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Connections between classroom theory & real world practice: Exploring the perspectives of undergraduate students at a Nigerian faculty of pharmacy

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Abstract

Background: Experiential learning attachments are avenues for students to apply classroom learning to real world situations. Therefore, understanding the impressions students develop about classroom theory after these attachments is important.

Objectives: The aim of this study was to explore the perceptions of selected fifth year undergraduate bachelor of pharmacy students at Ahmadu Bello University, Zaria, Nigeria on the relationship between classroom theory and real world practice.

Methods: Two focus group discussions (FGDs) were held and audiotaped in March 2017, with thirteen purposefully sampled students. Data collected were then transcribed and analysed using qualitative content analysis.

Results: The students reported that there were notable differences between classroom theory and actual practice. Reasons for these sentiments were covered under two main categories: constraints within the practice environment, and problems with knowledge obtained from the classroom.

Conclusions: Redesigning the curriculum to improve the relevance of classroom content, and greater involvement of Nigerian universities in experiential learning placements may help to better integrate classroom theory and real world practice within the country.

Keywords: *Experiential Learning, Focus Group Discussions, Pharmacy Education, Pharmacy Practice*

Introduction

Experiential learning opportunities are avenues for students to apply classroom learning to real world situations, and these attachments can play a crucial role in the development of pharmacy students' attitudes, behaviours and skills as they are socialised into the profession (Ting, Wong & Thang, 2009). In addition, well developed experiential learning programmes can help to equip new pharmacists with essential knowledge and skills to meet the many challenges associated with providing high quality patient-centred care (DiFrancesco, 2011).

Because experiential learning opportunities simulate actual practice conditions, many pharmacy students will form their first opinions of what real world pharmacy practice is actually like and may even decide on future career options from their experiences during these attachments (Ting, Wong & Thang, 2009; Diack *et al*., 2014; Burrows, Dall'Alba & Caze, 2016; Mylrea *et al*., 2018). Furthermore, because these attachments offer opportunities to assimilate classroom knowledge into practice, experiences during them can also give insights into the relevance of classroom curricular content (Noble *et al*., 2014).

The five year Bachelor of Pharmacy (B.Pharm.) degree offered by Nigerian universities has two experiential learning components: the Students Industrial Work Experience Scheme (SIWES), and final year clinical clerkship (Ikhile & Chijioke-Nwauche, 2016). SIWES is funded by the Nigerian government, and lasts for six months. Fourth year undergraduate pharmacy students within the country can choose any area of pharmacy practice to undergo this placement. Alternatively, depending on university discretion, the six month period can be split in two, and students can engage in the placements during the semester breaks of their third and fourth undergraduate years. The final year clinical clerkship takes place only in hospitals (usually university teaching hospitals), and lasts for one semester during the final year of the B.Pharm. programme.

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A few studies (Dayom & Banwat, 2016; Abdu-Aguye, Yusuf & Abubakar, 2017) have explored Nigerian pharmacy students' perceptions of the first experiential learning component (SIWES). To the best of the authors' knowledge however, no study has explored student perceptions of experiential learning as a whole within the Nigerian undergraduate pharmacy curriculum. This is important, because an understanding of student experiences during these attachments may help relevant stakeholders better design both classroom content and experiential learning attachments. Thus, the aim of this study was therefore to explore the views of selected fifth year undergraduate B.Pharm. students of Ahmadu Bello University, Zaria, Nigeria, on the relationship between classroom theory and real world practice.

Methods

Background

The study was a follow up to an initial study (Abdu-Aguye, Yusuf & Abubakar, 2017), conducted on fourth year undergraduate students of the faculty of pharmaceutical sciences, Ahmadu Bello University, Zaria, Nigeria who had completed their first experiential learning attachment under the SIWES during the 2015/2016 academic session. The students were asked to write an essay detailing their experiences during the attachment using ten open-ended questions as a guide. Ninety-eight students wrote and submitted their essays out of which 16 students wrote that "*theory was different from practice*". This statement warranted further study, especially since none of the open-ended questions in the essay guide had asked about that. Consequently, this work was designed to explore the reasons why those students felt that theory was different from practice. Ethical approval for the study was obtained from the Human research ethics committee of Ahmadu Bello University, Zaria, Nigeria (Approval No: ABUCUHSR/2017/UG/007).

Study design

The study was qualitative, and FGDs were employed to collect data. As previously stated, selected students were purposively sampled and were approached face-to-face by a research assistant who was their classmate and invited to participate. They were all appropriately informed about the objectives and purpose of the study, and that participation was voluntary. Thereafter, written informed consent was obtained from each participant. However, only 13 of 16 students finally participated, because the remaining three were unavailable at the time the FGDs were held.

Interview guide

An interview guide was created for the FGDs by the four academic researchers and pilot tested on the research assistant to give them an idea of the kind of responses they could expect, after which they were modified accordingly. The questions asked during both discussions were open-ended and similar. These questions included the nature of their experiences during the placements, whether their expectations before the placements were met, their reasons for saying theory was different from practice *etc*. (see **Appendix A** for further details).

Data collection

Two FGDs were conducted on the same day in March 2017 by which time most of the students (11 of them) had already completed the second experiential learning component in the programme, *i.e*., pharmacist ward-rounds in selected hospitals as the first semester of their fifth year was already over. The discussions were moderated by and held in the office of a female lecturer in the Department, who had previously taught all of the participants. Only the lecturer, her research assistant and the participants were present during the discussions. The FGDs lasted an average of 1 hour 57 minutes, and would have continued for longer but the moderator felt that data saturation had been reached as the students were starting to repeat themselves. The discussions were audiotaped and the moderator also took notes during the FGDs.

Data analysis

Data from the FGDs were transcribed by E.O and S.A., and checked for accuracy by H.Y and F. A. Directed qualitative content analysis was then used to analyse the data (Hsieh & Shannon, 2005). Coding was done independently by the first two researchers (S.A. & H.Y.), and confirmed by the other two (F.A. & H.M.); who also resolved any disagreements. Because the aim of the study was to look at the differences between theory and practice, two pre-identified categories were agreed upon for analyses, based on problems with either construct (*i.e*., theory or practice). All the themes identified from the interviews were then appropriately placed in either category. Participants' quotes were used to illustrate themes and improve result clarity.

Results

The students (six females and seven males) were divided into two groups based on the area of pharmacy practice *i.e*., hospital or community pharmacy that their SIWES institution fell into. The first FGD was held with students who did their SIWES placements in community pharmacies (six students: three females and three males), while the second FGD was held with students who did their placements in hospitals (seven students: three females and four males).

Reasons why the students felt that theory was different from practice were covered under two main categories: constraints within the practice environment, and problems with knowledge obtained from the classroom.

Category one: Constraints within the practice environment

Themes captured under this category included the negative attitudes of some older pharmacists, difficulties implementing pharmaceutical care and problems specific to particular practice settings.

Theme one: Attitudes of other pharmacists

There were complaints about negative attitudes/ behaviours of some older pharmacists towards the students. These included lukewarm attitudes towards patient care and older colleagues ridiculing their classroom learning.

> "*At times……when I was in the anti-retroviral (ARV) clinic, in the course of me giving out pharmaceutical care or counselling to patients, the other pharmacist that even works there, she would tell me that… I like wasting my time on unnecessary things, I should let, just let these patients go……*" [003, Hospital]

> "*Where I did my attachment, they carry out weekly presentations. There is this consultant pharmacist who makes jest of students. He will ask you, who taught you this? And then start laughing. He'll just be telling us, learn there* [in university] *to pass, but when you come here we will teach you a different thing entirely…….*" [006, Hospital]

Theme two: Difficulties implementing pharmaceutical care

Here, the students complained about large patient volumes and patient attitudes towards them when they were trying to dispense and properly counsel patients/ customers.

> "*I was expecting a lot of things but when I got there, I saw that they* [people in the community pharmacy] *were just involved in like wholesale of drugs….you see like 20 to 30 customers at a time at the counter and because of their number, I used to partake in selling the drugs without any pharmaceutical care… In fact I barely speak with the patients….we just sell from morning till evening*"
> [006, Community pharmacy]

> "*And pharmaceutical care, it doesn't work in the community, in most communities…..the people* [patients/customers] *try to..... they don't cooperate. They'll tell you that I know, I know or I don't have time, just give me (the drug)……*"
> [002, Community pharmacy]

> "*Most of them* [the patients]*, like 75% of them don't know the reason why they were prescribed their meds……..but you have to try and ask. Then some feel superior, you are young and they are older, yet you're asking them questions. They then shout at you and leave…….*" [007, Hospital]

Theme three: Practice setting specific problems

These problems were voiced out by several participants in each FGD, but were specific only to each practice setting. For those who did their placements in hospital settings, they complained of feeling like they were under-utilised and over-educated, as their actual work routine did not utilise the knowledge they possessed.

> "*During the time I stayed there* [hospital]*…..All we were doing was receiving prescription orders from the patients, look at it, calculate the cost and pass it to the dispensers, that's all we were doing……. Even in the* [hospital] *ward the patients would still just come with their prescriptions for drugs, we* [would] *look at it, dispense and that is it……..There is no specific point where we actually provide any input……*" [002, Hospital]

For those that did their placements in community pharmacies, their variant of this problem was encountering the business/profit nature of community pharmacy practice especially in poorly regulated settings like Nigeria:

> "*For example, when using antibiotics, what we learnt is that doing sensitivity testing before you give antibiotics is good…But I saw that dispensing/ selling antibiotics……was more or less like giving paracetamol to everyone. Also, things like first line agents, second line agents…gaskiya* [truly] *based on where I did my attachment, we didn't follow such* [rules]*…..Also, the use of controlled drugs, we were taught that they required prescriptions…Some of them were dispensed without any prescription.....*"
> [002, community pharmacy]

> "*Sometimes you know that a particular drug is the first line agent used in treating a particular condition. The pharmacist would just go ahead to recommend a second line agent or the third line agent because it's more expensive. I would then ask her that if X drug is the first line agent, why are you recommending this one? She'll say just keep quiet....forget about it. I then came to realise that they are just after the money because most of the second line or third line agents are more expensive…..*" [006, Community pharmacy]

Category two: Problems with knowledge obtained from the classroom

Under this category, participants complained about several knowledge gaps (both actual and perceived), in addition to others.

Theme one: Actual knowledge gaps

Some participants complained that they realised that their knowledge of certain drugs/medical conditions were very poor as these aspects were not covered within the curriculum.

> "*We were not taught cancer in clinical pharmacy, we were only taught cancer in pharmacology. So…there are some aspects were not covered including adjuvants like… allopurinol. What we were taught was the classification of the drugs* [anti-cancer agents]*, side effects, and that's basically it… so it was there* [the hospital] *that I learnt some of those adjuvant drugs, learnt about the issue of emesis and its management, how to tackle some other side effects…*" [004, Hospital]

Theme two: Perceived knowledge gaps

Complaints here were as a result of participants encountering off-label drug prescribing/use in hospitals, leading them to believe that their classroom learning was deficient.

> "*In school we were taught that Bendro* [Bendroflumethiazide, a diuretic] *is contraindicated in pregnancy. But in the hospital…they actually gave it to a pregnant woman who had hypertension…she had pre-eclampsia, so they prescribed Bendro for her*" [002, Hospital]

Theme three: Other problems with the curriculum

Here, participants complained of topics/courses that they did not think were pertinent and incomplete coverage of other useful topics. Some also remarked that while they covered certain areas, the things they were taught in the classroom did not adequately prepare them for practice realities

> "*And then, there are some things that are taught in class that are not relevant….you don't see them in practice. Let me talk about pharmacognosy…when you go out there…, is it the trichomes or the roots that you will go and see in the hospital? Sometimes, it feels like we are just wasting our time with certain knowledge that we acquired from school…*" [004, Community]

Discussion

Previous studies (Hassell, 2007; Noble *et al*., 2014; Mendonça, Freitas & Ramalho de Oliveira, 2017; Rios *et al*., 2017) have suggested that undergraduate pharmacy education may not adequately prepare graduates for future practice, and this seemed to be supported by the findings from this study. One of these, a survey of intern (trainee) pharmacists in the UK reported that up to 30% of respondents believed that the Master of Pharmacy (M.Pharm.) syllabus bore little relevance to actual knowledge required in practice (Hassell, 2007).

Barradell and Kennedy-Jones (2013) argue that consistency between curriculum and real life is essential for health science graduates if they are to practice optimally. This might explain why several problems within the curriculum were cited by the students as some of the reasons for their perceptions that theory was different from practice. The B.Pharm. curriculum currently in use in Nigeria and some other countries focuses heavily on the basic pharmaceutical sciences, leaving little room for clinical and pharmacotherapeutic knowledge (Ikhile & Chijioke-Nwauche, 2016; Mendonça, Freitas & Ramalho de Oliveira, 2017). This assertion is supported by a study by Fakeye *et al*. (2017) that reported that one of the suggestions to improve the pharmacy curriculum by final year B.Pharm. students at a Nigerian university was to improve the time allocation and scope of clinical pharmacy and pharmacy practice courses, while reducing some of the content of the basic pharmaceutical sciences.

Just like this study, other studies have reported a mismatch between pharmacy student or intern expectations and real life pharmacy practice (Mak *et al*., 2013; Noble *et al*., 2014). Some of the major reasons for this perception by the students in this study were negative attitudes by older pharmacists performing their duties poorly, and negative experiences faced by students who did their SIWES placement in community pharmacies. Community pharmacy practice in Nigeria is largely profit driven and poorly regulated (Awaisu, Mohammed & Yakubu, 2016), explaining several of the poor practices that those students encountered. Similarly, the importance of older pharmacists in training younger ones cannot be overemphasised (Jee, Schafheutle & Noyce, 2013), and poor availability of role models has been implicated as a likely contributing factor to student perceptions of the differences between theory and practice (Noble *et al*., 2014).

While this study provides novel insights into some Nigerian students' views on the relationship between classroom theory and practice, its limitations include the relatively small number of participants and the fact that only students from one institution were interviewed. It should however be noted that there is no ideal sample size for qualitative studies, and given the similar nature of experiential learning attachments in the B.Pharm. programmes run by Nigerian universities, some of these findings will definitely be generalisable. Further research on a larger scale may be useful to provide more data on the topic.

In conclusion, the students reported that there were notable differences between classroom theory and actual practice. Their reasons for these sentiments were covered under two main categories: constraints within the practice environment, and problems with knowledge obtained from the classroom.

To help improve the relevance of classroom content, there is a need to redesign our curriculum to better prepare students for practice within the peculiar Nigerian setting. In addition, better integration of theory and practice may also be achieved through earlier introduced and better structured experiential learning programmes, in line with student suggestions from this and other studies on pharmacy curriculum improvement in the country. It may also be useful for Nigerian universities to start playing a greater role in selecting and prequalifying attachment sites, to ensure that students are exposed to good quality training and mentorship

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Appendix A

INTERVIEW GUIDE FOR THE FOCUS GROUP DISCUSSIONS

1. Why did you choose to study pharmacy?
2. What were your expectations prior to studying pharmacy, i.e. what did you think pharmacists actually do?
3. Why did you choose either the hospital/ community setting for your SIWES attachment?
4. What were your expectations for this attachment? Were they met?
5. What was you clinical clerkship experience like?
6. Were your expectations for this placement also met?
7. The statement you all made that 'theory was different from practice', Was it good, bad or neutral?
8. Why did you perceive theory to be different from practice?
9. Do you think that the conflict between patient care and financial gain played a part in developing this belief? (*Only asked to students who did their SIWES placement in community pharmacies*)
10. What do you think we (the university) can do to fix this problem?