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PERCEPTION OF LECTURERS AND STUDENTS ON PROBLEMS OF TEACHING AND LEARNING OF PHARMACY IN KADUNA STATE UNIVERSITY (KASU)

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ABSTRACT

Introduction: The development of Pharmacy education in Nigeria is unique, multifaceted, and has undergone significant transformation throughout its history. Every pharmacy student spends minimum of 5 or 6 years to acquire a bachelor or doctor of Pharmacy; the course is really tasking for both the students and their lecturers.

Aim: This study was aimed at surveying the perception of lecturers and students on problem of teaching and learning of pharmacy in Kaduna State University.

Methods: A stratified random sampling was used to select the participants from the students' level of study. A self-administered questionnaire was used for this study. A sample of 170 (20 academic staff and 150 students) who volunteered to participate in the study were collected using random sampling techniques, there were 76 males and 94 females. All the analyses were done with the aid of Statistical Package for Social Science (SPSS) version 23.

Results: The findings of this study showed that good student-teacher relationship exists between the students and lecturers of KASU Faculty of Pharmaceutical Sciences. Both students and academic staffs had positive perception on the problems of teaching and learning of Pharmacy in KASU. They identified the following problems: heavy workload which is affecting the academic performance of some of the students, lack of adequate educational resources and infrastructure (such as internet facility, constant power supply), lack of and high cost of textbooks and in-availability of e-books. Socioeconomic factor was also highlighted, many of the students are from average income background, parents and/or guardian being civil servants, farmers or business men.

Conclusion: There are problems facing pharmacy education in Nigeria especially in Kaduna State University. The state government should see education and its funding as a priority especially pharmacy education because of its enormous benefit to the society.

Keywords: perception, pharmacy, teaching, learning

INTRODUCTION

According to Merriam-Webster, pharmacy is the art, practice, or profession of preparing, preserving, compounding, and dispensing medical drugs [1]. Pharmacy is also the science and practice of discovering, producing, preparing, dispensing, reviewing and monitoring of medications aiming at ensuring the safe, effective, and affordable

use of medicines [2]. The International Pharmaceutical Federation (FIP) provides a definition of Pharmacy Education as the intentional and systematic educational plan that fosters the advancement of the workforce towards an array of settings, including community, hospital, research and development, and academia, in accordance with varying levels of service provision and

competence [3]. The development of Pharmacy Education in Nigeria is unique, multifaceted, and has undergone significant transformations throughout its history.

In Nigeria, pharmacy education takes either five years of study (for Unified Tertiary Matriculation Examination [UTME]) or four years (for Direct Entry applicants) in any of the accredited Faculty of Pharmacy with the award of Bachelor of Pharmacy degree. Recently the Nigerian Universities Commission (NUC) approved the commencement of Pharm D (Doctor of Pharmacy) degree a six years study in Nigeria universities [4]. There are six major departments in pharmacy education these are pharmaceutical microbiology, pharmaceutics, clinical pharmacy and pharmacy management, Pharmacology and toxicology, Pharmacognosy and Pharmaceutical chemistry. However, the nomenclature of each department can be modified depending on each university. All pharmacy students offer compulsory courses from all these departments, including practical classes, field trips, and externship programmes [5]. All these courses are compulsory. Each student is expected to pass all assigned course in each year before he/she is qualified to move to the next study year. All these and lots more have made the study of Pharmacy to be a difficult one.

Pharmacy practice in Nigeria including Pharmacy education is regulated by the Pharmacy Council of Nigeria (formerly Pharmacists Council of Nigeria) which is a Federal Government parastatal established by the Pharmacy Council of Nigeria Act 2022, [6] charged with the responsibility of regulating and controlling pharmacy education, training and practice in all aspects and ramifications, including regulating Pharmacy Technicians and Patent and Proprietary Medicines Vendors (PPMVs).

Kaduna State University (KASU) was established under the Kaduna State law promulgated in 21st May 2004 [7]. The institution was created out of the need to increase the presence of higher institution in the northern and southern parts of the state. Consequently, two campuses were approved, one in Kaduna and the other in Kafanchan. The Faculty of Pharmaceutical Sciences, KASU was established in 2012. The faculty has six departments namely: Pharmaceutical microbiology and Biotechnology, Pharmaceutics and Industrial Pharmacy, Clinical Pharmacy and Pharmacy management, Pharmaceutical and medicinal chemistry, Pharmacognosy and drug development, Pharmacology and toxicology. Each of these departments have core courses allocated for each semester out of which a student can take a maximum of 24 credit units per semester. The courses are usually taught by pharmacist and non-pharmacist lecturers with the assistant of technologists in running the practical classes. Administrative staffs are also involved in the proper running of the institution. Teaching and learning of pharmacy can be described as didactic method involving the use of lectures, tutorials, case studies and practicals.

The faculty runs a course system in which students are allowed to carry over a failed course to the next academic year. However, all courses must be passed before a student graduates. The maximum number of years a student can stay in pharmacy school is eight, after which a student is withdrawn if the prerequisite for graduation is not met. Also, any student who remains on probation for two consecutive semesters will be withdrawn from the programme. Some of the courses are in a lower level, and are prerequisite to some courses in higher level, failure to pass the prerequisite will disqualify the students from taking the course at the higher level thereby

prolonging the length of stay of the students in school. Eventually, only few students sometimes less than half of a particular year set usually graduate in the record time of five years (academic sessions). Also in the admission process, more qualified students with higher scores are sometimes left unadmitted while lesser qualified ones are admitted probably due to their strong connections. This also might affect the performance of the students. The management of KASU recently increased the tuition fees by about 750% which has greatly increased the cost of pharmacy education in Kaduna State.

Teaching is the process of imparting knowledge, skills, or information to others. It involves the deliberate and organized effort of a teacher or instructor to facilitate learning in learners. Teaching often takes place in a structured setting such as a classroom, where a teacher employs various instructional methods, strategies, and resources to engage learners and help them acquire new knowledge, develop skills, or change their attitudes or behaviors [8].

Learning, on the other hand, is the process of acquiring knowledge, skills, attitudes, or values through study, experience, or teaching. It is a complex and individualized process that involves the assimilation and integration of new information or skills into one's existing knowledge or behavior. Learning can occur in various environments and contexts, not just limited to formal educational settings. It can be facilitated through interactions with teachers, peers, or through self-directed exploration and reflection [9].

Teaching and learning are closely interconnected and interdependent. While teaching provides the structure, guidance, and resources for learning, learning is the

active process by which individuals engage with the information or experiences presented to them and internalize it in a way that leads to meaningful understanding or skill development [10]. Effective teaching practices aim to create optimal learning environments that engage learners, promote critical thinking, problem-solving, and encourage active participation and inquiry. Ultimately, the goal of teaching is to foster meaningful learning outcomes in individuals. There are numerous teaching and learning methods that educators employ to facilitate effective learning experiences among which are: lecture, innovative, discussion, case study, role playing, simulation, enquiry, experiential learning, technology enhanced learning [5,11].

Components of teaching and learning include teachers, learners, curriculum, learning objectives, instructional methods, assessment and evaluation.

Pharmacy education plays a vital role in Nigeria, as it is essential for the development of a robust healthcare system and the overall well-being of the population. Here are some key reasons highlighting the importance of pharmacy education in Nigeria: patient care, drug safety and quality assurance, research and development.

The aim of this study is to investigate the perceptions of lecturers and students on the problems of teaching and learning of pharmacy in Faculty of Pharmaceutical Sciences, Kaduna State University and to discuss on the factors that affect teachers and students on teaching and learning of Pharmacy in KASU.

Methods

Population of the Study

The population for the study includes academic staffs and 200 level to 500 level pharmacy students of the Faculty of

Pharmaceutical Sciences, Kaduna State University, Kaduna.

Sampling and Sampling Technique

Best and Kahn [12] have proposed a definition of the ideal sample size, which involves its capacity to accurately represent the population under investigation, while being economically selected in terms of cost and data analysis complexity. In accordance with this definition, the sample used in this study consisted of 170 individuals, including both students (150) and academic staff (20). To ensure a representative sample, a stratified random sampling method was employed, which involved dividing the population into subgroups. The sample size included 37 students from each level, as well as 20 academic staff members. The selection of these individuals was done randomly, in order to minimize potential biases.

Research Instrument

The instrument for data collection was a self-developed questionnaire. Each category of respondent (students and academic staff) has a different questionnaire; the questionnaire consists of 4 sections of both closed ended questions and open-ended statements. Section A consists of personal data of respondent, section B consists of statements/questions focusing on the effects

of curriculum, teaching methods and course work on teaching and learning of pharmacy in KASU, sections C and D focus on how teacher-student relationship and infrastructure respectively affect teaching and learning of Pharmacy in KASU.

The respondents indicated their level of agreement based on the four-point Likert-type scale adopted as follows:

Strongly agree or Excellent

Agree or Good

Disagree or fair

Strongly disagree or poor

Data Analysis

The data that had been gathered was compiled and subjected to analysis through the use of Statistical Package for Social Science (SPSS) version 23.

Results

Socio-demographic Data Analysis of Pharmacy Lecturers

The distribution of the lecturers by gender showed 45% male and 55% female (Table 1). In their age distribution age group 30-34 had the highest frequency of 6 (30%) while age group 25-29 and 45-49 had the least distribution of 1 (5%); 30% of the lecturer respondents are of the rank of Senior Lecturer and above.

Table 1: Socio-demographic Data Analysis of Pharmacy Lecturers (n = 20)

	Groups	Frequency	Percentage
Gender	Male	9	45.0
	Female	11	55.0
Age	25-29	1	5.0
	30-34	6	30.0
	35-39	4	20.0
	40-44	5	25.0
	45-49	1	5.0
	50 and above	3	15.0
Rank	Assistant Lecturer	5	25.0
	Lecturer II	7	35.0
	Lecturer I	2	10.0

Senior Lecturer and 6 30.0
above

Socio-Demographic Data Analysis of Pharmacy Students

There were 67 male respondents representing 44.7% and 83 female respondents (Table 2). The age group 20-24 had the highest frequency of 73.3% while age 30 and above had the least frequency of 3.3% (Figure 1). The distribution of the students according to their level of studies is presented in (Table 2); 52.7% of the students' parents are civil servants, and 90% of the students described their parents to be of average socio-economic status (Table 2).

Table 2: Socio-Demographic Data Analysis of Pharmacy Students (n = 150)

	Groups	Frequency	Percentage
Gender	Male	67	44.7
	Female	83	55.3
Level of study	200	36	24.0%
	300	50	33.3%
	400	33	22.0%
	500	31	20.7%
	45-49	1	5.0
	50 and above	3	15.0
Parent's (or Guardian's) Occupation	Farmer	17	11.3%
	Civil servant	79	52.7%
	Business person	26	17.3%
	Teacher/Lecturer	14	9.3%
	Others	14	9.3%
Parent's Socio-Economic Status	Poor	8	5.3%
	Average	135	90.0%
	Wealthy	7	4.7%

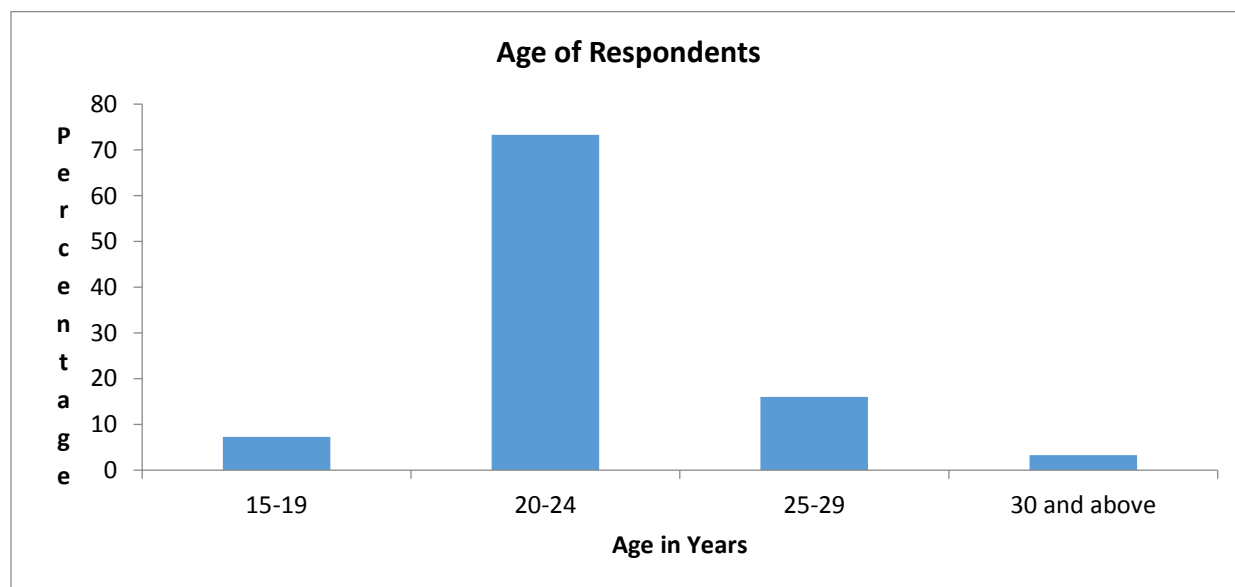


Figure 1: Age of Student respondents:

The Perceptions of lecturers and students on the problem of effective teaching and learning of pharmacy in KASU

A great percentage of the lecturers agreed that the pharmacy curriculum adequately covers all the necessary subjects and topics and that it covers practical skills and real-world pharmacy practice. According to the lecturers, not all the courses in pharmacy are difficult to grasp; 40% of the lecturers agreed that the heavy workload of pharmacy school is having a negative impact on the students' academic performance while 60% disagreed. Even though the lecturers agreed that the current teaching method being used by the pharmacy lecturers in KASU is good, there is presently no measure in place for pharmacy students in KASU to evaluate their lecturers (Table 3).

Table 3: Perceptions of lecturers on effects of curriculum, teaching methods and course work on teaching and learning of pharmacy in KASU

	Strongly Agree	Agree	Disagree	Strongly Disagree	Mean	Std. D.
The pharmacy curriculum adequately covers all the necessary subjects and topics	3 (15%)	15 (75%)	2 (10%)	-	3.05	0.510
The current pharmacy curriculum adequately covers practical skills and real-world pharmacy practice	-	14 (70%)	6 (30%)	-	2.70	0.470
All the courses and/topics within the pharmacy curriculum are challenging to grasp	-	7 (35%)	11 (55%)	2 (10%)	2.25	0.639
The teaching methods employed by pharmacy lecturers in KASU are very effective	1 (5%)	14 (70%)	5 (25%)	-	2.80	0.523
The heavy workload of pharmacy school is having a negative impact on the students' academic performance	2 (10%)	6 (30%)	11 (55%)	1 (5%)	2.45	0.759
	YES		NO			
	F	%	F	%		
Are the course materials and textbooks easily accessible and affordable for pharmacy students in KASU?	11	55	9	45		
Do you think the teaching methods promote active learning and critical thinking among pharmacy students in KASU?	12	60	8	40		
Is the current method of assessment and evaluation of	12	60	8	40		

pharmacy students in KASU adequate?

Is there any measure in place for your students to evaluate your performance as a lecturer? 4 20 16 80

Do you think there is a need for continuous professional development programs for pharmacy educators in KASU? 20 100 - -

Are there adequate training and workshops organized for pharmacy educators to enhance their teaching skills? 4 20 16 80

Majority of the students agreed that the current pharmacy curriculum adequately covers all the necessary topics and subjects, and the real-world pharmacy practice. They agreed that heavy work load is having negative impact on the academic performance of the students in KASU pharmacy school. They however noted that the course materials and textbooks are not easily accessible and affordable for pharmacy students in KASU. About 72.7% indicated that they encounter difficulties in understanding certain pharmacy topics such as pharmaceutical chemistry, pharmaceutics technology and formulation (Table 4).

Table 4: Students' response on the effects of curriculum, teaching methods and course work

	Strongly Agree	Agree	Disagree	Strongly Disagree	Mean	Std. D
The pharmacy curriculum adequately covers all the necessary subjects and topics	33 (22%)	102 (68%)	14 (9.3%)	1 (0.7%)	3.11	.574
The current pharmacy curriculum adequately covers practical skills and real-world pharmacy practice	10 (6.7%)	75 (50%)	55 (36.7%)	10 (6.7%)	2.57	.718
All the courses and/topics within the pharmacy curriculum are challenging to grasp	31 (20.7%)	62 (41.3%)	52 (34.7%)	5 (3.3%)	2.79	.805
The teaching methods employed by pharmacy lecturers in KASU are very effective	8 (5.3%)	96 (64%)	40 (26.7%)	6 (4%)	2.71	.630
The heavy workload of pharmacy school is having a negative impact on the students' academic performance	86 (57.3%)	51 (34%)	10 (6.7%)	3 (2%)	3.47	.711
	YES			NO		
	F	%		F	%	

Are the course materials and textbooks easily accessible and affordable for pharmacy students in KASU?	45	30%	105	70%
Do you think the teaching methods promote active learning and critical thinking among pharmacy students in Nigeria?	91	60.7%	59	39.3%
Are there any challenges or concerns you face regarding the grading system or examination processes?	95	63.3%	55	36.7%
Do you encounter difficulties in understanding certain subjects or topics in pharmacy?	109	72.7%	41	27.3%

Factors affecting teachers and students on teaching and learning of Pharmacy in KASU

Student-teacher relationship is one of the factors affecting teaching and learning of pharmacy. In KASU, both the students and the lecturers gave credit to the cordial relationship that exists between the academic staffs and the students. To a large extent, KASU pharmacy lecturers are concerned about their students' academic performance, the lecturers are very friendly and accessible. Most of the students agreed that that there were instances where they felt the communication with their lecturers positively influenced their understanding of some pharmacy concepts (Table 5).

Table 5: Response of students on how teacher-student relationship and infrastructure affect teaching and learning of Pharmacy in KASU

S/N	Description:	Strongly Agree or Excellent	Agree or Good	Disagree or Fair	Strongly Disagree or Poor	Mean	Std. D.
1.	The lecturers in Faculty of Pharmaceutical Sciences, KASU are very friendly and accessible	21 (14%)	103 (68.7%)	21 (14%)	5 (3.3%)	2.93	.642
2.	Pharmacy lecturers in KASU are concerned about their students' academic performance	21 (14%)	92 (61.3%)	31 (20.7%)	6 (4%)	2.85	.699
3.	As a Pharmacy student, I always feel comfortable approaching my lecturers with questions or concerns related to my studies	31 (20.7%)	57 (38%)	50 (33.3%)	12 (8%)	2.71	.885
4.	How would you rate the communication and interaction between teachers and students in your pharmacy classes?	28 (18.7%)	96 (64%)	25 (16.7%)	1 (7%)	3.01	.618

5.	Students find it easy to engage in discussions and ask questions during class	42 (28%)	77 (51.3 %)	24 (16%)	7 (4.7%)	3.03	.794
6.	There is/are specific instances where I felt the communication with my teachers positively influenced my understanding of pharmacy concepts	55 (36.7%)	79 (52.7 %)	15 (10%)	1 (0.7%)	3.25	.657
7.	A supportive and nurturing relationship with teachers contributes to a more effective learning experience for pharmacy students	95 (63.3%)	48 (32%)	6 (4%)	1 (0.7%)	3.58	.605
8.	Do you believe that a positive teacher-student relationship encourages teachers to be more approachable and accessible to students?	119 (79.3%)	29 (19.3 %)	1 (0.7%)	1 (0.7%)	3.77	.480
9.	Have you experienced instances where your teachers have provided individualized guidance or mentorship that positively influenced your learning outcomes?	40 (26.7%)	56 (37.3 %)	43 (28.7%)	11 (7.3%)	2.83	.908
10.	Do your teachers provide personalized feedback and guidance to help you improve your learning and performance?	27 (18%)	79 (52.7 %)	33 (22%)	11 (7.3%)	2.81	.814
Effect of Infrastructure							
11.	How would you rate the adequacy of infrastructure (e.g., classrooms, laboratories) provided for pharmacy education in your institution?	6 (4%)	60 (40%)	57 (38%)	27 (18%)	2.30	.809
12.	Do you have access to online resources and databases that support your learning?	3 (2%)	46 (30.7 %)	55 (36.7%)	46 (30.7%)	2.04	.834
13.	Do you feel that the classroom and learning environment are conducive to your learning needs?	12 (8%)	52 (34.7 %)	55 (36.7%)	31 (20.7%)	2.30	.888

Family background and socio-economy is having a negative impact on teaching and learning of Pharmacy in KASU (Table 6); 90% of these students claimed their parents/guardian socioeconomic status to be on the average (Table 2). This might be the reason for the financial challenges the students are encountering.

Table 6: Response of students on the impact of family background and socio-economy on teaching and learning of Pharmacy in KASU

	YES		NO	
	F	%	F	%
Have your parents/guardians encouraged and motivated you to pursue pharmacy as a career?	144	96%	6	4%
Do you face any financial challenges or constraints in pursuing your pharmacy education?	112	74.7%	38	25.3%
Do you believe that your socio-economic background has influenced your access to educational opportunities and resources related to pharmacy education?	126	84%	24	16%
Have you received any financial support or scholarships specifically for your pharmacy education?	35	23.3%	115	76.7%

Comparing the responses of the lecturers and the students on their perceptions on both the problems facing teaching and learning of pharmacy in KASU and the factors responsible, t-test analysis tool was used, and there was no significant difference (Tables 7 and 8).

Table 7: T-test analysis of significant difference between perception of students and academic staffs on the problem of teaching and learning of pharmacy in KASU

Group	N	Mean	Standard deviation	Mean difference	Df	Tcal	Critical t-value	Remark
Students	150	2.93	0.688	0.28	168	1.983	1.984	Not significant
Academic staff	20	2.65	0.580					

Calculated t value is the same as the critical T-value from the table, at $\alpha = 0.05$

Table 8: T-test analysis of significant difference between perception of students and academic staffs on the factors affecting teaching and learning of pharmacy in KASU

Group	N	Mean	Standard deviation	Mean difference	df	Tcal	Critical t-value	Remark
Students	150	2.878	0.741	0.231	168	1.510	1.984	Not significant
Academic staff	20	3.109	0.629					

Calculated t value is the lower than the critical T-value from the table, at $\alpha = 0.05$.

DISCUSSION

In this study some positive factors were observed which are adding to the value of pharmacy teaching, learning and students' outcomes in KASU. Among these are good student-teacher relationship, most of the lecturers are easily accessible; both the students and academic staff agreed that the pharmacy curriculum adequately covers all the necessary subjects and topics. The students also applauded the teaching methods being adopted by their lecturers.

Teaching, learning and educational performance of students in Nigeria is facing various challenges among which are poor infrastructure, poor funding, socio-economic factor, family background, lack of good condition of service for teachers among others. According to the students' perception, the following problems are confronting the teaching and learning of pharmacy in KASU: First is heavy workload, according to them this is having a negative impact on their academic performance. Over the years, pharmacy training is characterized with heavy workload such that any unserious student may not be able to cope [13].

Lack of accessibility and inability to afford pharmacy textbooks is another problem. There are e-books that can be accessed through the faculty of Pharmaceutical Sciences e-library but there is lack regular internet connectivity, and not all students can afford regular purchase of data for internet connectivity. This response is similar to a study by Lawal et al, [14] which described the negative impact of lack of internet facility on pharmacy education in Nigeria. The few available textbooks in bookshops are very expensive, only a very few students can afford them; 60% of the lecturers responded that the current method of assessment and evaluation of pharmacy students in KASU is adequate, though there is presently no

measure in place for the students to evaluate the performance of their lecturers. Also, according to the teachers (80%) there is lack of adequate training and workshops for pharmacy educators to enhance their skills. However, all the respondent lecturers agreed that there is need for a continuous professional development program for pharmacy educators in KASU. Half of the academic staff that partook in this survey had no professional teaching qualification.

Poor infrastructure is another perceived problem in the teaching and learning of pharmacy in KASU. This finding is consistent with the study by Subair *et al.*, [15] on "Perceived quality of infrastructure in selected Nigerian Universities" who reported that lecture rooms and office places were grossly inadequate and not convenient for proper positioning of modern electronic gadgets that will accommodate current curriculum and the globally acceptable mode of teaching and learning. Infrastructures such as well -equipped laboratory, physical and e-library, well- furnished student hostels, modernized lecture halls, adequate office accommodation for staffs, recreation centers, electricity, pipe-borne water, internet facility, good roads among others are needed for effective teaching and learning. According to Benya, [16] and Subair [17], high quality university education and training requires the provision of adequate infrastructure. Pharmacy education is science practical based, lack of adequate equipment for practical classes will lead to graduating "half-baked" pharmacists.

It is very obvious from the response of the students that family background in terms of the finance and socio-economic factors are major problems as touching the effective teaching and learning of pharmacy in KASU. About 74.7% of the students are facing financial challenges, 84% agreed that socio-

economic background has influenced their access to educational opportunities and resources related to pharmacy; also 76.7% of the student respondents have never received any financial support or scholarships specifically for their pharmacy education. There was a similar report by Yahaya and Mohd, [18] in a study on Socio-economic determinants of students' academic achievement in building technology in North-Central Nigeria reported that socioeconomic determinants of students' academic performance include gender, age, stipends per month, family size; inadequate infrastructure was also reported as a factor. Considering the response that majority of the parents and/or guardians of these pharmacy students are civil servants, recent increase in school fees and high cost of living due to hike in fuel pump price as a result of government removal of fuel subsidy without increase in salary is seriously impacting the students' learning negatively due to lack of adequate fund.

CONCLUSION

Based on the findings of this study both lecturers and students had similar perceptions on the problems and factors militating against effective teaching and learning of Pharmacy in Kaduna State University. The following among others were perceived to be the problems: heavy workload on students, poor education funding by the government, lack of adequate infrastructures and educational resources such as internet facilities, lack of continuous professional development program for pharmacy educators, socioeconomic factors include students' poor financial background, high school fees, lack of funds and access to textbooks (both hard and e-copies). If these factors are attended to by both the government, the university management, students, and academic staffs

there will be a great improvement in the teaching and learning of pharmacy in Kaduna State University and other universities in Nigeria.

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