Perception of Pharmaceutical Care Roles of Pharmacists among In-patients in a Tertiary Care Facility in Jos City, Nigeria

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Authors' contributions

This work was carried out in collaboration between all authors. Author SJI designed the study, wrote the protocol, and critically reviewed the manuscript. Author ISD did the data acquisition, managed the literature searches and wrote the first draft of the manuscript. Author IOA defined concepts and intellectual content, performed the statistical analysis, and critically reviewed and edited the manuscript for publication. All authors read and approved the final manuscript.

ABSTRACT

Aims: The study is aimed at gaining a better understanding of the perception of in-patients on the pharmaceutical care (PC) roles of the pharmacists. This is useful in assessing the quality of care provided by the pharmacist and in the design and implementation of improved PC program in Nigeria.
Study Design: A cross-sectional, descriptive study.
Place and Duration of Study: Jos University teaching hospital" (JUTH), between June and October 2013.
Methodology: The perception of the PC roles of pharmacists was assessed in consented in-patients, using 23 items self administered questionnaire. Factors of PC assessed included: knowledge of the pharmacy profession, Interpersonal relationship, Collaboration with other professionals, and managing therapy. Factors associated with the perception of respondents were analyzed using Chi-square and Mann-Whitney U Test as appropriate.
Results: A total of 548 out of 551 questionnaires were completely filled and analyzed (response rate 99%). Majority (64%) of the respondents are in the age range 21-40 years. Females accounted for 53% (n=288). Overall perception of respondents was excellent with a mean percentage perception score of 86% [95% confidence interval: 84 to 88%].

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Knowledge of the pharmacy profession had the highest positives perception score of 89% while Interpersonal relationship had the highest negative perception score of 16%. Sex, marital status and ward of admission were significantly associated with respondent's perception, whereas age and occupation were not.

Conclusion: In general, in-patients in JUTH have excellent perception about the PC role of the pharmacist. However, there is a need to develop strategies to improve on the therapeutic relationship which is critical to the attainment of PC goals.

1. INTRODUCTION

A key aspect of clinical pharmacy practice is the provision of pharmaceutical care (PC). PC is an outcome oriented, patient-centered pharmacy practice, that aims to, within realistic economic expenditures, optimize the patient's health-related quality of life, and achieve positive clinical outcomes [1]. To achieve this goal, among other things, the pharmacist must establish and maintain a therapeutic relationship with the patients. In this relationship, the pharmacist holds the patient's welfare paramount, uses all his/her professional knowledge and skills on the patient's behalf and maintains an appropriate caring attitude for the patient's welfare. In exchange, the patient agrees to supply personal information and preferences, and participate in the therapeutic plan [1].

PC represents a new paradigm shift in pharmacy practice and patient's perception of the expanded roles of pharmacists in PC is at the heart of a successful therapeutic relationship [2]. Patient perception is patient's "personal evaluation of health care services and providers" [3]. Measurement of patient's perceptions of the role of the pharmacist is a method of assessing the quality of care provided by the pharmacist. It offers several practical advantages: it can be measured rapidly following the delivery of care; it is inexpensive; it does not depend on the quality of data found in the medical records, and it is more sensitive to differences in the quality of care than indicators such as adjusted mortality rates or complication rates [4].

Several studies have evaluated patient's perception of the role pharmacists in the community [5,6]. However, far too little attention has been paid to in-patients. Jos University Teaching Hospital (JUTH) operates a decentralized model of pharmaceutical service, in which pharmacies are located at the different point of care. This increases accessibility to patients and supports the provision of PC. Nevertheless, very little is known about patients perceptions about the service pharmacist provide. An understanding of this perception will be useful in the design and implementation of improved PC program in Nigeria. Hence the current study is aimed at gaining a better understanding of the perception of in-patients on the PC roles of the pharmacist in a tertiary health facility "in Nigeria".

2. MATERIALS AND METHODS

2.1 Design and Setting

A cross-sectional, descriptive study was carried out between June and October 2013 at JUTH, Jos, located in North central part of Nigeria. JUTH is a 630-bed tertiary health facility offering both secondary and tertiary health care to residents of Jos City and the neighboring

States (Provinces). The number of pharmacists, including intern pharmacists providing PC in the hospital at the time of the study was seventy five. Each forty bed capacity ward was equipped with a pharmacy station with an average of 5 to 6 pharmacists in attendance.

2.2 Sample and Procedures

Patients admitted to the medical, surgical, psychiatric, pediatrics, obstetrics and gynecology wards of the hospital during the study were conveniently sampled. A sample size of 548 patients used for this study was obtained using appropriate statistical formula for estimating minimum sample size in health research [7-9]. More patients were added to the calculated sample size to account for none and in-complete responses. The purpose of the interview and confidentially of the information to be provided by the patients was explained to each patient that was approached to participate in the study. The pretested, self administered questionnaire was administered after obtaining informed consent from the participants. Informed consent and filling of the questionnaire was done by patient's caregivers or representatives for patients aged ≤15 years of age. Questionnaire was administered through an interpreter for patients who do not understand or read in English. Unconscious patients were excluded from the study. Prior to undertaking the study, ethical clearance waiver was obtained from Jos university teaching hospital ethical committee.

2.3 Survey Instrument

A 23-item, self administered questionnaire was developed for the survey. These included socio-demographic characteristics and measures of patient's perception of PC.

2.3.1 Measures of patient's perception

Respondent perception of the PC roles of pharmacists were measured by knowledge of the pharmacy profession (4 items), Interpersonal relationship (2 items), Collaboration with other professionals (3 items), Managing therapy (8 items).

2.3.2 Knowledge of the pharmacy profession

This was assessed by respondent's knowledge about pharmacy profession relevance of the pharmacy profession to the hospital, pharmacists as drug experts and the ability of pharmacists to respond to drug questions.

2.3.3 Interpersonal relationship

Patients were asked if self introduction by pharmacists was a necessary part of pharmacist-patients encounter and if they were comfortable talking with the pharmacist about their medication.

2.3.4 Collaboration with other professionals

This measured the perception of patients on the need for the pharmacists to participate in their treatment, including ward rounds and monitoring of drug treatment in collaboration with other health care professionals.

2.3.5 Managing therapy

Aspects of PC assessed included prescription screening services, medication counseling/education duties, pharmacist's intervention to resolve drug therapy problems, recommendation of therapeutic alternatives(suggesting therapeutic alternatives), monitoring of treatment responses, medication record keeping and provision of medicines.

2.3.6 Validity and reliability of instrument

To ensure data validity questionnaire items were carefully adapted based on previous studies [10-12] and the peculiarities of the study setting. The questionnaire was reviewed by a clinical pharmacist for face validity pre-tested on 60 admitted patients. Yes, No and do not know response to each questionnaire item were adopted as a result of difficulty by majority of the respondents responding to a Likert scale format question; hence Cronbach alpha was not determined.

2.4 Data Analysis

A 'Yes' response was interpreted as positive perception and was graded as 1, while 'No' and 'do not know' responses were considered negative perception and graded as 0. The total cumulative score for positive perception was 17. Percent of positive perception was computed for each respondent. A percent score of 81-100% was categorized as excellent perception, 51-80% good perception and ≤50 as poor perception. Subgroup analysis was performed to identify factors associated with the perception of respondents. Chi-square was used to compare categorical variables, while Mann-Whitney U Test was used to compare continuous variables based on data distribution. P-values of ≤0.05 were regarded as statistically significant. All p-values were 2-tailed. Statistical package for social sciences (SPSS) version 20 (SPSS Inc, Chicago, Illinois, USA) was used for statistical analysis.

3. RESULTS

A total of 551 questionnaires were administered, out of which 548 was completely filled, giving a response rate of 99%. Majority (64%) of the respondents are in the age range 21-40 years, while 23% are below 20years and 13%, above 40years. There were 288(53%) female and 252 (47%) males. The proportion of married and unmarried respondents was 38 and 62% respectively. Students accounted for 35% of the respondents. Others occupational categories are civil servants 36%, self employed 18% and unemployed 11%.

The mean percentage perception score of respondents was 86% [95% confidence interval (CI): 84 to 88%]. Proportion of respondents with poor, good and excellent perceptions was 11, 13 and 76% respectively. Overall, the percentage positive perception score for all the factors of PC evaluated was excellent Table 1. In the factor analysis Table 1, the highest percentage positive perception score was in Knowledge of the pharmacy profession (88.6%), followed by Collaboration with other professionals (86.4%). Managing therapy and interpersonal relationship had the least scores of 84.6 and 84.5% respectively.

Table 1. Perception of 548 in-patients in JUTH on the pharmaceutical care roles of the pharmacists

Items	% positive perception	% negative perception
Knowledge of pharmacy profession		
Do you know about the pharmacy profession	88.5	11.5
Do you think pharmacy profession is relevant to the hospital	90.6	9.5
Do you think pharmacist are drug experts	89.3	10.7
Do you think pharmacist are trained enough to answer questions about your drugs	86.1	13.9
Average score	88.6	11.4
Interpersonal relationship		
Does your pharmacist need to identify him/herself before interacting with you	83.7	16.3
Are you comfortable talking with your pharmacist about your medications	85.2	14.9
Average score	84.5	15.6
Collaboration with other professionals		
Are pharmacist essential health care professionals who need to take part in your treatment	84.1	16
Does the pharmacist need collaboration with other health care professionals in the hospital in monitoring your drug treatment	89.1	14.3
Does the pharmacist in the hospital need to participate in clinical ward rounds to monitor your medication/drug treatment plan	85.9	14
Average score	86.4	14.7
Managing therapy		
Do you think Pharmacist need to screen and check your drug prescriptions to ensure that there are no errors and that they are appropriate and safe	88.3	11.7
Do you feel your pharmacist need to counsel/educate you on your medication	86.5	13.5
Do you feel pharmacist as drug professionals should have access to your case file to enable him/her monitor your drug treatment	84.8	15.1
Do your pharmacist need to intervene in the event of any form of problem with your treatment	83.9	16.1
Can pharmacist recommend (suggest) alternative drugs if they discover problems with your medications	81.1	18.9
Do you think pharmacists need to monitor your response to drugs	81.9	18.2
Do you think pharmacist need to keep record of your medications	85.2	14.8
Do you think pharmacist are responsible for providing your medications in the hospital	85.2	6.5
Average score	84.6	14.4

In the sub-group analysis Table 2, female respondents had a higher positive perception compared to their male counterpart (p=0.006). Likewise, married respondents had higher positive perception compared to the unmarried (p=0.001). The wards of admission were significantly associated with the patient's perception, with respondents admitted in the medical ward having the least positive perception of 69%. Age and occupation of respondents were not significantly associated with their perception of the PC roles of the pharmacists.

Table 2. Association of socio-demographic characteristics of 548 respondents with the perception on the pharmaceutical care roles of the pharmacists

		Total (%)	Mean(SD) % PP	Excellent n (%)	Good N (%)	Poor N (%)	*P*-value
Sex	Male	252(46.7)	84(25)	-	-	-	0.006*
	Female	288(53.3)	87(26)	-	-	-	
Married	No	203(37.6)	83(27)	-	-	-	0.001*
	yes	337(62.4)	89(25)	-	-	-	
Age	≤20	124(23)		91(73.4)	14(11.3)	19(15.3)	0.35†
	21-40	346(64.1)		273(80.3)	30(8.7)	38(11)	
	≥41	70(13)		53(75.7)	10(14.3)	7(10)	
Ward of Admission	MED	166(30.7)		114(68.7)	24(114.5)	28(16.9)	0.005†
	O & G	83(15.4)		74(89.2)	7(8.4)	2(2.4)	
	PAED	96(17.8)		71(74)	9(9.4)	16(16.7)	
	PSY	38(7)		31(81.6)	3(7.9)	4(10.5)	
	SURG	157(29.1)		132(84.1)	11(7)	14(8.9)	
Occupation	Student	187(34.6)		139(74.3)	20(10.7)	28(15)	0.51†
	CS	197(36.5)		156(79.2)	18(9.1)	23(11.7)	
	SE	97(18)		80(82.5)	8(8.2)	9(9.3)	
	Others	59(10.9)		47(79.7)	8(13.6)	4(6.8)	

* Mann-Whitney U Test, †Pearson Chi-Square test, MED=Medical, PAED=Paediatrics, O & G=Obstetrics and Gynaecology, PSY=Psychiatric, SURG=Surgical, CS=civil servants, SE=Self employed

4. DISCUSSION

To the best of our knowledge, this is the first report of the perception of in-patients on the pharmaceutical care role of pharmacists in a tertiary care facility "in Nigeria". A significant proportion of our study participants are aware of the pharmacy profession and have excellent perception of the pharmaceutical care roles of pharmacists. Clinically this is important, as a good understanding and perception about the role of the care provider is the foundation of a successful therapeutic relationship [2]. An excellent perception of the PC roles of pharmacists indicates an acceptance and high expectation of this service. Hence, pharmacists should leverage on the positive perception to improve on the quality of PC provided. Extrapolating the excellent perception of PC by in-patients in our study to other practice settings needs to be done with caution, as the practice of PC was still variable in Nigeria [13,14].

Notwithstanding the high level of knowledge of the pharmacy profession reported by respondents; a small proportions of patients (11.4%) were unaware of the pharmacy profession, therefore, are unable to express their opinions on the PC roles of the pharmacist. This finding highlights the need for more education on the role of pharmacists. Except

patients know about the roles of pharmacists, they are unable to hold the pharmacists accountable for his responsibilities in a therapeutic relationship. It is the duty of well informed pharmacist to disseminate information to patients on their roles, by appropriately introducing themselves and explaining their roles in the patient's management.

Despite excellent perception on all the factors of PC, managing therapy and interpersonal relation had a lower score compared to the knowledge of the pharmacy profession and collaboration with other professionals. In managing therapy, respondents had the least perception in the ability of a pharmacist to recommend alternative medications.

Recommending therapeutic alternative in this context means that the pharmacists suggest appropriate alternative therapeutic options to the prescriber with supporting data, in other to resolve a drug therapy problem. This practice of collaborative medication management also known as medication therapy management (MTM) services where pharmacist work in collaboration with other care provider to optimize patients treatment is not well established in our setting compared to advanced practice setting in the US where pharmacist are certified in the provision of (MTM) services as part of PC [15]. Other studies have shown that patients are not too familiar with MTM as an expanded responsibility of the pharmacist and that patient respond better to this service when properly educated [16,17].

Our study observed an excellent perception on interpersonal relationship. However compared to other factors of PC, the perception on interpersonal relationship was lower. Interpersonal relationship is very important factor in successful therapeutic relationship [2]. Interpersonal relationships can be improved upon by adopting strategies of improved interpersonal communication in health care such as caring and socio-emotional, diagnostic communication and problem solving, and counseling and education principles [18].

We observed a difference in perception of pharmacists' PC roles between male and female respondents, with female respondents tending to have a higher perception score compared to men. Our finding is consistent with the report of Alrubaiee, 2011 on the evaluation of patient's satisfaction with health services, women tended to have higher satisfaction scores than men [19]. This might be a reflection of the experiences and expectation of men and women. However, our report is inconsistent with the finding of Crow et al. 2002; and Nguyen et al. 2002 [20,21].

Like with a previous study [19], our study showed that married persons tend to have a higher perception of healthcare services compared to the unmarried. This tendency is not very clear and merits further evaluation.

The perception of patients on PC varied depending on the ward of admission, with patients admitted to the medical ward having the least perception on the PC roles of the pharmacist. This might be a reflection of the need and quality of PC service in the medical wards. The use of medicines is highest in the medical wards and hence there will be a higher demand on the pharmacist to provide collaborative medication management services.

Due to the literacy level (not reported in the study) of our study participants, our questionnaire design used simple yes/no response instead of a Likert scale. Therefore, we are unable to determine the internal consistency and reliability of our survey instrument. Secondly our study is a single institution study; given the variability in the scope and practice of PC in Nigeria, extrapolation of our study results to other tertiary care facilities in Nigeria should be done cautiously.

5. CONCLUSION

In general, in-patients have excellent perception about the PC role of the pharmacist in the facility studied. Compared to other domains of PC, interpersonal relationship and managing therapy had a lower rating. Strategies to increase patients' knowledge of the qualifications and training of pharmacists and their expanded role within the context of PC are desirable in this setting. Such knowledge will improve the therapeutic relationship and support the attainment of PC goals.

CONSENT

Participation in the survey was voluntary. Consented In-patients filled the survey questionnaire.

ETHICAL APPROVAL

Prior to undertaking the study, an ethical waiver was obtained from Jos University Teaching Hospital ethical committee (Ref: JUTH/DCS/127/XXII/5430).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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