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Physicians and Pharmacists Perspective of Clinical Pharmacy Practice, Services, Perceptions and Barriers in a Secondary and a Tertiary Hospital in Southeast Nigeria

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Abstract

Background

The practice of clinical pharmacy and pharmaceutical care has facilitated the improvement of quality of life via clinical, economic and humanistic outcomes. However, in Nigeria, we have paucity of evidence-based data. This study evaluated the services, perceptions and barriers to clinical pharmacy practice in Nigeria from physicians and pharmacists' perspective.

Methods

A cross-sectional survey was conducted among physicians and pharmacists from two hospitals in south-east Nigeria using questionnaires in the months of June and July, 2019. The questionnaire was adapted from similar study use to assess the services, perception and barriers of pharmacist about Clinical Pharmacy practice in Nigeria. This study was done with permission from the institutions and with approved consents from 400 respondents. The result was summarized with descriptive statistics and Chi square. A $p<0.05$ was considered significant.

Results

Among the respondents were, 250 physicians, and 150 pharmacists. Majority of the respondents are male (68%) within the age of 21-29 (66.3%). Most all the respondents have attained first degree (84.3%) and within the practice year of 1-10 years (83.8%). Most of the physicians indicated that recommendations made by pharmacist are sometimes accepted by prescribers (78.9%) and, that physicians share their therapeutic knowledge with pharmacist (78.4%). The study suggested a difference (p-0.016) between respondents who indicated that emphasis on drug therapy was placed to patients in order to improve patients care and quality of life.

Conclusions

The respondents had good perception and attitude towards clinical pharmacy practice. However, the results suggested that the clinical pharmacy services were poor. The barriers stemmed from physicians lack of understanding of the expertice and services of a clinical pharmacists which limits interaction and collaboration with the physicians.

Abbreviations

CPP- Clinical Pharmacy Practice, UK- United Kingdom, AACP -American Association of College of Pharmacy, Dr. -Doctor, APhA -American Pharmaceutical Association, TDM Therapeutic Drug Monitoring, AMS -Antimicrobial Stewardship, MTM -Medication Therapy Management,

NHP National Health Profit, RGH Repatriation General Hospital, NAUTH -Nnamdi Azikiwe University Teaching Hospital, SPSS Statistical Package for Social Sciences, GHO -General Hospital Onitsha.

Introduction

Clinical pharmacy practice is relatively a new discipline in pharmacy practice in which the emphasis is transferred from product oriented to patient-oriented practice [1]. However, the definition of clinical pharmacy practice or clinical pharmacy has not been universally touched stoned. Clinical pharmacy has different definition through the world but some recognized definitions are. Clinical pharmacy is a health science discipline in which pharmacists provide patient care that optimizes medication therapy and promotes health, wellness and disease [1]. Clinical pharmacy practice is the practice of pharmacy as a multidisciplinary, healthcare team directed at achieving quality use of medicine [1]. The "Thalidomide tragedy" wherein it was found that consumption of popular sedative thalidomide resulted in birth of babies with sealed limbs, second in 1968 phenytoin toxicity was reported in Australia which was because of change in formulation that is switching over from calcium sulfate to lactose as an inert excipient in the tablet [2].

Clinical pharmacy started in the UK in 1960 as result to promote rational use of medication therapy, reduce cost of medications and increase patient quality of life. Some of the barriers to clinical pharmacy practice are; lack of clinical pharmacy training, lack of therapeutic knowledge and policy implementation problem [2]. The Clinical pharmacy has emerged as one of the latest branches of pharmacy in 21st Century. However, this journey was not easy, many barriers, restrictions was overcome with the optimism and persistent efforts of many pioneers who started with nothing. It all began with when pharmacists at the University of Iowa hospital. This helped in defining the Pharmacist's Intervention in management of pharmacotherapy and made the clinical pharmacist a valuable member of healthcare team. Later on, the many other domains were added in clinical pharmacy from Therapeutic Drug Monitoring (TDM) to Anti-microbial Stewardship (AMS), [3]. Thus, lack of adequate practice of clinical pharmacy is a serious problem to the nation at large. Clinical pharmacy happens to be one of the vital parts in healthcare and it is difficult to determine how far clinical pharmacy has been implemented in Nigeria due to lack of research and proper documentation. This study evaluated the services, perceptions and barriers to clinical pharmacy practice in Nigeria from physicians and pharmacists' perspective.

Methods

Study Design

This research was a descriptive cross-sectional study which was questionnaire based.

Study Setting

The study was conducted in two tertiary health care facilities in Anambra State. Having most specialties in medicine. The facilities were the Nnamdi Azikiwe University Teaching Hospital(NAUTH) and General Hospital Onitsha. These sites were chosen due to availability of sufficient number of physicians, pharmacists, and high patients turnout.

Study Population/Sample Size

All physicians and pharmacists that indicated interest to participate in the study, and gave their informed consent were recruited for the study. The sample size was calculated as shown below:

$$n = \frac{N}{1 + N(e)^2}$$

Where n= required sample size (unknown)
N=population size
E=maximum acceptable error margin at 5% degree of freedom (95% chances of being right) =0.05
For Physicians
N= estimated population size of Physicians in NAUTH =400

$$n = \frac{N}{1 + N(e)^2}$$

$$n = \frac{400}{1 + 400(0.05)^2}$$

$$n = \frac{400}{1 + 400(0.0025)}$$

$$= 400/2$$
$$= 200$$

Attrition of 10 Physicians was used
200 + 10 = 210

Recruitment of Subjects

The study was explained to the respondents and the procedure involved. Data collected was strictly kept confidential. Those who gave their informed consent participated in the study. The questionnaire was administered to them, filled and was retrieved.

Questionnaire Administration

The questionnaire was self-administered and was collected back after the respondents had finished filling them same day.

Ethical Consideration

Before the study commenced, ethical approval for the study protocol was obtained from the Research and ethics. Department of both tertiary healthcare facilities. Informed consent was obtained from the respondents before commencement of the study.

Data Collection

Data was collected from sample population using questionnaires. The questionnaires were retrieved and data was analyzed using appropriate statistical method [4]. The questionnaires were pilot tested with 15 health workers who were not included in the final study.

Data Analysis

We summarized the data with descriptive statistics, mean, mode and median. We measured the differences in frequencies of the outcomes variables with Chi-square test.

Study Criteria

Inclusion Criteria

All physicians and pharmacists that were willing to participate who have practiced for morethan 12 months and were available during the time of the study.

Exclusion Criteria

Physicians and pharmacists that were willing to participate but were not available at the time of the study. Physicians and pharmacists that were not willing to participate in the study at all.

Pilot Study

A Pilot study was carried out by distributing 10 questionnaires to 10 physicians and pharmacists each and the questionnaires were retrieved. Those that were used in the pilot study did not participate in the main study.

Results

Socio Demographic Characteristics of the Respondents

Of the 500-questionnaire instrument distributed, four hundred were returned as validly completed giving a response rate of 400 (80%).

In table 1, among the respondents (Dr), 210 (84%) were from Nnamdi Azikiwe University Teaching Hospital (NAUTH) while 40 (16%) were from General Hospital Onitsha. There were 187 (74.8%) male and 63 (25.2%) females among the respondents with more males in both hospitals; their mean age was 29.9 ± 6.08 years with modal age of 21-29 years. The educational qualification of almost all the respondents 206 (82.4%) were first degree. The year of practice experience of majority of the respondents was 194 (77.6%) were between 1-10 years; their mean duration of practice experience was 7.8 ± 4.29 years with modal practice/experience of 1-10 years.

Table 1: Socio-Demographic Characteristics of Respondents (Dr) (N = 250)

Variables	NAUTH n	GHO n	Total n (%)	P- value
Gender				
Male	158	29	187 (74.8)	
Female	52	11	63 (25.2)	0.134
Age				
21-29	109	21	130 (52)	
30-39	88	17	105 (42)	
40-49	13	2	15 (6)	0.084
Mean age = 29.9 years, (Standard deviation = ± 6.0 8 years)				
Year of Practice Experience				
1-10	162	32	194 (77.6)	
11-20	47	8	55 (22.0)	
Above 20	1	0	1 (0.004)	0.312
Mean duration of Practice Experience = 7.8 years, (Standard deviation = ± 4.29 years)				
Educational Qualifications				
First degree	173	34	206 (82.4)	
Second degree	38	6	44 (17.6)	
Third degree	0	0	0 (0.00)	0.222
Total	210	40	250 (100)	

NAUTH - Nnamdi Azikiwe University Teaching Hospital, GHO - General Hospital Onitsha

Table 2: *Socio–Demographic Characteristics of Respondents (Pharm) (N = 250)*

Variables	NAUTH n	GHO n	N(%)	p-value
Gender				
Male	77	8	85 (56.7)	
Female	57	8	65 (43.3)	0.324
Age				
21–29	120	15	135 (90)	
30–39	9	1	10 (6.7)	
40–49	5	0	5 (3.3)	0.630
Mean age = 26.3 years, (Standard deviation = ± 4.14 years)				
Year of Practice Experience				
1–10	125	16	141 (94)	
11–20	4	0	4 (2.7)	
Above 20	5	0	5 (3.3)	1.143
Mean duration of Practice Experience = 6.4 years, (Standard deviation = ± 3.90 years)				
Educational Qualifications				
First degree	116	15	131 (87.3)	
Second degree	18	1	19 (12.7)	
Third degree	0	0	0 (0.00)	0.667
Total	134	16	150 (100)	

NAUTH – Nnamdi Azikiwe University Teaching Hospital, GHO – General Hospital Onitsha

Services, Perceptions and

Table 3: *Perception and Barriers of Respondents to Clinical Pharmacy Practice (N)*

Variables (Physicians)	NAUTH (n)	GHO (n)	N(%)	p-value
1. Is clinical service well perceived by physicians?				
Never	8	2	10 (4)	
Sometimes	99	19	118 (47.2)	
Always	99	19	118 (47.2)	
Rarely	4	0	4 (1.6)	0.883
2. Is clinical service specifically requested by physicians?				
Never	0	0	0 (0.00)	
Sometimes	120	24	144 (57.6)	
Always	78	14	92 (36.8)	
Rarely	12	2	14 (5.6)	0.120

	NAUTH	GHO	N(%)	P-value
3. Are the recommendations made by pharmacists accepted by prescribers?				
Never	4	1	5 (2.0)	
Sometimes	165	31	196 (78.4)	
Always	33	6	39 (15.6)	
Rarely	8	2	10 (4.0)	0.194
4. Do physicians ever share their therapeutic knowledge with pharmacists?				
Yes	166	30	196 (78.4)	
No	44	10	54 (21.6)	0.325
Total	210	40	250 (100)	

Table 4: Services, Perception and Barriers of Physicians to Clinical Practice (N)

Variables (Physicians)	NAUTH n	GHO n	N(%)	P-value
1. How many days/weeks do you contact pharmacist regarding patients' medication?				
Every day	30	5	35 (14.0)	
1-3 days/week	34	5	39 (15.6)	
4-6 days/week	8	2	10 (4.0)	
Once/week	138	28	166 (66.4)	0.582
2. How many days/weeks do you ask or asked to intervene on patients' medication?				
Every day	58	12	70 (28.0)	
1-3 days/week	42	5	47 (18.8)	
4-6 days/week	12	2	14 (5.6)	
Once/week	98	28	119 (47.6)	1.344
3. How many time/days do you spend on patients counseling in relation to their medications?				
30 mins	127	23	150 (60.0)	
1-2 hrs.	55	10	65 (26.0)	
2-3 hrs.	8	2	10 (4.0)	
Above 3 hrs.	20	5	25 (10.0)	0.485
4. Would you be receptive to an expanded patient centered role of the pharmacist in the clinical setting?				
Yes	165	30	195 (78.0)	
No	45	10	55 (22.0)	0.250

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	NAUTH	GHO	N (%)	p-value
5. Do you place emphasis on drug therapy to the patient in order to improve patient care and quality of life?				
Yes	193	37	230 (92.0)	0.016
no	17	3	20 (8.0)	
6. Do you think a pharmacist adds to patient's clinical care?				
Yes	194	36	230 (92.0)	
No	16	4	20 (8.0)	0.259
7. Do you consider pharmacist a member of health care team?				
Yes	202	39	241 (96.4)	
No	8	1	9 (3.6)	0.166
8. Do you think it's important to patient's clinical care to have a consultation with a pharmacist regarding their medication?				
Yes	153	28	181 (72.4)	
No	57	12	69 (27.6)	0.137
9. Do you think the majority of the patients would adhere with medication regimen if they have consultation with pharmacist?				
Yes	141	26	167 (66.8)	
No	69	14	83 (33.2)	0.070
Total	210	40	250 (100)	

Table 5: *Services, Perception and Barriers to Clinical Pharmacy Practice (N)*

Variables (Physicians)	NAUTH n	GHO n	N (%)	p-value
1. Year of initiating clinical services?				
1989-2000	18	0	18 (12.0)	
2001-2010	21	4	25 (16.7)	
2011-2018	95	12	107 (71.3)	2.929

	NAUTH	GHO	N (%)	
2. Was the clinical services your initiative or requested by your superiors? Pharmacists decision Superiors decision Both Others	24 49 34 27	0 10 5 1	24 (16.0) 59 (39.3) 39 (26.0) 28 (18.7)	 6.979
3. What is the appropriate time allocated to a particular patient? 5-10 mins 10-15 mins 15-30 mins Above 30 mins	43 42 37 12	5 5 3 3	48 (32.0) 47 (31.3) 40 (26.7) 15 (10.0)	 1.795
4. Do you expect current clinical services to expand over the next 12 months? Yes No Not sure	114 11 9	13 2 1	127 (84.7) 13 (8.6) 10 (6.7)	 0.333
5. Do you expect offering additional clinical services over the next 12 months? Yes No Not sure	119 14 1	14 2 0	133 (88.7) 16 (10.7) 1 (0.6)	 0.179
Total	134	16	150 (100)	

Table 6: *Services of Pharmacists towards Clinical Pharmacy Practice (N)*

Variables	NAUTH n	GHO n	N(%)	p-value
1. Provide health care education and drug information Agree Neutral Disagree	126 8 0	15 1 0	141 (94.0) 9 (6.0) 0 (0.0)	 0.002

2. Active members in hospital committee (e.g. Pharmacy and therapeutics, antimicrobial stewardship)				
Agree	122	14	136 (90.6)	
Neutral	8	2	10 (6.7)	
Disagree	4	0	4 (2.7)	1.412
3. Participate in guidelines or protocols development?				
Agree	96	12	108 (72.0)	
Neutral	40	3	33 (22.0)	
Disagree	8	1	9 (6.0)	0.110
4. Involved in medication safety projects				
Agree	113	13	126 (84.0)	
Neutral	13	1	14 (9.3)	
Disagree	8	2	10 (6.7)	1.113
5. Actively participate in multidisciplinary patients care round				
Agree	99	13	112 (74.7)	
Neutral	23	1	24 (16.0)	
Disagree	12	2	14 (9.3)	1.361
6. Develop and initiate a pharmaceutical care plan				
Agree	113	13	126 (84.0)	
Neutral	13	1	14 (9.3)	
Disagree	8	2	10 (6.7)	1.113
7. Conduct interview to collect and document a complete medication history				
Agree	112	14	126 (84.0)	
Neutral	14	1	15 (10.0)	
Disagree	8	1	9 (6.0)	0.280
Total	134	16	150 (100)	

Discussion

An overall response rate of 80% was recorded. The findings confirmed previous reports of good perspective and attitude but poor services towards clinical pharmacy practice in both developed and developing countries [1,2]. This was attributed to lack of formal policy implementation and hence, lack of clinical pharmacist in the hospitals. According to Lemay, physicians have positive perception of the value and impact of pharmacist to patient care but poor services to MTM. This was attributed to very little time devoted to MTM by clinical pharmacist, lack of clinical pharmacy training, lack of therapeutic knowledge and lack of confidence and fear of new responsibility among some pharmacist which may adversely affect their perception.

That younger physicians and pharmacists showed higher positive attitude towards pharmaceutical care than the older once gives a ray of hope for the future of professional practice in Nigeria. This was reflected in the fact most respondents within the age of 21 - 29 year with 1 - 10 years of experience showed the highest positive attitude towards clinical pharmacy practice in the sub-demographic groups. This is particularly important because they are the determinants of labor force to take charge of pharmaceutical care implementation. The older age groups are usually predominantly for managerial responsibilities. The representation by the both sexes is equally remarkable due to gender implications on policy-related matters [5]. It is indicative that almost all the respondents have good understanding of what clinical pharmacy is with reference to that of Hepler and Strand [2]. This strongly indicates a good knowledge but also needs improved mandatory continuing professional development (MCPD).

A reasonably high number of respondents showed good perspective toward clinical pharmacy practice. This can be seen in table 4 as majority of the physicians indicated that they place emphasis on drug therapy to the patient in order to improve patient care and quality of life (92%); think a pharmacist adds to patients clinical care (92%); consider pharmacist a member of health care team (96.4%); think it's important to patients clinical care to have a consultation with a pharmacist regarding their medication (72.4%) and they think the majority of the patients would adhere with medication regimen if they have consultation with pharmacist (66.8%). In affirmation to the above, physicians agreed that pharmacists Provide health care education and drug information (94%); are active members in hospital committee (e.g. Pharmacy and therapeutics, antimicrobial stewardship) (90.6%); are involved in medication safety projects (84%); Develop and initiate a pharmaceutical care plan (84%); Conduct interview to collect and document a complete medication history (84%) and actively participate in multidisciplinary patients care round (74.7%). This is in agreement with the roles of pharmacist in pharmaceutical care practice [6].

Clinical pharmacy practice requires a strengthening of the professional relationship between pharmacists and physicians to offer mutual beneficial partnerships in which both share responsibility for patient care. This is indicative in table 4 survey 3 where most physicians (66.4%) indicated that they contact pharmacist regarding patient medication once/week. Therefore, effective pharmacist-physician collaborative working relationship in Nigeria hospitals needs to be improved in order to initiate successful implementation of pharmaceutical care. Counselling is a critical part of pharmaceutical care that cannot be compromised. In table 6 survey 1 and 6, almost all the pharmacist indicated that the provide health care education and drug information (94%); and develop and initiate pharmaceutical care plan (84%). This is in agreement with survey done in Kuwait [7].

The physicians indicated that they allocate 30 minutes to patient counseling while the pharmacist in table 5 surveys 3 allocates just 1-5 minutes to patient care. Lack of time is the most significant obstacle standing against the implementation of clinical pharmacy practice worldwide [8]. Through re-organization of pharmacy staff duties, a certain amount of time could be routinely scheduled for patient care activities. We identified infrequent contact of the respondents with physicians in relation to information about drugs; this may be due to the high competency of the prescribers or their lack of confidence in the pharmacists' abilities [7].

The non-involvement of majority of respondents, especially the hospital pharmacists, in ward rounds recorded in this study is a major weakness in pharmaceutical services in the study area. Lack of enabling environment, knowledge deficit, inadequate pharmacy personnel, and excess work load among others could be responsible and need to urgently be addressed. Shyness by a number of pharmacists is well known even without much obstacle which calls for improved integration during training at various levels. This study is in agreement with study done in south-west Nigeria [5]. Our respondents' perspective on ways of improving clinical pharmacy implementation varied and is also an attestation of their readiness to implement it. Topping the list was improved skill acquisition through training. The World Health Organization (WHO) had encouraged special attention to be placed on knowledge, skills, attitudes and behaviours which support pharmaceutical care model right from undergraduate training [9]. Other suggestions were improved relationships with other health care professionals and patients, involvement in ward rounds, political backing, adequate facility provision, better re-numeration and privacy for counseling. Most of these suggestions are commendable and in consonant with WHO and FIP documents on PC related matters [10]. For enhanced relationships with patients, competence, empathy, privacy and good communication skill are paramount.

These are the bedrocks in building enduring therapeutic relationships. For the built relationships to be maintained, regular monitoring and in-process evaluation of the therapy, its production mechanisms and responsible follow-up as well as documentation are mandatory. To achieve and sustain all these meaningfully, continuous quality improvement in capacity building is of absolute necessity. Quality care by nature is collaborative, hence adequate involvement of other health care professionals are paramount particularly the physicians. Practice standards need to be developed [11], and undertake research to assess it in the country, taking each local peculiarity into consideration before satisfactory implementation can be achieved [12,13].

Conclusion

The study revealed that physicians and pharmacist have good perception and attitude towards clinical pharmacy practice in Nigeria; but have poor services towards clinical pharmacy practice in Nigeria. Improved partnership with physicians, improved medication therapy management, adequate leadership and resources and updated legislation from MoH enforcing clinical pharmacists in the circle of care will improve clinical pharmacy practice in Nigeria. The barriers stemmed from physicians lack of understanding of the expertice and services of a clinical pharmacists which limits the interaction and collaboration which limits interaction and collaboration with the physicians. Emphasis should be laid on training and more focus should be paid to the clinical training and externship programmes because they afford the students and professionals the opportunity to have real life experiences with patients and improve patient quality of life.

Conflict of Interest: The authors have no conflict to declare

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