

Pharmacists In National Public Health Programs In India: A Pilot Study Highlighting Physicians' Perceptions

Siva Prasada Reddy Maddirala Venkata^{1,2}, Peter Kielgast², Ubaidulla Udhumsha³, Marja Airaksinen¹

¹Clinical Pharmacy Unit, Division of Pharmacology and Pharmacotherapy, University of Helsinki, Helsinki, FINLAND.

²Taastrup Pharmacy, Taastrup, DENMARK.

³Department of Pharmaceutics, C. L. Baid Metha College of Pharmacy, Chennai, INDIA.

ABSTRACT

Background: Community pharmacists could play more potential role when finding ways to allocate effectively limited healthcare resources in primary care in many developing countries, including India. Pharmacists could participate in national public health programs, and cooperate effectively with other members of health care team. This small-scale pilot study was designed to develop a method for characterizing physicians' perceptions on the role of pharmacists in public health and patient care in India. **Methods:** Six volunteers visited 800 physicians in Southern region in India and collected data in 2014. The survey tool consisted of 28 structured questions concerning: (i) physicians' experiences of cooperation with pharmacists; (ii) physicians' general opinion on pharmacists' involvement in National Public Health Programs (NPHPs) in India; and (iii) pharmacists' involvement in 11 major NPHPs. The data were collated and extracted and descriptive statistical analysis was conducted by SAS (version 9.3). **Results:** Of total 800 physicians contacted, 129 responded. Of the responding physicians 98% were comfortable with pharmacists' roles in general, 96% were comfortable or somewhat comfortable to collaborate with pharmacists, and 82% regarded pharmacists as part of health care team. The physicians with shorter professional practice were more positive on pharmacists' involvement in NPHPs than physicians having at least 11 years' experience. Overall response of accepting pharmacists' role and

involvement in NPHPs was positive, Pulse Polio, HIV/AIDS, Tuberculosis and Tobacco control, and Leprosy eradication programs being the top NPHPs where physicians perceived pharmacists had a role to play. **Conclusion:** This small-scale pilot study indicates that Indian physicians are willing to collaborate with pharmacists and are comfortable to involve them in the health care team. The survey also revealed differences in opinions between junior and senior physicians: the longer physicians' practice experience was, the less favorable they were for pharmacists' involvement in NPHPs.

Key words: National Public Health Programs, Pharmacists India, Healthcare, Cooperative practice, Physicians, Pharmacist role in public health.

Correspondence :

Siva Prasada Reddy Maddirala Venkata, MPharm, RPh,

Clinical Pharmacy Group, Division of Pharmacology and Pharmacotherapy, University of Helsinki, Viikinkaari 9, Biocenter 2, 00014 Helsinki, Finland.

Taastrup Pharmacy, Taastrup Hovedgade 60 Taastrup, DK-2630, DENMARK.

Email: prassu117@gmail.com

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INTRODUCTION

Manpower for health services has been described as 'the heart of the health system in any country'.^{1,2} World health workforce is facing significant challenges. With an estimated shortage of more than four million health workers worldwide, the global health workforce crisis is possibly the greatest health system constraint on countries seeking to meet their 2015 Millennium Development goals (MDGs).³ As identified by the World Health report 2006, India is 1 of 57 countries facing Human Resources for Health crisis.^{4,5} In India, the latest advances in medicine are available to people who can pay, but the vast underclass, 800 million people or more, have little or no access to healthcare.⁶ The public health system in India has a shortage of medical and paramedical personnel. Total number of doctors registered in the country was 885,233 (March 2013).⁷ Government estimates, based on vacancies in sanctioned posts, indicate that 18% of primary health centers are without a doctor, about 38% are without a laboratory technician, and 16% are without a pharmacist.⁸

Community pharmacists could play more potential role when finding ways to allocate effectively limited healthcare resources in primary care in many developing countries, including India. The role of pharmacists in the health care system has been highlighted by World Health Organization (WHO). Already in 1994, WHO resolution WHA 47.12 recognized the key role of pharmacists in public health, particularly in the field of medicines.⁹ Even earlier, in 1988, World Health Organization

(WHO) Consultative Group, New Delhi, emphasized pharmacists' involvement in health promotion campaigns and disease prevention both in local communities and at national level. The report also emphasized that pharmacists should "actively participate in national health programs", and "communicate and cooperate effectively with the other members of the health care team".¹⁰

There are over a million registered pharmacists in India working in various facets of pharmacy. Though there is such large presence, pharmacists both in public and private sector still remain largely an untapped resource in India.¹¹⁻¹³ One of the glaring examples of this is reflected by the fact that the pharmacists does not find even a mention in National Health Policy 2002¹⁴ and National Pharmaceutical Policy.¹⁵ The same applies to 9 out of 11 National Public Health Programs (NPHPs) run by the government of India, namely leprosy and vector borne disease control, mental health, deafness and blindness control, pulse polio, universal immunization, health care of elderly and tobacco control programs.¹⁶ Pharmacists' involvement in HIV/AIDS prevention and control; and tuberculosis control programs has recently rolled out.¹⁴

Physicians are opinion leaders in health care policy making, and thus, in key position for building up strategies for pharmacists' involvement in national public health programs. This small-scale pilot study was designed to develop a method for characterizing physicians' perceptions on the role of pharmacists in public health and patient care. This evidence

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Table 1: Characteristics of the responding physicians (% of the respondents, n=129)

Variable	n (%)
Gender	
Male	107 (83)
Female	22 (17)
Age, years	
≤ 30	36 (28)
31-40	47 (36)
41- 50	20 (16)
> 50	26 (20)
Education qualification	
MBBS	53 (41)
MS/MD	69 (53)
Other	7 (05)
Number of year in practice	
< 5	55 (43)
5-10	33 (26)
11-15	15 (12)
> 15	26 (20)
Current designation	
Family doctor	45 (35)
Medical officer	8 (06)
CMO	3 (02)
Surgeon	18 (14)
Other	55 (43)
Current practice setting	
Private	16 (12)
Corporate	56 (43)
Government	2 (02)
Other	55 (43)

could guide pharmacists in preparing to take active part in NPHPs and to appear on national health and pharmaceutical policies. Pharmacists’ involvement in national public health programs (NPHPs) in this study means active participation in one or more of 11 NPHPs run by the government of India.¹⁷

METHOD

Study design: A cross-sectional survey to a convenience sample of physicians in Southern region in India.

Study instrument

The method of this cross-sectional small-scale pilot study was designed using the following three studies as baseline references: “Physician perceptions of pharmacist roles in a primary care setting in Qatar”,¹⁸ “Professional training and roles of community pharmacists in Malaysia: views from general medical practitioners”¹⁹ and “Extending the roles of community pharmacists: views from general medical practitioners”.²⁰

A survey tool was developed with 28 structured questions divided into three sections: (i) physicians’ experiences of interaction and cooperation with pharmacists; (ii) physicians’ general opinion on pharmacists’ involvement in NPHPs; (iii) Physicians’ opinion on pharmacists’ role in 11 major individual NPHPs. The questionnaire was initially validated by two professors, two pharmacists and two physicians for content before data collection. Their views and comments were considered and incorporated, where appropriate, into the final questionnaire.

Six volunteers personally visited 800 physicians working in private hospitals and as independent practitioners in Southern region in India and collected data between March – November 2014. Well in advance, the volunteers were briefed about the importance of the study and process on how to collect the data. The volunteers made two visits: the first visit was to explain and deliver the print version of the survey tool, then the second visit to remind and collect the data. To document the consent of physicians and to maintain authenticity of the study, participating physicians were requested to fill the questionnaire personally and sign and stamp it at the end of the survey form.

To maintain anonymity of the respondents, data forms were numbered and the numbers were used as IDs during the data entry in University of Helsinki’s E-lomake online survey portal. The data were collated and extracted and descriptive statistical analysis was conducted by SAS (version 9.3). Results are presents as frequencies and percentages. The physicians’ perceptions of pharmacists’ role in NPHPs were reflected according to length of their medical practice. Chi-square tests were used to determine if there were any statistical differences in the responses in this respect. For this purpose, the survey respondents were segregated into the following 4 groups based on the number of years of professional practice: Group A with less than 5 years of professional practice (43%, n=55); Group B with 5-10 years of practice (26%, n=33), Group C with 11-15 years of practice (12%, n=15) and Group D with more than 15 years of practice (20%, n=26).

RESULTS

Of total 800 physicians, 129 responded, leading to a response rate of 16% (Table 1). Of the respondents, 83% were men and 17% women with a median age of 34 years. Forty-one percent of the respondents had Bachelor of Medicine and Bachelor of Surgery (MBBS) degree and 53% Post Graduate in Medicine (MD) and Master of Surgery (MS) as their highest academic degree. The respondents were working in various sectors, the highest proportion (43% of the respondents) being working in corporate hospitals at the time of the survey. Almost half (43%) of the respondents had less than 5 years’ experience in professional practice, 26% with 5-10 years, 15% with 11-15 years and 20% with over 15 years of experience.

Table 2 shows the results of the survey questions related to physicians’ and pharmacists’ interaction and collaboration in general. A majority (90%) of the physicians had a pharmacy close to their practice and 88% of them reported referring patients to buy medicine from those close by pharmacies. Of all responding physicians, 81% indicated contacting their pharmacy frequently for professional matters, 68% of them on daily or at least weekly basis. Physicians with less than 5 years and 5-10 years of practice experience reported contacting pharmacists more frequently (96% and 88%, respectively) than physicians with 11-15 years and over 15 years of professional experience (60% and 54%, respectively). A majority of the physicians also perceived that pharmacists were knowledgeable (84%), service oriented (83%) and were providing very sufficient or sufficient patient counseling on medicines to supplement physician’s counselling, e.g., on administration, dosage and side effects. Again, this perception was more common in younger physicians with <5 years of practice experience (89%) and 5-10 years of experience (75%), than in senior physicians with 11-15 years’ experience (53%) and >15 years’ experience (69%). Almost all physicians (98%) were comfortable with pharmacists’ roles in general, 96% were comfortable or somewhat comfortable to collaborate with pharmacists and 82% regarded pharmacists as part of health care team.

Table 3 shows the results of physicians’ general opinion on pharmacists’ involvement in NPHPs. Around 50% of all physicians regarded pharmacists as a mere vendor/dispenser of prescription drugs. The physicians with shorter professional practice (Group A and Group B) were more

Table 2: Physicians' experiences of cooperation and interaction with pharmacists according to their years of professional practice (% of the respondents. n=129)

Question	Responses according to years of professional practice, n (%)					p-value*
	Total (n=129)	< 5 yrs (n=55)	5-10 yrs (n=33)	11-15 yrs (n=15)	>15 yrs (n=26)	
Is there a pharmacy attached or close to your practice?						
Yes	116 (90)	55 (100)	32 (97)	12 (80)	17 (65)	<0.001
No	13 (10)	0 (0)	01 (03)	03 (20)	9 (35)	
Do you refer your patients with prescription to a pharmacy in your practice area to buy their medicine?						
Yes	114 (88)	51 (93)	31 (94)	14 (93)	18 (69)	<0.001
No	15 (12)	4 (07)	2 (06)	1 (07)	8 (31)	
Do you contact your pharmacy frequently for professional matters?						
Yes	105 (81)	53 (96)	29 (88)	9 (60)	14 (54)	<0.001
No	24 (19)	2 (04)	4 (12)	6 (40)	12 (46)	
On an average, please estimate the frequency of your interactions with a pharmacist						
Every day	40 (31)	17 (31)	15 (45)	4 (27)	4 (15)	<0.001
Once or more than once a week	48 (37)	20 (36)	13 (39)	5 (33)	10 (38)	
Once or more than once a month	22 (17)	15 (27)	4 (12)	1 (07)	2 (08)	
Less than once a month	19 (15)	3 (5)	1 (03)	5 (33)	10 (38)	
Do you think that your pharmacist is knowledgeable?						
Yes	109 (84)	54 (98)	27 (82)	6 (40)	22 (85)	<0.001
No	20 (16)	1 (02)	6 (18)	9 (60)	4 (15)	
Do you think that your pharmacist is service oriented?						
Yes	107 (83)	53 (96)	26 (79)	12 (80)	16 (62)	0.001
No	22 (17)	2 (04)	7 (21)	3 (20)	10 (38)	
Do you think the pharmacy / your pharmacist is providing patient counseling on medicine, administration, dosage, side effects etc., to supplement your counseling, is at a satisfactory level?						
Very much sufficient	31 (24)	10 (18)	14 (42)	2 (13)	5 (19)	0.013
Sufficient	69 (53)	39 (71)	11 (33)	6 (40)	13 (50)	
Neutral	15 (12)	3 (05)	4 (12)	4 (27)	4 (15)	
Not sufficient	10 (08)	3 (05)	3 (09)	1 (07)	3 (12)	
Totally nsufficient	4 (03)	0 (0)	1 (03)	2 (13)	1 (04)	
Please rate your comfort with pharmacist roles described						
Very comfortable	81 (63)	40 (73)	24 (73)	03 (20)	14 (54)	0.006
Somewhat comfortable	45 (35)	14 (25)	08 (24)	11 (73)	12 (46)	
Uncomfortable	03 (02)	01 (02)	01 (03)	01 (07)	0 (0)	
Do you have any barriers to collaborate with pharmacists as a part of health care team?						
Very comfortable	77 (60)	36 (65)	27 (82)	05 (33)	09 (35)	0.003
Somewhat comfortable	47 (36)	18 (33)	05 (15)	09 (60)	15 (58)	
Uncomfortable	05 (04)	01 (02)	01 (03)	01 (07)	02 (08)	
Do you see pharmacists as a part of health care team?						
Yes	106 (82)	53 (96)	29 (88)	10 (67)	14 (54)	<0.001
No	10 (08)	02 (04)	01 (03)	01 (07)	06 (23)	
No opinion	13 (10)	0 (0)	03 (09)	04 (27)	06 (23)	

Chi-square test was used.

* < 0.05 is considered significant.

Table 3. Physicians general opinions on pharmacists’ involvement in National Public Health Programs (NPHPs) according to their years of professional practice (% of the respondents, n=129)

Question	Response according to years of professional practice, n (%)					p-value*
	Total (n=129)	< 5 yrs (n=55)	5-10 yrs (n=33)	11-15 yrs (n=15)	>15 yrs (n=26)	
Do you see the pharmacist as a mere vendor/dispenser of prescription drugs?						
Yes	57 (44)	14 (25)	23 (70)	7 (47)	13 (50)	<0.006
No	64 (50)	39 (71)	7 (21)	8 (53)	10 (38)	
Do not know	08 (06)	02 (04)	3 (09)	0 (0)	3 (12)	
Your perception on pharmacists’ role in National Public Health Programs:						
Positive	84 (65)	46 (84)	25 (76)	6 (40)	7 (27)	<0.001
Neutral	24 (19)	04 (07)	5 (15)	7 (47)	8 (31)	
Negative	06 (05)	01 (02)	0 (0)	0 (0)2 (13)	5 (19)	
No opinion	15 (12)	04 (07)	3 (09)		6 (23)	
Do you feel pharmacists have an important role to play in public health programs?						
Yes, very important	85 (66)	48 (87)	23 (70)	07 (47)	07 (27)	<0.001
Yes, moderately important	22 (17)	04 (07)	06 (18)	03 (20)	09 (35)	
No, not important	05 (04)	01 (02)	0 (0)	01 (07)	03 (12)	
No opinion	15 (12)	02 (04)	04 (12)	04 (27)	07 (27)	
Do you think it is important to include pharmacists in National public health programs?						
Yes, very important	85 (66)	45 (82)	24 (73)	08 (53)	08 (31)	<0.001
Yes, moderately important	22 (17)	06 (11)	05 (15)	03 (20)	08 (31)	
No, not important	10 (08)	02 (04)	0 (0)	01 (07)	07 (27)	
No opinion	12 (09)	02 (04)	04 (12)	03 (20)	03 (12)	
Do you feel that pharmacists’ current knowledge on various public health programs is sufficient?						
Very much sufficient	29 (22)	11 (20)	14 (42)	02 (13)	02 (08)	<0.001
Sufficient	48 (37)	33 (60)	06 (18)	02 (13)	07 (27)	
Neutral	14 (11)	04 (07)	03 (09)	04 (27)	03 (12)	
Not sufficient	25 (19)	06 (11)	07 (21)	04 (27)	08 (31)	
Totally insufficient	13 (10)	01 (02)	03 (09)	03 (20)	06 (23)	

Chi-square test was used.

* < 0.05 is considered significant.

positive (84% and 76%, respectively) on pharmacists’ involvement in NPHPs than physicians having at least 11 years’ experience (Group C: 40% and Group D: 27%, respectively). In the same manner, more physicians from Group A and B (83% and 94%, respectively), perceived that the pharmacists have very important to moderately important role in public health programs, compared to physicians from Group C and D (67% and 62%, respectively). However, 93%, 83%, 73% and 62% of physicians from Group A, B, C and D, respectively, perceived that it is important or moderately important to involve pharmacists in NPHPs. The respective proportions of physicians estimating pharmacists’ knowledge sufficient for the involvement were 80%, 60%, 26% and 35%, $p < 0.001$. The results show a trend in acceptance of pharmacists’ involvement in NPHPs based on the length of physicians’ professional experience: the longer the physicians’ practice experience was, the less favorable they were for pharmacists’ involvement in NPHPs.

Table 4 shows the results of physicians’ opinions on pharmacists’ involvement in 11 selected NPHPs in India. Overall response of accepting pharmacists’ role and involvement in NPHPs was very positive, ranging from 67 – 83% for different programs. Similar trend as in the previous section was found again, where more the physicians’ practice experience, the less the acceptance for pharmacists’ role in particular NPHPs. The trends in their opinions were quite similar in all selected NPHPs. As per

the results, Pulse Polio, HIV/AIDS, Tuberculosis and Tobacco control and Leprosy eradication programs were the top five NPHPs where physicians perceived that the pharmacists has a role to play.

DISCUSSION

This small-scale pilot study indicates that Indian physicians are willing to collaborate with pharmacists and are comfortable to involve them in the health care team. The same trend was found in the physicians’ general opinions of interaction and cooperation with pharmacists; their general opinion on pharmacists’ involvement in NPHPs; and their opinion on pharmacists’ role in 11 major individual NPHPs in India. The survey also revealed differences in opinions between junior and senior physicians: the longer the physicians’ practice experience was, the less favorable they were for pharmacists’ involvement in NPHPs.

Differences in opinions between junior and senior physicians concerning pharmacists’ involvement in NPHPs can be related to pharmacists’ qualifications in India. Most of the pharmacists practicing in community pharmacies in India are DPharm holders with 2 years education²¹ and without continuing education.²² Physicians with more than 10 years practice experience may build their perceptions of pharmacists’ skills and knowledge on these least trained professionals that use the same title as, e.g., PharmDs who have three times longer training which is

Table 4: Physicians' opinions on pharmacists' involvement in the major national public health programs established by Indian Government (% of the respondents according to their years of professional practice, n=129)

Title of the National Public Health Program and its objectives	Response according to years of professional practice, n (%)					p-value*
	Total (n=129)	< 5 yrs (n=55)	5-10 yrs (n=33)	11-15 yrs (n=15)	>15 yrs (n=26)	
HIV/AIDS Control Program						
Objectives: NACO envisions in India where every person living with HIV has access to quality care and is treated with dignity. Effective prevention, care and support for HIV/AIDS is possible in an environment where human rights are respected and where those infected or affected by HIV/AIDS live a life without stigma and discrimination.						
Can the pharmacist play a role in HIV/AIDS Control Program?						
Yes	107 (83)	54 (98)	28 (85)	12 (80)	13 (50)	<0.001
No	17 (13)	01 (02)	03 (09)	01 (07)	12 (46)	
Do not know	05 (04)	0 (0)	02 (06)	02 (13)	01 (04)	
Revised National Tuberculosis Control Program (RNTCP)						
The objective of TB control Program is to achieve and maintain cure rate of at least 85% in new sputum positive pulmonary TB patients, and to achieve and maintain detection of at least 70% of such cases. Directly Observed Treatment is highlight of this program.						
Can the pharmacist play a role in Revised National Tuberculosis Control Program (RNTCP)?						
Yes	106 (82)	55 (100)	28 (85)	10 (67)	13 (50)	<0.001
No	18 (14)	0 (0)	05 (15)	01 (06)	12 (46)	
Do not know	05 (04)	0 (0)	0 (0)	04 (27)	01 (04)	
National Vector Borne Disease Control Program (NVBDCP)						
The objective of the program is to prevent and control Malaria, Dengue, Lymphatic Filariasis, Kala-azar, Japanese Encephalitis and Chikungunya in India.						
Can the pharmacist play a role in National Vector Borne Disease Control program (NVBDCP) ?						
Yes	94 (73)	52 (95)	25 (76)	08 (53)	09 (35)	<0.001
No	27 (21)	03 (05)	06 (18)	03 (20)	15 (58)	
Do not know	08 (06)	0 (0)	02 (06)	04 (27)	02 (08)	
National Leprosy Eradication Program (NLEP)						
Objectives of the program: Early detection & complete treatment of new leprosy cases. Carrying out house hold contact survey in detection. Early diagnosis & prompt MDT, through routine and special efforts. Information, Education & Communication (IEC) activities in the community to improve self reporting to Primary Health Centre (PHC) and reduction of stigma. Intensive monitoring and supervision at Primary Health Centre/ Community Health Centre.						
Can the pharmacist play a role in National Leprosy Eradication Program (NLEP)?						
Yes	99 (77)	54 (98)	25 (76)	10 (67)	10 (38)	<0.001
No	19 (15)	01 (02)	05 (15)	01 (07)	12 (46)	
Do not know	11 (09)	0 (0)	03 (09)	04 (27)	04 (15)	
National Mental Health Program (NMHP)						
Objectives: 1) To ensure the availability and accessibility of minimum mental healthcare for all in the foreseeable future, particularly to the most vulnerable and underprivileged sections of the population; 2) To encourage the application of mental health knowledge in general healthcare and in social development; and 3) To promote community participation in the mental health service development and to stimulate efforts towards self-help in the community.						
Can the pharmacist play a role in National Mental Health Program (NMHP)?						
Yes	94 (73)	51 (93)	22 (67)	08 (53)	13 (50)	<0.001
No	23 (18)	04 (07)	06 (18)	03 (20)	10 (38)	
Do not know	12 (09)	0 (0)	05 (15)	04 (27)	03 (12)	
National Program for Prevention and Control of Deafness (NPPCD)						
Objectives: 1) To prevent the avoidable hearing loss on account of disease or injury; 2) Early identification, diagnosis and treatment of ear problems responsible for hearing loss and deafness; and 3) To strengthen the existing intersectoral linkages for continuity of the rehabilitation program, for persons with deafness.						
Can the pharmacist play a role in National Program for Prevention and Control of Deafness (NPPCD)?						
Yes	88 (68)	49 (89)	25 (76)	06 (40)	08 (31)	<0.001
No	35 (27)	06 (11)	7 (21)	05 (33)	17 (65)	
Do not know	06 (05)	0 (0)	1 (03)	04 (27)	01 (04)	

Table 4: Con

Title of the National Public Health Program and its objectives	Response according to years of professional practice, n (%)					p-value*
	Total (n=129)	< 5 yrs (n=55)	5-10 yrs (n=33)	11-15 yrs (n=15)	>15 yrs (n=26)	
National Program for Control of Blindness (NPCB)						
Objectives: 1) To reduce the backlog of blindness through identification and treatment of blind at primary, secondary and tertiary levels; 2) Prevention of visual impairment; through provision of comprehensive eye care services and quality service delivery; 3) To enhance community awareness on eye care and lay stress on preventive measures; and 4) To secure participation of Voluntary organizations/Private Practitioners in eye care.						
Can the pharmacist play a role in National Program for Control of Blindness (NPCB)?						
Yes	87 (67)	50 (91)	24 (73)	07 (47)	06 (23)	<0.001
No	30 (23)	05 (9)	06 (18)	05 (33)	14 (54)	
Do not know	12 (09)	0 (0)	03 (09)	03 (20)	06 (23)	
Pulse Polio program						
Objectives: Children in the age group of 0-5 years administered Polio drops during the national and sub-nationals immunization rounds. About 172 million children are immunized during each National Immunization Day.						
Can the pharmacist play a role in Pulse Polio program?						
Yes	108 (84)	53 (96)	30 (91)	11 (73)	14 (54)	<0.001
No	17 (13)	02 (04)	01 (03)	03 (20)	11 (42)	
Do not know	04 (03)	0 (0)	02 (06)	01 (07)	01 (04)	
Universal Immunization Program (UIP)						
Objective: Protection of children from life threatening conditions by providing vaccination. Under UIP, following vaccines are provided: 1) BCG; 2) DPT; 3) OPV (oral polio vaccine); 4) Measles; 5) Hepatitis; 6) TT (Tetanus Toxoid) etc.						
Can the pharmacist play a role in Universal Immunization Program (UIP)?						
Yes	96 (74)	53 (96)	26 (79)	09 (60)	08 (31)	<0.001
No	21 (16)	02 (04)	2 (06)	03 (20)	14 (51)	
Do not know	12 (09)	0 (0)	5 (15)	03 (20)	04 (15)	
National Tobacco Control Program (NTCP)						
Objectives: 1) To bring about greater awareness about the harmful effects of tobacco use and about the Tobacco control Laws; and 2) To facilitate effective implementation of the Tobacco Control Laws.						
Can the pharmacist play a role in National Tobacco Control Program (NTCP)?						
Yes	99 (77)	52 (95)	28 (85)	09 (60)	10 (38)	<0.001
No	22 (17)	03 (05)	03 (09)	03 (20)	13 (50)	
Do not know	08 (06)	0 (0)	02 (06)	03 (20)	03 (12)	
National Program for Health Care of the Elderly (NPHCE)						
Objective is to provide separate, specialized and comprehensive health care to the senior citizen at various level of State health care delivery system including outreach services.						
Can the pharmacist play a role in National Program for Health Care of the Elderly (NPHCE)?						
Yes	93 (72)	53 (96)	25 (76)	08 (53)	07 (27)	<0.001
No	25 (19)	01 (02)	04 (12)	04 (27)	16 (62)	
Do not know	11 (09)	01 (02)	04 (12)	03 (20)	03 (12)	

Chi-square test was used.

* < 0.05 is considered significant.

also more clinically oriented.²³ Thus, upcoming PharmD graduates with 6 years education (training initiated in 2008) focused mainly towards clinical and community aspects²¹ should be able to change collaborative practice models and physicians' perceptions in the future.

Most of the responding physicians had the opinion that pharmacists can take an important role in all the NPHPs. This provides pharmacists huge opportunities however, the pharmacists need proper training. This provides pharmacists huge opportunities to contribute to public health and patient care. However, practicing pharmacists need proper continuing education for being prepared for more patient-oriented practice. Some suitable continuing education is already available, e.g., the implementation

of National Health Mission is already providing a course for BSc in Community Health for mid-level clinical care provider, including pharmacists.²⁴ Such courses for in-service pharmacists would provide opportunities to create competences and collaborative networks needed when working as a part of community health services. Also the Planning Commission of India has approved schemes for "Setting up of college of pharmacy in Government medical colleges" to facilitate quality education and ensure availability of skilled competent workforce to the society.²⁵ This initiative in long run, provide better collaborative opportunities for the pharmacists.

To create such evidence, pharmacists need to make strategies with the help of professional associations. It is also important to conduct a separate study to understand reasons for these differences.

As per the results, Pulse Polio, HIV/AIDS, Tuberculosis-, Tobacco control and leprosy eradication programs were the top five NPHPs where physicians perceived that the pharmacists can play an important role. It is also important to note that, none of other programs selected were completely ignore or uninterested for the respondents (over 65% positive response). If the pharmacists are trained in NPHPs, this untapped potential of one million pharmacists can be utilized to supplement the health workforce in India to meet challenges in public health sector. Therefore, it is important to conduct a large scale study to understand the needs of training that is required for the pharmacists to make them part of NPHPs.

The World Health Organization (WHO) and its partners recognize interprofessional collaboration in education and practice as an innovative strategy.²⁶ Strong working relationships between pharmacists and physicians are needed to optimize patient care. In a study from Canada reveals that community pharmacists and physicians agree that collaborative practice can optimize patient outcomes and would like to collaborate more.²⁷ The Planning Commission of India has approved schemes for “Setting up of college of pharmacy in Government medical colleges” to facilitate quality education and ensure availability of skilled competent workforce to the society.²⁴ This initiative in long run, provide better collaborative opportunities for the pharmacists.

Policy makers in India are yet to realize full potential of pharmacists’ role in NPHPs. Physicians in this survey clearly indicated that pharmacists can play an important role in the major health programs and the physicians are willing to collaborate. A Malaysian study suggests that General Physicians (GPs) support the extension of community pharmacists’ role in patient care activities,¹⁹ which is almost the same in this study. Another study conducted among pharmacy students revealed that 100% of 282 students were willing to learn to extend their role in patient care and public health.²⁸

Though the physicians are welcoming, it is also important that the pharmacists must be prepared and learn about the NPHPs, either through training programs or in the curriculum. Perceptions of physicians on pharmacists’ role in RNTCP are welcoming. The RNTCP guidelines for the first time, have mentioned the word “pharmacist” as specialists with expertise in managing Multi-Drug-Resistant Tuberculosis (MDR-TB)²⁹ which is another step forward. A good example to show pharmacist unpreparedness is, a study revealed that the pharmacists in retail outlets dispense anti-TB drugs, but they were not aware of existence of RNTCP, however, almost all of them were willing to learn and contribute to TB control.³⁰ Hence, creating awareness on NPHPs and opportunities available for pharmacists should be actively promoted by national professional associations, so that pharmacists can take initiatives in NPHPs.

As both the pharmacists and physicians want pharmacists’ involvement in NPHPs, now pharmacy professionals have to find ways to make pharmacists as part public health providers. A live example for such initiatives is, in South Africa, over the past few years, the government has introduced a range of initiatives to recruit and retain health professionals, including increase of pharmacists in public health sector commenced in 2001, mandatory one-year community service in public sector was introduced for all pharmacists following registration with the South African Pharmacy Council. Similar initiatives in collaboration with Pharmacy Council of India will improve pharmacists’ image in society and with policy makers.

Role of professional associations in strengthening

pharmacists position NPHPs

Productive partnerships could be public-private-professional organizational collaborations. For example, All India Organisation of Chemists and Druggists (AIOCD) with its approximately 700,000 members and Indian Pharmaceutical Association has 10,000 members and also operates in 17 state branches and 33 local branches, which could be a potential resource to disseminate information on various NPHPs and utilize this mega network to create awareness and better image about the roles of pharmacists in NPHPs.

Study limitations

The strength of this survey was that there is statistically comparable and valid number of participants from all the groups of the physicians with different levels of experience. Majority of the physicians are welcoming the pharmacists to take active role in NPHPs.

There are over 885,000 registered physicians practicing in the country. One of the limitations is number of physicians participating in this study which is limited to 129. As this study was conducted only in South India, it can be considered as a pilot study to test the method and get some insights in physicians’ perceptions on pharmacist role in NPHPs. A larger national level study covering all parts of India would give more insights to the situation. Such a study will be more useful to start negotiations with policy makers to include pharmacists in national health programs, policies and make them part of health care team.

CONCLUSION

The closer professional relationship between the pharmacists and physicians is always essential in improving the quality of patient care. From this survey it is clear that the younger physicians are more welcoming the pharmacists to take up new role and challenges in NPHPs. Ninety-six percent of responding physicians are very comfortable or somewhat comfortable to collaborate with pharmacists as part of health care team. Maximizing the roles and scope of pharmacists to deliver a variety of patient-centered primary care and public health, in collaboration with physicians is a proven and existing paradigm of care that can be effectively implemented.³¹ Development of liaison between pharmacists and prescribers mainly depends on worthwhile contribution by pharmacists towards better patient care through patient counseling, drug therapy monitoring, adverse drug reaction monitoring and reporting, and unbiased drug information to the doctors.³² Most physicians felt that the pharmacists can take important roles like dissemination of information, patient counseling and improving of patient adherence. The student should be trained to collaborate with other health professionals and to enhance the quality of life through improved health for the global community.³³ The associations and curriculum development committees, pharmacy students and in-service pharmacists could focus patient care areas so that, the future pharmacists are prepared to take up the roles. Further national level large scale studies are required to make strategies and discussions with the policy makers.

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CONFLICT OF INTEREST

None declared

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ABBREVIATIONS USED

NPHPs: National Public Health Programs; **WHO:** World Health Organization; **MDGs:** Millennium Development goals.

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