Pharmaceutical Care Education in A Nigerian University: A Cross-Sectional Study on Students' Attitude and Perception

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Abstract:

Background: Pharmaceutical care is the responsible provision of medication therapy to achieve definite outcomes that improve patients' quality of life. Generally, students in pharmacy training take pharmaceutical care as part of their course in the five to six years pharmacy program and this form of education equips the students with the knowledge, skills, and attitudes they need to practice when they become pharmacists.

Objective: The study assessed pharmacy students' attitude and perception of pharmaceutical care education in a university in southeast Nigeria.

Methods: The study is a descriptive, cross-sectional survey of pharmacy students in Agulu campus, Nnamdi Azikiwe University, Awka using a self-administered questionnaire. The questionnaire was pre-tested for comprehension and reliability on 15 pharmacy students that are not part of the study, and necessary modifications were made. The study started from March to October 2019. A convenience sampling method was adopted in this study. Data was collected via a pre-tested 34-item self-administered questionnaire. SPSS (IBM, Corp.) version 25 was used for analysis. Descriptive statistics including percentages, mean, standard deviation, medians, and Likert scale rating (SD) were calculated and chi-square was used to determine association between categorical variables.

Result: A total of 299 of students participated in the study (130 males and 169 females). The response rate was 99.6%. Most of the students in the study showed positive attitude towards pharmaceutical care, as majority (73.6%) of them agreed that the practice of pharmaceutical care is valuable. Meanwhile, there is a significant association between the educational year of students and how they perceive their preparedness on their skill to administer drugs (X2 (23.03); p=0.03). Also, a significant association exists in the students' educational year and their perceived ability to monitor therapeutic plan for a patient (X2 (28.08); p=0.005).

Conclusion: The pharmacy students' attitude towards pharmaceutical care was good. Their preparedness to practice pharmaceutical care was average. The pharmacy students' perception of the importance of the various pharmaceutical care activities was good. There was a significant association between students' educational year and preparedness on the technical aspects of competency such as ability to recommend appropriate drug therapy, evaluate patient pharmacotherapeutic regimes, monitor therapeutic plan for a patient and identify information to prevent or resolve drug therapy problem.

Keywords: pharmaceutical care; pharmacy education; pharmacy; perception

Introduction

Pharmaceutical care is a multi-disciplinary, organized, and standard practice, that is focused on the detection, prevention, and resolution of drug-related problems [1]. This has been the gradual paradigm in the modern-day pharmacy practice [2–4]. It has transitioned the training of pharmacists from product orientation to patient orientation [4–7] i.e. there is a gradual shift in the specialized responsibilities from transactional tasks such as drug compounding and dispensing to providing a more comprehensive patient-centered model of care [8]. This role is more important than ever, as the environment is demanding this new practice [8,9] and the current training has positioned pharmacists to be the most accessible health professionals [10,11].

Over the years, pharmacy education has gradually evolved to effectively nurture pharmaceutical care philosophy and integrate all aspects of the services that responsibly provide patients with the most effective medication therapy to achieve definite outcomes that improve their quality of life [12–14]. Hepler and Strand, in 1990, defined pharmaceutical care as the responsible provision of drug therapy to achieve definite outcomes that improve a patient's quality of life [15]. In line with the Helper and Strands definition of Pharmaceutical care, the American Society for Health-System Pharmacists (ASHP) defined Pharmaceutical care as the direct, responsible provision of medication-related care to achieve definite outcomes that improve a patient's quality of life [6]. In 1998, the International Federation of Pharmacists [FIP] also adopted the Hepler and Strand definition with a little modification i.e. "Pharmaceutical care is the responsible provision of drug therapy to achieve definite outcomes that improve or maintain a patient's quality of life" [16,17] and, since then, pharmaceutical care has evolved and is currently being applied in pharmacy practice in many countries around the world [18,19].

There are several advances made in pharmaceutical care, examples are clinical pharmacy services, cognitive services, medication management, and medication review and they all share the same philosophy and objectives [14]. Furthermore, implementation of pharmaceutical care involves six [6] basic steps which include the establishment of a professional/therapeutic relationship, collection of patient-specific data, evaluation of data to identify health and drug-related problems, development and implementation of the pharmaceutical care plan [20]. Nevertheless, to adequately apply pharmaceutical care in practice, a pharmacist must be equipped with adequate and relevant knowledge and skills for this important venture [14,21].

In this vein, Pharmacy educators around the world have consistently trained and prepared student pharmacists to be competent in the implementation of pharmaceutical care for their future practice [14]. Students have been provided with ample opportunity to develop the clinical knowledge foundation as well as effective communication skills needed to serve the needs of patients [22–24]. The training has also imbibed in students' positive attitudes and possible ways of motivation in the provision of pharmaceutical care [24]. This combination of knowledge, skills, and attitudes is required for widespread acceptance and implementation of the concept of pharmaceutical care [7,23,25].

In Nigeria, most pharmacy schools have tailored their current curriculum in such a way that it nurtures student's skills to provide effective pharmaceutical care [5,20]. The skills developed in the course of training are: communication skills; making rational and independent judgments based on sound scientific reasoning and providing a caring attitude in their professional interaction with patients [5,16,21,25]. Furthermore, the concept of pharmaceutical care is first introduced to students in their second year (depending on the school) in which the concept and a description of basic pharmaceutical care principles are introduced to them [5,20,26].

In Anambra State, the attitude of pharmacy students towards pharmaceutical care has not been investigated. However, there are previous studies in Nigeria and other developing countries [4,7,8,21,24,27]. Assessing pharmacy students' attitudes towards pharmaceutical care and perceptions of their preparedness to perform pharmaceutical care can provide useful information to guide curricular change and improvement [17]. Therefore, this study is designed to describe the attitudes of pharmacy students towards pharmaceutical care, perceptions of their preparedness to perform pharmaceutical care competencies, their perceived importance of the various pharmaceutical care activities, and their opinions about the importance of pharmacists in the provision of pharmaceutical care in Anambra, State Nigeria.

Methods

Study Design

The study is a descriptive, cross-sectional survey of pharmacy students conducted at the Faculty of Pharmaceutical Sciences, Nnamdi Azikiwe University, Akwa, Agulu campus during their 2018/2019 academic session. The study employed the use of pre-validated questionnaire to measure the study outcomes. The self-administered questionnaire used was adapted from survey instruments designed and used in previous studies [28, 3, 4, 7]. It was pre-tested for comprehension and reliability on 15 pharmacy students that are not part of the study, and necessary modifications were made.

Study Population

The study population consisted of four different student levels from the second year to the Fifth year, each representing a professional class at a different stage of the school's core curriculum. The students were surveyed in the 2018/2019 academic session, toward the end of the second semester (from June 2019 to September 2019).

At the time of the commencement of this study, the population of pharmacy students in the faculty was four hundred and fifty-three (453). An eligibility criterion for students to be included in this study was that they gave consent to participate. A convenience sampling method was adopted in this study. To obtain a high response rate, the students were approached after major lectures for a particular level and the survey instrument was distributed in class and retrieved on the spot. The purpose of the study was briefly explained to students, and verbal consent was obtained before the administration of the survey instrument. Participants were assured of confidentiality.

Study Instrument

The final version of the 34-item questionnaire had four sections. The first section contained items seeking details on the students' socio-demographic characteristics such as gender, marital status, nationality, and educational level. The second section was used to assess the attitudes of students towards pharmaceutical care and consisted of the Standard Pharmaceutical Care Attitude Survey (PCAS) tool [29] i.e., it consists of items that assessed pharmacy student attitudes towards pharmaceutical care and the responses to the item below is distributed on a five Likert scale, ranging from, "strongly agreed" to "strongly disagree". (1=strongly disagree, 5=strongly agree). The third section was used to assess the perceptions of students regarding their ability to perform various pharmaceutical care competencies. It consisted of the Perceptions of Preparedness to Provide Pharmaceutical Care (PREP) survey tool [30] rate on a 5-point Likert scale (1=poor, 5=excellent). In the last section, the responses of students on the importance of pharmaceutical care activities using a 4-point Likert scale (1=unimportant, 4=very important) were evaluated.

Ethical Approval

The study was approved by the Research and Ethics Committee of the Nnamdi Azikiwe University Teaching Hospital (NAUTH). Also, verbal consent of the participating pharmacy student was obtained before the commencement of the study.

Data analysis

The reliability of the research instrument was verified with Cronbach's alpha. The coded data from the questionnaire were entered into the SPSS

(IBM, Corp.) version 25, and descriptive analysis and univariate comparisons were conducted to produce study outcomes. Descriptive statistics such as means, standard deviation, frequency, and percentages were carried out on the retrieved data. The three constructs were also classified and a chi-square distribution test was conducted to show the association between categorical variables. For all analysis, $p \leq 0.05$ was considered significant.

Table 1 shows that, of the 300-questionnaire distributed, two hundred and ninety-nine (299) were returned as validly completed, giving a response rate of 99.6%. There were 130 (43.5 %) males and 169 (56.5 %) females among the pharmacy students. Majority of the respondents 274 (91.7 %) are single while 24 (8.0 %) are married. At the time of conducting this study most of the respondents were seen to be in 300 level of pharmacy education.

Results

Variables	Frequency (n)	Percentage (%)
Gender		
Male	130	43.5
Female	169	56.5
Marital status		
Married	24	8.0
Single	274	91.7
Divorced	1	0.3
Nationality		
Nigerian	297	99.3
Non-Nigerian	2	0.7
Level		
200	56	18.7
300	92	24.1
400	91	30.4
500	80	26.8

Table 1: Socio-demographic characteristics of the students (N=299)

In table 2, it was observed that most of the respondents strongly agreed with most of the statements in the attitude section these responses; this indicates favourable attitudes toward pharmaceutical care (Table 2). That is, 200 (66.9%) of the students agreed that all pharmacists should perform pharmaceutical care at a mean and standard deviation of 4.2 (1.0). Also,

220 (73.6%) of them strongly agreed the practice of pharmaceutical care is valuable this is at a mean of 4.2 and a Standard deviation of 0.8. However, a smaller number of students (98 (32.8%)) strongly agreed that pharmaceutical care takes too much time and effort at a mean of 3.2 with a Standard deviation of 1.1.

Items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean (SD)	Median
1. All Pharmacists should perform pharmaceutical care.	2(0.7)	3(1.0)	1 (0.3)	93(31.1)	200(66.9)	4.2(1.0)	4.6
2. The primary responsibility of Pharmacists in all health care settings should be to prevent and solve medication-related problems.	0(0.0)	7(2.3)	9 (3.0)	97(32.4)	186(62.2)	4.1(0.8)	4.6
3. Pharmacists' primary responsibility should be to practice Pharmaceutical care	4(1.3)	8(2.7)	12 (4.0)	99(33.1)	176(58.9)	4.0(0.8)	4.6
4. Pharmacy students can perform Pharmaceutical care during their experiential training (placements).	3(1.0)	5(1.7)	19 (6.4)	115(38.5)	157(52.5)	4.0(1.0)	4.6
5. The practice of pharmaceutical care is valuable.	3(1.0)	2(0.7)	1 (0.3)	73(24.4)	220(73.6)	4.2(0.8)	4.6
6. Providing pharmaceutical care takes too much time and effort.	19(6.4)	53(17.7)	48(16.1)	81(27.1)	98(32.8)	3.2(1.1)	3.6
7. I would like to perform pharmaceutical care as a Pharmacist practitioner.	7(2.3)	1(0.3)	10 (3.3)	85(28.8)	196(66.6)	4.1(0.8)	4.6
8. Providing pharmaceutical care is professionally rewarding.	5(1.7)	5(1.7)	9 (3.0)	86(28.8)	194(64.9)	4.1(0.8)	4.6

9. I feel that Pharmaceutical care is the right direction for the profession to be headed.	3(1.0)	2(0.7)	11 (3.7)	87(29.1)	196(65.6)	4.1(0.8)	4.6
10. I feel that the pharmaceutical care movement will benefit Pharmacists.	2(0.7)	1(0.3)	25 (8.4)	107(35.8)	164(54.8)	4.0(1.0)	4.6
11. I feel that the pharmaceutical care movement will improve patients' health.	1(0.3)	0(0.0)	17 (5.7)	59(19.7)	222(74.2)	4.2(0.8)	4.6
12. I feel that practicing pharmaceutical care would benefit my professional career as a pharmacy practitioner.	1(0.3)	2(0.7)	15 (5.0)	106(35.5)	175(58.3)	4.1(0.8)	4.6
13. Providing pharmaceutical care is not worth the additional workload that it places on the pharmacist.	66(22.1)	72(24.1)	30(10.0)	47(15.7)	84(28.1)	2.6(1.3)	2.6

Table 2. Pharmacy students' Attitudes towards Pharmaceutical care (N=299)

Table 3 shows that on using the Likert scale rating, the level of preparedness to provide pharmaceutical care was seen to be high in most of the student's responses, as most of them responded that they are "very good" in pharmaceutical care. Also, 104 (34.8%) of the perceived students response is that they have the ability to provide excellent counselling to patients at a mean 3.3 and Standard Deviation of 1.2. Of all the competencies responses, the highest competencies recorded was about 91(30.4%) of which students reported that they have a good ability to calculate/evaluate pharmacokinetic properties in professional practice followed by the perceived ability to identify the appropriate information to decide a course of action for a problem (30.1%).

In all, the competencies attributes measured, the students rated themselves above average (3.4) in the psychological aspect (on a specific skill of providing counselling to patients) with a standard deviation of 1.2 and lowest (SD, 2.7) in the communication aspect of competency with a standard deviation of 1.1 (on a specific skill or ability to communicate medical records information to health professionals).

S/N	Items on the technical aspect of competency	Poor	Average	Good	Very good	Excellent	Mean (SD)	Median
1	Recommend appropriate drug therapy.	13 (4.3)	51 (17.1)	82 (27.4)	67 (22.4)	86 (28.8)	3.1(1.2)	3.6
2	Evaluate patient pharmacotherapeutic regimens to prevent or resolve medication-related problems	16 (5.4)	50 (16.7)	89 (29.8)	65 (21.7)	79 (26.4)	3.0(1.2)	2.62.6
3	Determine drug delivery system	13 (4.3)	54 (18.1)	96 (32.1)	69 (23.1)	67 (22.4)	3.0(1.1)	2.6
4	Recommend medication doses /dose schedules	10 (3.4)	41 (13.7)	82 (27.4)	86 (28.8)	80 (26.8)	3.2(1.2)	3.6
5	Identify/collect information to prevent or resolve a drug therapy Problem	14 (4.6)	49 (16.4)	101 (33.8)	61 (20.4)	74 (24.7)	3.0(1.1)	2.6
6	Evaluate laboratory tests for a specific patient.	29 (9.7)	53 (17.7)	73 (24.4)	68 (22.7)	76 (25.4)	2.9(1.3)	2.6
7	Calculate/evaluate pharmacokinetic properties	21 (7.0)	67 (22.4)	91 (30.4)	51 (17.1)	69 (23.1)	2.8(1.2)	2.6
8	Evaluate information from the patient's history and assessment	10 (3.3)	62 (20.7)	87 (29.1)	74 (24.7)	66 (22.1)	3.0(1.2)	2.6
9	Make reasonable conclusions when data is incomplete.	29 (9.7)	62 (20.7)	91 (30.4)	61 (20.4)	56 (18.7)	2.7(1.3)	2.6
10	Provide counselling to patients.	9 (3.0)	38 (12.7)	77 (25.80)	71 (23.7)	104 (34.8)	3.3(1.2)	3.6
11	Recommend methods to seek patient compliance	22 (7.4)	45 (15.1)	80 (26.8)	66 (22.1)	86 (28.8)	3.0(1.1)	3.6
12	Monitor therapeutic plan for a patient.	27 (9.0)	44 (14.7)	81 (27.1)	63 (21.1)	84 (28.1)	3.0(1.1)	2.6
13	Document information on drug-related problems.	30 (10.0)	47 (15.7)	87 (29.1)	71 (23.7)	64 (21.4)	2.9(1.1)	2.6

	Items on psychological aspect of competency	Poor	Average	Good	Very Good	Excellent	Mean (SD)	Median
1	Identify the appropriate information to decide a course of action for a problem	22 (7.3)	46 (15.4)	90 (30.1)	70 (23.4)	71 (23.7)	3.0(1.0)	2.6
2	Contribute opinions/insights to health care team	10 (3.3)	48 (16.1)	67 (22.4)	89 (29.8)	85 (28.4)	3.2(.0.8)	3.6
3	Promote public awareness of health.	5 (1.70)	42 (14.0)	65 (21.7)	79 (26.4)	108 (26.1)	3.4(1.2)	3.6
4	Data/computer use in professional practice.	17 (5.7)	40 (13.4)	68 (22.7)	76 (25.4)	98 (32.8)	3.2(1.3)	3.6
	Items on Communication Aspect of competency	Poor	Average	Good	Very Good	Excellent	Mean (SD)	Median
1	Communicate medical records information to health professionals	22 (7.3)	75 (25.1)	85 (28.4)	61 (20.4)	56 (18.7)	2.7(1.1)	2.6
2	Communicate medical records information to patient.	22 (7.3)	62 (20.7)	85 (28.4)	74 (24.7)	56 (18.7)	2.9(1.3)	2.6
3	Identify/collect information to respond to health professional drug information request	14 (4.6)	67 (22.4)	74 (24.7)	79 (26.4)	65 (21.7)	2.9(1.2)	2.6
4	Respond to information request from a patient.	12 (4.0)	58 (19.4)	86 (28.8)	79 (26.4)	64 (21.4)	2.9(1.2)	2.6
	Administrative/Management aspects	Poor	Average	Good	Very Good	Excellent	Mean (SD)	Median
1	Evaluate, select, and purchase pharmaceuticals.	30 (10.0)	53 (17.7)	75 (25.1)	64 (21.4)	77 (25.8)	2.9(1.2)	2.6
2	Develop/implement a pharmacy inventory system.	27 (9.1)	65 (21.7)	74 (24.7)	58 (19.40	75 (15.1)	2.9(1.1)	2.6
3	Manage fiscal and human resources.	20 (6.7)	66 (22.1)	73 (24.4)	71 (23.7)	69 (23.1)	2.9(1.2)	2.6
4	Develop/implement drug formulary service.	30 (10.0)	67 (22.4)	62 (20.7)	59 (19.7)	81 (27.1)	2.9(1.1)	2.6

Table 3. Pharmacy students' perceptions of their preparedness to provide pharmaceutical care (N=299)

Table 4 shows an association between the students' academic year and different aspects of Pharmaceutical care. There was no significant difference between the four levels of student classes in their attitudes toward pharmaceutical care (p > 0.05), with most of the students in the four education levels showing positive attitudes toward pharmaceutical care. Nonetheless, it was also observed there is a significant difference between the four levels of student classes and their preparedness on the technical aspects of competency. This difference in the association was majorly seen in their response to their ability to recommend appropriate drug therapy with most of the student in the 500 level of pharmacy education scoring above average (p=0.028). There was also a significant difference in the responses of the students, ability to evaluate patient pharmacotherapeutic regimens to prevent or resolve medication-related problems at p=0.027. Likewise, a significant difference was seen in their responses on their ability to monitor therapeutic plans for patients at p=0.001. It was also observed that there was no significant difference between the four levels of student classes and their preparedness on the psychosocial aspects of competency (p>0.05). Likewise, it was observed that there was no significant difference between levels of students' characteristics and preparedness on the communication aspects of competency. Finally, it was also observed that there was no significant difference between the four levels of student class and their preparedness on the administrative aspects of competency (p>0.05).

	200L	300L	400L	500L	X²	P
Pharmacy students can perform pharmaceutical care during their experiential training (placements)					9.033	0.700
Strongly Agree	20	29	35	31		
Agree	30	35	51	41		
Neutral	4	7	3	5		
Disagree	2	1	0	2		
Strongly Disagree	0	0	2	1		

I would like to perform pharmaceutical care as a pharmacist practitioner					10.42	0.578
Strongly Agree	14	21	21	29		
Agree	39	47	62	48		
Neutral	2	2	4	2		
Disagree	0	0	0	1		
Strongly Disagree	1	2	4	0		
All pharmacists should perform pharmaceutical care					14.389	0.277
Strongly Agree	17	29	23	24		
Agree	39	42	64	33		
Neutral	0	1	0	0		
Disagree	0	0	2	1		
Strongly Disagree	0	0	2	0		
I feel that the pharmaceutical care movement will improve patients' health					4.518	0.874
Strongly Agree	11	14	16	18		
Agree	43	53	70	56		
Neutral	2	5	4	6		
Disagree	0	0	0	0		
Strongly Disagree	0	0	1	0		
Association between students' characteristics and their preparedness on the technical aspects of competency						
Recommend appropriate drug therapy					23.026	0.028
Poor	4	3	3	3		
Average	7	16	14	14		
Good	7	16	14	14		
Very good	13	11	14	29		
Excellent	22	20	29	15		
Evaluate patient pharmacotherapeutic regimens to prevent or resolve medication-related problems					23.140	0.027
Poor	2	4	4	6		
Average	7	21	10	12		
Good	15	16	36	22		
Very good	11	11	19	24		
Excellent	21	20	22	16		
Recommend medication doses /dose schedules					20.367	0.158
Poor	3	4	1	2		
Average	5	12	10	14		
Good	12	20	31	19		
Very good	16	18	26	26		
Excellent	20	18	23	19		
Identify/collect information to prevent or resolve a drug therapy problem					26.477	0.033
Poor	4	3	3	2		
Average	3	17	12	17		
Good	15	24	40	22		
Very good	18	8	15	20		
Excellent	16	20	20	18		
Evaluate information from the patient's history and assessment					13.832	0.538
Poor	1	0	0	0		
Average	10	14	18	20		

Good	13	23	31	20		
Very good	18	16	18	22		
Excellent	14	15	21	16		
Monitor therapeutic plan for a patient					28.079	0.005
Poor	2	1	11	13		
Average	9	17	9	9		
Good	15	18	29	19		
Very good	7	17	17	22		
Excellent	23	19	25	17		
Association between students' educational level and their preparedness on the psychosocial aspects of competency						
Identify the appropriate information to decide a course of action for a problem					14.145	0.515
Poor	4	6	7	5		
Average	6	10	14	16		
Good	19	19	31	21		
Very good	12	13	21	24		
Excellent	15	24	18	14		
Contribute opinions/insights to the health care team					9.128	0.692
Poor	2	2	2	5		
Average	6	9	15	16		
Good	15	18	20	21		
Very good	17	20	25	24		
Excellent	16	23	29	14		
Promote public awareness of health					7.651	0.812
Poor	1	1	2	1		
Average	6	9	14	13		
Good	13	18	17	17		
Very good	11	18	23	27		
Excellent	25	26	35	22		
Data/computer use in professional practice					17.208	0.142
Poor	2	5	4	8		
Average	7	13	6	14		
Good	13	11	26	17		
Very good	9	18	26	23		
Excellent	25	25	28	20		
Association between students' educational level and their preparedness on the communication aspects of competency						
Communicate medical records information to health professionals					17.591	0.285
Poor	3	2	7	22		
Average	14	23	18	20		
Good	13	17	35	20		
Very good	12	15	16	18		
Excellent	14	15	15	12		
Communicate medical records information to the patient					10.72	0.772
Poor	4	3	6	9		
Average	9	17	18	18		
Good	21	21	24	19		
Very good	13	15	25	21		
Excellent	9	16	18	13		

					16.146	0.372
Identify/collect information to respond to health professional drug information request						
Poor	2	2	5	5		
Average	11	23	16	17		
Good	17	11	25	21		
Very good	11	20	30	18		
Excellent	15	16	15	19		
Respond to information requests from a patient					12.19	0.664
Poor	1	3	4	12		
Average	11	18	14	15		
Good	16	16	32	22		
Very good	14	16	28	21		
Excellent	14	19	13	18		
Association between students' educational level and preparedness on the administrative aspects of competency						
Evaluate, select, and purchase pharmaceuticals					14.459	0.491
Poor	3	10	9	7		
Average	10	15	17	11		
Good	12	15	26	22		
Very good	14	9	19	22		
Excellent	17	23	19	18		
Develop/implement a pharmacy inventory system					7.942	0.926
Poor	4	9	8	6		
Average	12	15	20	18		
Good	14	14	27	19		
Very good	13	14	14	17		
Excellent	13	20	22	20		
Develop/implement drug formulary service					7.759	0.925
Poor	6	7	10	7		
Average	11	19	20	17		
Good	8	12	21	21		
Very good	12	15	16	16		
Excellent	19	19	24	19		
Manage fiscal and human resources					14.189	0.511
Poor	5	4	9	2		
Average	10	22	15	19		
Good	12	15	24	22		
Very good	15	12	22	22		
Excellent	14	19	21	15		

Table 4: Association between the students' educational level and different aspect of Pharmaceutical care (N=299)

Discussion

This study evaluated the attitude and perception of a Nigerian University students towards pharmaceutical care in a three-month study period. At the end of the study most of the them showed a positive attitude towards pharmaceutical care but their perceived preparedness to practice pharmaceutical care was seen to be average.

The positive attitude seen amongst the students towards pharmaceutical care is comparable to result seen in a similar study carried out in different universities around the globe. Such studies were conducted in Qatar, United States, Saudi Arabia and, Kuwait pharmacy student[2,21,31], but unlike the result seen in these studies a study carried out in University of Benin in Nigeria also showed that most students indicated moderately positive attitudes toward pharmaceutical care[5]. In this study, most of the student in the lower level of pharmacy education (200 level and 300 level) had a less positive attitude than their seniors in the higher level (400level and 500level). This is so because the students were still undergoing training, even though the year two class have not commenced pharmaceutical care courses. It might be important to pay particular attention to this issue because of the current take off of the Nigerian pharmacy school to start the Pharm. D program. So, this special group of students need to start at least a minimum form of pharmaceuticals for them to appreciate the aspects of pharmaceutical care better. Most of the pharmacy students can perform Pharmaceutical care during their

experiential training (placements/clerkship). Hence, the positive attitudes seen in this group of students. This is so because the higher level of education in the pharmacy school had more students that participated in the study and pharmaceutical carefully taught in the higher levels. This serves as a paradigm for a need to introduce pharmaceutical care courses in lower levels as well[5]. It may also be necessary for Pharmacist Council of Nigeria to review practice experience sites were young graduate of pharmacy schools in Nigeria undertake their one year internship programmes [5].

Perception on pharmaceutical care among the students was explored by using 5-point Likert scale responses and the study revealed that the majority of the students strongly perceived that they have the skill to recommend appropriate drug therapy for patients. This result is also seen in a study conducted in Kuwait that evaluated the level of Pharmaceutical care education amongst pharmacy student in Kuwait[7]. The perceived student competencies were measured in four aspects namely, technical aspect, psychological aspect, Communication aspect and, Administrative/Management aspects of competency. The study revealed that most of the students exhibited an excellent skill in the technical aspect of providing counselling to patients. Also a majority of the student reported that they can recommend appropriate drug therapy for patients but it was observed that the association between levels of education and the students' preparedness on the technical aspects of competency was seen to differ significantly, due the fact that the 400 and 500 levels have had a practical/ hands on experience on pharmaceutical care.

The items on psychological aspect of competency showed that most of the students have a high level of skill on how to promote public awareness of health amongst patient but they also showed a low level of skill on identifying the appropriate information to decide a course of action for a problem. On communication aspect of competency, most of the student exhibited a good skill on how to communicate medical records information to health professionals and how to respond to information request from a patient. This is so due to the fact that students have an earlier exposure to courses covering the aspects of pharmaceutical care.

Conclusion

The pharmacy students' attitude towards pharmaceutical care was good. Their preparedness to practice pharmaceutical care was average. The pharmacy student's perception of the importance of the various pharmaceutical care activities was good. There was a significant association between students' educational year and preparedness on the technical aspects of competency such as ability to recommend appropriate drug therapy, evaluate patient pharmacotherapeutic regimes, monitor therapeutic plan for a patient and identify information to prevent or resolve drug therapy problem.

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