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Research article

Assessment of Pharmaceutical Care Competency of Community Pharmacists in a Nigerian State

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ABSTRACT

Pharmacists practicing in Nigeria must embrace the Pharmaceutical Care concept and philosophy of practice to sustain their claims as custodians of drugs. This practice will improve patient care outcomes through humanistic, economic and clinical high cure rates, reduction in target symptoms, and decrease in adverse drug reactions. We assessed the community Pharmacists knowledge, skills and confidence to deliver Pharmaceutical Care practice in Anambra State Nigeria. Pharmaceutical Care Competency Questionnaires (PCCQ) were used to evoke voluntary and unbiased responses from participants who were all community pharmacists. Using three Likert-type response scales for knowledge, skills and confidence, to test the research objectives. Data gathered were first sorted using Microsoft excel before loading into SPSS version 13.0 for descriptive statistics analysis (mean, standard deviation, frequency distribution, and p-value). The result revealed mean computed for rated scores as follows; for knowledge was 4.03, for skills was 3.96 and for confidence was 4.02. This implied that the community pharmacists with minimum of B. Pharm degree have some skills to practice Pharmaceutical Care. The factor loading is > 0.4; Cronbach's alpha for knowledge is 0.972, for skills 0.904, for confidence 0.931. This survey concluded that despite some knowledge skills acquired by pharmacists in their B. Pharm, training schools, there is still a gap between their practice and the concept of Pharmaceutical Care delivery.

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INTRODUCTION

Pharmacy as a profession is currently experiencing a necessary paradigm shift from the product-oriented practice to the modern patient focus practice necessitated by the dynamic evolution in all medical practices to modern evidence-based delivery. For the profession of Pharmacy therefore to sustain its claim as the custodian of drugs, it must embrace Pharmaceutical Care Concept and Philosophy of practice in service delivery to clients. The future of Pharmacy depends on the successful application of Pharmaceutical Care by Pharmacists regardless of their practice setting, through application of drug knowledge and patient counseling to encourage proper medication usage, prevent potential adverse interactions, and ensure therapeutics monitoring as practices associated with this commitment [4, 5].

To annul the present and future loss of social value Hepler and Strand developed a model that refined the patient care paradigm. This model termed 'Pharmaceutical Care' is defined as the responsible provision of drug therapy intended to achieve definite outcomes that will improve a patient's quality of life [8, 13]. Pharmaceutical Care minimizes preventable drug related morbidity and mortality by improving patients' drug therapy outcomes. Within the Pharmacy profession, Pharmacists are

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under pressure to meet the growing demand for providing high-quality services and improving them [2, 12, 21, 23].

Growing demands for greater accountability of professional education programs coupled with public concerns regarding the skills and efficacy of professionals has emphasized the importance of professional competence [4]. There has been a shift in the practice of pharmacy, moving from a focus on dispensing medications to providing clinical care for patients. This change has led pharmacy schools to adjust their curricula to better prepare students for delivering Pharmaceutical Care. This involves adopting a patient-centered approach in which Pharmacists take responsibility for patient's drug therapy-related outcomes. It requires that students learn critical thinking, problem-solving abilities, and develop effective communication skills with patients and other health care providers, while addressing ethical problems [4, 11, 15].

A key challenge in pharmacy education is designing, implementing, and evaluating curricula that integrate general and professional skills to support practitioners in meeting their responsibilities for drug therapy outcomes and patient wellbeing. The preparedness to review program should not be overlooked or delayed because it encourages the minimum competencies standard. These competences and skills of the Pharmacist are achieved through Pharmacy educators which focus on developing the students in interpersonal and interdisciplinary learning to make them work effectively as part of an integrated healthcare team.

The distinguishing ability of successful Pharmacists of the future will be their ability to deliver effective Pharmaceutical Care which requires a high level of skills, competence and confidence. Achieving this goal, however, will involve addressing several challenges, including pharmacy's product-centric focus, opposition from other healthcare professionals and drug manufacturers, finance and logistic issues, ignorance and wasteful inertia among Pharmacists themselves [3, 11, 15].

Healthcare is rapidly advancing faster than expected and professions that fail to adapt accordingly may find no role in the future healthcare scheme [4]. The need for this shift emanated from three primary sources that can be thought of as catalysts for this change. In the first phase, drug related morbidity and mortality was on the increase with consequent increase in cost of healthcare, resulting from unnecessary hospitalization and emergency room visits due to adverse drug reactions. There has been evidence that Pharmacists providing comprehensive patient care could reduce this configure [3, 9, 15, 22].

The movement towards a patient care practice may enhance the legitimacy of the Pharmacy profession, reaching positively to the loss of social value due to the demise of the compounding function` [13]. The catalyst to the shifting towards a patient care has to do with the future loss of social value due to automation and technology which have combined to remain the dispersing role of the Pharmacy profession. The impact of Pharmaceutical Care practice in developed nations such as Europe and United States have long been investigated, elucidated and endorsed as necessary panacea for veritable health outcomes. Therefore, developing nations must as a necessity fully imbibe the concept and practice of Pharmaceutical Care in order to benefit from the millennium health goals [1994; 3, 9, 11, 22].

In order to fulfill its societal obligation to lower avoidable drug-related morbidity and death, the pharmacy profession is currently undertaking a global re-professionalization process. [15]. Currently, in Nigeria a greater percentage of Pharmacists still practice within the confines of product/money-oriented approach, thereby denying patients of their due potentials as professionals, because they are not competent in the skills, knowledge and practice application of pharmaceutical care Philosophy. A great number of pharmacists still remain at the level of B. Pharm. degree training and still practice within the confines of drug-oriented practice and therefore, deny patients the benefits of their full potentials as professionals due to lack of the full practice of the Pharmaceutical Care concept [6, 7, 15, 18, 22].

This study evaluated the Pharmaceutical Care competency of community pharmacists in a state located in southeastern Nigeria. The study was carried out with a view to bringing to bare the mode and extent of practice in the right direction, exploring the hindrances to modern practice of 'PC' and motivating them to break the barriers with acquisition of communication skills, knowledge and competency skills in application of Pharmaceutical Care philosophy.

METHODS

This study was a cross-sectional non interventional study which used 42 framed competency skills assessment questionnaires as tool for the study. The tools were served to 90 respondents who are community pharmacists (male and females) from various locations in the eastern part of Nigeria, particularly Anambra State. The stimuli in this respect were their demographics such as age, qualifications, years of practice, statements of their knowledge of Pharmaceutical Care competency skills and confidence.

Each respondent was expected to indicate,

- How much knowledge he/she has in performing Pharmaceutical Care tasks, which were represented with the following score scales; Excellent = 5, Very good = 4, Not sure = 3, Fair = 2, Poor = 1
- How much confidence he or she now has in competency skills, represented in a response score scales as follows: Very confident = 5, Confident= 4, not sure = 3, less confident = 2, and not at all confident = 1
- How he/she agrees or disagree with pharmacists' competence skills: strongly agree = 5, agree = 4, undecided = 3, disagree= 2, strongly disagree = 1.

The questionnaires were presented to pharmacists who consented to participate and satisfied the inclusion criteria of community pharmacy practice only. Where pharmacists were not available on duty repeat, visits were involved to ensure that the questionnaires got only to the targeted participants, for the survey. The study participants' recruitment was initially carried out in the pharmacists' association annual general meeting of one year who attended within the four days conference or followed up visits to their premises. All respondents represent the 100 community pharmacy practitioners directly served with the questionnaire's items consisting of two sections

Section A, of the questionnaire was designed to collect demographic characteristics of the respondents which included sex, age, qualifications, prior community or other pharmacy practice experience current community pharmacy experience and designation in practice setting

Section B, contains 42-item standard competency-skills questions developed and validated to assess the community pharmacists on their knowledge, skills and confidence to deliver Pharmaceutical Care practice. Three subscales, 'A' 'B' and 'C' with 5-point (Likert-type) response scales score (1-5) were employed as illustrated. The respondents were asked to state their degree of response (Excellent or poor, very confident or not at all confident, agree or disagree) to the Pharmaceutical Care competency skills-items posed to them.

Out of the 100 questionnaires served the community pharmacists, 10 were used for the pilot tests for tool validation, while 10 were lost due to withdrawals, 80 were retrieved from participants but 62 were completely and properly filled and therefore, used for the study.

The completed questionnaires were retrieved, coded for proper identification with numbers, 1-62, entered into Microsoft excel and cross checked for accuracy before sorting. Data were then organized and imported into the statistical package for social sciences, SPSS (Version 13.0) software for descriptive statistical analysis. Graph pad instat (Version 3.0) was used for inferential statistical analysis. The logical mid-point between least scores and mean scores, along with standard deviations and percentage frequencies were determined. Factor loading was computed to identify items contributing to the

overall group summary scores. Additionally, the factor analysis assessed the construct and validity of the instrument. Cronbach's alpha was calculated to estimate the internal consistency of the responses to questionnaire items or reproducibility of the result or degree of the relationship between the items. The process was accomplished in order to assess the scope/dimensions of knowledge, skills and confidence of community pharmacists towards delivery of clinical and Pharmaceutical Care. Rate scores were related as interval data suited for qualitative analysis. The mean of mean was taken using inferential statistics also calculated and the package reported the exact p-values, hence p value is > 0.999.

RESULTS

The questionnaire response rate was 62% from the practicing community pharmacists surveyed (54.84% for males and 45.16% for females) and **77.4%** of the proportions of respondents were aged between **30-49** years. About **56.45%** had current community pharmacy experience. Details of the demographics data are presented in table 1. Of the respondents, about **87.1%** indicated that they had Excellent or very good knowledge to use language appropriate for the patient and **83.9%** indicated that they could effectively communicate at level appropriate to the patient as evidenced in table 2A. On their skills **87.1%** strongly agreed or agreed that they used specific, clear and appropriate terminology. Also **83.9%** of the respondents strongly agreed or greed in their competency to answer question clearly and appropriately as shown in table 2B, white, **83.5%** are very confident or confident to identify contra-indications to therapy as reflected in table 2C. On determination of communalities all the factors contributed to the group summary score hence no factor was less than 0.4 as evidenced from the 62 questionnaires, items assessing knowledge is **0.971,** assessing competency skills is **0.903,** and assessing confidence is **0.930** as indicated in table 3. Factor loadings of questionnaire items and Cronbach's alpha for the sub-scales (N=62). The mean total computed for rated score to knowledge is **169.01±**and to competency skills are 165.45+, and to confidence is 168.57+ 36.995. The mean of mean for knowledge is 4.02, competency skill is 3.94and confidence is 4.01 (see table 3).

Table 1: Demographics of Respondents to the Questionnaires

Item	Number (N-62)			Percentage (%)
Sex: Female	28			45.16
Male	34			54.84
Age (years)	**N**	**Male**	**Female**	
20-29	3	(1)	(2)	4.84
30-39	28	(18)	(10)	45.16
40-49	20	(11)	(9)	32.26
50-59	9	(2)	(7)	14.52
60 or above	2	(2)	(0)	3.23
Basic Qualification B. Pharm.	62			100
Current community Pharmacy practice experience				
Yes	35			56.45
No	27			43.55
Prior community Pharmacy practice				
Yes	10			16.13
No	52			83.87

Table 2A: Frequency (%) distribution on how much knowledge respondents have in performing competency skills (N-62)

S/N	Knowledge & competency skills assessment in community pharmacy practice setting.	Column A How much knowledge do you have in performing these tasks? (%)				
		Poor	**Fair**	**Not sure**	**Very good**	**Excellent**
1	Collect patient data to identify problems and individual care.	0	3.8	20	23.8	30
2	Perform relevant physical assessment.	12.5	16.3	20	36.3	13.8
3	Interview patient, family and other health care professionals	1.3	25	23.8	33.8	16.3
4	Identify patient specific goals of therapy	5	15	27.5	36.3	15
5	Identify patient specific goals of therapy	2.5	12.5	12.5	47.5	21.3
6	Prospectively develop care plans	1.3	13.8	21.3	40	22.5
7	Organize, interpret and analyze patient-specific data	1.3	16.3	28.8	41.3	10
8	Synthesize patient data to form an assessment	2.5	11.3	28.8	32.5	18.8
9	Assess health status, etiology, risk factors and complications of the patient's medical problem	1.3	16.3	26.3	31.3	23.8
10	Prioritize medical problems based on urgency and severity	1.3	5	31.1	35	22.5
11	Identify preventive and health maintenance issues	1.3	5	27.5	46.3	16.3
12	Persuasively communicate a justification for one's assessment	1.3	7.5	26.3	38.8	25

13	Evaluate the appropriateness of drug therapy, the choice of drug, dose, route, frequency and duration of therapy.	2.5	7.5	26.3	36.3	23.8
14	Evaluate the efficiency of current drug therapy	1.3	6.3	25	35	27.5
15	Identify potential or actual drug interaction	1.3	3.8	27.5	37.5	27.5
16	identify contradictions to therapy	1.3	8.8	27.5	37.5	22.5
17	Identify potential or actual drug-induced adverse effects	6.3	27.5	37.5	22.5	6.3
18	Identify untreated problems	3.8	31.3	41.3	17.5	6.3
19	Assess patient adherence to therapy and lifestyle changes	7.5	23.8	36.3	22.5	10
20	Select non-pharmacologic therapeutic measure	0	8.8	13.8	43.8	25
21	Select optimal drug, dose, route, frequency and duration of therapy	0	5	12.5	50	22.5
22	Select strategies for prevention of diseases	0	2.5	8.8	45	27.5
23	Incorporate the significance of potential drug interactions and adverse effects into the recommended plan	0	3.8	11.3	45	27.5
24	Persuasively justify recommendations based on patient data	0	5	15	42.5	20
25	Take responsibility for patient care duties	3.8	6.3	16.3	40	20
26	Reliably complete tasks and assignments	6.3	3.8	17.5	37.5	18.8
27	Manage time appropriately to be well prepared for clinical activities	2.5	7.5	22.5	32.5	21.3
28	Identify appropriate patient educational needs	2.5	6.3	13.8	35	23.8
29	Recognize patients' education barriers	5	3.8	11.3	30	31.8
30	Use appropriate educational materials to educate patient regarding drug therapy	0	3.8	8.8	26.3	40
31	Use language appropriate for the patient	0	1.3	11.3	22.5	45
32	Assess patient's level of knowledge and acquisition	0	2.5	13.8	30	33.8
33	Effectively communicate at a level appropriate to the audience	0	5	7.5	28.8	33.8
34	Interpret verbal and non-verbal cues	0	5	22.5	20	31.3
35	Use specific, clear and appropriate terminology	0	7.5	12.5	25	35
36	Communicate in an organized, logical and concise manner	1.3	5	6.3	31.3	33.8
37	Maintain appropriate eye contact	0	3.8	11.3	30	33.8
38	Display appropriate level of confidence	0	7.5	10	26.3	33.8
39	Answer questions clearly and appropriately	2.5	5	3.8	30	36.3
40	Clearly document drug therapy reconciliation and other patient-related interventions	0	11.3	12.5	26.3	27.5
41	Effectively communicate assessment, including supporting subjective and objective data	2.5	7.5	15	20	32.5
42	Effectively communicate the therapeutic plan	0	5	7.5	35.5	30.5

Table 2B: Frequency (%) distribution on how much respondents agree or disagree with their competency skills as pharmacists (N=62)

S/N	Knowledge & competency skills assessment in community pharmacy practice setting.	Column B How much do you agree or disagree with your competency skills? (%)				
		Strongly agree	agree	Undecided	Disagree	Strongly disagree
1	Collect patient data to identify problems and individual care.	17.5	43.8	26.3	11.3	0
2	Perform relevant physical assessment.	30	27.5	17.5	3.8	0
3	Interview patient, family and other health care professionals	18.8	36.3	33.8	7.5	0
4	Identify patient specific goals of therapy	36.3	27.5	12.5	3.8	0
5	Identify patient specific goals of therapy	25	35	26.3	5	1.3
6	Prospectively develop care plans	5	20	32.5	35	7.5
7	Organize, interpret and analyze patient-specific data	3.8	28.8	42.5	5	1.3
8	Synthesize patient data to form an assessment	16.3	35	35	7.5	0
9	Assess health status, etiology, risk factors and complications of the patient's medical problem	23.8	33.8	31.3	6.3	1.3
10	Prioritize medical problems based on urgency and severity	30	40	21.3	5	1.3
11	Identify preventive and health maintenance issues	27.5	36.3	25	2.5	0

12	Persuasively communicate a justification for one's assessment	25	33.8	30	5	2.5
13	Evaluate the appropriateness of drug therapy, the choice of drug, dose, route, frequency and duration of therapy.	31.3	37.5	21.3	6.3	0
14	Evaluate the efficiency of current drug therapy	31.3	27.5	30	6.3	0
15	Identify potential or actual drug-induced adverse effect interaction	32.5	30	23.8	5	0
16	identify contradictions to therapy	36.3	27.5	26.3	3.8	0
17	Identify potential or actual drug-induced adverse effects	27.5	31.3	25	6.3	0
18	Identify untreated problems	17.5	33.8	27.5	10	0
19	Assess patient adherence to therapy and lifestyle changes	22.5	32.5	26.3	5	0
20	Select non-pharmacologic therapeutic measure	20	40	20	5	1.3
21	Select optimal drug, dose, route, frequency and duration of therapy	30	33.8	20	2.5	0
22	Select strategies for prevention of diseases	25	36.3	18.8	6.3	0
23	Incorporate the significance of potential drug interactions and adverse effects into the recommended plan	25	30	27.5	5	0
24	Persuasively justify recommendations based on patient data	21.3	30	26.3	5	1.3
25	Take responsibility for patient care duties	18.8	31.3	27.5	5	3.8
26	Reliably complete tasks and assignments	21.3	32.5	17.5	10	1.3
27	Manage time appropriately to be well prepared for clinical activities	21.3	21.3	32.5	10	2.5
28	Identify appropriate patient educational needs	28.8	28.8	20	6.3	0
29	Recognize patients' education barriers	31.3	28.8	16.3	6.3	0
30	Use appropriate educational materials to educate patient regarding drug therapy	30	31.3	15	3.8	0
31	Use language appropriate for the patient	35	27.5	10	6.3	1.3
32	Assess patient's level of knowledge and acquisition	20	25	16.3	3.8	0
33	Effectively communicate at a level appropriate to the audience	32.5	31.3	11.3	2.5	1.3
34	Interpret verbal and non-verbal cues	30	25	20	1.3	1.3
35	Use specific, clear and appropriate terminology	43.8	21.3	11.3	1.3	0
36	Communicate in an organized, logical and concise manner	37.5	21.3	15	3.8	0
37	Maintain appropriate eye contact	32.5	30	13.8	1.3	0
38	Display appropriate level of confidence	31.3	33.8	11.3	1.3	0
39	Answer questions clearly and appropriately	28.8	30	13.8	5	0
40	Clearly document drug therapy reconciliation and other patient-related interventions	31.3	26.3	13.8	6.3	0
41	Effectively communicate assessment, including supporting subjective and objective data	28.8	21.3	16.3	10	1.3
42	Effectively communicate the therapeutic plan	31.3	20	15	7.5	3.8

Table 2C: The Frequency (%) distribution on how much confidence respondents have now in performing competency skills (N=62)

S/N	Knowledge & competency skills assessment in community pharmacy practice setting.	Column C How much confidence do you have now in competency skills? (%)				
		Very confident	Confident	Not sure	Less confident	Not at all confident
1	Collect patient data to identify problems and individual care.	36.3	27.5	15	8.8	0
2	Perform relevant physical assessment.	27.5	25	18.8	10	0
3	Interview patient, family and other health care professionals	13.8	36.3	26.3	18.8	0
4	Identify patient specific goals of therapy	40	26.3	13.8	5	0
5	Identify patient specific goals of therapy	21.3	42.5	16.3	11.3	1.3
6	Prospectively develop care plans	21.3	40	22.5	7.5	2.5
7	Organize, interpret and analyse patient-specific data	3.8	33.8	33.8	13.3	1.3
8	Synthesize patient data to form an assessment	18.8	40	21.3	15	0
9	Assess health status, etiology, risk factors and complications of the patient's medical problem	23.8	31.3	26.3	16.3	1.3
10	Prioritize medical problems based on urgency and severity	26.3	28.8	31.3	7.5	0
11	Identify preventive and health maintenance issues	15	36.3	35	10	0

12	Persuasively communicate a justification for one's assessment	22.5	38.8	27.5	8.8	0
13	Evaluate the appropriateness of drug therapy, the choice of drug, dose, route, frequency and duration of therapy.	23.8	37.5	28.8	8.8	0
14	Evaluate the efficiency of current drug therapy	28.8	35	23.8	5	0
15	Identify potential or actual drug interaction	30	31.3	26.3	2.5	0
16	Identify contradictions to therapy	26.3	41.3	18.8	3.8	0
17	Identify potential or actual drug-induced adverse effects	23.8	38.8	23.8	5	0
18	Identify untreated problems	17.5	40	20	10	1.3
19	Assess patient adherence to therapy and lifestyle changes	21.3	40	15	10	0
20	Select non-pharmacologic therapeutic measure	27.5	40	15	3.8	0
21	Select optimal drug, dose, route, frequency and duration of therapy	30	31.3	11.3	6.3	1.3
22	Select strategies for prevention of diseases	28.8	30	16.3	8.8	0
23	Incorporate the significance of potential drug interactions and adverse effects into the recommended plan	26.3	30	22.5	5	0
24	Persuasively justify recommendations based on patient data	21.3	35	16.3	7.5	1.3
25	Take responsibility for patient care duties	17.5	32.5	25	5	1.3
26	Reliably complete tasks and assignments	17.5	30	23.8	8.8	1.3
27	Manage time appropriately to be well prepared for clinical activities	20	31.3	21.3	6.3	1.3
28	Identify appropriate patient educational needs	7.5	32.5	13.8	7.5	0
29	Recognize patients' education barriers	35	25	13.8	3.8	0
30	Use appropriate educational materials to educate patient regarding drug therapy	32.5	26.3	13.8	6.3	0
31	Use language appropriate for the patient	45	13.8	16.3	2.5	0
32	Assess patient's level of knowledge and acquisition	35	26.3	12.5	5	0
33	Effectively communicate at a level appropriate to the audience	35	21.3	17.5	3.8	0
34	Interpret verbal and non-verbal cues	38.8	18.8	11.3	8.8	0
35	Use specific, clear and appropriate terminology	37.5	21.3	13.8	3.8	1.3
36	Communicate in an organized, logical and concise manner	36.5	27.5	7.5	5	1.3
37	Maintain appropriate eye contact	36.3	21.3	15	5	0
38	Display appropriate level of confidence	36.3	25	13.8	3.8	0
39	Answer questions clearly and appropriately	38.8	18.8	17.5	2.5	0
40	Clearly document drug therapy reconciliation and other patient-related interventions	30	31.3	10	7.5	0
41	Effectively communicate assessment, including supporting subjective and objective data	31.3	18.8	16.3	8.8	2.5
42	Effectively communicate the therapeutic plan	30	22.5	15	6.3	3.8

Table 3: Rated score for questionnaire items (N=62)

S/N	Competency Skills	Knowledge mean ± SD	Skills mean ± SD	Confidence mean ± SD
1	Collect patient data to identify problems and individual care.	3.48 1.158	3.68 0.899	3.24 1.119
2	Perform relevant physical assessment.	3.23 1.250	3.39 1.096	3.12 1.193
3	Interview patient, family and other health care professionals	3.39 1.073	3.69 0.877	3.47 0.973
4	Identify patient specific goals of therapy	3.42 1.081	3.51 1.047	3.36 1.022
5	Identify patient specific goals of therapy	3.75 1.028	3.84 0.937	3.77 0.987
6	Prospectively develop care plans	3.70 1.017	3.68 0.898	3.75 0.988
7	Organize, interpret and analyse patient-specific data	3.44 0.934	3.61 0.905	3.47 0.954
8	Synthesize patient data to form an assessment	3.57 1.029	3.64 0.864	3.66 0.974
9	Assess health status, etiology, risk factors and complications of the patient's medical problem	3.61 1.067	3.75 0.948	3.64 0.885
10	Prioritize medical problems based on urgency and severity	3.76 0.922	3.95 0.924	3.79 0.949
11	Identify preventive and health maintenance issues	3.74 0.849	3.97 0.833	3.58 0.879
12	Persuasively communicate a justification for one's assessment	3.80 0.952	3.78 0.989	3.77 0.911
13	Evaluate the appropriateness of drug therapy, the choice of drug, dose, route, frequency and duration of therapy.	3.74 1.005	3.97 0.903	3.77 0.919
14	Evaluate the efficiency of current drug therapy	3.86 0.962	3.88 0.952	3.95 0.890
15	Identify potential or actual drug interaction	3.88 0.911	3.99 0.920	3.99 0.864

16	identify contradictions to therapy	3.73 0.963	4.03 0.915	4.00 0.822
17	Identify potential or actual drug-induced adverse effects	3.81 0.881	3.89 0.928	3.89 0.859
18	Identify untreated problems	3.77 0.798	3.66 0.925	3.70 0.962
19	Assess patient adherence to therapy and lifestyle changes	3.82 0.909	3.84 0.885	3.84 0.933
20	Select non-pharmacologic therapeutic measure	3.93 0.903	3.84 0.901	4.06 0.820
21	Select optimal drug, dose, route, frequency and duration of therapy	4.00 0.787	4.06 0.838	4.03 0.992
22	Select strategies for prevention of diseases	4.16 0.730	3.93 0.896	3.94 0.983
23	Incorporate the significance of potential drug interactions and adverse effects into the recommended plan	4.10 0.783	3.86 0.905	3.93 0.910
24	Persuasively justify recommendations based on patient data	3.94 0.820	3.78 0.951	3.83 0.977
25	Take responsibility for patient care duties	3.77 1.031	3.65 1.027	3.74 0.923
26	Reliably complete tasks and assignments	3.70 1.101	3.76 1.024	3.66 0.989
27	Manage time appropriately to be well prepared for clinical activities	3.72 1.027	3.56 1.072	3.78 0.967
28	Identify appropriate patient educational needs	3.88 1.023	3.96 0.944	3.98 0.944
29	Recognize patients' education barriers	3.97 1.131	4.03 0.944	4.18 0.897
30	Use appropriate educational materials to educate patient regarding drug therapy	4.30 0.854	4.09 0.868	4.08 0.955
31	Use language appropriate for the patient	4.39 0.789	4.11 1.010	4.31 0.916
32	Assess patient's level of knowledge and acquisition	4.19 0.833	4.14 0.906	4.16 0.919
33	Effectively communicate at a level appropriate to the audience	4.27 0.877	4.16 0.902	4.13 0.932
34	Interpret verbal and non-verbal cues	3.98 0.975	4.05 0.931	4.13 1.048
35	Use specific, clear and appropriate terminology	4.09 0.988	4.39 0.797	4.16 0.995
36	Communicate in an organized, logical and concise manner	4.18 0.950	4.19 0.920	4.19 0.972
37	Maintain appropriate eye contact	4.19 0.859	4.21 0.792	4.15 0.956
38	Display appropriate level of confidence	4.11 0.977	4.23 0.756	4.19 0.895
39	Answer questions clearly and appropriately	4.19 1.022	4.06 0.903	4.21 0.908
40	Clearly document drug therapy reconciliation and other patient-related interventions	3.90 1.051	4.06 0.956	4.06 0.948
41	Effectively communicate assessment, including supporting subjective and objective data	3.94 1.143	3.85 1.114	3.87 1.166
42	Effectively communicate the therapeutic plan	4.10 0.889	3.87 1.194	3.89 1.161

DISCUSSION

Pharmacists' success in the nearest future will be determine by their ability to provide effective Pharmaceutical Care which requires their acquisition and practical exhibition of appropriate clinical knowledge, competency skills and confidence by the pharmacists in practice. Competences and skills to pharmacy practice is a major key in meeting the increasing demands to the profession by the lay public, patients and other healthcare practitioners. The knowledge acquired, skills and confidence are very important factors to deliver the current trend in pharmacy practice of Pharmaceutical Care [16]. Also, the effective practice of Pharmaceutical Care requires pharmacists who are able to first initiate and establish effective therapeutic relationships with the patients [10]. The proper implementation of Pharmaceutical Care in Nigeria, which demands the competencies and skills of pharmacists, calls for additional training and professional development for both undergraduate and practicing pharmacists. This is essential to foster a more effective approach to practice, ensuring the delivery of comprehensive Pharmaceutical Care [20].

This survey seeks to evaluate the knowledge, competency skills and confidence of pharmacists to the concept of Pharmaceutical Care using 42 standard questionnaire items developed for data collection to access the community pharmacies practitioners. A high percentage of respondents indicated that they had good knowledge of the use of language appropriate for the patients and those they can effectively communicate at a level appropriate to the patient understanding. This implies that the community pharmacists with minimum of B. Pharm. degree have some knowledge of communication skills all things being equal. However, from the result the response to actually performing relevant physical assessment and due PC activities is not very satisfactory [1, 14, 20].

The Crobach's alpha indicates that the internal consistency of the responses to the questionnaire items or the degree of the relationship between the items is satisfactory, thus, this can be reproduced. Reliability coefficient between 0.5 – 0.6 is moderate which implies therefore, that community pharmacists under survey have some knowledge, skills and confidence to practice Pharmaceutical Care but for some barriers and attitude to the implementation of the PC philosophy. The p-value of 0.999 can be considered not significant hence the p-value is > 0.05. Inferential statistics suggests that the community pharmacists with minimum of B. Pharm degree are capable of demonstrating knowledge, skills and confidence to practice Pharmaceutical Care. The 28% expected response from the questionnaire items not recovered still hinged on some pharmacists' poor attitude to the 'PC' concept having directly received the questionnaire but misplaced or spared no time to fill it up while those who hurriedly filled the questionnaire did its half-way or incorrectly. Thus, the 62% correctly filled and recovered questionnaire items were used for the survey.

The deficiency in assessing widespread competency skills from all Nigerian community pharmacists with particular reference to the area under survey, (despite the theory acquired in pharmacy schools) can be attributed to the limited integration of the 'PC' philosophy in pharmaceutical education curricula

with primary focus on drugs and drugs distribution and little fragments of clinical pharmacy activities. Effectively implemented 'PC' requires competence, skills and confidence by the pharmacists [1, 14, 16, 20].

Therefore, to be accepted as complete Pharmaceutical Care ('PC') practice, pharmacists must overcome several challenges, including the traditional product-focused approach, resistance from other healthcare professionals and drug manufacturers, financial and logistical issues, as well as ignorance and inertia within the profession itself. To gain professional relevance in the ever-evolving healthcare system, professions must therefore adapt to changes (1, 14, 19, 20].

CONCLUSION

The assessment of the Pharmaceutical Care Competency of community Pharmacists is generally not satisfactory. Despite the knowledge, skills and confidence acquired from B. Pharm. degree pharmacy schools, there is still a wide gap between the practitioners' pharmacy practice and the expected standard practice of Pharmaceutical Care concept due to several limiting factors. Acquiring clinical knowledge, developing therapeutic skills, competency skills, physical assessment skills, critical thinking skills, problem solving skills and communication skills among others will significantly enhance self-efficacy and better clinical confidence of pharmacists to deliver Pharmaceutical Care, to humanity.

Conflict of interest

The authors have none to declare.

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