



Knowledge Attitude and Practices in Community Health Programs by the Pharmacists in Lahore, Pakistan

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Introduction: A public health program intends to improve the health care services in society to lessen the disease burden particularly in the case of non-infectious diseases. This research work investigates the knowledge, practice, and attitude of pharmacists in community health programs offered by the government concerning their demographic associates.

Methods: A cross-sectional survey from 75 registered pharmacists is conducted in Lahore, Pakistan to explore the role of pharmacists in public health programs by using a self-administered questionnaire from January 01, 2021, to January 15, 2021. The collected data is analyzed through frequencies, percentages, and a chi-square test of association.

Results: Most of the pharmacists were in favor that the disease burden can be reduced by indulging pharmacists in public health programs. Many pharmacists already working on public health issues were screening of the blood glucose, blood pressure, obesity, hypertension,

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dyslipidemia, and smoking cessation.

Conclusion: Like many other countries, Pakistan may also effectively accomplish its public health goals by offering training to the pharmacists and retaining them in public health programs at the pharmacy level.

Keywords: Pharmacists; general public; public health; KAP; public health program.

1. INTRODUCTION

Due to an escalation in life expectancy and decay infertility, the worldwide population has been aging quickly [1]. Older people can be an asset for their families and communities as they have a piece of rich knowledge and experience and can help us in avoiding similar mistakes as done in history. They can help us in developing the economy and society that might cover the life behaviors, environmental factors, population age structure, and spectrum of human diseases. This leads to public health problems [2]. About 80% of non-infectious diseases occur in low-income countries and approximately 80% of the deaths due to non-infectious diseases occur in low-middle income countries. Also, in low-middle income countries, deaths due to chronic diseases are a serious concern [3]. The mortality in low-middle income countries can be reduced by running public health programs where different stakeholders of the society participate to create awareness among the public about the myths of infectious and non-infectious diseases [4,5].

Pharmacists in such situations can perform a significant role by pharmacovigilance activities [6]. Patients and the health system would be beneficial due to the interventions of the pharmacists [7-8]. Generally, pharmacists are the primary health consultants that patients access whenever seeking health advice [9]. Pharmacists have a significant contribution to diabetes management programs [10-11]. Many nations already achieved a lot in their health sector by introducing community health programs at the pharmacy level [12-14].

In Pakistan, medicines are obtainable at public and private pharmacies and can easily be purchasable even without any prescription [15,5]. Due to expensive medication in hospitals, many patients consult the local pharmacist about their disease and medicate themselves. Many screening tests like blood glucose level, blood pressure, and cholesterol level are common practices at the pharmacy. Besides, counseling

about general nutrition is also very common by pharmacists. This will reduce the disease burden on hospitals but still harmful due to improper diagnostics and medications. In the present research, we explore the knowledge, attitude, and practices in public health programs from the pharmacists located in Lahore, Pakistan as well as identify its possible associated demographic characteristics.

2. MATERIALS AND METHODS

The cross-sectional explorative study is organized in Lahore (city of Pakistan) from January 01, 2021, to January 15, 2021, after getting permission from the relevant authorities. The population under investigation is the registered pharmacist working in public and private pharmacies located in the city of Lahore. Over 100 registered pharmacists located in Lahore are contacted and requested to take part in this study. After taking their verbal consent they are asked to fill a self-administered questionnaire designed to collect the desired information. Some of the respondents refused to participate in the study or drop the questionnaire incomplete at some stage of the study. Only 75 questionnaires are filled and included in the analysis. Non-registered Pharmacists or having less than one year of experience are excluded from the study. The reliability measure (Cronbach Alpha) of the knowledge, attitude, and practices items of the questionnaire is 0.762. All the data is entered, screened, and analyzed by SPSS v23. Frequencies, percentages, and chi-square tests of the association are used for the presentation and analysis of the data.

3. RESULTS

Table 1 showed that out of 75 pharmacists, 41 (54.7%) are male; 43 (57.3%) have almost 35 years of age; 21 (28.0%) have one to five years of experience, 21 (28.0%) have six to ten years, and 33 (44.0%) have more than ten years of experience; 38 (50.7%) are postgraduate and 56(74.7%) have some previous work experience in public settings.

Table 1. Frequency (percentage) of pharmacist's demographic information

Variables	Categories	Frequency (%)
Gender	Male	41 (54.7)
	Female	34 (45.3)
Age (Years)	≤ 35	43 (57.3)
	< 35	32 (42.7)
Experience (Years)	1 – 5	21 (28.0)
	6 – 10	21 (28.0)
	11 – 15	16 (21.3)
	> 15	17 (22.7)
Education	Graduate	37 (49.3)
	Postgraduate	38 (50.7)
Previous work in a public setting	Yes	56 (74.7)
	No	19 (25.3)

Table 2. Frequency (percentage) of pharmacist's knowledge and practices about public health

Variables	Categories	Frequency (%)
What is public health? ^{f,g}	Preventing problems	5 (6.7)
	Protecting and improving health	60 (80.0)
	Free from illness or injury	3 (4.0)
	None of these	7 (9.3)
What is health promotion?	Focus on prevention strategies	5 (6.7)
	To give knowledge about health	26 (34.7)
	Enabling people to improve their health	41 (54.7)
	None of the above	3 (4.0)
What is disease prevention?	Early detection	21 (28.0)
	Activities to protect patients	30 (40.0)
	The action of stopping something	20 (26.7)
	None of the above	4 (5.3)
Health promotion activities	Health information	25 (33.3)
	Building the skills	8 (10.7)
	Social marketing	4 (5.3)
	All of the above	38 (50.0)
Disease prevention activities	Preventive healthcare	4 (5.3)
	Preventive medicine	8 (10.7)
	Prophylaxis	12 (16.0)
	All of the above	51 (68.0)
No. of health activities carried in Pharmacy	≤ 2	11 (14.7)
	3 – 5	41 (54.7)
	6 – 8	16 (21.3)
	> 8	7 (9.3)

Variables	Categories	Frequency (%)
Involved in health promotion activity		
	Screening for diabetes	15 (20.0)
	Screening for BP	17 (22.7)
	Drug abuse	9 (12.0)
	Obesity	6 (8.0)
	Others	4 (5.3)
	All	24 (32.0)
Educate the following health issues		
	Smoking cessation	7 (9.3)
	Hypertension	25 (33.3)
	Dyslipidemia	3 (4.0)
	Obesity	8 (10.7)
	Others	5 (6.7)
	All	27 (36.0)

Note: associated ($p < 0.05$) with a. Gender; b. Age; c. Experience; d. Education; e. Previous work in public health; f. No. of health activities; g. Involved in health promotion activity

Results presented in Table 2 showed that 5(6.7%) pharmacists said that public health is preventing the problem, 60(80%) protecting and improving health, 3 (4%) reported it as free from illness or injury and 7(9.3%) did not consider any option. About 5(6.7%) reported that health promotion is too focused on preventing strategies, 26(34.7%) to give health knowledge, 41(54.7%) assisting people to improve their health. In response to the question about disease prevention, 21(28.0%) said it is early detection, 30(40%) called its activities to protect patients, 20 (26.7%) declared the action of stopping something. Similarly, 25(33.3%) reported that community pharmacists can carry out public health promotion activities, building the skills 8(10.7%), social marketing 4(5.3%). The pharmacist who suggested that example of disease prevention activities include preventive healthcare 4(5.3%), preventive medicine 8(10.7%), prophylaxis 12(16.0%). About 11(14.7%) pharmacists have less than three public health activities, 41(54.7%) carried 3 to 5, 16(21.3%) had 6 to 8, and 7(9.3%) pharmacists did more than 8 public health activities. Health promotion activities in which pharmacists are involved are the screening of diabetes 15(20%), screening of blood pressure 17(22.7%), drug abuse 9(12%), obesity 6(8%), other activities 4(5.3%) and 24(32%) pharmacists are engaged in all activities. Issues that are educated by the pharmacist to the public include smoking cessation 7(9.3%), hypertension 25(33.3%), dyslipidemia 3(4%), overweight 8(10.7%), other issues 5(6.7%) and 27(36%) all issues. Furthermore, knowledge about public health is associated with the frequency and promotion of health activities at the pharmacy by pharmacists.

Table 3 showed the results of the attitude of community pharmacists in public health in Lahore. The pharmacist who agreed or disagreed with the statement that nurses and medical doctors only should carry the public health activities are; 2(2.7%) strongly agree, 3(4%) agree, 15(20%) not decided, 24(32%) disagree and 31(41.3%) strongly disagree. Health centers are the only place to carry out public health activities are associated with gender and 3(4%) strongly agree, 5(6.7%) agree, 14(18.7%) not decided, 34(45.3%) disagree, and 19(25.3%) strongly disagree. While in pharmacy school, pharmacists cannot carry public health activities due to lack of training are 8(10.7%) strongly agree, 22(29.3%) agree, 6(8%) not decided, 15(20%) disagree, and 24(32%) strongly disagree. Also, this statement is associated ($p < 0.05$) with qualification and promotion of health activities. Public health activities should be carried out by community pharmacists are 39(52%) strongly agree, 29(38.7%) agree, 2(2.7%) not decided, 3(4%) disagree, and 2(2.7%) strongly disagree. Community pharmacist should be focused on individual clients and group of individuals while educating people about health are 32(42.7 %) strongly agree, 34(45.3%) agree, 5(6.7%) not decided, 2(2.7%) disagree, and 2(2.7%) strongly disagree and found associated ($p < 0.05$) with previous work in public health programs and frequency of health activities. Community pharmacists should focus on drug-related information while educating people about health are 26(34.7%) strongly agree, 36(48%) agree, 9(12%) not decided, 3(4%) disagree, and 1(1.3%) strongly disagree. Educating people about risk factors on chronic diseases, such as smoking, obesity, nutrition, etc., is not under the

premises of community pharmacists are 4(5.3%) strongly agree, 5(6.7%) agree, 8(10.7%) not decided, 17(22.7%) disagree and 41(54.7%) strongly disagree. Educating people about oral hygiene/health is not an entity of the community pharmacists are 1(1.3%) strongly agree, 8(10.7%) agree, 3(4%) not decided, 38(50.7%) disagree, and 25(33.3%) strongly disagree; and found associated with experience and previous work in public health programs. Educating people about sexual health (prevention of STIs, contraception, etc) is not necessary for community pharmacists as family planning clinic is already responsible for it are 8(10.7%) strongly agree, 19(25.3%) agree, 10(13.3%) not decided, 21(28%) disagree and 17(22.7%) strongly disagree; and associated with previous work in a public setting. Educating people about

immunization or vaccination is not an entity of the community pharmacists are 14(18.7%) strongly agree, 16(21.3%) agree, 7(9.3%) not decided, 23(30.7%) disagree, and 15(20%) strongly disagree; and found associated with gender, age, experience, and previous work in a public setting. The burden of cardiovascular diseases can be reduced by screening dyslipidemia, diabetes, hypertension, etc., at pharmacy level is 34(45.3%) strongly agree, 34(45.3%) agree, 2(2.7%) not decided, 3(4%) disagree and 2(2.7%) strongly disagree. Patients' adherence to their medication should be an important segment for community pharmacists are 37(49.3%) strongly agree, 29(38.7%) agree, 5(6.7%) not decided, 2(2.7%) disagree, and 2(2.7%) strongly disagree.

Table 3. Frequency (percentage) of pharmacist's attitude about public health programs

	SA	A	N	D	SD
Nurses and medical doctors only should carry the public health activities.	2(2.7)	3(4.0)	15(20.0)	24(32.0)	31(41.3)
Health centers are the only place to carry out public health activities. ^a	3(4.0)	5(6.7)	14(18.7)	34(45.3)	19(25.3)
While in pharmacy school, pharmacists cannot carry public health activities due to a lack of training. ^{d,g}	8(10.7)	22(29.3)	6(8.0)	15(20.0)	24(32.0)
Public health activities should be carried out by community pharmacists.	39(52.0)	29(38.7)	2(2.7)	3(4.0)	2(2.7)
Community pharmacists should be focused on individual clients and groups of individuals while educating people about health. ^{e,f}	32(42.7)	34(45.3)	5(6.7)	2(2.7)	2(2.7)
Community pharmacists should focus on drug-related information while educating people about health. ^{c,e}	26(34.7)	36(48.0)	9(12.0)	3(4.0)	1(1.3)
Educating people about risk factors for chronic diseases, such as smoking, obesity, nutrition, etc., is not under the premises of community pharmacists.	4(5.3)	5(6.7)	8(10.7)	17(22.7)	41(54.7)
Educating people about oral hygiene/health is not an entity of the community pharmacists. ^{c,e}	1(1.3)	8(10.7)	3(4.0)	38(50.7)	25(33.3)
Educating people about sexual health (prevention of STIs, contraception, etc) is not necessary for community pharmacists as family planning clinic is already responsible for it. ^e	8(10.7)	19(25.3)	10(13.3)	21(28)	17(22.7)
Educating people about immunization or vaccination is not an entity of the community pharmacists. ^{a,b,c,e}	14(18.7)	16(21.3)	7(9.3)	23(30.7)	15(20.0)
The burden of cardiovascular diseases can be reduced by screening dyslipidemia, diabetes, hypertension, etc., at the pharmacy level.	34(45.3)	34(45.3)	2(2.7)	3(4.0)	2(2.7)
Patients' adherence to their medication should be an important segment for community pharmacists.	37(49.3)	29(38.7)	5(6.7)	2(2.7)	2(2.7)

Note: associated ($p < 0.05$) with a. Gender; b. Age; c. Experience; d. Education; e. Previous work in public health; f. No. of health activities; g. Involved in health promotion activity

4. DISCUSSION

Worldwide pharmacists are progressively giving a scope of general wellbeing administrations and many countries utilize their services in public health programs to reduce the disease burden [16]. In Pakistan, generally, people consider pharmacists as medication specialists and not healthcare specialists, and in this way, their services might be underutilized. Knowledge, attitude, and practices (KAP) studies are conducted to assess a specific condition and an arrangement of factors influencing that condition. The knowledge part evaluates what individuals know, while the state of mind segment surveys what they feel and practice evaluates their conduct [17]. The present study was conducted to explore the knowledge, attitude, and practices of the pharmacist in public health programs. The results demonstrate that majority of the pharmacist know about the public health programs and are also involved in counseling in many public health issues [18]. Most of the participants are enrolled in blood glucose and blood pressure screening tests. Moreover, respondents are also helping people in coping with smoking cessation, hypertension, obesity, and dyslipidemia [19]. Generally, participants of the study reveal that public health activities should not be carried out only by nurses or doctors but also by pharmacists as they would be very helpful in the promotion and prevention of infectious or non-infectious diseases [20]. Pharmacists consider themselves a potential source of education on sexual health (contraception, prevention of STIs), diabetes management, drug adherence, oral hygiene, etc. [21-23].

5. CONCLUSION

It is cleared from the literature that how nations reduce their disease burden by indulging their pharmacists in public health programs. Pakistan can also take this advantage through public health administration programs. The need is to train and engage the local pharmacists to create public awareness about the symptoms, screening, and possible treatment of the diseases especially in the cases of non-infectious diseases.

CONSENT

As per international standard or university standard, respondents' verbal consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. World Health Organization. World report on ageing and health. World Health Organization; 2015.
2. World Health Organization. Innovative care for chronic conditions: building blocks for action. 2002. Geneva: WHO; 2017.
3. World Health Organization, Public Health Agency of Canada, and Canada. Public Health Agency of Canada. Preventing chronic diseases: a vital investment. World Health Organization; 2005.
4. Muhammad K, Saqlain M, Muhammad G, Hamdard A, Naveed M, Butt MH, Karatas Y. Knowledge, attitude, and practices (KAPs) of Community pharmacists regarding COVID-19: A cross-sectional survey in two provinces of Pakistan. Disaster Medicine and Public Health Preparedness; 2021;1-23.
5. Feng Z, Hayat K, Huang Z, Shi L, Li P, Xiang C, Fang Y. Knowledge, attitude, and practices of community pharmacy staff toward antimicrobial stewardship programs: a cross-sectional study from Northeastern China. Expert Review of Anti-infective Therapy. 2020;1-8.
6. Kennie-Kaulbach N, Farrell B, Ward N, Johnston S, Gubbels A, Eguale T, Winslade N. Pharmacist provision of primary health care: A modified Delphi validation of pharmacists' competencies. BMC family practice. 2012;13(1):1-9.
7. Odukoya OK, Chui MA, Pu J. Factors influencing quality of patient interaction at community pharmacy drive-through and walk-in counselling areas. International Journal of Pharmacy Practice. 2014;22(4):246-256.
8. Gregorio J, Cavaco A M, Lapao LV. How to best manage time interaction with patients? Community pharmacist workload and service provision analysis. Research in Social and Administrative Pharmacy. 2017;13(1):133-147.

9. Antunes LP, Gomes JJ, Cavaco AM. How pharmacist–patient communication determines pharmacy loyalty? Modeling relevant factors. *Research in Social and Administrative Pharmacy*. 2015;11(4):560-570.
10. Wang Y, Yeo QQ, Ko Y. Economic evaluations of pharmacist-managed services in people with diabetes mellitus: a systematic review. *Diabetic Medicine*. 2016;33(4):421-427.
11. Almansour HA, Chaar B, Saini B. Pharmacists' perspectives about their role in care of patients with diabetes observing Ramadan. *Research in Social and Administrative Pharmacy*. 2017;13(1):109-122.
12. Gregorio J, Cavaco AM, Lapao LV. How to best manage time interaction with patients? Community pharmacist workload and service provision analysis. *Research in Social and Administrative Pharmacy*. 2017;13(1):133-147.
13. Deng F, Lv JH, Wang HL, Gao JM, Zhou ZL. Expanding public health in China: an empirical analysis of healthcare inputs and outputs. *Public Health*. 2017;142:73-84.
14. Donovan GR, Paudyal V. England's Healthy Living Pharmacy (HLP) initiative: Facilitating the engagement of pharmacy support staff in public health. *Research in social and administrative pharmacy*. 2016;12(2):281-292.
15. Hashmi FK, Hassali MA, Khalid A, Saleem, F, Aljadhey H, Bashaar M. A qualitative study exploring perceptions and attitudes of community pharmacists about extended pharmacy services in Lahore, Pakistan. *BMC health services research*. 2017;17(1):1-9.
16. Saramunee K, Krska J, Mackridge A, Richards J, Suttajit S, Phillips-Howard P. General public's views on pharmacy public health services: current situation and opportunities in the future. *Public Health*. 2015;129(6):705-715.
17. Mouhieddine TH, Olleik Z, Itani MM, Kawtharani S, Nassar H, Hassoun R, Tamim H. Assessing the Lebanese population for their knowledge, attitudes and practices of antibiotic usage. *Journal of infection and public health*. 2015;8(1):20-31.
18. Joubert MC, Naidoo P. Knowledge, perceptions and practices of pharmacovigilance amongst community and hospital pharmacists in a selected district of North West Province, South Africa. *health sa gesondheid*. 2016;21:238-244.
19. Deeks LS, Cooper GM, Currie MJ, Martin SJ, Parker RM, Del Rosario R, Bowden FJ. Can pharmacy assistants play a greater role in public health programs in community pharmacies? Lessons from a chlamydia screening study in Canberra, Australia. *Research in Social and Administrative Pharmacy*. 2014;10(5):801-806.
20. Palombi L, Kading M, Hayes CJ. The public health pharmacist and the role of the pharmacy curriculum: a call to action. *Currents in Pharmacy Teaching and Learning*. 2013;5(5):477-482.
21. Jomaa I, Odisho M, Cheung JM, Wong K, Ellis JG, Smyth T, Saini B. Pharmacists' perceptions and communication of risk for alertness impairing medications. *Research in social and administrative pharmacy*. 2018;14(1):31-45.
22. Legrand SA, Boets S, Meesmann U, Verstraete AG. Medicines and driving: Evaluation of training and software support for patient counselling by pharmacists. *International journal of clinical pharmacy*. 2012;34(4):633-643.
23. Hakonsen H, Lees K, Toverud EL. Cultural barriers encountered by Norwegian community pharmacists in providing service to non-Western immigrant patients. *International journal of clinical pharmacy*. 2014;36(6):1144-1151.

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