goal of National Tuberculosis Control Programme is-
a. To eradicate TB
b. To decrease the transmission of TB
c. To treat all sputum positive patients
d. To decrease the incidence of TB to such a low level that is no longer a major health problem

19. Mass treatment approach is used in the control of which one of the following -
a. Malaria
b. Dengue
c. Smoking
d. Cholera

20. In your view the areas of Public Health in which Ayurveda Graduates/Ayurvedic Medical Officers can or are doing work effectively are:
i. .....
ii. .....
iii. .....
iv. .....
v. .....

21. **Any other Suggestion/Remarks:-**
.....
.....
.....
.....

Signature of the Respondent

हिन्दी सारांश

आयुर्वेद चिकित्सकों का जन स्वास्थ्य हेतु ज्ञान स्तर

जयदिप कुमार, जयन्तिदत्त रॉय, अमरजितसिंग मिंहास

सामुदायिक स्वास्थ्य सेवाओं की तीव्र मांग और सार्वजनिक स्वास्थ्य हेतु चिकित्सकों की कमी को देखते हुए यह जरूरी है कि आयुर्वेद चिकित्सकों का योगदान सार्वजनिक स्वास्थ्य के क्षेत्र में अधिक से अधिक हो । हालांकि, यह आयुर्वेद चिकित्सकों के सार्वजनिक स्वास्थ्य की अवधारणाओं के ज्ञान पर निर्भर है, उनको सफलतापूर्वक सामुदायिक स्वास्थ्य के क्षेत्र में एकीकृत किया जा सकता है या नहीं । इस पृष्ठभूमि में आयुर्वेद चिकित्सकों के सार्वजनिक स्वास्थ्य के बारे में ज्ञान के स्तर का आंकलन करने के लिए यह अध्ययन किया गया है । यह अध्ययन संघ राज्य क्षेत्र, चंडीगढ़, हरियाणा और पंजाब राज्य के दो जिलों में आयोजित किया गया । लोक स्वास्थ्य ज्ञान का मूल्यांकन (PHKAT) पंजीकृत आयुर्वेद चिकित्सकों और इंटर्न से जानकारी एकत्र कर किया गया । SPSS की मदद से डेटा विश्लेषण किया गया । अधिकांश (८२%) चिकित्सकों के ज्ञान का स्तर ''औसत ज्ञान होने''की श्रेणी में आया । आयुर्वेद के पाठ्यक्रम और प्रशिक्षण में सार्वजनिक स्वास्थ्य संबंधी अंश की वृद्धि की आवश्यकता है ।