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Pharmaceutical care implementation in Rivers and Bayelsa states of Southern Nigeria

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ABSTRACT

Pharmaceutical care concept was introduced in Nigeria Pharmacy schools about a decade ago. Hence, to evaluate translation of theory into practice an original and maiden survey was carried out to identify the proportion of Pharmacists who have implemented Pharmaceutical Care (PC) practice and also to evaluate the impact of demographic factors. A descriptive study was carried out with a questionnaire between the months of January and March, 2013 among 205 out of estimated 400 pharmacists practicing in Rivers and *Bayelsa* States of Nigeria. Data collected was subjected to descriptive analysis using SPSS version 15. The study revealed that Pharmacists do perform pharmaceutical care functions in half the opportunities presented. About 50 %, 28 %, 20%, and 22% of pharmacists always establish a therapeutic relationship to begin the practice, evaluate patient related health information, draw up a pharmaco therapeutic plan, and document pharmaceutical care goals respectively. However, consistent practitioners of pharmaceutical care who use the instruments of care plans with goals and eventual documentation are about 21%. Chi square test reveal a significant relationship between sex and practice as well as between practice group and practice.

Key words: Pharmaco-therapeutic plan, Therapeutic relationship, Implementation.

INTRODUCTION

Pharmaceutical Care concept and practice has been adopted by *FIP* as the 'GOLDEN' standard of practice for the Pharmacy profession. The International Pharmaceutical Federation (FIP) modified the *Hepler* and *Strand's* definition to state that 'Pharmaceutical care is the responsible provision of pharmacotherapy for the purpose of achieving definite outcomes that improves or maintains a patient's quality of life; it is a collaborative process that aims to prevent or identifies and resolves medicinal products and health related problems. This is a continuous quality improvement process for the use of medicinal products. [1].The responsibility to translate this concept into practice worldwide is a collective responsibility of pharmacists in every country of the world. Each country's pharmaceutical (public and private) sector have to create the enabling environment for practice. Enabling environment includes knowledge, communication skills, systems for data collection, documentation and transfer of information and a commitment to quality improvement and assessment [2]. The goal of pharmaceutical care is to optimize the patient's health related quality of life and achieve positive clinical outcomes, within realistic economic expenditures. The American Pharmacists Association [3] has stated principles of pharmaceutical care practice which would ensure the achievement of pharmaceutical care goals. Such principles are:

A. Establishment and maintenance of a professional/therapeutic relationship between the pharmacist and the patient.
B. Collection, organization, documentation and maintenance of patient specific health related data.
C. Evaluation of the health related patients' data and development of a pharmaco therapeutic plan with the patient.
D. Ensuring that the patient has all the supplies, the information and knowledge necessary to carry out the plan.
E. Monitoring, reviewing, and modifying the therapeutic plan as necessary and appropriate in concert with the patient and the healthcare team to assure positive outcomes.

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METHODS

The study was a prospective multi-centered study that involved facilities that involved three tertiary health facilities (Federal Medical Center, *Yenagoa*; Niger Delta University Teaching Hospital; and University of Port Harcourt Teaching Hospital) , and two schools of pharmacy (Niger Delta University, *Amasoma* and University of Port Harcourt).Pharmacists were targeted at various pharmaceutical society and technical meetings in both states. The purpose of the research was explained to the pharmacists in other to obtain their consent. Participation was voluntary. A self-administered questionnaire was distributed to willing participants irrespective of their practice group. The questionnaire was structured to retrieve demographic and practice based data. Two hundred and sixty-five questionnaires were sent out. Two hundred and five questionnaires were retrieved completely filled. Statistical package for Social Sciences (SPSS) was used to analyze the data. Descriptive data was derived. Response to questions was computed numerically and in percentages. Chi square tests were performed to observe the relationship between demographics and functions of practice. At 95% confidence interval, a 2-tailed p-value less than 0.05 was considered significant.

RESULTS

Out of two hundred and sixty questionnaires distributed two hundred and five were completed and retrieved giving a response rate of 78.8%.

Demographics: There were more male pharmacists (60.5%) while female pharmacists were (39.5%). Majority (88.7%) of respondents were less than 50years of age. Majority (62.4%) are married. About 73.2% of the respondents were licensed less than twenty years ago with two-third of them in the last ten years. Majority 69.8% had been aware of Pharmaceutical Care concept for up to 10 years. The bachelor's degree (B.Pharm) which is the minimum qualification for practice in Nigeria is the highest qualification for 68.8% of the respondents. Over seventy percent (70%) have not specialized in any particular field. The dominant practice groups are community pharmacists (43.9%) and hospital/administrative pharmacists (38.7%). Over eighty percent (80%) of respondents practice in the urban area. Details in Tables 1a, b.

Proportion of respondents practicing pharmaceutical care: About 38% of the respondents stated that they fully practice pharmaceutical care. Respondent's indication for activities that form part of their practice was significant for the following, Patient Interview 72.2%, Patient Counseling 68.3%, Enhancing adherence to medication 76.6%, Making medicines affordable 50.2%, Encouraging feedback/follow up 66.8%, Comprehensive documentation 52.2%, Communicating with health care practitioners 63.4%. Details are available in table 2.

DISCUSSION

The trend of more male than female respondents is observed in other reports such as the surveys by *Owusu-Daaku et al*, [4] in Ghana, *Spinewire* and *Dhillon*, [5] in Belgium and *Suleiman* and *Onaneye*, [6] in Nigeria. The high proportion of Pharmacist younger than 50years of age (88.7%) is indicative of an active work force. A similar observation was made by *Suleiman* and *Onaneye*, [6].The high proportion of young pharmacists most of whom are bachelor degree holders(68.8%) yet to specialize in any area is a good indication that intervention programs will yield positive results.Interestingly,9.3% indicated that their specialty is in clinical pharmacy. The ratio of pharmacists practicing in urban area relative to rural area is 4: 1.This is as a result of two factors. The first is the paucity of pharmacists in the primary and secondary health care facilities which are domiciled largely in rural areas and are funded by local councils and state (regional) governments. The second reason is due to the poor infrastructural states of rural settings that discourages the establishment of community pharmacies. Consequently, there is an imbalance in distribution of pharmaceutical services and care amongst the population.

It is obvious that without a plan or a goal there would be no outcome expected from the interaction, and certainly no commitment or responsibility on the part of the practitioner. Secondly, documentation is the proof of performance. Therefore, respondent's response to making pharmaco therapeutic plans (19.5%) and documentation of care plans and goals (21.5%) were used as a yardstick to confirm those practicing pharmaceutical care based on the principles of pharmaceutical care process [3]. The mean of both is 21%.

Okoro and *Ibrahim*, [7] in their study in *Maidugury* observed that pharmacist had good knowledge without corresponding action. *Suleiman*, *Eniojukan* and *Eze* [8] in a study on documentation practices revealed poor documentation practices among pharmacists. *Erah* and *Nwazuoke*, [9] in their study to identify practice standards for pharmaceutical care in Nigeria distributed questionnaires of 52 practice standards obtained

from the *Delphi* panel of pharmaceutical care experts observed that only 12.5%-23.8% of pharmacists were applying them and only 8.5-12.6% had intention to apply them in a future date. Statistical significance was observed between sex, practice group, sub-practice group and drawing up a pharmacotherapeutic care plan (p=0.017, p=0.000, p=0.009,p=0.011) as well as documenting care plans/goals (p=0.003, p=0.000, p=0.006, p=0.003). Male pharmacists, community retail pharmacists, hospital pharmacists in the tertiary health facilities do the functions of practice much more than others. The retail community pharmacists seem to be leading the practice.

CONCLUSION

Most pharmacists seem to undertake activities of pharmaceutical care such as patient interview and patient counseling without an order, a plan or any goal. About 50% practice pharmaceutical care occasionally by establishing a therapeutic relationship but only 21% practice pharmaceutical care consistently employing the instruments of care plans with goals and eventual documentation. There is need to intervene to increase the proportion of Pharmacists implementing Pharmaceutical Care and the quality of their practice. However, more research may be needed to find out the nature of the necessary intervention program.

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TABLE 1a--DEMOGRAPHIC DATA; n=205

VARIABLES	VALUES	FREQUENCY	PERCENTAGE
Sex	M	124	60.5
	F	81	39.5
Marital	Single	73	35.6
Status	Married	128	62.4
	Widowed	3	1.5
	No Response	1	0.5
Age	< 30	56	27.3
Group	31-40	72	35.1
	41-50	54	26.3
	51-60	20	9.8
	61-70	1	0.5
	> 70	2	1.0
Years of Post-	< 10	102	49.8
Licensing Experience	11-20	48	23.4
	21-30	36	17.6
	31-40	6	2.9
	41-50	2	1.0
	No Response	11	5.4
Years Spent in Current Practice	< 5	85	41.5
	6-10	42	20.5
	11-15	20	9.8
	16-20	11	5.4
	21-25	9	4.4
	26-30	11	5.4
	31-35	5	2.4
	No Response	22	10.6

TABLE 1b--DEMOGRAPHIC DATA;n=205

		Percentage	Frequency
Practice Group	NAHAP – Ministry	15	7.3
	NAHAP – 3^{O} Care	56	27.3
	NAHAP – 2^{O} Care	7	3.4
	NAHAP – Anonymous	1	0.5
	NAPA – Teaching	22	10.7
	NAPA – Consultancy	1	0.5
	ACPN – Wholesale	15	7.3
	ACPN – Retail	71	34.6
	ACPN – Int. Trade	4	2
	NAIP – Marketing	2	1
	NAIP – Int. Trade	1	0.5
	No Response	10	4.9
Qualification	B. Pharm/B. Sc	141	68.8
	Pharm. D	21	10.2
	M.Sc. Pharm.	13	6.3
	M. Pharm.	4	2.0
	FPC Pharm.	8	3.9
	Ph.D	7	3.4
	MBA	6	2.9
	MPH	3	1.5
	No Response	2	1
Specialization (Specialty)	Public Health	8	3.9
	Pharm. Tech.	5	2.4
	Clinical Pharmacy	19	9.3
	Pharm. Chem	2	1
	Pharmacology	3	1.5
Practice location	State Capital	167	81.5%

TABLE 2--PERCENTAGE OF RESPONDENTS' WHO SAY THEY UNDERTAKE THE UNDERLISTED PC ACTIVITIES IN THEIR PRACTICE SETTING;n=205

PC activities that are part of any current practice	Yes	No	No Response
Patient Interview	72.2	25.4	2.4
Comprehensive Documentation	52.2	45.2	2.4
Communication with HC practitioner	63.4	33.2	3.4
Encouraging Feedback/Follow up	66.8	30.7	2.4
Enhancing adherence to medication/advice	74.6	22.4	2.9
Making medicines affordable/available	50.2	46.5	3.3
Improvingpostmarketing surveillance/pharmacovigilance	29.8	67.3	2.9
Teaching and Research	27.3	70.2	2.5
Regulate Pharmacy Practice	20.5	76.1	3.4

Table 3-PERCENTAGE OF RESPONDENTS' RESPONSE TO QUESTIONS RELATING TO IMPLEMENTATION OF THE PC PROCESS-

n=205

Questions	Always	Sometimes	Rarely	Never	No Response
How often do you establish a therapeutic relationship with your patients/clients?	50.2	30.2	2.4	3.4	13.7
How often do you keep records of prescriptions or patients medications you dispense for future reference?	51.2	24.9	3.4	4.4	16.1
How often do you document chronic health challenges of your patients/clients?	29.3	31.7	14.6	8.3	16.1
How often do you draw up a pharmacotherapeutic plan for your patient/client?	19.5	45.4	12.7	4.4	18
How often do you evaluate the information you gather?	28.3	38.5	13.2	3.4	16.6
As a result of patient's information review how often do you intervene in a patient's drug therapy regimen?	39	35.6	5.4	2.9	17.1
How often do you document your PC intervention plan/goals?	21.5	38.5	15.6	7.8	16.6

TABLE 4-CROSS TABULATION OF DEMOGRAPHIC DATA OF RESPONDENTS VERSUS RESPONSE TO ATTRIBUTES OF PRACTICE.. n=205;n (%)

HOW OFTEN DO YOU DRAW UP A PHARMACOTHERAPEUTIC PLAN FOR YOUR PATIENTS/CLIENTS?

	ALWAYS	SOMETIMES	RARELY	NEVER	NO RESPONSE	TOTAL	X^2	df	p-value
	n%	n (%)	n (%)	n (%)	n (%)	n (%			
Sex; M	32 (25.8)	54 (43.5)	10 (8.1)	6 (4.8)	22 (17.7)	124 (100.0)	12.0	4	0.017*
F	8 (9.9)	39 (48.1)	16(19.8)	3 (3.7)	15 (18.5)	81 (100.0)			
Age:<30	7 (12.5)	28 (50.0)	9 (16.1)	3 (5.4)	9 (16.1)	56(100.0	13.6	20	0.852
31-40	13(18.1)	35 (48.6)	7 (9.7)	4 (5.6)	13(18.1)	72(100.0)			
41-50	12(22.5)	22 (40.7)	8 (14.8)	2 (3.7)	10(18.5)	54(100.0)			
51-60	8 (40.0)	6 (30.0)	2 (10.0)	0 (0)	4 (20.0)	20(100.0)			
61-70	0 (0)	1(100.0)	0 (0)	0 (0)	0 (0)	1 (100.0)			
>70	0 (0)	1(50.0)	0 (0)	0 (0)	1(50.0)	2 (100.0)			
Pr.Group									
NAHAP	8(10.1)	39(49.7)	16 (20.3)	5(6.3)	11(13.9)	79(100.0)	68.9	20	0.000*
NAPA	3(13.0)	4 (17.4)	0 (0)	2(8.7)	14(60.9)	23 (100.0)			
ACPN	26(29.5)	46(52.3)	8 (9.1)	1(1.1)	7 (7.9)	88(100.0)			
NAIP	0 (0)	1(33.3)	0 (0)	1(33.3)	1(33.3)	3(100.0)			
NAHAP									
Ministry	0 (0)	4 (26.7)	5 (33.3)	2 (13.3)	4(26.7)	15(100.0)	26.4	12	0.009*
Tertiary	8 (14.3)	30(53.6)	10 (17.9)	3 (5.4)	5 (8.9)	56(100.0)			
Secondary	1 (14.3)	5 (71.	1(14.3)	0 (0)	0 (0)	7 (100.0)			
ACPN									
Wholesale	3(20.0)	8 (53.3)	2 (13.3)	0 (0)	2 (13.)	13(100.0)	25.9	12	0.011*
Retail	23(32.4)	36 (50.7)	6 (8.5)	1(1.4)	5 (7)	71 (100.0)			
Int.Trade	1 (25.0)	2 (50.0)	0 (0)	0(0)	1 (25.0)	4 (100.0)			

Respondents sex, practice group (pr.group) and sub-practice group have significant (p=0.017,p=0.000,p=0.009,p=0.011) association with how often they draw up a pharmacotherapuetic plan which is a function of practice. Male respondents, ACPN and NAHAP practice groups, NAHAP Tertiary and ACPN retail draw up pharmacotherapeutic plans more often. With ACPN and retail subgroup leading the practice.

TABLE 5- HOW OFTEN DO YOU DOCUMENT YOUR PC INTERVENTION PLANS/GOALS?

	ALWAYS	SOMETIMES	RARELY	NEVER	NO RESPONSE	TOTAL	X^2	df	p-value
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)			
Sex; M	33(26.6)	50(40.0)	11(8.9)	7(5.6)	23(18.5)	124(100.0)	15.9	4	0.003*
F	11(13.6)	29(35.8)	21(25.9)	9(11.5)	11(13.6)	81(100.0)			
Age;<30	11(19.6)	21(37.5)	11(19.6)	7(12.5)	6(10.7)	56(100.0)	14.7	20	0.792
31-40	16(22.2)	26 (36.1)	13(18.1)	2(2.8)	15(20.8)	72(100.0)			
41-50	12(22.2)	24(44.4)	4 (7.4)	5(9.3)	9 (16.7)	54(100.0)			
51-60	5 (25.0)	6 (30.0)	4 (20.0)	2(10.0)	3(15.0)	20(100.0)			
61-70	0 (0)	1(100.0)	0 (0)	0 (0)	0 (0)	1(100.0)			
>70	0 (0)	1(50.0)	0 (0)	0 (0)	1 (50.0)	2(100.0)			
Pr.Group									
NAHAP	21(26.6)	22(27.8)	18(22.8)	9(11.4)	9(11.4)	79(100.0)	60.3	20	0.000*
NAPA	4 (17.4)	3 (13.0)	1(4.3)	2(8.7)	13(56.5)	23(100.0)			
ACPN	15(17.0)	50(56.8)	11(12.5)	4(4.5)	8 (9.1)	88(100.0)			
NAIP	0 (0)	0 (0)	1(33.3)	0 (0)	2 (66.6)	3(100.0)			
NAHAP									
Ministry	2(13.3)	3(20.0)	3(20.0)	4(26.7)	3(20.0)	15(100.0)	27.6	12	0.006*
Tertiary	17(30.4)	19(33.9)	12(21.4)	4(7.1)	4(7.1)	56(100.0)			
Secondary	2 (28.6)	1(14.3)	3 (42.9)	1(14.3)	0 (0)	7 (100.0)			
ACPN									
Wholesale	1(6.7)	10(66.7)	1(6.7)	1(6.7)	2(13.3)	15(100.0)	29.6	12	0.003*
Retail	13(18.3)	40(56.3)	10(14.1)	3(4.2)	5(7.0)	71(100.0)			
Int.Trade	1(25.0)	2(50.0)	0 (0)	0 (0)	1(25.0)	4(100.0)			

Respondents sex, practice group and sub-practice group have significant(p=0.003,p=000,p=0.006,p=0.003) association with how often they document their PC intervention plan/goals which is a function of practice. Male respondents, ACPN and NAHAP practice groups, NAHAP Tertiary and ACPN retail subgroups document PC intervention plans/goals more often with ACPN and Retail subgroup leading the practice.

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