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Attitudes of undergraduate pharmacy students toward inter-professional collaboration: Analysis of survey in a Nigerian University

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Abstract

The focus of pharmacy education has shifted from product based training to patient care which require Pharmacists to practice in multidisciplinary settings with members of other healthcare professionals. The development of interprofessional collaborative attitudes towards teamwork is known to occur well before graduation. Attitudes of pharmacists towards physicians and other healthcare professionals have influence on quality of future collaboration in patient care decisions. There is evidence to suggest that developing right attitudes during training can enhance collaboration during post-graduation team work in patient care decisions. The objective of this study is to evaluate students' attitudes towards collaboration with physicians when carrying out pharmaceutical care services.

This was a cross sectional survey study among fourth and fifth year pharmacy students. The sixteen item "scale of attitudes towards physician and pharmacist collaboration" [SATP2C] questionnaire was used to explore their attitudes. The four item Likert scale instrument was self-administered and respondents were asked to tick the option that best reflect their attitude (1=strongly agree, 2-agree, 3-disagree, 4-strongly disagree). Analysis was done using descriptive and inferential statistics (Students *t* test) and P value ≤ 0.05 was considered statistically significant.

Attitudes of pharmacy students towards physician collaboration was generally high, a result that was not affected by gender and year of study. Pharmacy student's positive collaborative attitudes with physician holds better promise for integration into clinical teamwork for improved outcomes for patients after qualification.

The positive attitude among pharmacy students towards collaboration with physicians should be emphasized during training to adequately prepare them for post qualification teamwork.

Keywords: Attitude; Collaboration; Pharmacy students; Physicians; Teamwork

1. Introduction

Pharmacy education curriculum has shifted emphasis from product focused training to patient based pharmaceutical care practice, which require collaborative input from different health professionals working together to optimize best outcomes for patients. Pharmacists are expected to develop professional relationships with physicians, patients, family members and other healthcare providers in the process of contributing to drug therapy management of patients. The development of attitudes among students towards collaboration with other healthcare professionals was reported to be well established before graduation; which may be a product of educational, administrative, regulatory, social and

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professional attitudinal factors [1]. This led to suggestions that exposing undergraduate students to inter-professional team work, learning, skills and social interactions may contribute to breaking down barriers and facilitating pre-graduation interactions may assist in engendering positive attitudes towards future collaboration [2].

Several studies reported that students who were exposed to inter-professional learning environment displayed better professional relationships and mutually beneficial interactions with other healthcare professionals [3, 4]. It has also been demonstrated that students exposed to team building and learning programmes equally displayed positive attitudes towards professional collaboration and better understanding of their respective roles in patient care [5]. The increasing focus on pharmacist driven collaborative care approach is not only in ensuring optimal drug therapy outcomes, reduction in adverse drug reactions, drug related morbidity and mortality but also achievement of lowering cost of healthcare [6, 7].

In recent years the concept of inter-professional education has received recognition and acceptance as the direction for future training of healthcare professionals. There have been strong recommendations from several organizations that educational institutions training healthcare professionals should develop and implement inter-professional education components in their programs. This is to prepare students with requisite skills and proper attitudes needed in post-graduation professional practice [8, 9, 10]. Inter-professional collaborative education and practice should be based on the recognition of unique roles and clear understanding of the need for professional interdependence [11]. There is clear evidence that inter-professional collaborative practice has tangible benefits for patients in several areas including optimizing quality of care and safety [12, 13]. Several studies reported that medical interventions that involved inter-professional collaboration have consistently achieved goals of therapy [14,15,16,17] and significant improvement in overall patient medication management [18,19,20]. These and many other benefits of collaborative care has been well documented particularly among patients with chronic diseases [21, 22, 23, 24, 25].

While it is clear that collaborative care has demonstrable benefits to patients and healthcare system [26, 27], there is however controversy among other healthcare professionals as to the exact roles of pharmacists in patient care [28, 29, 30, 31]. Pharmacy profession hitherto have not been involved in direct patient care until in recent decades when imperatives of providing pharmaceutical care to patients have brought them to responsibilities that physicians have traditionally overseen. Herein lies the need to change and develop right attitudes towards inter-professional collaboration practice [31, 32]. Several studies reported that pharmacists and pharmacy students have a more positive attitude towards collaboration with physicians compared to physicians and medical students [33, 34, 35].

In Nigeria, recognition of inter-professional collaborative practice among healthcare providers is yet to find its way through regulatory, administrative and structural bottlenecks. The healthcare system in the country is largely run by physicians who apparently dominate all aspects of services with little contribution from other healthcare professionals. While the current pharmacy education curriculum in Nigeria emphasizes collaborative practice, its effective implementation requires structured collaborative learning and development of right attitudes during training. The major aim of this study is to assess the attitude of pharmacy students towards collaboration with physicians.

2. Methods

2.1. Setting

The survey was carried out among pharmacy students in their fourth and fifth year of bachelor of pharmacy degree programme in University of Maiduguri, Borno State.

2.2. Study design

This was a cross sectional survey study, using scale of attitudes towards pharmacist – physician collaboration.

2.3. Sample/sampling

Pharmacy students in their fourth and fifth year of study who consented to participate were involved in the study.

2.4. Questionnaire

The sixteen item standard scale of attitude towards physician – pharmacist collaboration [SATP2C] was revalidated after modification [*Cronbach alpha 0.89*]. The original instrument construct consisted of a five item scale with “neutral” in the middle of the scale. It was however modified into a four item response scale with “neutral” removed [36, 37, 39]. The item responses ranged between strongly disagree – 1 [SD], disagree – 2 [D], agree – 3 [A], strongly agree – 4 [SA].

2.5. Data collection

The questionnaire was given to all consenting students during normal academic interactions and given time to complete and return the questionnaires.

2.6. Data analysis

The data was entered into SPSS 21 and double checked for accuracy and the internal consistency of the modified instrument was determined. Factor analysis was carried out using principal component analysis, varimax rotation with Kaiser normalization and missing data deleted list wise. Items with factor loading greater than or equal to 0.4 were used for analysis. The responses to items 6 and 12 were reversed before analysis and mean item scores above midpoint was considered positive attitude and vice versa. Student *t* test was to evaluate differences in attitudes based on gender and year of study and P values ≤ 0.05 was considered statistically significant.

3. Results

Demographic data showed that the number of male respondents [52.6%] was slightly more than females [43.8%]. The mean age of respondents was 24.7 ± 2.5 years [Figure 1].

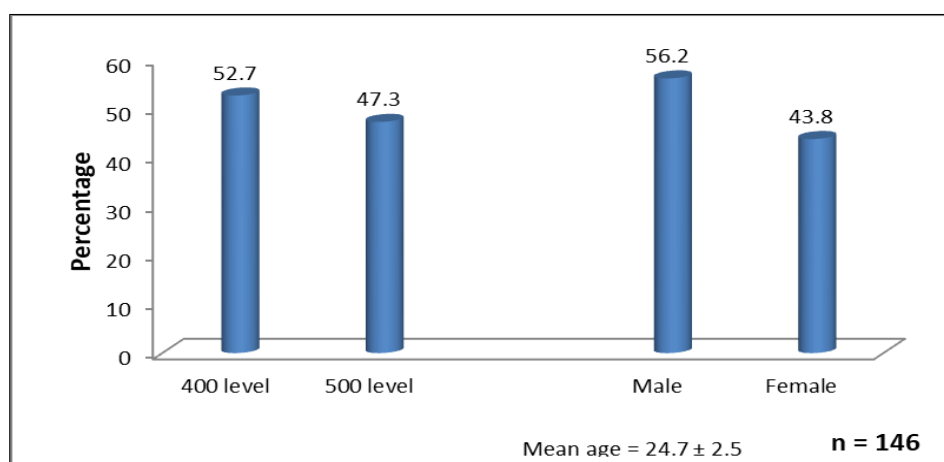


Figure 1 Demographic data

The attitude score was generally high which indicated a high level of positive attitude towards pharmacist – physician collaboration [$> 80\%$]. [Table 1]

Table 1 Distribution of responses and attitude score

No	Items	FL	SD [%]	D [%]	A [%]	SA [%]	Positive [%]
1	A physician should be viewed as a collaborator and colleague with a pharmacist rather than his/her superior	0.594	8 [5.5]	5 [3.4]	40 [27.4]	91 [62.3]	89.7
2	Pharmacist are qualified to assess and respond to patient drug treatment needs	0.773	10[6.8]	4 [2.7]	30 [20.5]	102 [69.9]	90.4
3	During their education, pharmacy and medical students should be involved in teamwork in order to understand their respective roles	0.541	5 [3.4]	5 [3.4]	43 [29.5]	93 [63.7]	93.2
4	Pharmacists can contribute to decisions regarding drug interactions that can affect patients	0.770	10[10.8]	3 [2.1]	23 [15.8]	110 [75.3]	91.1

5	Pharmacists should be accountable to patients for drugs they provide	0.445	3 [2.1]	13 [8.9]	54 [37]	75 [41.4]	88.4
6	There are many overlapping areas of responsibilities between pharmacists and physicians in drug treatment of patients†	0.421	10 [6.8]	4 [2.7]	68 [46.6]	61 [41.8]	88.4]
7	Pharmacists have special expertise in counseling patients on drug treatment	0.787	11 [7.5]	3 [2.1]	29 [19.9]	103 [70.5]	90.4]
8	Both Pharmacists and physicians should contribute to decisions regarding type and dosage of medicines given to patients	0.531	4 [4.1]	3 [2.1]	54 [37]	81 [55.5]	92.5
9	The primary function of the pharmacist is to fill physician prescription without question	0.537	18 [12.3]	21 [14.4]	21 [14.4]	99 [67.8]	82.2
10	Pharmacists should be involved in making drug policy decisions	0.510	6 [4.1]	3 [2.1]	39 [26.7]	95 [65.1]	91.8
11	Pharmacists as well as physicians should have responsibility for monitoring the effect of drugs on patients	0.683	6 [4.1]	5 [3.4]	56 [38.4]	76 [52.1]	90.5
12	Pharmacists should clarify physicians orders when they feel it might have potentially detrimental effects on patients†	0.756	7 [4.8]	4 [2.7]	38 [26]	97 [66.4]	92.4
13	Physicians should be educated to have collaborative relationships	0.682	8 [5.5]	2 [1.4]	37 [25.3]	98 [67.1]	92.4
14	Physicians should consult pharmacist for helping patients with adverse drug reactions or refractory to treatment	0.589	5 [3.4]	3 [2.1]	55 [37.7]	83 [56.8]	94.5
15	Physician should be made aware that pharmacists can help in providing the right drug treatment	0.704	5 [3.4]	2 [1.4]	35 [24]	104 [71.2]	95.2
16	Inter-professional relationship between physician and pharmacist should be included in their professional education program†	0.713	4 [2.7]	8 [5.5]	50 [34.2]	81 [55.5]	89.7

Key: FL – factor loading, KMO - 0.918, Bartlett's test of sphericity - <0.001, Principal component analysis Varimax rotation with Kaiser Normalization, † - responses reversed before analysis

A comparison of attitude score showed no significant influence of gender and level of study on collaboration with physicians [Table 2].

Table 2 Influence of gender and level of study on attitude towards collaboration

Variable	Number	Mean	SD	P value
Gender				
Male	82	3.38	0.81	
Female	64	3.30	0.88	0.947*
Level of study				
400 level	77	3.31	0.92	
500 level	69	3.38	0.73	0.953*

Key: * - students t test

4. Discussion

The current national health policy of Nigeria's government recognize inter-professional collaboration as foundational to the quality of healthcare; however there are no clear regulatory and administrative mechanisms for promoting collaborative practice among healthcare professionals. There appear to be a significant push back among both professionals and students of other healthcare professions to pharmacist led pharmaceutical care as part of multidisciplinary care model in the country. While progress in implementing pharmaceutical care is proceeding at a very low pace in the nation's healthcare system, it is important that attitudes of students be prepared for collaborative practice well before graduation.

The result of this study showed that attitude of pharmacy students towards collaboration with physicians was generally positive, which is consistent with previous studies [31,34,39]. The positive attitude may be largely driven by the fact that in recent years, pharmacy education curriculum made provision for experiential training in form of industrial attachment and clerkship training which help expose students to interactions with physicians and other members of the healthcare team. These opportunities and inclusion of courses in clinical skills, pharmaceutical care, therapeutics and advanced communication skills were aimed at enabling students to have confidence in their professional roles and unique identity in multidisciplinary care settings.

Professional collaborative practice holds high potential for better drug therapy outcomes, however in a healthcare system dominated by physicians who typically assume administrative authority over other professionals, collaboration can be difficult to achieve without major policy and health system wide structural changes. The absence of well-defined pharmacists' roles and responsibilities, poor communication and acceptance by physicians as well as the wrong perception of authority has given room for physicians to impose restrictive roles on pharmacist led pharmaceutical care services in the country.

There have been reports of physician misunderstanding, misconceptions and reservations about accepting the contributions of pharmacists in patient care which can deprive patients of vital contributions pharmacists make to drug therapy decision making process [40,41,42]. The attitudes that led to this situation experts believe predates post-graduation professional practice and need to be addressed during training. The development of positive attitudes therefore represent expression of willingness and preparedness to collaborate by contributing knowledge, expertise and information which will be beneficial to the overall quality of patient care process in a multidisciplinary setting [43]. The fact that attitudes are developed over time should be recognized in designing, planning, preparing training environment that is conducive for collaborative attitudes to take place and thrive.

The positive attitude of pharmacy students towards collaboration therefore can be broadly seen from dimensions of responsibility, awareness and enthusiasm to work with physicians and other members of the health team so as to deploy skills and competences towards patient care. While it is known that physician training involves a culture of self-sufficiency and responsibility with little interest in involving other professionals in decisions of therapy, [44,45,46], collaboration with pharmacists will further promote better therapy outcomes which is the main goal of all healthcare professionals. The misconception that pharmacists are only dispensers of medicines – a subordinate view towards pharmacist roles create room for unnecessary inter-professional rivalry, mistrust and conflict [47,48,49]. The feeling among physicians that pharmacist new pharmaceutical care roles represent an encroachment into service areas that traditionally have been their domain, is driven by long held attitudes and not founded on evidence. As new generations of highly trained, skilled, academically sound and competent pharmacists come into workplace, attitudes will play a vital role in determining if transition to collaborative care will seamlessly take place in Nigeria's' health care system.

5. Conclusion

The attitude of pharmacy students towards collaboration with physicians was generally positive; it offers an opportunity for collaborative and teamwork skills building training programmes among students preparatory to qualification as professionals.

Compliance with ethical standards

Disclosure of conflict of interest

The authors declare no conflict of interest.

Statement of Ethical approval

Ethical approval was obtained from the students affairs department of the University of Maiduguri, Borno State, Nigeria

Statement of informed consent

Informed consent was obtained from all individual respondents included in the study

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