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Assessment of Attitude, Practice and Barriers to Pharmaceutical Care Among Community Pharmacists in Ibadan

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A – research concept and design; B – collection and/or assembly of data; C – data analysis and interpretation; D – writing the article; E – critical revision of the article; F – final approval of article.

Abstract

Background: Pharmaceutical care (PC) is a professional responsibility of a pharmacist that involves medication management with the overall goal of improving the quality of life of patient.
Objectives: To evaluate the attitude, practice, and barriers to PC among community pharmacists in Ibadan.
Method: A cross-sectional survey was conducted among community pharmacists between May and July 2021, with the aid of a self-administered questionnaires, information on socio-demographic characteristics, practice, attitudes, and barriers to PC was obtained. A consecutive sampling technique was used for participants' enrolment. Participating pharmacists must have had a minimum of one-year practice experience in a community pharmacy. Pharmacy students, interns, non-pharmacist attendants, and community pharmacists who were absent from their pharmacies during the study were excluded. Data were summarized with descriptive statistics.
Results: Over 12 weeks, 120 survey were collected (90.9% response rate). About (115; 95.8%) of respondents had good practice of PC and reported that pharmaceutical care is a timely innovation to pharmacy practice. However, only (62; 52.0%) had positive attitude and (117; 97.5%) believed more pharmaceutical care could be provided. Regarding their practice, most respondents (118; 98.3%) stated pharmaceutical care involves monitoring improvement in patient response to treatment and adherence to treatment regime and counselling patients with drug therapy problems. The top detected barriers for PC provision included insufficient time (71; 59.2%), and inadequate collaboration with other healthcare professionals (56; 46.7%).
Conclusion: Community pharmacists in Ibadan demonstrated good practice and positive attitudes towards PC provision. However, further work should emphasise on improving PC understanding, better collaboration among other healthcare professionals and overcoming system-related barriers.

***Keywords**:* Pharmaceutical care, Community pharmacist, Pharmacy practice in Nigeria

INTRODUCTION

The basic functions of pharmaceutical care include development and use of a patient medication profile, obtaining medication history, interviewing and documentation, patient counseling, monitoring drug therapy for safety, efficacy, and desired clinical outcome, detection and reporting of drug allergies and adverse drug interactions (Okonta *et al*., 2012; Ogbonna et al., 2015a; Tayo 2007; Puspitasari et al., 2009; Ogbonna et al., 2015b; Amibor & Okonta 2019; Usman & Ilyas 2014; Cipolle et al.,2012).

According to the definition of Hepler and Strand (1989), pharmaceutical care (PC) is the responsible provision of drug therapy for the purpose of achieving definite outcomes that improve a patient's quality of life. There has been an increasing need to improve community pharmacy operations to match the demand of the twenty-first century. Many pharmacists have chosen to embrace the PC model in their practice sites in the place of the usual traditional care to meet the patients' health care system needs (Cipolle et al., 2012; Odedina & Segal 1996). PC reflects a systematic approach aimed at ensuring that patients get the right medications at the right time and for the right reasons (El Hajj *et al*., 2016).

In Nigeria, community pharmacies are one of the first points for the purchase of drugs for treating common ailments and initial source of counsel regarding illness and drug therapy. The general opinion is that community pharmacies have shorter waiting times, longer operating hours, convenience and are more cost effective with usually no need to pay consultation fees compared to the visit to a clinic or hospital (Ogbonna et al., 2015a; Tayo 2007; Puspitasari et al., 2009). Nonetheless, PC, the innovative approach to contemporary pharmacy practice, is still at the developmental stage in Nigeria (Okonta *et al*., 2012). Limited consulting time, lack of private counseling area in community pharmacies, perception that patients are not willing to pay for specialized care, and unfriendly inter-professional dispositions have limited the growth of PC practice in Nigeria especially at the community pharmacy level (Ogbonna et al., 2015b; Amibor & Okonta 2019; Usman & Ilyas 2014).The factors have not only compromised the early implementation of PC in hospitals and community pharmacies in Nigeria but have had negative impact on clinical pharmacy practice in the healthcare delivery system in Nigeria. Pharmaceutical care advantages abound irrespective of practice settings. However, the specific content of practice standards may vary from one setting to another. Lack of enforcement of standards for pharmacists in their daily practice has been identified as a limitation to widespread implementation of PC (Erah & Nwazuoke 2002).

Pharmaceutical care is considered as a standard for providing patient-centered care and its implementation is a necessity today. Although PC has been implemented in community pharmacies in the developed countries, little is known about the practice, attitudes, and perceived barriers of PC in Ibadan, Nigeria among community pharmacists.

This study aimed to investigate community pharmacists practice, attitudes, and perceived barriers to PC in Ibadan, Nigeria.

METHODOLOGY

Study sites and settings

A cross-sectional survey was conducted among community pharmacists between May and July 2021. Eligible participants were registered community pharmacists practicing in the Ibadan, who gave voluntary informed consent to partake in the study. Participating pharmacists must have had a minimum of one-year practice experience in a community pharmacy. Pharmacy students, interns, non-pharmacist attendants, and community pharmacists who were absent from their pharmacies during the study were excluded.

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 (NPC, 2006). There are federal and state government hospitals, primary health care 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 drug store and chain in-store pharmacies.

Sample size determination

The number of community pharmacy premises registered in Ibadan was obtained from the Pharmacists' Council of Nigeria, Ibadan, Oyo State chapter directory. Based on the estimated population of 160 registered pharmacy premises and using the assumption of 95% confidence level and 5% margin of error, a sample size of 104 was obtained using Yamane sample size formula (Yamane 1967). Adjusting for a 10% non-response rate gave a target sample population of approximately 115.

Sampling and data collection procedure

A consecutive sampling technique/approach was used for participants' enrolment. Eligible community pharmacists were approached by visiting individual pharmacist in their respective pharmacy premises. The paper questionnaire was distributed to 132 community

pharmacists. Objectives of the study were explained to every pharmacist after which voluntary verbal informed consent was obtained to signify intention to participate in the study. The paper questionnaire was self-administered by all consented pharmacists and retrieved within 25–30 minutes of completion of the questionnaire. Anonymity and confidentiality of responses were assured, while participation was entirely voluntary. Measures were put in place to ensure that no pharmacist filled more than one questionnaire. This was achieved by coding each questionnaire administered to the pharmacist from each community pharmacy to avoid duplication. At least one pharmacist per community pharmacy premises completed the questionnaire on his/her own. The investigator collecting the data was given all the necessary training about the instrument and appropriate ways of approaching the pharmacists and gaining their permission for filling the questionnaire prior to the data collection process. There was no incentive provided to the respondents for participating in the study.

Data collection instrument, pretest, and content validation

The questionnaire was developed by the investigators following an extensive review of relevant literature (El Hajj et al 2016; Ung et al 2016). The review provided an insight to facilitate the development of the questionnaire. Pretest and content validation were carried out on the drafted questionnaire. The questionnaire consisted of three parts. Part A captured demographic characteristics, such as sex, age, years of experience in community pharmacy. Part B comprised the practice of pharmaceutical care by community pharmacists. Part C comprised questions on attitudes and barriers of community pharmacists to pharmaceutical care. The questionnaire was assessed for content validity by two pharmacists in academia chosen from the Department of Clinical Pharmacy and Pharmacy Administration, University of Ibadan, to ascertain the comprehensiveness of question items vis-à-vis the study objectives, as well as ensuring that there are no ambiguous questions or statements. Subsequently, the questionnaire was given to five community pharmacists randomly chosen within Ibadan to ascertain the ease of comprehension of the item-statements, these pharmacists were not included in the main study. Feedback from the pretest and content validation led to minor modifications of the drafted questionnaire.

Practice and attitude index

For each practice statement, a correct response was assigned a score of "1," and an incorrect response was scored as "0." The total practice score was obtained by adding the scores for all practice responses. Then, an "overall practice percent score" was calculated by multiplying the total practice score for each participant by 10. Similar procedure was followed for the attitude index, while the "overall attitude percent score" was calculated by multiplying the total attitude score for each participant by 12.

Data analysis

At the end of each day of the study, the administered questionnaires were sorted, crosschecked, and coded serially. Data entering, cleansing, and analysis were done using IBM SPSS (version 23). Descriptive statistics including frequency and percentage were used to summarize the data. In this study, the overall score by community pharmacists in the practice and attitude domains developed for the purpose of this study was converted into a percentage to ensure uniformity in the scores.

In the practice domain where all scores are whole number, a total score of ≥ 8 out of 10 was considered as "good" practice, while a score < 8 out of 10 signified "poor" practice. Similar procedure was followed for the attitude domain, a total score of ≥ 10 out of 12 was considered as "positive" attitude, while a score < 10 out of 12 signified "negative" attitudes. The cut-off criteria for the binary categorization were adapted from Bloom's cut-off point criteria, as well as a review of other related studies (Akande-Sholabi and Ajamu 2021; Blooms 2002). Community pharmacist's barriers to the practice of pharmaceutical care were presented descriptively in a table using frequency and percentages.

RESULTS

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 while 51 (42.5%) were male. Sixty-six respondents (55.0%) were aged between 21-30 years, while 7 (5.8%) were aged 50 years and above. Eighty-two, 82 (68.3%) fell within 1-5 years of experience, 27 (22.5%) fell within 6-10 years of experience and 11 (9.2%) had greater

than 10 years of experience as community pharmacists. Respondents had either Bachelor of Pharmacy 85 (70.8%) or Doctor of Pharmacy 35 (29.2%) as their minimum educational qualification, sixteen (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.

Attitudes of community pharmacists to pharmaceutical care

Majority, 115 (95.8%) of community pharmacists reported that pharmaceutical care is a timely innovation to pharmacy practice. Patient's economic situation in pharmaceutical care provision was considered by 109 (90.8%). Less than half of the respondents, 50 (41.7%) had willingly sponsored themselves to trainings on pharmaceutical care outside their location. Majority of the respondents 108 (90.0%) believed they could provide more pharmaceutical care than what is provided now. Details of attitude of community pharmacists to pharmaceutical care are shown in Table 2.

Practice of pharmaceutical care by community pharmacists

Majority of the respondents, 118 (98.3%) stated that pharmaceutical care involves monitoring improvement in patient response to treatment. More than half of the community pharmacists, 66 (55.0%) usually document pharmaceutical care carried out in their premises. Most of the respondents, 118 (98.3%) counseled patients with drug therapy problems. Majority of the respondents 111, (92.5%) reported that they used direct interview method in monitoring of patient. Details of practice of pharmaceutical care by community pharmacists are shown in Table 3.

Barriers to the practice of pharmaceutical care

A larger proportion, 87 (72.5%) disagreed that lack of remuneration or reimbursement prevented them from carrying out pharmaceutical care. More than half, 71 (59.2%) stated that insufficient time is a barrier to the practice of pharmaceutical care. Less than half, 56 (46.7%) of the respondents reported that there had been good collaboration with other healthcare professionals to practice pharmaceutical care. Details of barriers to the practice of pharmaceutical care are shown in Table 4.

Table 1: Demographic Characteristics of Respondents (n = 120)

Type of pharmacy	Frequency (n)	Percentage (%)
Chain Pharmacy	24	20.0
Independent pharmacy	96	80.0
Age group (years)		
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 Ph.D)	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

Table 2: Attitudes of Community Pharmacists to Pharmaceutical Care (n = 120)

S/N	STATEMENT	YES	NO
		n (%)	n (%)
1	Pharmaceutical care is a timely innovation to pharmacy practice.	115(95.8)	5 (4.2)
2	I apply pharmaceutical care to all my patients.	71 (51.2)	49 (40.8)
3	Pharmaceutical care is very demanding in terms of time.	114(86.7)	6 (13.3)
4	I consider patient's economic situation in pharmaceutical care provision.	109(90.8)	11(9.2)
5	I have willingly sponsored myself to trainings on pharmaceutical care outside my location of practice.	50 (41.7)	70 (58.3)
6	I sponsor myself to trainings on pharmaceutical care.	58 (48.3)	62 (51.7)
7	The knowledge I acquired from pharmaceutical care workshop has improved my professional relationships with my patient.	83 (69.2)	37 (30.8)
8	I can provide pharmaceutical care than what is provided now.	108 (90.0)	12 (10.0)
9	There are barriers to the practice of pharmaceutical care such as lack of basic working conditions.	107(89.2)	13 (10.8)
10	Providing pharmaceutical care offers me job satisfaction.	114 (95.0)	6 (5.0)
11	Patients expect me to provide better pharmaceutical care.	97 (80.8)	23 (19.2)
12	Pharmaceutical care is not necessary in our practice.	13 (10.8)	107(89.2)

Score distribution	**Frequency (n)**	**Percentage (%)**	**Percentage Score**
6	5	4.2	50.0
7	12	10.0	58.3
8	18	15.0	66.7
9	23	19.2	75.0
10	14	11.7	83.3
11	29	24.2	91.7
12.0	19.0	15.8	100

Cut off (%)	**Frequency (%)**	**Remark**
<80	58 (48.0)	Poor attitude
>80	62 (52.0)	Good attitude

Table 3: Practice of Pharmaceutical Care by Community Pharmacists (n = 120)

S/N	STATEMENT			YES	NO
				n (%)	n (%)
1	Pharmaceutical care involves monitoring improvement in patient response to treatment.			118(98.3)	2 (1.7)
2	Pharmaceutical care involves identification of error in patient's prescription.			116(96.7)	4 (3.3)
3	Counseling patients with drug therapy problems.			118(98.3)	2 (1.7)
4	Pharmaceutical care provides a feedback to optimize drug use.			119(99.2)	1 (0.8)
5	Carrying out medication review with patients.			116(96.7)	4 (3.3)
6	Documentation of pharmaceutical care carried out in the premise.			66 (55.0)	54(45.0)
7	Carrying out medication review with physicians.			65 (54.2)	55(45.8)
8	Monitoring of patient using direct interview method.			111(92.5)	9 (7.5)
9	Pharmaceutical care involves monitoring of adverse drug reaction.			120(100.0)	0(0.0%)
10	Pharmaceutical care involves adherence to treatment regimen.			118(98.3)	2 (1.7)
	Score distribution	**Frequency (n)**	**Percentage (%)**	**Percentage score (%)**	
	4	1	0.8	40	
	5	1	0.8	40	
	7	3	2.5	70	
	8	3	28.3	80	
	9	4	37.5	90	
	10	3	30.0	100	
Cut off (%)		**Frequency (%)**		**Remark**	
< 80		5 (4.2)		Poor practice	
> 80		115 (95.8%)		Good practice	

Table 4: Barriers to the practice of pharmaceutical care

S/N	STATEMENT	YES n (%)	NO n (%)
1	Does lack of remuneration or reimbursement prevent you from carrying out pharmaceutical care?	33(27.5)	87(72.5)
2	Does lack of acceptance by physician prevent you from carrying out pharmaceutical care?	41(34.2)	79(65.8)
3	Is there ambiguity about professional roles and concept of pharmaceutical care?	44(36.7)	76(63.3)
4	Do you have counseling room, finance, personnel, and management that can help provision of pharmaceutical care?	78 (65)	42 (35)
5	Have patients been accepting pharmaceutical care whenever you provide it?	113(97.5)	7 (2.5)
6	Is there usually enough time to provide pharmaceutical care?	49 (40.8)	71(59.2)
7	Do you possess sufficient pharmaceutical skills e.g., clinical problem solving, documentation and drug information skills?	95 (79.2)	25(20.8)
8	Do you have good communication skills needed to interact with physicians?	117(97.5)	3 (2.5)
9	Can you say your present or previous boss support the practice of pharmaceutical care?	107(89.2)	13(10.8)
10	Do you think there has been good collaboration with other healthcare professionals to practice pharmaceutical care?	64(53.3)	56(46.7)
11	Lack of knowledge about drug use.	26 (21.7)	94(78.3)
12	Based on the training you had while in school, can you say you were well equipped to carry out pharmaceutical care?	85 (70.8)	35(29.2)

DISCUSSION

This study was carried out to assess the attitude, practice, and barriers to the provision of pharmaceutical care (PC) among community pharmacists in Ibadan. The study found that majority of the respondents reported that PC involves monitoring patient adherence to treatment regimen. Low adherence by patients to prescribed treatments is very common (El Hajj et al., 2016) and low adherence rates for prescribed medications, can lead to sub-optimal health outcomes. If adherence is effectively monitored as reported, adherence is enhanced and definite outcomes (clinical, humanistic and economic) which improve patients' quality of life are achieved.

Respondents in this study reported that PC involves identification of error in patient's prescription. The philosophy and methods of PC enables pharmacists to collaborate with prescribers, patients, and carers to identify and correct prescribing errors, minimize harm and achieve better healthcare outcomes. (Helper 2004). Virtually all respondents in this study reported that PC entails counseling patient with drug therapy problems and providing feedback to optimize drug use. Drug therapy problems can be identified in community pharmacy settings at the time of prescription pick-up. Also, it involves monitoring for the progress of treatment by specifying monitoring parameters which gives feedback of the efficacy or otherwise of the drug therapy or care provided (Amibor & Okonta 2019).

All the respondents reported that PC involves monitoring for adverse drug reaction, which is a drug therapy problem. This finding is in line with a report by Cipolle et al in 2004 that the philosophy of PC practice is made up of four elements, one of which is the pharmacist' responsibility to identify, resolve and prevent drug therapy problem. The application of PC philosophy and methods enhances identification and management of adverse drug reactions and reporting these reactions to national spontaneous reporting programmes.

Slightly more than half of the respondent carried out medication review with physician. This could be attributed to lack of acceptance of their recommendations by physician which is common in some studies conducted in developing countries (Usman and Ilyas 2014; Puspitassari *et al.,* 2015). This could also be due to poor relationship between health care professionals.

Most of the community pharmacists in this study were conducting medication review with patients. A regular medication review with patient can help to improve PC in patients (Geurts *et al*., 2012; Kwint *et al*., 2013). Medication review can be done using a direct patient interview method which can help in the identification of drug-related problems. A clinical medication review that includes a pharmacist, physician and patient is expected to enhance pharmaceutical care (Geurts *et al.,* 2012). The involvement of patient is critical for both the identification of drug therapy problems (Kwint *et al.*, 2012) and for the long-term success of the intervention performed (Geurts *et al.,* 2012).

Standards for the practice of PC have been set by the Pharmacists' Council of Nigeria (PCN) to ensure the practice of PC in pharmacy premises (PCN 2005)". Continuing education programmes such as Mandatory Continuing Professional Development (MCPD) programme are also put in place by PCN. However, less than half of the respondents had willingly sponsored themselves to trainings on PC other than this Mandatory Continuing Professional Development (MCPD) programme. This attitude of some community pharmacists towards continuously engaging themselves in training and other activities that fortifies with the requisite knowledge and skills needed to facilitate effective delivery of PC can negatively impact the implementation of PC.

The consequence of not attending or participating in trainings, conferences and workshop on PC can be further explained by low level of implementation of PC in the society. About two-third of those that had attended trainings, workshop and conferences affirmed that the knowledge acquired has improved their professional relationships with patients.

It was also observed that majority of the respondents believed they can provide better PC than what is provided now. This finding can be compared with a study in Kuwait that reported total willingness (Abdelmoneim *et al.,* 2006). The government should take advantage of this positive attitude of community pharmacists and enforce specific educational interventions and remunerations for services provided as it obtains in some of the developed nations (Farris & Schopflocher 1999).

Furthermore, results obtained from this study shows, majority of the respondents (90.8%) reported that they usually considered patient's economic situation in the provision of PC. This most times is usually in form of direct costs such as the cost of medications, laboratory investigations and consultations and a few indirect costs. Pharmacists also offer advice or non-pharmacological approaches as first-line solutions, thus they save cost by preventing the purchase of over the counter items unnecessarily (Chui *et al*., 2001).

Although this study showed that many community pharmacists practice and provided PC, only 55% of them documented their interventions. This can be compared with a study conducted by (Aje & Erhun, 2017) which showed that about two-third of community pharmacists did not document their

pharmaceutical interventions. The data obtained from this study showed that there might have been a significant improvement in the documentation practice among community pharmacists in Ibadan. Similarly, studies showed poor documentation of pharmaceutical intervention by community pharmacists from various parts of the continent (Elayeh *et al*., 2017; Reis *et al*., 2015; Opara *et al*., 2005). According to Cipolle and others "if you are not documenting the care you provide in a comprehensive manner, then you do not have a practice" (Cipolle *et al*., 2012).

Barriers to PC reported in this study by community pharmacists were insufficient time, lack of finance, counseling room, personnel and management that can support in the provision of PC. The result also showed that a third of community pharmacists acknowledged lack of acceptance by physician as a barrier. Acceptance of PC provided by community pharmacists by physicians depends on the extent of awareness and understanding between the healthcare professionals. Most physicians feel or see pharmaceutical interventions as a threat to their professional duties while others accept it to be a complementary role that borders on team work to enhance improvement in the treatment outcomes of patients (Kho et al., 2017; Kwint *et al*., 2013).

Nearly half of the respondent reported that there has not been good collaboration with other healthcare professionals to practice pharmaceutical care. Okonta *et al* in 2012 recommended that technical collaboration of other health professionals and health facility management with pharmacists' regulatory authorities will promote the practice of pharmaceutical care and bridge most of the gaps (Okonta *et al*., 2012).

This study is not void of some limitations, due to the self-reporting nature of the study, there is a possibility of response biased where information given might be either over or under reported. Thus, there should be caution on generalization of the results across all pharmacists in Ibadan and Nigeria.

CONCLUSION

In this study community pharmacists revealed good practice and positive attitudes towards pharmaceutical care provision. Nonetheless, various barriers for the PC provision were stated such as lack of acceptance by physician and good collaboration with other healthcare professionals, lack of time, counselling room, finance, personnel and management. In the context of pharmacy practice situation in Ibadan, implementation of supportive policies and collection of evidence to demonstrate the benefits of pharmaceutical care are considered the foremost steps to alleviate the barriers for the service. Further work should emphasise on improving PC understanding, better collaboration among other healthcare professionals and overcoming system-related barriers. The study also highlights many obstacles that should be targeted to facilitate PC practice in Ibadan.

ETHICAL CONSIDERATIONS

Ethics approval for the study was obtained from the joint University of Ibadan/University College Hospital Institution Review Board with approval number UI/EC/21/0184

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