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PUBLIC HEALTH ACTIVITIES: EVALUATION OF COMMUNITY PHARMACISTS' ATTITUDE, PRACTICE AND BARRIERS IN A NIGERIAN SOUTHWESTERN STATE

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ABSTRACT

The Nigerian health system continues to face double burden of communicable and non-communicable diseases. To meet the country's health needs, the number of healthcare professionals participating in public health activities must be increased. The purpose of this study was to assess the attitudes, practices and barriers to rendering public health services among community pharmacists in a southwestern Nigerian state. We used a pretested self-administered questionnaire to collect data on 120 community pharmacists' socio-demographic characteristics, practices, attitudes and barriers to providing public health services. Participating pharmacists must have at least one year of experience working in a community pharmacy. Data were summarised descriptively using IBM SPSS (version 23.0). Females' respondents were (n = 69, 57.5%) and (n = 82, 68.3%) pharmacists had 1 year–5 years' experience. Most (n = 116, 96.7%) of the respondents agreed that pharmacists should be involved in public health activities, and (n = 106, 88.3%) respondents disagreed that public health activities should be carried out only by doctors and nurses. Overall (n = 89, 74.0%) of the respondents had positive attitude to public health activities (score ≥ 80%) and majority of the community pharmacists had been practicing public health activities. Insufficient time (n = 65, 54.2%) and lack of financial capital to implement changes (n = 84, 70.0%) were identified as prominent barriers that hindered community pharmacists from rendering public health services. Community pharmacists had positive attitude towards the practice of public health activities. However, further studies should emphasise on how to overcome barriers preventing their involvement in public health activities. Providing incentives for public health services rendered could increase community pharmacists' involvement in public health activities.

Keywords: Community pharmacists, Public health activities, Disease prevention, Health promotion, Nigeria

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INTRODUCTION

Nigeria has poor health indicators, which are primarily due to a lack of health infrastructure and services to address the various health challenges (Amos *et al*. 2021). One of Nigeria's many public health challenges is a lack of adequately trained healthcare workers. Nurse, midwife and doctor densities (1.95 per 1,000) are still considered insufficient for effective delivery of basic health services (World Health Organization 2015). This gap further highlights an important opportunity for community pharmacists to advance public health.

Community pharmacies are easily accessible, they are an excellent means of delivering public health interventions (Hillier-Brown *et al*. 2017). The role of the community pharmacist in public health activities can be understood when three levels of prevention are considered: primary, secondary, and tertiary (Meyerson, Ryder and Richey-Smith 2013). In some countries, primary prevention entails intervening to prevent the initiation of negative health outcomes, such as pharmacist involvement in the distribution of vaccines, supplies, and, more recently, vaccination provision (Meyerson, Ryder and Richey-Smith 2013). Secondary prevention entails intervening early in the disease course and prior to the onset of illness. Early intervention in behavioural change and disease diagnosis in cases of cardiovascular disease, diabetes, weight management, smoking cessation, substance misuse and abuse (Hillier-Brown *et al*. 2017). Tertiary prevention entails delaying disease progression and reducing complications through medication evaluation, particularly for certain groups of patients such as patients living with HIV/AIDS, patients on multiple and conflicting medications due to co-morbidities (Meyerson, Ryder and Richey-Smith 2013).

It is common knowledge that pharmacists are well equipped and in an excellent position to exert an influence on the lifestyle choices made by their patients (Kotecki, Elanjian and Torabi 2000). Changing habits that have been practiced for a long time, such as smoking, drinking alcohol or even eating differently, can be challenging for a single group of health professionals, according to reported findings (Ekpenyong *et al.* 2012). As a consequence of this, each member of the healthcare team is required to commit a sizeable portion of their time to the pursuit of improved health (Babiker *et al.* 2014).

A study found that community pharmacists are becoming more involved, which has led to greater health outcomes at a lower cost (Soyemi and Hunponu-Wusu 2015). Consequently, there is a growing desire to expand the involvement of community pharmacists in public health efforts (Wiedenmayer *et al*. 2006). To improve public health practice in community pharmacy in Nigeria, it is necessary to evaluate their attitudes, practices, and impediments for implementing public health interventions within their facilities. Other studies in Nigeria have evaluated community pharmacists' attitudes toward health promotion and their participation in basic healthcare (Soyemi and Hunponu-Wusu 2015; Oparah and Arigbe-Osula 2002; Oparah and Okojie 2005). Our study particularly characterised the attitudes and practice of rendering public health services by Nigerian community pharmacists as well as understand the barriers that prevent the community pharmacists from rendering public health activities.

METHODS

Study Design and Settings

A cross-sectional survey of community pharmacists in Ibadan using a self-administered questionnaire between May 2021 and July 2021 was conducted. Registered community pharmacists in Ibadan who provided informed consent to participate in the study were

eligible. Participants were required to have at least one year of community pharmacy experience. Intern pharmacists, student pharmacists, pharmacy assistants and community pharmacists who were not working in their pharmacies at the time of the study were not included.

Study Area

The study was conducted in Ibadan, the capital of Oyo State, southwestern Nigeria. Oyo State has a landmass of 27,249 square kilometers and is one of the 36 states of Nigeria. Ibadan has a population of 3.6 million inhabitants, while Oyo State has a population of 5.6 million (National Population Commission 2013). There are federal and state government hospitals, Primary Health Care (PHC) facilities as well as numerous private hospitals in Ibadan. Community pharmacies and proprietary and patent medicine vendor stores are present throughout Ibadan. There are various types of community pharmacies in Ibadan and across Nigeria, most are retail, independent, supermarket type of pharmacies, with a few drugs store and chain in-store pharmacies.

Sample Size Determination

The number of community pharmacy premises certified in Ibadan was obtained from the Pharmacists' Council of Nigeria, Ibadan, Oyo State chapter directory. Using the Yamane sample size formula, a sample size of 104 was calculated based on the estimated population of 160 registered pharmacy premises with an assumption of 95% confidence level and 5% margin of error (Yamane 1967). After adjusting for a 10% non-response rate, the target sample population was around 115.

Sampling and Data Collection Procedure

A consecutive sampling technique was used to enroll participants. On the premises of their respective pharmacies, eligible community pharmacists were approached. The paper questionnaire was distributed to 132 community pharmacists. Before obtaining voluntary verbal informed consent to participate in the study, each pharmacist was informed about the study's objectives. The paper questionnaire was self-administered by all consenting pharmacists and was retrieved within 25 min–30 min of completion. Participation was entirely voluntary and responses were kept private and anonymous. There were checks in place to ensure that no pharmacist filled out more than one questionnaire. Each questionnaire given to the pharmacist by each community pharmacy was coded to avoid duplication. At least one pharmacist from each community pharmacy site completed the questionnaire. Prior to data collection, the investigator receiving the data received all necessary instrument training as well as appropriate methods of approaching pharmacists and obtaining their permission to fill out the questionnaire. Respondents were not compensated for their participation in the study.

Data Collection Instrument, Pretest and Content Validation

The questionnaire was designed by the investigators after an extensive review of relevant literature (Offu *et al.* 2015; Yousuf *et al*. 2019) and utilising the researchers' expertise. The review provided information that aided in the development of the questionnaire. The drafted questionnaire was subjected to a pretest and content validation. The questionnaire was

divided into three sections. Part A collected demographic information such as gender, age and years of community pharmacy experience. Part B covered community pharmacists' attitudes toward public health activities. Part C included questions about public health activities carried out in community pharmacies as well as barriers to community pharmacists participating in public health activities. Two academic pharmacists reviewed the questionnaire for content validity to ensure that the question items were comprehensive in relation to the study objectives and that there were no ambiguous questions or statements. Following that, the questionnaire was distributed to five community pharmacists chosen at random from Ibadan to assess the ease of comprehension of the item-statements; these pharmacists were not included in the main study. The pretest and content validation feedback resulted in minor changes to the drafted questionnaire. A pre-test was conducted with a total of 5 community pharmacists, and a Cronbach alpha value of 0.72 revealed internal consistency.

Attitude Index

For each attitude question, a positive response was assigned a score of '1' and a negative response, I don't know, and disagree responses were scored as '0'. The total attitude score was obtained by adding the scores for all attitude responses. Then, an 'overall attitude percent score' was calculated by multiplying the total attitude score for each participant by 10.

Data Analysis

The administered questionnaires were sorted, crosschecked and coded serially at the end of each day of the study. IBM SPSS (version 23.0) was used for data entry, cleansing and analysis. To summarise the data, descriptive statistics such as frequency and percentage were used. To ensure consistency in the scores, the overall score by community pharmacists in the attitude domains developed for this study was converted into a percentage in this study.

In the attitude domain where all scores are whole number, a total score of ≥ 8 out of 10 ($\geq 80\%$) was considered as 'positive attitudes', while a score < 8 out of 10 ($< 80\%$) signified 'negative attitudes'. The cut-off criteria for the binary categorisation were adapted from Bloom's cut-off point criteria, as well as a review of other related studies (Akande-Sholabi and Ajamu 2021; Anderson, Sosniak and Bloom 1994; Akande-Sholabi and Adebisi 2021). Community pharmacist's barriers to their involvement in public health activities and the public health activities they were involved in were presented descriptively in a table using frequency and percentages.

Ethical Consideration

Ethical approval was obtained from the University of Ibadan/University College Hospital ethics review board with IRB number UI/EC/21/0184.

RESULTS

Demographic Characteristics

Out of the 132 questionnaires administered to community pharmacists, 120 questionnaires were filled giving a response rate of 90.9%. More than half, 69 (57.5%) of the respondents were female. Sixty-six respondents (55.0%) were aged between 21 years old–30 years old, while 7 (5.8%) were aged 50 years old and above. Eighty-two (68.3%) fell within 1 year–5 years of experience and 27 (22.5%) fell within 6 years–10 years of experience as community pharmacists. Respondents had either Bachelor of Pharmacy (*n* = 85, 70.8%) or Doctor of Pharmacy (*n* = 35, 28.2%) as their minimum educational qualification, 16 (13.3%) had a master's degree, while 6 (5.0%) had others such as Doctor of Philosophy as their educational qualifications. Demographic characteristics of the respondents are shown in Table 1.

Table 1: Participants demographic characteristics and community pharmacists and pharmacy premises descriptive (*n* = 120).

Type of pharmacy	Frequency (*n*)	%
Chain pharmacy	24	20.0
Independent pharmacy	96	80.0
Age group (years old)		
21–30	66	55.0
31–40	39	32.5
41–50	8	6.7
50 and above	7	5.8
Gender		
Female	69	57.5
Male	51	42.5
Year(s) of experience as community pharmacist		
1–5	82	68.3
6–10	27	22.5
> 10	11	9.2
Educational qualification		
B. Pharm.	85	70.8
Pharm. D.	35	29.2
Additional qualification		
Master	16	13.3
Others (e.g. PhD)	6	5.0
Average number of clients daily		
10–20	15	12.5
21–50	39	32.5
51–100	40	33.3
101–200	14	11.7
201–500	12	10.0

Notes: Chain pharmacies are retail pharmacies which operate more than three retail outlets and an independent pharmacy are pharmacist-owned, privately held businesses in varying practice settings.

Attitudes of Community Pharmacists to Public Health Activities

Majority, 116 (96.7%) of the respondents agreed that pharmacists should be involved in public health activities. Most 106 (88.3%) disagreed that public health activities should be carried out by doctors and nurses only. One hundred and seven (89.2%) of the respondents agreed that they had enough knowledge to advise patients on health promotion and disease prevention. While 96 (80.0%) agreed that they had enough time to educate patients on health issues. Details of attitudes of community pharmacists to public health activities are shown in Table 2.

Table 2: Attitudes of community pharmacists to public health activities (*n* = 120).

S/N	Statement	Agree *n* (%)	I do not know *n* (%)	Disagree *n* (%)
1	Pharmacists should be involved in public health activities.	116 (96.7)	4 (3.3)	0 (0.0%)
2	People will not accept my participation in public health activities.	4 (3.3)	19 (15.8)	97(80.8)
3	I am not ready to be involved in public health activities.	10 (8.3)	21 (17.5)	89(74.2)
4	It is not important for pharmacists to practice health promotion activities.	10 (8.3)	9 (7.5)	101(84.2)
5	Health education only to problems related to drugs should be provided.	11 (9.2)	23 (19.2)	86 (71.7)
6	I am not interested in public health activities as it is the work of doctors and nurses.	4 (3.3)	10 (8.3)	106(88.3)
7	I don't have enough knowledge to advice patients on health promotion and disease prevention.	3 (2.5)	10 (8.3)	107 (89.2)
8	Public health activities belong to primary health care.	7 (5.8)	16 (13.3)	97 (80.8)
9	I do not have time to educate patients on health issues.	4 (3.3)	20 (16.7)	96 (80.0)
10	Other health workers do not allow pharmacists to carry out activities related to public health.	23 (19.2)	32 (26.7)	65 (54.2)

Score distribution		n	%
0		3	2.5
1		3	2.5
2		2	0.8
3		3	2.5
4		1	0.8
5		5	4.2
6		6	5.0
7		9	7.5
8		19	15.8
9		34	28.3
10		36	30.0
Attitude category	**Cut off mark**	**n**	**%**
Negative attitude	< 80	31	26.0
Positive attitude	≥ 80	89	74.0

Public Health Activities Carried out in Community Pharmacies

Majority of the respondents, 108 (90.0%) agreed that they provided education on drug abuse or safe use of drugs within the community. Only 72 (60.0%) of the respondents agreed to enlightening patients on the benefits of weight reduction. Moreover, 108 (90.0%) of the respondents provided information about family planning/emergency contraception. While 118 (98.3%) of the respondents educated their patients on the appropriate use of medical instruments. Majority of the respondents, 100 (83.3%) carried out screening for hypertension (Table 3).

Table 3: Public health activities carried out in community pharmacies (*n* = 120).

S/N	Statement	Yes *n* (%)	No *n* (%)
1	Provision of education on drug abuse or safe use of drugs.	108 (90)	12 (10)
2	Education to stop alcohol drinking.	112 (93.3)	8 (6.7)
3	Education to stop smoking.	117 (97.5)	3 (2.5)
4	Screening for hypertension.	100 (83.3)	20 (16.7)
5	Screening, advice and treatment of sexually transmitted infections including HIV/AIDS.	114 (95)	6 (5)
6	Information about family planning/emergency contraception.	108 (90)	12 (10)
7	Awareness on immunization or vaccination.	112 (93.3)	8 (6.7)
8	Education on how to handle unused or expired drugs.	118 (98.3)	2 (1.7)
9	Enlightening patients on the benefits of weight reduction.	72 (60)	48 (40)
10	Screening for dyslipidemia.	109 (90.8)	11 (9.2)
11	Education on the use of medical instruments.	118 (98.3)	2 (1.7)
12	Education to follow a healthy lifestyle.	117 (97.5)	3 (2.5)
13	Screening for diabetes.	114 (95)	6 (5)
14	Body mass index measurement.	107 (87.5)	13(12.5)
15	Folic acid supplementation in childbearing women.	116 (96.7)	4 (3.3)
16	Screening for malaria.	119 (99.2)	1 (0.8)

Barriers to the Involvement of Community Pharmacists in Public Health Activities

More than half 65, (54.2%) of the respondents agreed that there had not been enough time to carry out public health activities. However, 50 (41.7%) of the respondents acknowledged lack of official recognition as a barrier that negatively influenced their participation in their public health activities. Almost half, 58 (48.3%) of the respondents also admitted that lack of the concept of teamwork affected their involvement in public health activities. Respondents acknowledged that lack of financial capital to implement changes hinder carrying out public health activities 84 (70%). Details in Figure 1.

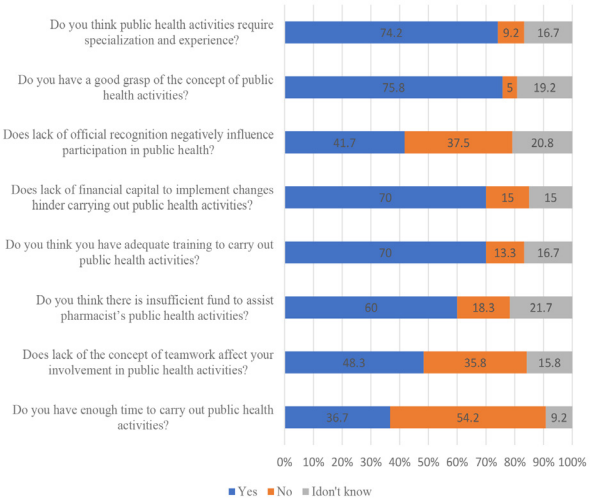

Figure 1: Barriers to involvement of community pharmacists in public health activities (*n* = 120).

DISCUSSION

This study was carried out to assess the attitude, practice, and barriers to the involvement of community pharmacists in public health activities among community pharmacists in Ibadan. The study found that majority of the respondents had a positive attitude to participating in public health activities as 96.7% of them reported that pharmacists should be involved in public health activities and 74.2% of them reported that they are ready to be involved in public health activities. Our study revealed that majority of the respondents showed positive attitude towards participation in public health activities and recognition of its importance to public health.

A study conducted by Offu *et al.* in 2015 also demonstrated positive attitude among community pharmacists towards public health practices (Offu *et al.* in 2015). Many community pharmacists expressed a willingness to participate in public health activities due to their knowledge of the importance of conducting health promotion activities and their interest in supporting public health activities as members of the care team. A systematic review reported similar overall positive attitudes among community pharmacists in providing public health services (Eades, Ferguson and O'Carroll 2011). According to Armstrong *et al*. (2005), community pharmacists can play an important role in public health, and they should be competent in different areas of practice. Community pharmacists can be involved in; health protection and disease prevention, health and social care and health improvement (Laliberte *et al*. 2012) and these practices are termed pharmaceutical public health (Walker, 2000).

Majority of our study participants agreed that it is important for pharmacists to practice health promotion activities. Also, about half of the respondents reported that other health care workers do not allow pharmacists to carry out activities related to public health. It is therefore important to establish good communication and co-operation among different health care professionals. This can be compared to a study in Yemen in which 80% of the

respondents claimed that other health care workers do not allow pharmacists to carry out public health activities (Yousuf *et al.* 2019). It is, therefore, important to establish good communication and co-operation among different health care professionals. From our study, 89.2% of the respondents claimed they have the knowledge to advice patient on health promotion and disease prevention. However, this is in contrast with previous studies where knowledge deficient was identified as a major barrier to rendering some public health intervention (Eades, Ferguson and O'Carroll 2011).

The respondents claimed that community pharmacists have been practicing various public health activities such as provision of education on drug abuse and safe use of drug, cessation of smoking and alcohol consumption, family planning/emergency contraception, handling of expired and unused drugs, following a healthy lifestyle, enlightening patients on the benefit of weight reduction, awareness on immunisation or vaccination, provision of information on acquired immunodeficiency syndrome (AIDS). Medical tests commonly carried out by community pharmacists were measurement of blood pressure and blood glucose test. Others also include measurement of cholesterol, body mass index, screening for malaria and AIDS using rapid diagnostic test kits. These services are consistent with what have been reported in other low-and middle-income countries (Rakib *et al.* 2015; Saramunee *et al*. 2015; Bou-Saba, Kassak and Salameh 2022; Saramunee *et al.* 2014). The community has always benefited from services such as health promotion, alcohol and smoking cessation, family planning/hormonal contraception and other preventive activities provided by community pharmacists (Agomo *et al*. 2018).

The study also revealed barriers that hindered community pharmacists from being involved in public health activities. These include lack of time, lack of the concept of teamwork among the different healthcare professionals, lack of training, financial constraints, lack of official recognition, and the need for specialisation and adequate experience to carry out public health activities. The revealed barriers can be partly overcome if there is willingness to provide free public health services rather than charging services to improve business profitability by the community pharmacists. In addition, the healthcare professionals must embrace the concept of collaborative care i.e. teamwork between physician and pharmacist. Public health activities can be performed and enhanced by working together. These barriers can be compared with those experienced in Ethiopia (Erku and Mersha, 2017) and other studies (Firth, Todd and Bambra 2015; Alonso-Perales *et al*. 2017; Jarab, Al-Qerem and Mukattash 2022; Alshahrani and Alsheikh 2021).

There is an urgent need for relevant national health authorities and stakeholders to increase investment in engaging community pharmacists in rendering extensive public health services. Inter-professional collaboration among pharmacists, physicians, nurses, and other healthcare professionals can also help to overcome the challenge of teamwork. There is also a need to enhance awareness on the core roles of pharmacists in rendering public health services.

Strength and Limitations

The research had a high response rate and provided important insight into community pharmacists' attitude, practice, and barriers to public health activities, revealing the areas of focus to address the gaps in attitudes, practice and barriers. The high response rate was accomplished because the researcher visited the pharmacy and handed out the questionnaire to the community pharmacists directly. Notwithstanding, the study has limitations which include the potential of participant recall bias due to over- or under-reporting of information supplied, which may imply the need for carefulness in generalising the results to the entire population of community pharmacists in Nigeria.

Future study should emphasise on how community pharmacists can overcome barriers preventing their involvement in public health activities. There are key areas such as interprofessional collaborative care, working with and for communities that community pharmacists should consider as initial steps for their involvement in public health activities.

CONCLUSION

This study revealed that majority of the community pharmacists had a positive attitude to participating in public health activities and most of the pharmacies are already engaging in several public health services provision. However, the barriers identified by pharmacists must be alleviated to enhance their participation in public health activities, these include lack of sufficient time and fund, poor collaboration among other healthcare providers, lack of policies to support pharmacist' public health activities, lack of official recognition of pharmacists' public health activities. To facilitate the involvement of pharmacists in public health activities, implementation of supportive policies, good collaboration among other healthcare providers and documentation of public health activities carried out in community pharmacies, which will aid official recognition of pharmacists' involvement in public health activities are some of the steps to reduce or alleviate the barriers preventing participation of community pharmacists in public health activities. Further study should be done to emphasise the involvement of community pharmacists in public health activities, role of teamwork among healthcare professionals and overcoming system-related barriers.

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