Evaluation of Community Pharmacists' involvement in Pharmaceutical Care related activities.

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ABSTRACT

Background-Pharmaceutical care activities in community pharmacies are of crucial importance. This study was carried out to investigate the extent of involvement of community pharmacists in pharmaceutical care related activities and to describe their attitudes towards some barriers to pharmaceutical care practice.

Methods: A cross sectional survey was conducted. Using anonymous responses, based on close ended questions with a Likert scale, Pharmacists in Ibadan completed self-administered questionnaires. Descriptive statistics on the sample characteristics and questionnaire items were computed. A Varimax factor analysis with Kaiser Normalization was employed. Unpaired t test and one way analysis of variance (ANOVA) were utilized for inferential statistics.

Results: Response rate was 54.7%. Forty seven (100%), (44) 93.6% and 31(66%) respondents were involved in patient counseling, patient education and patient follow-up respectively. Based on standard requirements, 46(97.9%), 45(95.7%), 30(63.3% and 29(61.7%) had supportive staff in the pharmacy, prescribed reference books, attended training on communication skills and had separate rooms for patient counseling respectively. A chronbach reliability coefficient of 0.659 was obtained. Of the respondents 40(85.1%) agreed that effective communication skill is a prerequisite to PC and that patients are willing to accept PC. Attitude rating was 33.77±9.17 (range 9 to 45; midpoint 27). There was no significant difference in gender (t=0.4212; p=0.6758); age (F=1.642; p=0.1945) and working experience in years (F=0.2768;p=0.9113) in respondents opinions.

Conclusion: Respondents were highly involved in patient counseling, education and follow up and poorly involved in preventive medicine, documentation and first aid. They indicated moderately positive attitudes towards the barriers of PC.

Keywords-Community Pharmacists', Pharmaceutical care, Activities.

INTRODUCTION

Community Pharmacists are health care professionals most accessible to the public and have a wide range of functions.[1] The services of a community pharmacist also provide a vital link between the patient and other health care professionals especially the medical experts.[2]

In community pharmacies around the world, there is a role for pharmaceutical care (PC). Pharmaceutical care involves the process through which a pharmacist cooperates with a patient and other professionals in designing, implementing, and monitoring a therapeutic plan that will produce specific therapeutic outcomes for the patient.[3]

The community pharmacy section of the International Pharmaceutical Federation (FIP) has advocated PC as a new role for the pharmacist. In 1996, FIP itself secured that role in its joint statement on good pharmacy practice (GPP) in community and hospital settings together with the World Health Organization.[4] However the adoption of PC among community pharmacists is not pervasive. This low adoption is likely due to complex interaction among a number of variables including drug product focus, lack of monetary incentives, patient attitudes and physician attitudes e.t.c.[5-8]

Involvement of Nigerian community pharmacists in Pharmaceutical care can be said to be evolving as there may be traces of the practice of PC existing in some community pharmacies. Likewise Nigerian community Pharmacists have their peculiar problems and their practices are not based on consistent principles and vary widely from one community pharmacist to another.[9]

Several studies have demonstrated community pharmacists' perspectives, involvement and impact on pharmaceutical care.[9-13] However, such studies are scarce in developing countries like Nigeria and hence the need for demonstrating such is important. The objectives of this study were to investigate the extent of involvement of community pharmacists in Pharmaceutical care related activities and to describe their attitudes towards some barriers to pharmaceutical care practice.

METHODS

Setting

The study was conducted within Ibadan Metropolis. Ibadan is the capital of Oyo State, Nigeria and has a projected population of 2,053714 males and 2,090378 females. The state is one of the most urbanized states in western Nigeria with Ibadan being the largest city in West Africa.[14] Several health care institutions are located in the city with community pharmacies numbering 101 in Oyo state and 86 of them are located in

Ibadan Metropolis.[15]

Design

A cross sectional, observational survey was conducted.

Survey instrument: A structured questionnaire that employed a yes or no response and a Likert scale was developed and employed as instrument to gather the required information.The questionnaire was adapted from professional literature and previous studies.[16-18] The questionnaire went through several revisions and feed back was obtained from five pharmacists (4 community pharmacists + 1 academic pharmacist). The final version of the survey was pilot tested using four community pharmacists practicing in locations different from that of the study. The survey instrument had 3 sections. Section 1 contained six items covering socio demographic characteristics such as age, gender, number of years of post qualification, and employment status. Section 2 of the instrument posed thirteen items on the extent to which community pharmacists practiced pharmaceutical care related activities. Pharmaceutical care activities included were-patient counseling, provision of first aid services, documentation of patients' medical records, patient education, provision of diagnostic services, presence of reference books, provision of patient follow-up services , presence of supportive staff, training on communication skills, preventive medicine, and documentation of adverse drug reactions.Each of the questions had a yes or no option. For positive responses, options were provided for the respondent to checkmark if he or she was involved in such instances.The third section had ten items using a 5- point Likert scale test to explore identified barriers that prevent the optimal practice of pharmaceutical care such as inter professional conflict, uneven patient demand, patient unwillingness, willingness to accept re-professionalization, informational limitations of pharmacists, and time.[19-23] The items were all positively worded. The five point Likert type response scale was anchored on: strongly agree = 5, agree = 4, neutral = 3, disagree = 2, and strongly disagree = 1.

Study population/ sample

Our target was all community pharmacists registered and practicing in Ibadan. A list of registered community pharmacy premises was obtained from the Ministry of Health, Pharmaceutical services Department of Oyo State. This list indicated 86 community Pharmacists and this was taken as our sample size.

Data Collection: Data were obtained using the developed instrument. The questionnaires were delivered to pharmaceutical premises and retrieved either instantly or after completion by the pharmacist on a later date.Questionnaires were also distributed to community pharmacists on targeted occasions such as monthly meetings of the association of community pharmacists as well as days of Mandatory Continuing Professional Development (MPCD) organized by the Pharmacists Council of Nigeria. This was done to be able to assess the pharmacists. Phone numbers were obtained as a form of contact and were also used to remind pharmacists who had not completed the questionnaires to do so.

Inclusion/Exclusion criteria

Community pharmacists who were registered with the Oyo State Chapter of the professional and regulatory bodies and were willing to participate were included in the study. Pharmacists who did not meet these criteria were excluded.

Ethical issues Permission was sought and obtained from the Oyo State Ministry of Health (Pharmaceutical Services Division) to carry out the survey. Also verbal consents were obtained from all the participants in the study before administering the questionnaire.

Analysis of Data Returned questionnaires were entered into Microsoft Excel software and cross-checked for accuracy. Data were loaded into Statistical Package for Social Sciences (SPSS) version 12.0 for descriptive statistical analysis. Mean scores with standard deviations and percentage frequencies were determined. Factor loadings were computed to determine items contributing to group summary scores and one item with factor loading of less than 0.4 was excluded. The factor analysis also evaluated the construct validity of the instrument. Cronbach's alpha was calculated to estimate the internal consistency of the responses to questionnaire items on barriers. Principal components analysis employed Varimax rotation with Kaiser Normalization and list-wise deletion of missing data.This process was accomplished in order to assess the dimensions of the pharmacists' opinions regarding some barriers in PC. Relationships between demographic profile and responses were explored using *Students' t- test* and one way ANOVA with the aid of GraphPad InStat, which reports exact P values, hence a P value of less than 0.05 was interpreted as significant.

RESULTS: The questionnaire achieved 54.65% response rate.

Socio-demographic characteristics

Majority of the respondents were males 35(74.5%). Mean age ± standard deviation was found to be 36.69±12.16 years. The majority of the respondents had a working experience of over 15 years 23(48.9%). Thirty seven (78.7%) respondents had BPharm as their first pharmacy degree.

Results of socio-demographic data of the respondents are presented in Table 1 below.

Table 1: Socio-Demographic Characteristics of Respondents

N=47

Item	Frequency	Percentage
Age (years)		
20-29	12	25.5
30-39	14	29.8
40-49	7	14.9
50 and above	14	29.8
Sex		
Male	35	74.5
Female	10	21.3
No response	2	4.3
Years of working experience		
1-5	6	12.8
6-10	10	21.3
11-15	8	17.0
>15	23	48.9
First pharmacy degree		
Pharm D	6	12.9
B. Pharm	41	87.7
Employment Status		
Employee	4	8.5
Owner	23	48.9
Superintendent Pharmacist	11	23.4
Locum Pharmacist	7	14.9
No Response	2	4.3

Reported Pharmaceutical care activities

Frequency of involvement in Pharmaceutical care related activities by respondents are shown on Figure 1 below. All respondents being involved in patient counseling and 93.6% involved in patient education.

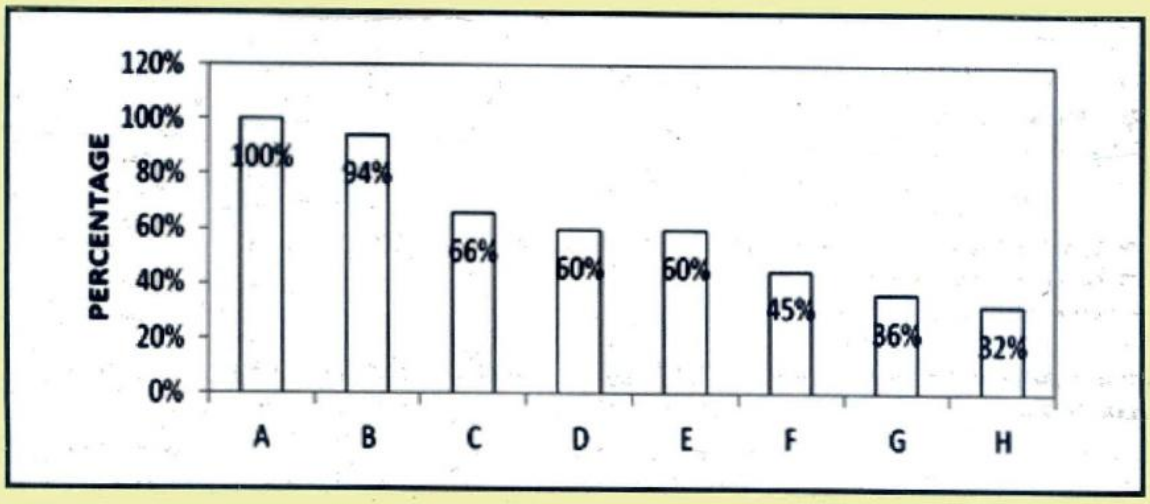

Figure 1

Respondents involvement in Pharmaceutical care related Activities

LEGEND-A=Patient counseling B= Patient education; C=Patient Follow up; D=Taking patient medication history; E=Provision of diagnostic services; F=Documentation of adverse drug reaction; G=Preventive medicine.

Patient counseling-Based on standard requirement for pharmaceutical care practice, 29(61.7%) of the respondents had separate rooms for patient counseling. Areas used for counseling included private counseling rooms 19(40.4%), semi counseling rooms (27.7%), pharmacy counters (29.8%) while (2.1%) gave no response. Thirty (63.8%) of the respondents had received training on communication skills.

Documentation-Out of the 28 (59.6%) respondents that admitted taking medication history, 22(46.8%) indicated how they documented such information. Ten (45.6%) used computer soft wares, 6(40.9%) used files while 3(13.5%) used notes and record cards.

Prescribed reference books -Forty five (95.7%) of the respondents had the prescribed reference books. Reference books cited by the respondents as being available include "British National Formulary"45(95.7%), Emdex 27(57.4%), MIMS Africa 32(68.1%), British Pharmaceutical Codex (BPC) 6(12.8%), Martindale 4(8.5%).

Follow up services-Thirty one (66.0%) of the respondents indicated patient follow up services. Methods used for such follow up included "Telephone calls' (51.15%).'Text messages' (27.7%), 'Visitation' (44.7%), on appointment/prescription refill' (8.4%).

Supportive Staff-Forty six (97.9%) had one or more supportive staff in the pharmacy which included Pharmacy assistants 23(48.9%), Pharmacy Technicians 26(55.3%) and pharmacy students on industrial attachments 25(53.2%).

Barriers to practice of pharmaceutical care

Table 2. Opinions of Respondents on Barriers that prevent the practice of pharmaceutical care

Barrier (Items)	Strongly agree	Agree	Undecided	Disagree	Strongly disagree	No response
1.Effective communication skills is a prerequisite to pc	26(55.3)	14(29.8)	-	-	2(4.3)	5(10.6)
2.Economic situation is a barrier to PC	6(12.8)	28(59.6)	1(2.1)	4(8.5)	2(4.3)	6(12.8)
3.Patients are willing to accept PC	17(36.2)	23(48.9)	1(2.1)	-	-	6(12.8)
4.Informational limitation of the pharmacist hinders practice of PC	11(23.4)	20(42.6)	7(14.9)	1(2.1)	2(4.3)	6(12.8)
5.Interproffessional conflicts pose a threat to practice of PC	10(21.3)	15(31.9)	16(34.0)	1(2.1)	-	5(10.6)
6.Uneven patient demand is a barrier to PC	5(10.6)	12(25.5)	13(27.7)	8(17.0)	2(4.3%)	7(14.9)
7.Lack of private counseling prevents effective PC	9(19.1)	18(38.3)	6(12.8)	4(8.5)	5(10.6)	5(10.6)
8.PC care requires so much time to talk to patients	5(10.6)	13(27.7)	8(17.0)	13(27.2)	6(12.8	5(10.6)
9. PC requires a special training and experience for effective practice.	9(19.1)	16(34.0)	6(12.8)	9(19.1)	2(4.3)	5(10.6)
10. Pharmacists are willing to accept reprofesionalization towards PC	10(21.3)	24(51.1)	7(14.9)	-	1(2.1)	5(10.6)

Reliability/ Factor analysis. Chronbach's alpha for the 10 barrier questions was found to be 0.659. About 70% of the total variance obtained was due to 4 of the items, the first contributing 25.5%, the second 18.3% and the third and fourth items had 13.2% and 11.32% respectively. Following determination of communalities one item had a factor loading of less than 0.4 and was therefore excluded from the summary score. The item is "uneven patient demand is a barrier to the practice of PC. The rated scores and factor loadings which were used to determine items belonging to the group responses are presented in Table 3 below.

Based on the remaining 9 items that loaded above 0.4 the mean total score was computed to be 33.77±9.18. Varimax rotation yielded 4 components. The first component had 3 items (items 2, 4, and 6) with a reliability coefficient of 0.656.The second component comprised 2 items (items 3 and 10) with a reliability coefficient of 0.618, the third component had 2 items (items 7 and 9) with a reliability coefficient of 0.641 and the fourth component had 2 items (Items 1 and 8) as well with a reliability coefficient of 0.347. Concerning barriers to pharmaceutical care, further inferential statistical analysis indicated no significant difference in the opinions of the male and female pharmacists (t=0.4212; p=0.6758); age (F=1.642;p=0.1945) and working experience in years **(F=0.2768;p=0.9113).**

Table 3 – Factor loadings, mean score and standard deviation of barrier items.

Item	Factor loading	Mean*	Standard deviation
1	0.836	4.45	0.950
2	0.781	3.76	1.025
3	0.710	4.42	0.552
4	0.638	3.89	1.034
5	0.232	3.84[a]	0.789
6	0.742	3.24	1.101
7	0.757	3.45	1.288
8	0.617	3.09	1.239
9	0.782	3.42	1.200
10	0.742	4.03	0.788
Mean Total		33.74	9.177

*=Strongly agree=5; agree=4; Undecided=3; Disagree=2; strongly disagree=1

a= item with low factor loading that was excluded from summary score.

DISCUSSION All respondents claimed involvement in patient counseling and most of them claimed to be involved in patient education. Similar results have been obtained in another study done in Benin City Nigeria[24] , and a study else where showed that community pharmacists spent twice of their work time counseling and educating patients.[25]

It is important to note that despite the high claim of counseling and education by the respondents, a little above half of them indicated a positive response for "separate room for patient counseling" as a standard requirement for pharmaceutical care practice and less than half of them had private counseling rooms. This is not encouraging as privacy of the patient is a very important aspect if PC must be practiced effectively.A high number of the respondents had reported having reference books, especially the 'British National Formulary. Having the reference books is commendable as the role of reference books cannot be overemphasized in the practice of PC. These are known to serve a purpose of educating the pharmacist and the come in handy when in doubt.

Half of the respondents had attended training on communication Skills. This is encouraging for the realization of PC in Nigeria. Clinical knowledge is critical and is the most important tool in providing PC. Knowledge will be enhanced if there is adequate training hence appropriate training for individual practitioners is one of the component prerequisite for change in practice.[26] Communication is an essential component of the clinician's role, it cannot be delegated to anyone else and it has a lasting effect.[27] Effective patient communication is central to being able to provide PC, identifying patients' needs, developing and communicating solutions and ensuring patient agreement and understanding are essential skills for pharmacists today. Effective communication skills are necessary for practitioners to receive accurate and comprehensive information from the patient as well as successfully educate the patient.[28]

This study revealed that only about half of the respondents used supportive staff. Supportive staff if properly trained will assist in carrying out other activities in the community pharmacy while the pharmacist in charge of PC will have ample time to attend to patients in need of PC. Supportive staff can serve in the community pharmacies having been exposed to some of the activities of the community pharmacy.

The pharmacist surveyed indicated a positive attitude towards known barriers of PC

No significant association was

observed with age, sex, and no of years of working experience as regards their attitudes to barriers PC indicating that they had similar attitudes towards the barriers.

Surprisingly only less than half of the respondents agreed that PC is time consuming and that uneven patient demand could be a barrier to the practice of PC. These have been noted as barriers of PC.[29]

CONCLUSION

This study reveals that community pharmacists in this location are highly involved in some PC activities like patient counseling and education despite the presence of barriers. They were poorly involved in others like First aid, preventive medicine and documentation of adverse drug reactions. The results reflect the evolving stage of pharmaceutical care in Nigeria. Increase in education and awareness of PC in all educational forums of pharmacist especially in the area of health promotion and documentation is recommended.

Disclosures-All authors declare that there are no potential conflicts (financial, professional or personal).

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