

Challenges and Opportunities of a Shared Medical Facility for the Training of Medical Students in Rivers State: Perspective of Stakeholders and the Medical Students

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ABSTRACT

Background: Teaching hospitals are known to manage complex health conditions and train medical students. This study aims to explore the experiences of medical students from different universities and stakeholders who share a teaching hospital facility in Rivers State in terms of challenges and opportunities, and to suggest ways of overcoming the challenges encountered. **Materials and Methods:** A qualitative phenomenological study design was employed for this research conducted in Port Harcourt among medical students and stakeholders from both the Rivers State University and PAMO University of Medical Sciences, using a purposive sampling method. There were in-depth interviews and focus group discussions, and data obtained was uploaded for analysis into ATLAS.ti version 8.4.24. **Results:** There was a total of 10 females and 14 males, comprising 2 management staff, 8 lecturers from the two universities who were also medical doctors and 14 medical students. The commonly shared facilities were lecture halls, clinics, wards, theatres, hospital space and time. Some challenges identified were space constraint, distance between the Universities and teaching hospital, limited exposure to calls and clinical practice and academic workload. Inter-university interactions emerged as the most

common opportunity, followed by a win-win for the teaching hospital and universities. Some suggestions were made for improvement in sharing a facility. Conclusion: A report of the experiences with shared facilities for undergraduate medical education is presented in this study. It is hoped that the findings will assist medical educators and teaching hospital management to make necessary changes that will enhance medical education.

Keywords: Shared medical facilities, Opportunities, Challenges, Stakeholders, Perspectives.

INTRODUCTION

Teaching hospitals are known to provide advanced medical care and manage complex health conditions. They are tertiary facilities that create environment for training, educating medical students as well as other health care professionals, and conducting research.[1] Teaching Hospitals also provide health services. For this reason, teaching hospitals are expected to be linked with medical universities and colleges. However, not all medical colleges or universities are associated or linked with a teaching hospital. In Nigeria, several changes are occurring concerning medical schools and training; there are increasing numbers of medical students admitted into the already existing universities and a growing number of private medical schools within the country. While this poses a great move to increase the number of healthcare workers in the country as a World Health Organization Global Strategy on Human Resources for Health,[2] and potentially narrows the gap in the doctor-population ratio in Nigeria,[3] there is a dire need to ensure that doctors produced in these medical colleges and universities have received quality education, training, and good practical/clinical experience. However, the challenge lies in the fact that medical education for doctors is not complete without clinical training in a teaching hospital,[4, 5] and some medical universities do not have a specific teaching hospital assigned to the school. These medical universities, either owned by the government or operating as private institutions are therefore obliged to share the teaching hospitals with other medical universities.

This strategy comes with its challenges and opportunities, but medical schools are saddled with the main responsibility of providing quality medical education and training to medical students. On the other hand, teaching hospitals that train medical students from different universities may encounter some challenges and opportunities from such events. Some managerial challenges identified by researchers in previous studies include: inadequacy of the legally binding letter of agreement between the University and Teaching Hospital, restricted office spaces, limited human and financial resources, organizational and managerial differences, and irrelevant rivalry between employees from both organizations.[6–8] Another research also identified some challenges that may affect the medical students who share a teaching hospital with students from other medical universities including: deficient content of clinical teaching as a result of a lack of clear expectations, poor student supervision, and inadequate clinical experience needed to build the capacity of the medical student.[9] Other challenges that have been identified from the medical student's perspective include: a lack of opportunities for clinical observations, unsatisfactory responses to questions asked, negative attitudes to the students from teaching staff, having too many students at a time to see a patient or conduct a procedure and too few educational sessions.[8, 10] Several opportunities following the use of shared facilities in training medical students have also been identified including the potential

presence of medical students at any point in time in the teaching hospital, opportunities for research, collaboration and networking between the two institutions, and credibility of the teaching hospital for medical specialist training.[6, 11]

There is a paucity of literature about challenges and opportunities concerning the training of medical students in teaching hospitals shared by different universities. This study aims to explore the experiences of medical students from different universities and stakeholders (management staff and lecturers of teaching hospitals and medical colleges or universities) in terms of challenges and opportunities, who share a Teaching Hospital facility in Rivers State (in the year 2022) and to suggest ways of overcoming the challenges encountered. It is hoped that findings from this study would provide insight into enhancing collaborations between institutions to improve the quality of clinical training among medical students who share a common teaching hospital. Findings from this study will provide a template for efficient planning when setting up new medical schools that do not have teaching hospitals.

METHODS

Study Area

The study area was Port Harcourt, christened "Garden City", the capital of Rivers State in Southern Nigeria. Port Harcourt is a culture-rich city, one of the largest cities in Nigeria after Lagos, Kano, Ibadan, and Kaduna. It is located on latitude and longitude coordinates are: 4.824167, 7.033611 and has an estimated population of 3,325,000. Two (Port Harcourt City and Obio Akpor) of the 23 local government areas in Rivers State house the Port Harcourt metropolis. The Garden City also has a seaport, an international airport and numerous oil and gas companies operating therein. The inhabitants are reputed for farming, fishing, and other business opportunities.

Study Setting

The study was conducted in the Rivers State University Teaching Hospital (RSUTH), the host tertiary hospital to medical students from the Rivers State University (RSU) and PAMO University of Medical Sciences (PUMS) for clinical training.

Study Design

A qualitative phenomenological study design was employed for this research as it describes the participant's experiences with a focus on subjective perspectives through in-depth interviews and focus group discussions.[12]

Study Population

The study population consisted of selected management staff, lecturers, and medical students from the RSU, RSUTH, and PUMS.

Sampling Technique

Participants were selected by purposive sampling, aiming to select management staff and lecturers for in-depth interviews and medical students for focus group discussions who have relevant knowledge and experience about using a shared teaching hospital facility for clinical training of medical students.

Study Variables

A variety of themes, including the teaching hospital facilities shared by the medical students from both universities, challenges encountered from sharing the facilities, opportunities identified and suggestions to improve training or mitigate the identified challenges.

Interviews

In this study, to better understand the opportunities and challenges of shared hospital facilities for training medical students, a discussion guide was developed and in-depth interviews, and focus group discussions was used to collect information on the experiences of participants. A total of ten in-depth interviews and two focus group discussions (7 students in each group) were conducted. The interview involved asking the participants general and open-ended questions regarding the description of their encounter with the clinical training in a shared tertiary facility. The interviews were conducted by a moderator (one of the researchers) with previous training in qualitative methods and a trained assistant who is also one of the researchers was available to take handwritten notes and other observations during the interviews. Each interview lasted for about 40 to 70 minutes.

Data Analysis

All interviews with the participants were audio recorded and then transcribed verbatim at the end of the interview sessions. All participant identifications were removed, and the transcripts were uploaded for analysis into ATLAS.ti version 8.4.24 (Scientific Software Development, Berlin, Germany). Content analysis approach was used to identify and understand the opportunities and challenges of using a shared tertiary hospital facility for medical students from different universities. This method of analysis is an interpretive process that focuses on the subject and background. In this method, the first five scripts of the interviews were read twice, once by the researchers (once by one of the researchers who conducted the interviews and once by a team researcher who was not present during the interviews), to reach an overall understanding of the participants' responses and develop a codebook. The other two investigators applied the derived codes to the remaining seven transcripts and arbitrated any observed differences. Words, sentences, and paragraphs relevant to each other in terms of both content and context was merged and coded. The final codes were entered into the coding database, with corresponding quotations; these were then interpreted in the context of the study and discussed. Additionally, the codes were used to obtain the frequencies of quotations with the same meaning. The interview guide has been included in the Appendix. Before the arbitration process, the coding of the transcripts was compared by the two researchers to calculate the inter-coder reliability using the Cohen's kappa (κ) statistic. The value of kappa for the assignment of codes was 0.821, demonstrating "strong" agreement.[13, 14]

RESULTS

Ten in-depth interviews and two focus group discussions were conducted. The in-depth interviews included management staff of the Rivers State University Teaching Hospital and lecturers from the Universities (PUMS and RSU). The two focus group discussions of seven persons per group included students from the Rivers State University (RSU) and the PAMO University of Medical Sciences (PUMS).

Table 1. Participants' characteristics

Characteristics	Interviews			Total
	IDI	Focus group 1	Focus group 2	
Sex				
Male	6	3	5	14
Females	4	4	2	10
Age				
21 – 30	0	7	7	14
31 – 40	1	0	0	1
41 – 50	5	0	0	5
51 and above	4	0	0	4
Role				
Management staff	2	0	0	2
Lecturer/Doctor	8	0	0	8
Student	0	7	7	14

Table 1 shows details of participants' characteristics. There was a total of 10 females and 14 males. All the medical students were within the age range of 21 to 30 years. Five participants from the IDI were within the age range of 41-50 years and 4 of them were aged 51 years and above. Our study included 2 management staff, 8 lecturers from the two universities who were also medical doctors and 14 medical students. The participants discussed a variety of themes, including the teaching hospital facilities shared by the medical students from both universities, challenges encountered from sharing the facilities, opportunities identified and suggestions to improve training or mitigate the identified challenges.

Table 2. Shared facilities

Shared facilities	Frequency of responses
Hospital space	1
Lecture halls, clinics, wards, theatres	9
Time	1

The findings in Table 2 show the frequency of responses given by the participants concerning the facilities shared by medical students from the two universities. Lecture halls, clinics, wards, and theatres were the common facilities most frequently shared by the medical students at the teaching hospital. Other responses concerning shared facilities were hospital space and time.

Challenges Encountered from Sharing a Tertiary Hospital

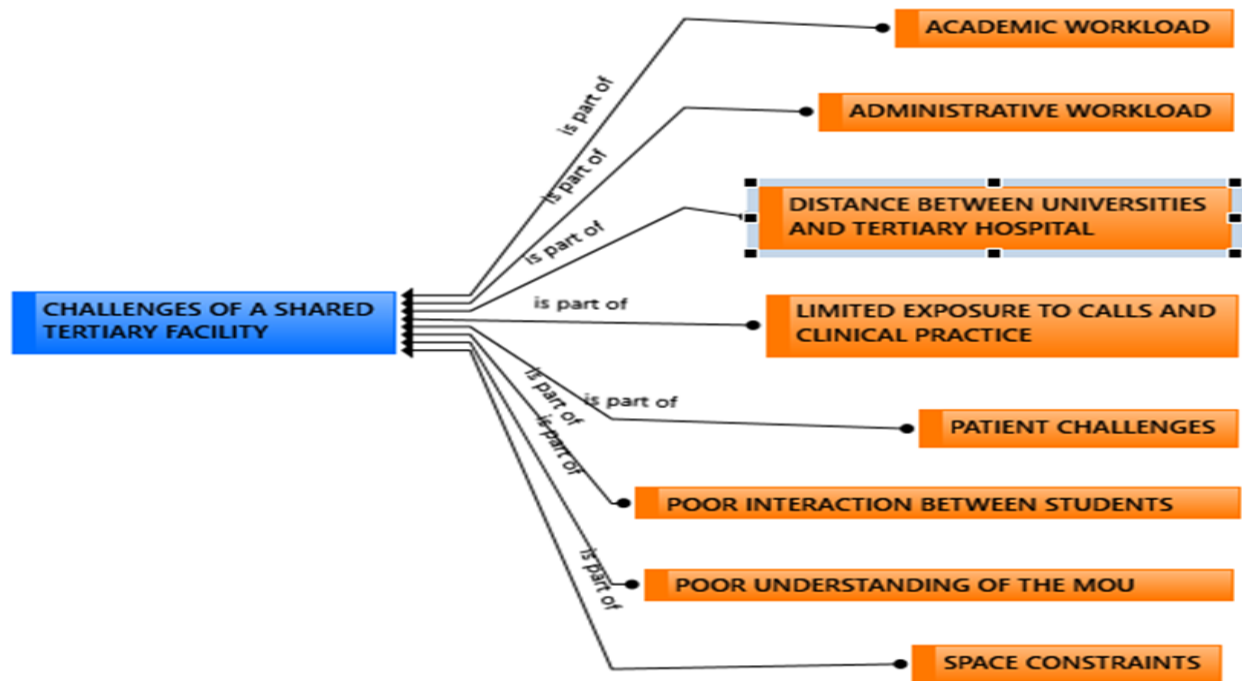


Figure 1: Hospital Challenges encountered from sharing a Teaching Hospital

Figure 1 shows that participants have identified some challenges as a result of sharing a tertiary hospital facility from two medical universities. From the interview sessions, the codes that emerged were academic workload, administrative workload, distance between the universities and the teaching hospital, limited exposures to night calls and clinical practice, patient challenges, poor interaction between students from the different schools, poor understanding of the memorandum of understanding between the Rivers State University Teaching Hospital and the PAMO university of Medical Sciences and space constraints. The quotations corresponding to the codes are shown in Table 3 and describe the experiences of challenges encountered when medical students from two universities have to share a teaching hospital. The most frequent challenge identified was space constraint followed by distance between the Universities and the teaching hospital, limited exposure to calls and clinical practice and academic workload.

Table 3. Codes and quotations of participants about challenges encountered from sharing a teaching hospital

Codes	Quotations
Academic workload	2:7 "Yes, the academic workload is a challenge" 3:6 "The workload will be much" 4:12 "Sometimes, it is overwhelming for the consultant that is teaching the students" 5:7 "The lecturers and trainers, sometimes are overworked" 10:2 "The challenge will be that the lecturers will have to do double teaching; you teach a set of seven now and then teach another set of 7 later."

Administrative workload	6:8 "As the head of the department, I have to do my work and the secretarial work too" 6:12 "The staff strength is low both in the teaching hospital and in the university" 10:6 "The multiple movements from one place to the other makes us miss administrative meetings"
Distance between universities and Tertiary hospital	1:7 "The university is located a bit far from the teaching hospital." 1:8 "We have to pay for transport to the hospital" 2:8 "For the students yes, there were a few times they came late, they will say that there was traffic" 5:10 "So the issue is travelling out to PAMO campus is that it's far out of town and taking the students off campus is quite an inconvenience." 5:11 "Sometimes when am going to teach in PAMO I just stay the whole day out there and take up more lectures which is not very good I think for the students." 6:9 "The location of the teaching hospital and the university in different parts of the same city is a challenge." 7:6 "The challenge is the fact that the university is far from the hospital."
Limited exposure to calls and clinical practice	8:3 "They can't take calls because they leave the hospital before 7 pm" 4: 7 "They are not having the needed clinical exposure" 4:6 "We don't do night calls because of the distance from our hostel to the hospital" 8:4 "It affects our medical experience" 12:11 "Due to the distance, lecturers are now forced to give 15 minutes to eat before the lectures. This takes up the lecture time and we will have less time for the clinical sessions after the classes"
Patient challenges	5:5 "The waiting time for the patient to be seen by many student doctors" 5:6 "Some patients just freak out for the students during the clinical sessions" 10:4 "So privacy of patients becomes an issue in this kind of arrangement because the students are many and this space is small"
Poor interaction between students	9:2 "We don't communicate much. Although we are in the same compound, we don't relate well, we just say hi to each other."
Poor understanding of the MOU	2:4 "There is an MOU yes, we heard about that, but we don't have the details of that MOU"
Space constraints	3:1 "We don't have enough classrooms for the medical students" 3:2 "There is no space the whole space is fully built" 3:5 "We really need more space we don't have enough space right now" 4:2 "Consulting rooms are small so when our students come sometimes the clinical processes overlap" 5:4 "Some of the challenges are the lack of space" 5:17 "Some RSU students will be like why are you guys coming into our space" 6:5 "There is a challenge of space" 7:3 "As clinical lecturers from PAMO, we don't have offices here" 9:4 "The space is very small for the consultant to teach all of them at the same time" 10:3 "Space constraints are much in terms of offices"

Opportunities of a Shared Tertiary Facility

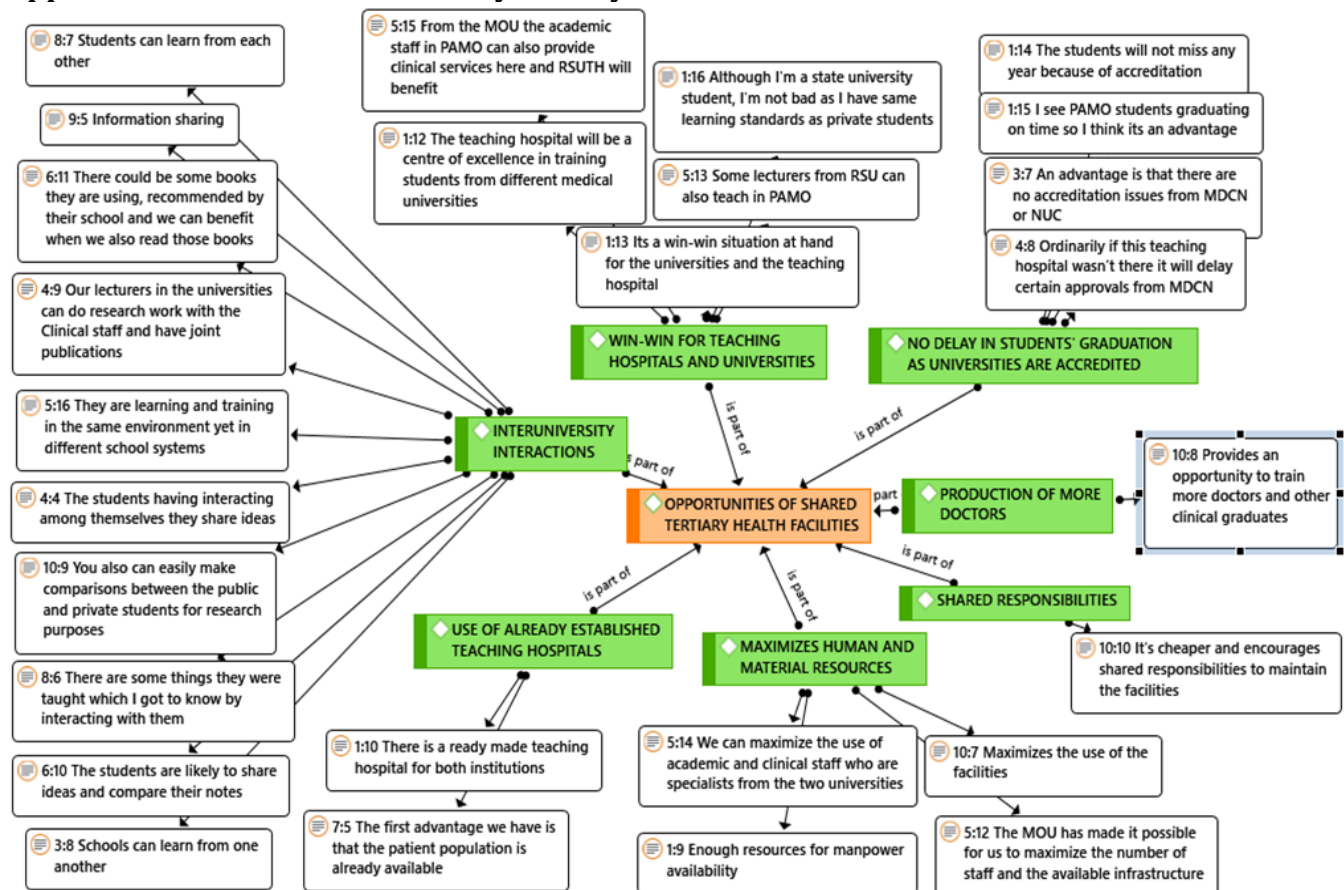


Figure 2: Opportunities of a shared tertiary facility

The results displayed in Figure 2 show opportunities identified from sharing a teaching hospital. A number of codes emerged including inter-university interactions, maximizing human and material resources, no delay in students' graduation as universities are accredited, production of more doctors, shared responsibilities, use of already established teaching hospitals, and a win-win for teaching hospitals and universities. Inter-university interactions emerged as the most common opportunity or benefit of sharing a teaching hospital. This was followed by a win-win for the teaching hospitals and universities, no delays in students' graduation as the medical universities will have all the necessary requirements to become an accredited institution, and the maximum use of human and material resources. The corresponding quotations for the codes are also displayed in Figure 2.

Measures to Improve Training in a Shared Tertiary Hospital Facility

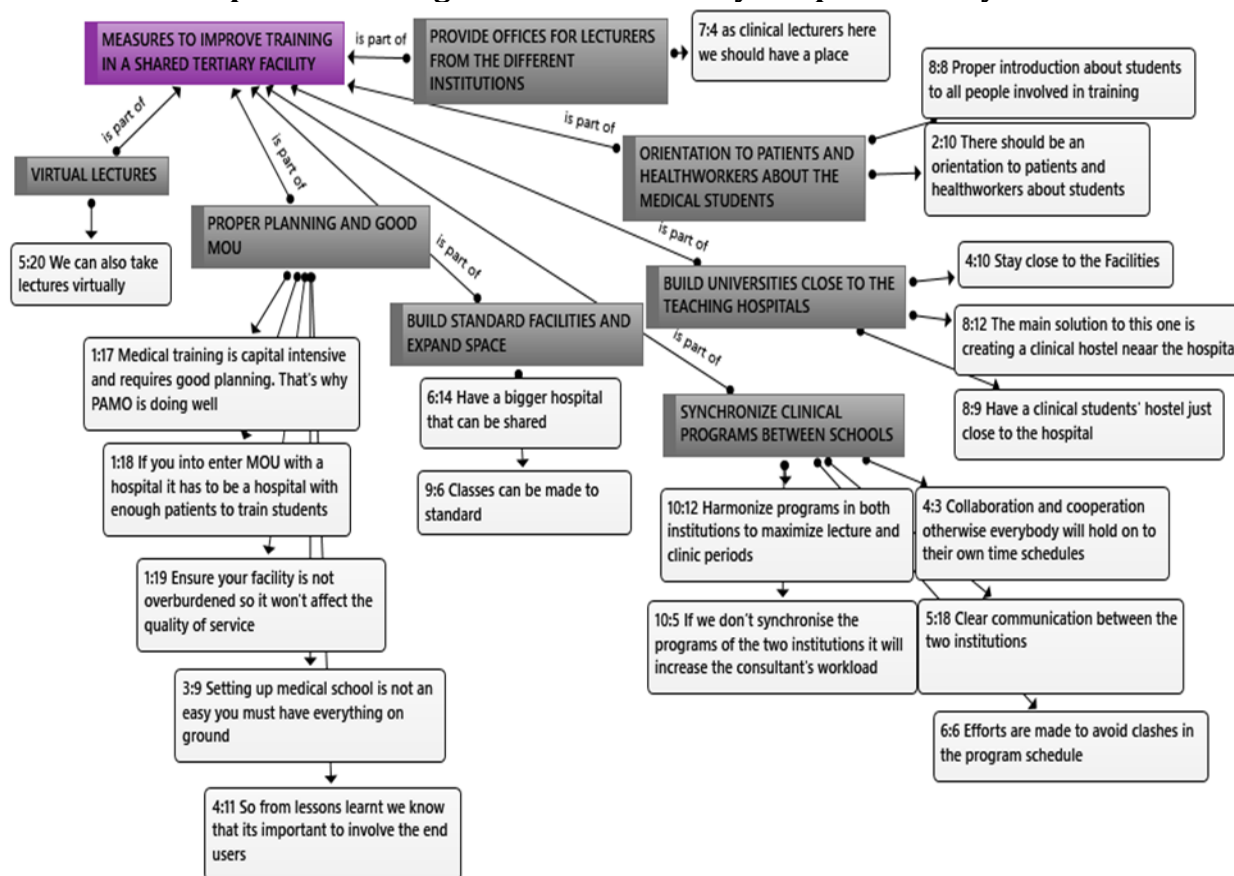


Figure 3: Measures to improve training in a shared tertiary hospital facility

The participants made some suggestions to improve the training of medical students in a shared teaching hospital (Figure 3). More commonly, suggestions about proper planning, having a good memorandum of understanding and synchronizing programs between schools were put forward. Building the universities close to the teaching hospitals was another popular opinion among the participants, while other suggestions put forward included: building standard facilities and expand the hospital space, providing orientation to patients and health workers about the medical students to give them proper recognition by patients and training by the doctors during clinical sessions, provide offices for lecturers from the different institutions within the teaching hospital and having virtual lectures.

DISCUSSION

Qualitative studies explore to provide insight into real world problems.[15] The use of in-depth interview and focused group discussion enables access to more details of a phenomenon including feelings that would not have been obtained. This is partly the reason for the choice of this study design. Shared facilities (by two independent institutions) for undergraduate medical education brought to the fore unique issues of concern that were not commonly discussed in literature. Highlighted in this study were the perspectives of the medical students, lecturers and the hospital management, with the intent to strike a balance in opinions on the issues being considered. The students age of 21 to 30 years was well within the undergraduate age of students reported in other studies,[16–18] and that of lecturers of 41-50 years was also in

tandem with other reports in Nigeria.[19–21] The issues discussed are shared facility for medical education, the opportunities / benefits accruable, the challenges encountered, and made suggestions for improvement.

Shared Facilities

The memorandum of understanding between PAMO University of Medical Sciences (PUMS), a private Medical University, and the Rivers State Government (who owns and administers the Rivers State University Teaching Hospital - RSUTH), requires the students of PUMS to use the facilities at the State Teaching Hospital, while the clinical staff of the PUMS work for the State Hospital and thereby use the environment to teach the PUMS clinical students undergoing clinical postings. This arrangement continues until the PUMS establishes her own Teaching Hospital. The implication of this is that the clinical students of the PUMS share facilities with the clinical students of the State- owned University – the Rivers State University. In this study, lecture halls, clinics, wards, and theatres were identified as being the common facilities most frequently shared by the medical students at the Teaching Hospital. Other responses concerning shared facilities were that of hospital space and time. Some similarity with the findings in this study was noted in facility sharing as reported among undergraduate and postgraduate students in the usage of clinical skills laboratory / facility with beneficial effects.[22] Another shared facility was reported among older adults and young children in Project SHARE - a field-building initiative designed to advance policy and practice related to intergenerational shared sites and shared resources in Canada.[23] These findings and reports contribute to knowledge sharing by health professionals and shared global learning.[24]

Opportunities / Benefits

The intent of the existing memorandum enabling the sharing of facilities between the institutions was to harness the advantages that could be derived from such arrangement. There were obvious opportunities / benefits, and these were identified to include: inter-university interactions, maximizing human and material resources, no delay in students' graduation, higher number of graduating medical doctors, shared responsibilities, use of already established teaching hospitals, and a “win-win” for teaching hospitals and universities. Inter-university interactions emerged as the most common opportunity / benefit, followed by a “win-win” for the Teaching Hospitals and universities, absence of delay in students' graduation, and the maximum use of human and material resources. The two institutions were partners in some form of collaboration with mutual benefits. In a study conducted by DeBoer and colleagues, comparable opportunities were identified including research, current best practice, improved patient care, and career development.[25] Mubuuke also identified research collaboration and team work as key opportunities that emerge from medical universities with affiliate teaching hospitals.[6] Similar beneficial outcome has been reported in other academic partnerships where facilities (structural or functional) were shared: enhanced students' learning seen in the collaboration of the K-12 / K-14 institutions and community colleges;[26–28] mutual benefits through joint planning and collaboration in academic-service partnerships;[29] peace-building processes in divided societies resulting from shared education in Northern Ireland; exponential increase in number and quality of Chinese publications and citations following academic collaboration with Germany.[30]

Challenges Encountered

The consequence of doing something differently is not only the opportunities / new advantages seen therein, but also encountering challenges. It is therefore not strange to encounter challenges as some of the known scientific discoveries were made by men who walked the path of innovations that led them to new discoveries.[31–33] In this study, some of the encountered challenges in shared facilities between the two institutions using the same Teaching Hospital were felt more by lecturers / administration, while others were commonly experienced by the students. However, some overlap did exist. The lecturers and clinicians experienced increase in academic workload, administrative workload, poor understanding of the memorandum of understanding between the Rivers State University Teaching Hospital and the PAMO university of Medical Sciences, and space constraints. Some of these challenges encountered are a consequence of the complex but changeable mix of monopoly and monopsony power in the different institutions, since these institutions are independent and have different goals to achieve.[34] Furthermore, there are limited guidelines controlling the association between the medical schools and the affiliate teaching hospital. However, these challenges are modifiable, as Al Kuwaiti et al recommended; they noted that having a transformational leadership will enhance efficient and strategic planning which will be beneficial to the medical students, medical professionals, the institutions involved, patients and the quality of health services provided.[35]

It is understandable that the most frequent challenge identified was space constraint followed by distance between the Universities and the teaching hospitals, limited exposure to calls and clinical practice and academic workload, poor interaction between students from the different universities and patient challenges. These challenges have also been identified in a similar study conducted by Almushait et al[36] who suggested that for space constraints, logistical solutions could be instituted to control the distribution of students to each clinic thereby facilitating a positive learning environment for both faculty members and students.[36] This would also improve clinical training experience and limit patient anxiety as the student crowd is reduced. Our study shares some similarity with an Iranian report of the challenges and opportunities encountered by teaching hospitals, although this study discussed issues of shared facilities for medical training which was not captured in the Iranian study.[11] Our study differs from Kastor's as the turmoil experienced in American setting in governance of university and teaching hospital was not encountered as each institution has clear-cut roles.[7] However, this event occurred almost twenty years ago and the perceived administrative issues have been resolved.

Studies on sharing information, especially in research have also been carried out and challenges identified, such as the one christened 'barriers' that restricted the ability of researchers to establish, promote, and sustain research best practices; this was reported in a survey on scientific shared resource rigor and reproducibility, by a committee of the Association of Biomolecular Resource Facilities (ABRF) with a mission to integrate advanced technologies, education, and communication in the operations of shared scientific resources in support of reproducible research.[37] Also, in the aftermath of Hurricane Maria in 2017 in Puerto Rico, some medical students were temporarily relocated to other institutions where facilities have to be shared, and similar increase in workload was reported as a significant challenge.[38]

Suggestions Proffered

Challenges abound in life in different sectors at different times, and different strategies have been documented on how to approach such challenges and overcome.[39, 40] In this study, emphasized as suggestions were the need for proper planning of programs, building of universities and teaching hospitals in proximity, building standard facilities and expanding on existing hospital space, orientation to patients and health workers (about the medical students), training by the doctors during clinical sessions, provision of offices for lecturers, and facilities for virtual lectures. Similar suggestions were put forward in the study by Mubuke et al, including having a Collaborative Relationship Model, and importance of having a clear memoranda of understanding between the institutions.[6]

Study Limitations

A non-probability method was used in this study to select few participants and their views, which may not reflect the true representative view of other students, lecturers, or the administrative staff. Therefore, the results provide a platform for larger probability studies which may reveal other significant findings.

CONCLUSION

A report of the experience with shared facilities for undergraduate medical education is presented in this study. The scope of the collaboration included physical structures and academic / professional skills of clinicians, with impact felt on students, clinicians, and administering institutions. The most common benefits / opportunities were inter-university interactions followed by a “win-win” for the Teaching Hospitals and universities, absence of delay in students’ graduation, and the maximum use of human and material resources. Challenges were encountered, most of which were modifiable, and suggestions were made to address them. Based on findings from this study, we recommend proper planning in the development of medical schools that intend to work in collaboration with an already existing teaching hospital, taking into consideration the facilities that will be shared with other medical schools using the same teaching hospital and having mitigation plans to address the likely challenges that may be encountered.

Since the medical field is a continuously changing environment, similar changes will be reflected on our medical education. Therefore, the challenges, opportunities and suggestions identified in this study can assist medical educators and teaching hospital management to make the necessary changes that will enhance clinical teaching and learning for the general advancement of medical education.

OTHER INFORMATION

Acknowledgement

We acknowledge the contributions of the Management of the Rivers State University Teaching Hospital (RSUTH), the lecturers /clinical staff of the RSU and PUMS, and the students of the two universities for making available their valued time for interviews and group discussions, from which data was obtained for this study.

Ethical Considerations

Ethical approval for this study was obtained from the Ethical Committee of the Rivers State University Teaching Hospital before the beginning of the study. The purpose of the study was

explained to all the participants and informed consent to voluntarily participate in the study and audiotape the conversations were obtained before the interviews were conducted. The participants were assured of the confidentiality of the data. In addition, the recorded interviews were kept in a safe place and were only accessible to the researchers.

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Conflict of Interest: None declared.

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APPENDIX

Study Guide Questions

Introduction

Dear participant, we are conducting a study to know your experiences, challenges, and opportunities of a shared medical facility for training medical students. We will be needing about 30 to 50 minutes of your time. This interview will be recorded for the purpose of transcribing and analyzing the responses you provide. Be rest assured of the confidentiality of the information you will provide. You will be asked some questions to help guide the flow of our discussion, please feel free to discuss extensively on any aspect of the questions that are important to you and be free to point out any question that you are not comfortable with discussing.

Tell me about the medical facilities your students share with students from other medical schools.

Tell me about your perceived challenge(s) of using a teaching hospital for training medical students from two different universities.

Describe your perceived advantage(s) of using a teaching hospital to train medical students from two universities. What measures do you think need to be in place to improve the training of medical students from different universities who share a medical facility/teaching hospital?

Thank you very much the time you have spent in sharing your valued experiences and excellent suggestions. Kindly contact the principal researcher or other members of the research team if you have any questions about this research.