EXPLORING THE ROLE OF THE PHYSIOTHERAPY CLINICAL EDUCATORS IN THE CLINICAL SETTING IN UGANDA

CHARLES KIBUUKA

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3813381

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SUPERVISOR

DR FARHANA KARACHI

DATE

NOVEMBER 2020

DECLARATION

I declare that ***"Exploring the role of the physiotherapy clinical educators in the clinical setting in Uganda"*** is my own work, has not been submitted for any degree or examination, at any other university, and all the resources I have used, or quoted, have been indicated, and acknowledged by complete references

Name: Kibuuka Charles

Date: November 2020

Signed: 

ABSTRACT

Background: Clinical education is considered a cornerstone of the healthcare professionals' education including physiotherapists. Clinical education involves translation of theoretical knowledge into practical skills, facilitated by clinical educators whose roles vary from place to place. The clinical educators' roles have a number of facilitators as well as barriers and these have been minimally evaluated globally and locally, including Uganda. Therefore, the aim of the study was to explore and describe the perception of the physiotherapists regarding their role as clinical educators and to identify the barriers to and facilitators for physiotherapy clinical education at the national and regional referral hospitals in Uganda.

Method: A qualitative exploratory descriptive research design was used. All physiotherapy clinicians from the national and the four main regional referral hospitals who provided consent to participate were included. Total population sampling, a form of purposive sampling was used where only those physiotherapists from the national and the four main regional referral hospitals in Uganda who had worked as clinical educators for at least two years were invited for an individual face-to-face audio-taped interview conducted by the researcher at a time and place convenient to participants following informed consent using a semi-structured interview guide. Data was transcribed verbatim and analysed using both inductive and deductive thematic content analysis to develop codes, categories and themes. Trustworthiness was observed by ensuring credibility, conformability, dependability and transferability of data. Ethics clearance was obtained from the relevant authorities both in South Africa and in Uganda.

Results: Eighteen (81.8%, n=18/22) physiotherapy clinical educators participated in the study**.** Eight (44.4%, n=8/18) participants were from the national referral hospital and ten (55.6%, n=10/18) participants were from the regional referral hospitals. The age range was 32-50 years and the mean age was 41.1(SD±5) years with males generally older (42±6.28) than females. The majority of participants (67%, n=12/18) had five to ten years of experience

working as clinical educators but 83% (n=15/18) had ten and more years of experience as a physiotherapist working in clinical practice. The majority of the participants (67%, n=12/18) held a diploma in physiotherapy as the highest education qualification. Five themes, each with their own categories and subcategories, emerged for the clinical educators' roles and included: empowerment of the students, promotion of students' professional behaviours, integration of theory and practical, evaluation of students and promotion of multidisciplinary teamwork. The facilitators of educators' roles were more of personal factors than external factors. There were challenges related to the lack of knowledge of teaching methods and clinical education guidelines by the educators, lack of commitment to studies by the students and an unconducive work environment that appears to be negatively affecting physiotherapy clinical education in Uganda.

Conclusion: The study findings suggest that physiotherapy clinical educators in Uganda carry out roles that are similar to those of physiotherapy clinical educators in other countries but with different implementation approaches including the dual role (clinician and clinical educator) of clinical educators in Uganda. The lack of knowledge of clinical education guidelines being the most common barrier perceived seems to negatively affect and make the attainment of effective clinical teaching and learning in physiotherapy clinical education difficult in Uganda. However, it is perceived that an acceptable level of the desired clinical education outcomes is still being achieved because of the clinical educators' personal factors and facilitators described by the physiotherapy clinical educators in Uganda.

Key words: clinical education, physiotherapy, roles, clinical setting, Uganda

Word count: 496 including headings

ABBREVIATIONS

AAPP:	Australia Assessment of Physiotherapy practice
APTA:	American Physical Therapist Association
APTCPI:	American Physical Therapist Clinical Performance Instrument
CE:	Clinical Educator
CME:	Continuous Medical Education
CPD:	Continuous Professional Development
ICAF:	Ireland's Common Assessment Form
MoE:	Ministry of Education
MoH:	Ministry of Health
MDTA:	Multidisciplinary Team Approach
OPD:	Out Patient Department
SWD:	Short Wave Diathermy
SHO:	Senior House Officer
UAHEB:	Uganda Allied Health Examinations Board
UAP:	Uganda Association of Physiotherapists
WCPT:	World Confederation of Physical Therapists
WHO:	World Health Organisation

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ETHICS

Ethics approval was obtained from the Biomedical Research and Ethics committee of the University of the Western Cape, South Africa (Ethics reference number- BM19/9/14) and from Mulago Hospital Research and Ethics committee in Uganda (MHREC 1782).

FUNDING AND CONFLICT OF INTEREST

The researcher acknowledges that the study was self-funded and there is no conflict of interest related to this study.

CHAPTER 1: BACKGROUND

In a study conducted by Meyer, Louw & Ernstzen (2017), they highlighted that clinical education is widely considered to be the cornerstone of the healthcare professionals' education (Kilminster et al 2007; Laitnen-vaananen 2008). It is a teaching and learning process which is student-oriented aimed at ensuring client safety and care (Delany & Bragge, 2009). Physiotherapy clinical education allows the student the chance to apply theoretical knowledge and skills acquired in the classroom to real live patients and also to practise team work with other professionals in the clinical setting (Newstead, Johnston, Nisbet, & McAllister, 2017; Ernstzen, 2013).

Furthermore,clinicaleducationinvolvesthetranslationoftheoreticalknowledgeintopractical skills with the incorporation of professional behaviour and attitude (McAllister, Lincoln, McLeod, & Maloney,1997).Aswithotherhealthcareprofessionals,theimportanceofclinical education is as vital and central in preparing physiotherapy students for their professional role (Fairbrother, Nicole, Blackford, Vilapakkam, & McAllister, 2016).This is because clinical education of healthcare professionals including physiotherapy requires the educators working in the clinical settings to have a specialised body of knowledge and skills to successfully help students learn (McCallum, Reed, Bachman, & Murray,2015).

Physiotherapy clinical education in Uganda is carried out by physiotherapists who have a dual role of clinician and clinical educator. However, information about the perceived roles of the physiotherapy clinical educator and physiotherapy clinical education knowledge and skills possessed by the physiotherapy clinical educators is not readily available due to a dearth of literature in particular Uganda. Ezenwankwo et al. (2018) state that clinicians working as educators without teaching skills tend to create a knowledge gap between theory and practice.

Clinical educators play many roles for example teaching, guidance, assessment and mentoring of students within a single clinical teaching session (Austerberry & Newman, 2013). McAllister et al. (1997) and Austerberry and Newman (2013) identified some common roles carried out by the clinical educator namely: role modelling, being a colleague, teacher, an evaluator, administrator, counsellor and mentor. In addition, for these roles to be successfully executed, with the emphasis on individual student development and patient care, clinicians need to develop expertise in a wide range of personal and interpersonal skills to supplement the core discipline skills (Edgar & Connaughton, 2014). However, in Uganda majority of the physiotherapy clinical educators have only the core discipline skills (physiotherapy skills) and work in an environment that may not favour them to acquire the necessary supplementary skills which can facilitate the achievement of effective clinical education. As there is no or minimal documented or literary evidence for the latter except for the personal experience of the researcher who has been trained and works in Uganda as a physiotherapist, conducting this study will highlight these aspects possibly affecting physiotherapy clinical education in Uganda.

Generally, the environment in which clinical education occurs should support skills proficiency and a caring attitude needed to become a competent professional as well as a competent clinician (Ernstzen, 2013). However, according to Rodger, Webb, Lorraine and John (2015), achieving effective clinical education among allied healthcare professionals has often been affected by lack of a sufficient number of qualified clinicians and a limited number of practicum sites against increasing numbers of students. In an attempt to solve such clinical education challenges, researchers have come up with different clinical education guidelines (models) to help in the implementation of this vital activity (Lekkas et al., 2007; Fairbrother et al., 2016; Hawkins & Shohet, 2012).

In countries where clinical education guidelines are available, known and utilized by clinical educators, the choice and implementation of a given set of these guidelines varies from profession to profession and from location to location (Fitzpatrick, Smith, & Wilding, 2012). For that reason, the usefulness of any chosen clinical education model will depend on the clinical educators' skills and abilities to implement it (Kell & Owen, 2008). For example, in South Africa where the Allied Health Key Dimensions model (clinical education guideline) was adapted and implemented by the allied health professions clinical educators, the clinical education and practice has yielded positive results on the quality and efficiency of healthcare among allied health professionals (Ramklass, 2013).

Similarly, the challenges of limited number of qualified clinicians and accredited practicum sites encountered in physiotherapy clinical education in developing countries are also experienced in Uganda. However, unlike in the developed countries where research and innovations have provided solutions to some clinical education challenges (Fairbrother et al., 2016), there is limited research about the role of physiotherapy clinical educators in the clinical setting in Uganda (Rukundo et al., 2016). Therefore, there is a dearth of evidence about the roles of physiotherapy clinical educators in Uganda despite having the clinical education curricula in place. This provided the rationale for the need to close this gap in the current literature and explore and describe how the clinical educator role is structured and implemented in physiotherapy clinical education in Uganda including barriers and facilitators for the physiotherapy clinical educator role in this setting. Physiotherapy clinical educators in Uganda carry out a dual role of clinician and educator within an environment that presents varying demands which calls for multiple knowledge and skills set by the educators. Because the researcher is both a physiotherapy clinician and a certified educator in Uganda, he became interested in exploring how his fellow clinicians/clinical educators perceive and carry out

their clinical educator roles while in the clinical setting.

1.1 Problem Statement

The lack of a well-defined and structured role of healthcare professional clinical educators including physiotherapists in Uganda could be negatively impacting on students' performance, physiotherapy services and patient care (Rukundo et al., 2016). The latter problem is complicated further by lack of regular evaluation of the clinical education process to identify the gaps. Therefore, of physiotherapy service and patient care by student physiotherapists to improve without the role of clinical educators in educating physiotherapy students in clinical education being reviewed and appraised regularly.

According to Schoo and Kumar (2018), clinical educators' carry out their role in a complex and dynamic health system that presents different demands from multiple levels that include the profession, the patients and the students. Schoo and Kumar (2018) noted that because of the unpredictability of the environment in which clinical education takes place, the role of the clinical educators keeps changing, thus impacting the teaching and learning process. How the latter affects clinical educators in Uganda is unknown and therefore needs to be evaluated. Minimal quantitative and qualitative studies (McCallum et al., 2015; Edgar & Connaughton, 2014; Ernstzen & Bitzer, 2012; Rukundo et al., 2016) regarding the profile and role of physiotherapy clinical educators in physiotherapy clinical education exists in both developed and developing countries, including Uganda.

1.2 Research Question

What roles do physiotherapy clinical educators play in the clinical setting in Uganda?

1.3 Aim of the Study

The aim of this study was to explore and describe the perceptions of physiotherapists regarding their role as clinical educators and to identify the barriers to and facilitators for clinical education at the national and regional referral hospitals in Uganda.

1.4 Specific Objectives

1.4.1 To explore the physiotherapy clinical educators' perception of their role in physiotherapy clinical education in Uganda.

1.4.2 To explore the barriers to, facilitators for and possible solutions to physiotherapy clinical education in Uganda.

1.5 Significance of the Study

It has become imperative that there is a need to properly articulate and clarify the roles of professional healthcare workers especially among physiotherapists in clinical education. Consequently, this study brings new insight that can help to improve the training and practice of physiotherapy. The findings provide an in-depth understanding of the role of physiotherapy clinical educators and how this role is carried out in Uganda. The findings also highlight the challenges that face physiotherapy clinical education and the gaps in the implementation process as perceived by the clinical educators in Uganda. Therefore, the findings of the study could be useful to the Uganda Ministries of Education and Health to evaluate their input in physiotherapy clinical education, thus enabling the necessary reviews on training policy and accreditation of clinical practicum areas. Furthermore, the findings could be useful to all University settings that house medical or allied health science schools and are involved in clinical education globally by providing insight to some of the challenges in and facilitators for clinical education. Finally, the findings provide insight into the clinical education practice

similarities and differences that exist in Uganda which could of be of interest to other researchers both locally and internationally.

1.6 Ethics

Ethics clearance to conduct the study was obtained from the Biomedical Research Ethics Committee at the University of the Western Cape, South Africa, (Ethics reference number BM19/9/14, Appendix1) and from Mulago Hospital Research and Ethics Committee in Uganda (MHREC, 1782, Appendix1). All participants were provided with an information sheet (Appendix2) and a consent form (Appendix 3) which was available in English only as all participants were educated and fluent in the English language. The data collected from each participant was captured into Microsoft word and stored on a password protected computer only accessible to the researcher and will be destroyed five years following publication. If any problem or discomfort was caused or experienced by the participants that the researcher was unable to address, an appropriate referral was made to a counsellor, Dr Kasigire Paul for the participant to be appropriately assisted. Participants were informed both in writing and verbally of their right to withdraw from the study at any time during the process without facing any consequences. Codes were used for each participant namely P1, P2, P3, … and so on until P18 and this ensured anonymity and confidentiality of the data collected.

1.7 Structure of the Thesis

The thesis is structured according to the conventional thesis structure with six chapters including an introduction, literature review, methodology, results, discussion and conclusion. The content of each chapter is described as follows:

1.7.1 Chapter One: Introduction

The researcher introduces the main concepts around clinical education of health care

professionals particularly that of physiotherapists. The introduction describes how understanding of the clinical educator role can improve the effectiveness of clinical education. The researcher provides information regarding the problem statement and therefore the rationale for the research question and the objectives. The significance of the study is highlighted, the ethics consideration outlined in brief and the description of the structure of the thesis made.

1.7.2 Chapter Two: Literature Review

In this chapter, the researcher reviews the relevant literature in terms of the role of clinical educators, the facilitators for and the barriers to clinical education in the clinical setting. The theoretical framework appropriate for physiotherapy clinical education is also described. The researcher highlights the lack of evidence on the role of physiotherapy clinical educators in Uganda which indicates the need for this research study.

1.7.3 Chapter Three: Methodology

The researcher describes the methodological design relevant for this study and includes a description of the research setting, the study design, study population, sampling method, instrument used for data collection, the data collection procedure, data capturing and analysis, trustworthiness and ethics considerations.

1.7.4 Chapter Four: Results

In this chapter the researcher describes the characteristics of the participants of the study and discusses the emerging themes and categories following data analysis and presents these findings in a narrative format.

1.7.5 Chapter Five: Discussion, Strengths and Limitations, Recommendations

The discussion chapter highlights the main findings of the study and integrates these findings with other evidence on the topic explored. The researcher analyses and interprets the findings with regards to the implications for future research and improvements in the area of

physiotherapy clinical education. Finally, the strengths and limitations of the study are outlined in brief and the chapter concludes with recommendations for the way forward.

1.7.6 Chapter Six: Conclusion

The final chapter draws a closure on the problem identified, the study method and findings and discusses the way forward on how the findings can be used by relevant stake holders in the field of physiotherapy clinical education.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

In this chapter, the researcher reviews the relevant literature in terms of the role of clinical educators, the facilitators for and the barriers to clinical education in the clinical setting. The theoretical framework appropriate for physiotherapy clinical education is also described. The researcher highlights the lack of evidence on the role of physiotherapy clinical educators in Uganda which indicates the need for this research study.

2.2 The Development of the Role of the Physiotherapy Clinical Educator

Internationally, at the time when physiotherapy was being taught at the tertiary institutional level in the later part of the 19th century, clinicians were being referred to as instructors (Balogun, Philip, Adetutu, Mbada & Okafor, 2018). Clinical instructors preferred the apprenticeship model of clinical education (Dennen & Burner, 2008; Rindflesch, Dunfee, Cieslack, Eischen, & Trenary, 2008). This model is where a more experienced physiotherapist would help a trainee physiotherapist to acquire clinical knowledge and skills through observation. As physiotherapy training moved from tertiary institutions to university level, the clinical instructor's role changed to a supervisory role in order to take care of both patients' and machines' safety during students' clinical practice at the wards. The supervisory role eventually transformed into the clinical educator role due to the increased demands for students' learning (Rosalie, 2008; McAllister et al., 1997). This evolutionary change started in developed countries and later in the developing countries including Uganda (Balogun et al. 2018).

2.3 The Roles of Clinical Educators

The clinical educators' role refers to a formal designated responsibility taken on by a qualified healthcare professional to facilitate learning of pre-registration trainees (Austerberry & Newman, 2013). Various studies have been carried out internationally on the roles of

physiotherapy clinical educators (Edgar et al., 2014; McCallum, Mosher, Jacobson, Gallivan, & Giuffre, 2013; Ong etal., 2018; Odole & Oladoyinbo, 2014). In a qualitative exploratory study done in Australia, Edgar et al. (2014) found that the roles of physiotherapy clinical educators included supporting the students to learn through guidance, mentorship, linking the university/institution and placement sites and teaching. Clinical educators have the responsibility to assess students' knowledge and skills during clinical practice and to help them develop professional competence. According to Harden and Crosby (2000) the roles of educators vary from institution to institution depending on the pre-set desired education outcomes that would be true for clinical educators as well. In their education model, Harden and Crosby 2000 identified twelve roles that an educator plays during their interactions with the students. Some of these educator roles stated by Harden and Crosby (2000) include the information provider; role model; facilitator; assessor; planner and resource developer that would be expected of the clinical educator as well. Furthermore, in a systematic review study that was conducted in the United States about the quality in physical therapy education; McCallum et al. (2013) reported that the roles of clinical educators influenced the quality of physiotherapy care. The roles of clinical educators constitute activities that determine the skills, attitudes and behaviours that students tend to adapt which later influence their clinical practice and quality of physiotherapy patient care. These researchers identified the following roles: conducting objective assessment of the students' performance, monitoring the overall quality of students' clinical experience, management of patients and students and provision of a conducive environment for students' learning (McCallum et al., 2013).

Similar studies were carried out in Africa in particular in South Africa (Meyer et al., 2017; Ernstzen & Bitzer, 2012). In South Africa, Ernstzen and Bitzer (2012) identified activities and educator characteristics that facilitate learning in physiotherapy. The results indicated the clinical educators' role as being a role model, a facilitator of learning and an evaluator. In

addition, Meyer et al. (2017) noted that some clinical educators are involved in planning and developing learning resources for students as well as mentorship. In some developing and underdeveloped countries including Uganda, physiotherapy clinical educators carry out a dual role of clinician and educator where they have to attend to the demands of both patients and students while in the clinical setting (Voges & Frantz, 2019; Odole & Oladoyinbo, 2014; Ong et al., 2018).

The available international and local African studies clearly show that clinical educators play varied roles depending on the location, choice of individual physiotherapy clinical educator, clinical set up, nature and number of students (Meyer et al., 2017; Edgar et al., 2014; McCallum etal.,2013; Ernstzen & Bitzer, 2012). That is why Parkinson (2016) suggested that clinical education systems and activities be reviewed regularly to address the challenges of variability in these clinical educator roles and thus the clinical educator practices.

Therefore, clinical educators are required to choose the most appropriate way of performing their roles that is within the available guidelines to ensure the desired physiotherapy clinical education outcomes. This will enable trainees to practise in all situations (Pollock et al., 2016). While fulfilling their duties, clinical educators are encouraged to conduct themselves in the most desirable personal and professional manner to prevent students adopting bad practices. Benbasset (2014), and Delany and Molloney (2009) emphasised that a role model is the most viable teaching strategy available for the clinical educator through which teaching of values, attitudes, behaviour and shaping the student for future professional competence can be achieved.

According to Delany and Molloney (2009), another important role of clinical educators is to facilitate trainees to integrate the theory and practical skills. The latter is achieved through the identification of the learners' needs and by engaging them in critical thinking that ensures

their ability to make their own clinical decisions. Brunero and Parbury (2008) classified the identification of the learners' needs, engaging them in critical thinking that ensures their ability to make their own clinical decisions as a formative role of clinical educators.

When performing the educational role, Watling, Driessen, Van der Vleutenand & Lingard (2014) argue that the nature of feedback determines the perspective in which the student makes sense of his/her practice experiences. Hence, providing feedback should be handled with great care as it can impact on the behaviour or specific skills (Morris & Stew, 2013). Giving effective feedback is seen to be largely dependent on the educator-student relationship (Watling et al., 2014). Therefore, it is the role of the clinical educator to establish a learning-teaching atmosphere that will enable a student to seek feedback and a clinical educator to willingly give feedback timeously and appropriately.

In addition, clinical educators perform the role of evaluating the students' performance and the whole process of clinical interaction (Delany & Molloney, 2009). The latter helps the clinical educator to review learning objectives and plan new learning opportunities (McAllister et al., 1997). However, this role has always been influenced by the educator-student relationship whereby some educators who may be clinicians, clinical supervisors or lecturers who assess in the clinical setting have reportedly failed to assess students' performance objectively during progressive clinical practice (Meyer et al., 2017).

Furthermore, clinical educators also take on a managerial role (McCallum et al., 2013). They help with the implementation of the clinical education programme, ensuring that the objectives of practice are achieved (McCallum et al., 2015). Therefore, clinical educators require a thorough preparation for and orientation/induction into their roles (Edgar et al., 2014; Austerberry & Newman, 2013). Harden and Crosby (2000) emphasise that even though

educators have numerous roles to play, these roles are interconnected and sometimes cut across. Although the roles of the physiotherapy clinical educators have been studied and suggestions made about its implementation in developed and some developing countries, no literature is available about the roles of physiotherapy clinical educators in Uganda. Therefore, this study is the first of its kind that explores the roles of physiotherapy clinical educators in Uganda and the results of which contributes to the literature of physiotherapy clinical education on the African continent.

2.4 Barriers for Clinical Educators

The challenges faced by clinical educators range from those presented by the students, the university, practicum sites and the job market (O'Brien et al., 2017). O'Brien et al. (2017) observed that clinical education demands unconditional commitment and time that presents an alarming challenge to educators, with which many clinical educators have failed to cope. Currently, the first common challenge faced by clinical educators is the facilitation of a large number of students to comprehend a vast package of knowledge and skills in a short period of time, while simultaneously having to achieve an acceptable level of understanding (Loewen et al., 2017). Having a large number of students enrol for physiotherapy and other allied health professions has caused a shortage of and competition for clinical placements; thus, resulting in insufficient learning resources (Higgs & McAllister, 2005). Also, engaging learners of different study levels in the clinical environment makes it difficult for the clinical educators to concentrate on training and supervision of particular skills (Ramani & Leinster, 2008).

Additionally, the healthcare and clinical education systems are constantly changing (Delany & Molloney, 2009). Therefore, clinical educators are required to be innovative and to have life- long learning skills in order to facilitate student learning that is tuned to the present and

future patient demands (Edgar et al., 2014). Rowe (2016) noted that for professionals to survive in the changing healthcare system, educators have to be innovative and equip students with research skills to match the changes. Furthermore, because the majority of clinical educators are practising clinicians, they experience difficulties in finding a balance between serving or seeing both the patients' and students' needs (Higgs et al., 2005). On many occasions, patients take first priority thus reducing students' time for learning (McCallum et al., 2013). Ramani and Leinster, (2008) noted that although many clinicians are prepared for their clinical roles, very few have teaching knowledge and skills.

O'Brien et al. (2017) observed that clinical education demands unconditional commitment and time that presents an alarming challenge to educators, with which many clinical educators have failed to cope. Therefore, the role of clinical educators needs to be separated from that of a clinician in those countries where this role is still combined if effective clinical education is to be achieved. It would be important to note whether this is a challenge for Ugandan physiotherapy clinical educators and whether they are able to find ways to adapt to this challenge.

2.5 Facilitators for Clinical Education

Clinical education comprises a number of different functions broadly categorised as; formative, restorative, and normative functions (Brunero et al., 2008). These are guided by sets of approaches referred to as models. A model constitutes a conceptual framework that can highlight the crucial stages in the clinical education process, the roles of the clinical educator and trainee (Denen et al., 2008). Advancements in clinical education have resulted in the evolution of clinical models from the traditional one-on-one to the collaborative type of models where one clinical educator facilitates more than one student or two clinical educators facilitate more than one student (Lekkas et al., 2007). The traditional one clinical educator to

one student model has been in use for a long time and is still being used in physiotherapy clinical education (O`Connor & McKay, 2012) for its benefits of maximum utilisation of contact time between the clinical educator and the student; hence ensuring efficiency.

On the other hand, according to Rindflesch et al. (2009), collaborative models have presented significant benefits. For example, promotion of peer learning, enabling reflective learning, promotion of student independence and easing the clinicians' double duty coverage. However, the available literature shows that there is no perfect model (Lekkas et al., 2007), for each model has benefits and weaknesses. Therefore, Fairbrother et al. (2016) suggested that the model chosen should enable the achievement of positive clinical education outcomes. When handling large number of students, a clinical educator may be required to adapt to more than one model in order to take care of the different students' learning abilities and the demands of the clinical environment in which learning is taking place. Because of the lack of a common stand of what makes effective clinical education in physiotherapy, Fitzpatrick et al. (2012) and Hawkins et al. (2012) argued that the process of clinical education should be regularly evaluated to ascertain its effectiveness.

Furthermore, Newstead et al. (2019) noted that physiotherapy clinical education can be facilitated by the individual clinical educators' experiences, knowledge and skills gained through continuous profession development (CPD). CPDs particularly in clinical education increase the clinical educators' confidence to facilitate students' learning. Generally, there are not many facilitators to enhance and improve clinical education in physiotherapy especially in less developed countries which have limited material and human resources. For example, the use of technology in teaching and learning activities has been proved to effectively facilitate physiotherapy clinical education. However, technology is still poor in many African countries including Uganda and therefore the solution to this is required. In addition, dual roles such as

physiotherapy clinician and clinical educator that may be the case in some developing countries due to limited staffing or other reasons not necessarily known also present challenges in the time required for both patient care and student clinical education and these challenges need to be addressed. The current study hopes to identify the facilitators for the perceived challenges faced by Ugandan physiotherapy clinical educators.

2.6 Theoretical Frameworks in Clinical Education

The theoretical framework enables the researcher to explicitly identify the point of entry into the research. Understanding how students acquire and develop knowledge and skills in a clinical learning environment by using learning theories and models relating to the physiotherapy practice is crucial in the development of a competent health practitioner. There is a substantial body of research on theories and models relating to the role of the physiotherapy clinical educator in the clinical setting with each having its own issues and inadequacies in some respect. It is now generally acknowledged that clinical education is the supervised acquisition of work-readiness skills, ability, attitude, values, ethics, professionalism and the provision of clinical opportunities for students to attain competence at a level of a beginner or novice practitioner by applying theoretical and evidence-based knowledge, skills and attributes developed in academic study, and building on these through the interaction with clients and professionals (Qasem, 2015)

During clinical placements, students are guided by qualified physiotherapists who are usually referred to as clinical educators or clinical instructors or clinical supervisors depending on a particular country. The roles of clinical educators are still a hot topic with numerous explanations from diverse academic perspectives, and a clear distinction between students and educators at the clinical placement is not always made. The clinical education of physiotherapists has traditionally used teaching ratios of one student to one clinical instructor

(1:1 model or 2:1 model). However, currently, in a Ugandan training situation according to the researcher's experience, a clinical supervision ratio of 1:1 or 2:1 is no longer effective because of a miss match between the number of students and the available clinical educators. For example, at the national referral hospital in Uganda, on average, five (5) physiotherapy clinical educators are available in the clinical setting every day to supervise more than forty (40) physiotherapy students and to cover their routine patient load. In South Africa, there is usually one physiotherapy clinical educator who may have two to six physiotherapy students to supervise as part of their workload but who supervise each student independently and also supervise in groups of two and use group tutorials during clinical education (personal communication with clinical educator at a South African University in Cape Town).

While a few theories about physiotherapy clinical education exist, for example, the positivism and critical theory (Plack, 2005) to name one, this study chose to use the constructivist learning theory in physiotherapy education, which was developed by Qasem (2015), as the most suitable theory to guide and underpin its findings in the Ugandan physiotherapy clinical educator population. Taylor and Hamdy (2013) state that constructivism theory if well utilised can address the three Domains in learning; knowledge, skills and attitudes which a learner should acquire in order for clinical education to be successful. The constructivist learning theory is suitable because of its flexibility and because of the professional enquiry about beliefs, views and practices related to the role of the clinical educators. The theory focuses on how students learn through construction of their own knowledge and skills based on interactions between learners, educators and the clinical environment (Plack, 2005). Furthermore, the theory works on assumption that knowledge is dynamic and not a commodity that can be transmitted from the educator to learner but rather learners have to be actively involved in creation of knowledge and skills through critical thinking and reflection. This enables the learners to formulate abstract concepts thus making appropriate

generalisations (Taylor and Hamdy, 2013). Because learners have different learning abilities, the theory allows clinical educators to encourage learners to find solutions to different problems in unique and varying ways at individual level (Qasem, 2015). Also physiotherapy clinical education practice being concentrated on real life scenarios, students are encouraged to create their own strategies to address current problems and later be able to apply the same skills but on different situations. Clinical education has long been accepted as integral to the education of physiotherapy students and their preparation for professional practice. Qasem (2015) believes that the clinical environment provides practice immersion, situates students in a powerful learning context and plays a critical role in students' construction of professional knowledge and skills.

Additionally, physiotherapy being a profession that is deemed to have a "hands-on" assessment and treatment approach, constructivist learning theory favours development of motor skills which characterise most physiotherapy interventions especially in rehabilitation. However, due to the prevailing physical component of physical therapy/rehabilitation and intervention, finding a single theory that addresses all physiotherapy clinical education needs remains a challenge to many researchers and educational theorists because of the continuous changes that take place in the clinical environment.

2.6.1 The Clinical Educator – Student Theoretical Framework (CES)

The constructivist theory helped the researcher to examine the activities that characterise the role of the physiotherapy clinical educators during the interactions between the clinical educators and the students while in the clinical setting. The key physiotherapy educational benefit of this learning theoretical framework includes exposure of the student to the world of work, personal interaction in the face-to-face component of the learning in the intervention, planning and facilitation of easier communication, critical thinking and creative thinking facilitated by the clinical educator (Qasem, 2015).The clinical educators' knowledge and skills determines his/her ability to select the most appropriate teaching method that suits the training of

particular skills and the students learning abilities as indicated in the proposed theoretical framework which guided this study. The clinical educator – student theoretical framework is presented in Figure 2.1.

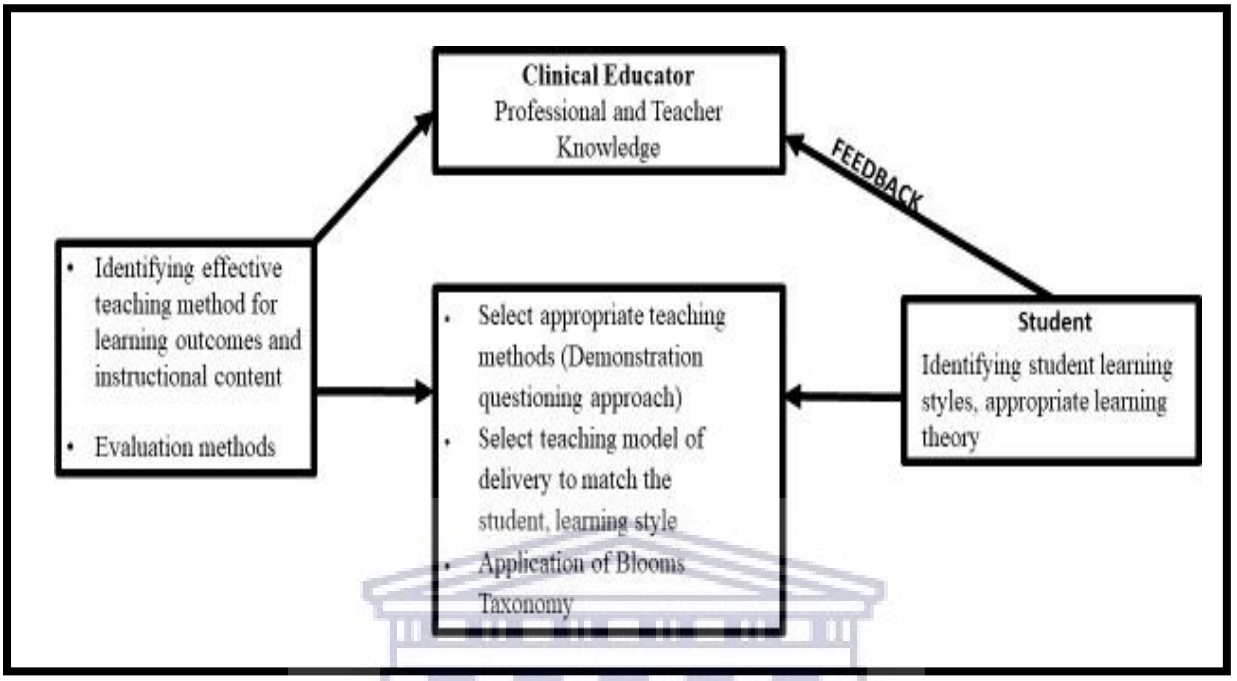

Figure 2.1 Proposed Theoretical Framework for Physiotherapy Clinical Education

2.7 Summary of Literature Review Findings

This chapter and the evidence presented has shown that many researchers acknowledge the multiple roles that physiotherapy clinical educators perform during clinical education sessions including being an information provider, a curriculum adviser and planner, role model, teacher, evaluator, manager, counsellor, colleague and researcher; carefully noting how these roles vary from place to place and within the profession. Understanding how students learn from the clinical educators is critical and central in influencing the attainment of the desired clinical education outcomes including knowledge, skills and attitudes. However, in order to implement the educator roles effectively in physiotherapy clinical education as well, researchers recommend that physiotherapy clinical educators should have clinical knowledge and skills, teaching skills, problem-solving skills, continuous learning drive and innovation. The latter demands that the role of physiotherapy clinical educators be reviewed regularly but

without disregarding the challenges they face. In addition, there is lack of a common procedure in which the implementation of clinical educator roles in physiotherapy should follow to achieve uniformity of the outcomes, both at local and international levels. Because of the variations that exists in the role of the clinical educators in the different settings and the lack of information regarding clinical educators and their roles in the physiotherapy literature in particular Uganda, additional research in this area would be beneficial to explore the physiotherapy clinical educators' roles and also establish the effectiveness of these roles in determining the desired clinical education outcomes in evaluation studies.

CHAPTER 3: METHODOLOGY

This chapter describes the methodological approach used in this study and includes a description of the research setting, the research design and theoretical framework, the study population, recruitment of the population and sampling. Furthermore, the procedure of data collection, instrumentation used to achieve the study objectives, data capturing and analysis and trustworthiness of the study findings are discussed. Lastly, ethics considerations and ethics principles are explained as is related to research conducted on humans according to the Helsinki Declaration (World Health Organization, 2016).

3.1 Research Setting

The research setting consisted of the national referral hospital and the four main regional referral hospitals in Uganda. Uganda is found in east Africa and is bordered by Kenya in the east, Southern Sudan in the north, Democratic Republic of Congo in the west and Tanzania in the south (https://en.wikipedia.org/wiki/Uganda accessed June, 2019). The country is divided into four main regions, namely: western region, northern region, eastern region and central region. Each region has at least one regional referral hospital except the central region which has more than two regional referral hospitals plus the national referral hospital. Two hospitals were from the central region, one from the northern region and two from the eastern region. All five hospitals agreed to participate in the study. No hospital was contacted from the western region because physiotherapy students rarely do clinical practices in this region. The hospitals that were contacted are the priority clinical placement sites for the physiotherapy students because of the variety of patient cases seen and the availability of senior physiotherapists who can mentor the students.

3.2 Research Approach and Theoretical Framework for the Study

In this study, a qualitative research method was used. The qualitative research method is an organised collection, alignment and interpretation of textual material derived from interviews, talk or observations (Malterud, 2001). The approach is appropriate especially to the study of human attitudes, behaviour and perceptions (Mays & Pope, 1995).

The study used the constructivist theory to guide its procedure and underpin its findings. Constructivist theory focuses on how students learn during clinical education and individual's own constructed knowledge and skills gained through social interactions (Plack, 2005; Qasem, 2015). The theory allows understanding of how knowledge and skills are gained by the individual student and how it can be evaluated for applicability to different situations by the educator. During clinical education placements, students interact with patients, clinical educators and other health professionals. The clinical educator–student theoretical framework (CES) interactions constitute the roles that this study aimed to explore. The nature of interactions in the CES shown in Figure 2.1., page 19, determines how students interpret the experiences of clinical education while in the clinical setting (Qasem, 2015). The theory helped the researcher to understand the activities involved in the CES interactions and their likely consequences on students' professional knowledge and skills as indicated in the results and discussion chapters.

3.3 Study Design

The study used an exploratory descriptive research design because it can explore experiences of individuals while in their natural setting (Malterud, 2001). It involves a comprehensive summarisation of specific events as experienced by individuals or groups of individuals. The design is appropriate since the study aimed to explore in depth the perceptions of physiotherapy clinical educators of the varied roles that they perform during clinical

education. It allows emphasis to be put on the participants' perspective (Mays & Pope, 1995), it does not require pre-selected variables and is not committed to a specific theoretical framework. When using this design, data collection and analysis are flexible and easier since many of the steps involved are straight forward and do not use pre-existing sets of rules. The design also creates openness amongst participants, encouraging participants to expand on their responses that address topics not initially considered (Essay, 2018).

3.3.1 Study Population and Sampling

The study population consisted of physiotherapists from the national referral hospital (N=10) and from the four main regional referral hospitals (N=12). These are physiotherapists who are permanently employed at the national referral hospital and at the four main regional referral hospitals. The study did not include any physiotherapist from the training institution because currently there is no permanently employed staff at the department (school) of physiotherapy.

3.3.2 Recruitment of the Population

Permission to conduct research at the national and regional referral hospitals was sought. A confirmation letter from the Ministry of Health stating approval for conducting research was hand delivered to the researcher. The confirmation letter was copied to the relevant administrators at the national and regional referral hospital. Heads of the physiotherapy departments were contacted telephonically for contacts of potential participants who would be willing to participate in the research study. A list of email addresses and telephone numbers of 22 physiotherapy clinicians/clinical educators was obtained and invitations were extended to the different physiotherapists to participate in the research study. Participation in the study was limited to physiotherapists who are permanently employed at the national and the four main regional referral hospitals and had two or more years of experience as clinical educators.

3.3.3 Sampling Method

A total population sampling method was used to sample physiotherapists working at the national and regional referral hospitals. Total population sampling is a type of purposive sampling technique where you choose to examine the entire population that has a particular set of characteristics (Laerd Dissertation, 2019, para 1). In this study, all participants got their physiotherapy training from the same institution and are currently working in public health facilities. All participants (n=22) were purposively sampled. The participants were not limited to any age but to two or more years of experience in physiotherapy clinical education in the clinical setting in Uganda due to the fact that Uganda has few qualified physiotherapists and whose distribution in the different public health facilities does not follow specific patterns in terms of age. The two or more years of experience as a clinical educator was to ensure that the researcher collects data from clinical educators who have had a longer time to experience the physiotherapy clinical education systems and processes and are able to draw on that length of experience to provide data which is rich in information and reflects the real life situation of these clinical educators in Uganda.

3.3.4 Sample Size

According to Robinson (2014), qualitative studies that aim to find real meanings of the participants' responses through intensive analysis of data require between three to16 participants considering their homogeneity. However, the goal of qualitative research should be the attainment of saturation. Data saturation occurs when no new ideas or themes emerge from the data that has been obtained (Urquhart, 2013). The sample size for the study included a total of 18 consenting participants employed at the national and the four main regional referral hospitals (see Figure3.1).

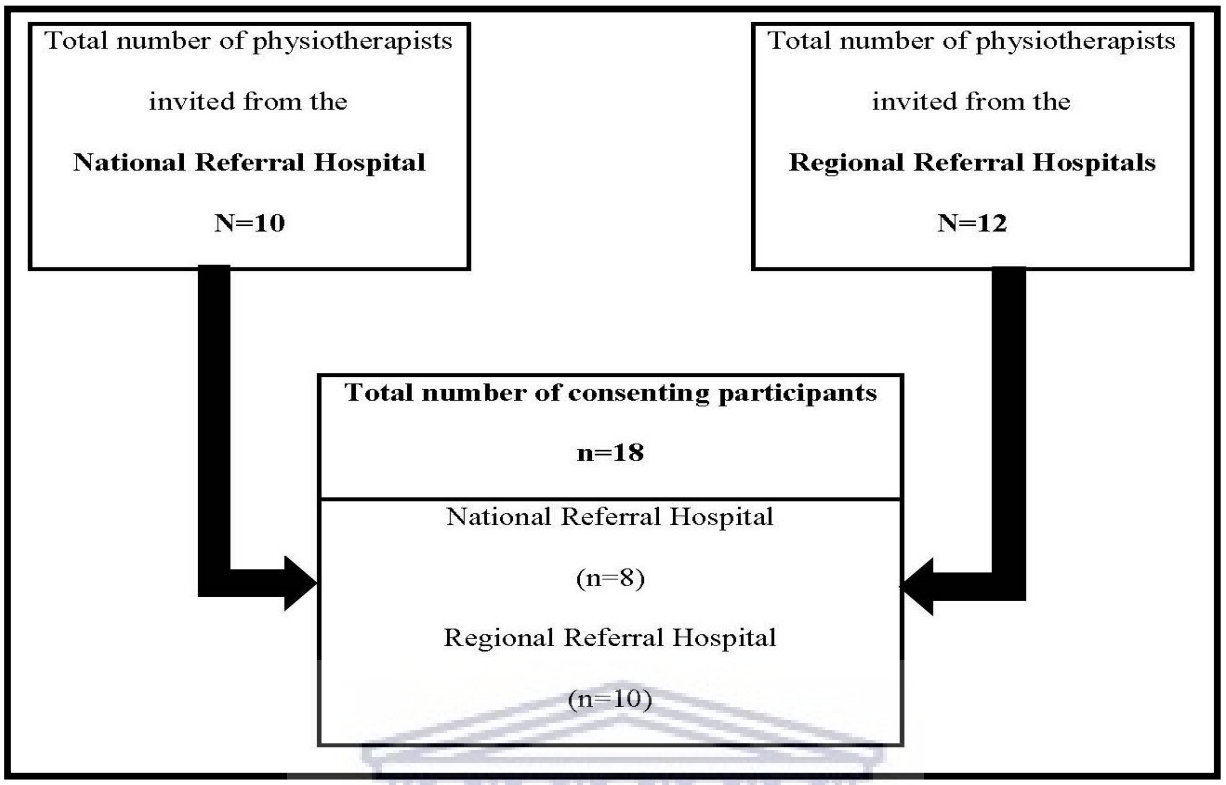

Figure 3.1 The Population and Sample of Physiotherapy Clinical Educators

3.4 Instrument

The data was collected using a semi-structured interview guide that was designed by the researcher with questions based on the research question and the objectives of the study (Appendix 3). The use of a semi structured interview guide allowed the participants to fully express their views which enabled the researcher to discover more information that he could probably have missed. All physiotherapists were conversant with English and thus the interview guide was developed in English and the interview conducted in the English language only. The semi-structured interview guide consisted of two main sections. The first section contained socio demographic information such as the participants' age, gender, number of years in service as a physiotherapy clinician, number of years as a physiotherapy clinical educator and the name of the hospital where each participant was employed. The latter quantitative data was captured first before the start of the interview. The experience in the clinical setting and the hospital where the clinical educator works may influence the perception of the clinical educator's role and hence this

information was captured. The second section focused on the perception and description of the clinical educators' roles, the challenges/barriers to and the facilitators for clinical education in Uganda. All participants were exposed to the same main questions but varying probes were employed depending on the participants' perception and approach to the questions. The probes used were questions which the researcher posed to the participants in cases where the participant did not respond fully to the main question or tended to give views that divert from the objectives of the study. These probes were used to keep the participant on track and were the same for each participant. Some of these probes are stated in the instrument (Appendix 4).

3.4.1 Pilot Interview

In order to ensure credibility within the research study, one interview was conducted with a physiotherapist/clinical educator from a regional referral hospital that was not part of the research setting but had similar characteristics to those of the study areas. This was to determine whether the questions in the semi-structured interview guide answered the objectives of the research study and to determine the approximate length of an interview. No amendments were made as all the questions were clear and understandable to the participant and interpreted well with minimal probes required for each question to make sure information provided by the participants were clear and detailed for the researcher to prevent assumptions of what was meant by the researcher. The data gathered from the pilot study was not incorporated into the research study because it was only for purposes of testing the study instrument. The interview lasted thirty-five minutes.

3.5 Procedure

3.5.1 Ethics

Ethics approval was obtained from the Biomedical Research Ethics Committee at the University of the Western Cape in South Africa as well as Mulago Hospital Research and Ethics Committee (MHREC), Ministry of Health and Uganda National Council for Science

and Technology (UNCST) in Uganda before commencement of the study.

3.5.2 Data Collection

Heads of the physiotherapy departments provided a list of email addresses and telephone numbers of 22 physiotherapy clinicians/clinical educators during the recruitment process explained in 3.3.2. Each participant was invited individually to participate in the study. The physiotherapy clinical educators were requested through an invitation via the email address and/or telephone contact obtained to participate in the research study. A follow up on the initial email invitation was made telephonically to all physiotherapy clinical educators. Once the invitation was accepted by the physiotherapy clinical educator, a convenient date, time and venue was agreed on. The venue at which the interview was conducted was within or near the clinical setting as participants give generally correct and in-depth information when found in their work setting (Malterud, 2001). However, basic requirements such as moderate level of silence and privacy were considered. The researcher conducted individual face-to-face audio-taped interviews with thirteen (n=13) consenting participants who were accessible physically. For five (n=5) participants who could not be physically accessed, telephonic interviews were conducted. Failure to physically access the five participants was due to unforeseen circumstances brought about by the COVID- 19 pandemic resulting in limited human movements and lockdown. However, this did not significantly affect the data collected telephonically as the researcher carefully took note of the voice intonation in order to capture some of the non-verbal information that could have been expressed by the participants through facial expressions and body language. A research assistant was employed to control the voice recorder and to keep time. The data related to the participants' profile was collected before the start of the interview using section one of the interview guide that included socio demographic questions described in 3.5. Following the latter, the researcher asked the participant to respond to the questions in section two of the interview guide. Probing

techniques were used to obtain richer information from participants (Malterud, 2001). The following probing techniques were employed; participant validation, filtering and reframing the conversation. The researcher kept summarising the data collected for verification of understanding throughout the interview process. The researcher also took field notes during interviews to review at a later stage. On average, each interview lasted approximately thirty to fifty minutes depending on the depth and richness of data obtained from each individual participant (Kitzinger, 1995).

3.5.3 Data Capturing and Analysis

The socio-demographic data related to the participants' profile was captured in a Microsoft Excel spreadsheet and exported to the Statistical Package for Social Sciences version 23 for quantitative data analysis. This quantitative data was analysed using frequencies, percentages, means and standard deviations, medians and ranges. The findings related to the profile are tabulated in the results chapter.

Following the collection of the qualitative data, all audio tapes were transcribed verbatim by the researcher for analysis. Both deductive and inductive content analysis as described by Braun and Clarke (2006) and Kitzinger (1995), were used to analyse the qualitative data obtained. The researcher first familiarised himself with the data. This was achieved through listening to the recordings during the transcription of data and by reading and re-reading the transcripts to understand what was being said. It also allowed the researcher to confirm that what was transcribed had not been altered but was the true reflection of what was being said on the audiotapes. This involved listening to the audio tapes while reading the transcribed material.

After the researcher became familiar with data, he started identifying the initial codes which were features of the data that may have appeared as interesting and meaningful. These codes were more numerous and specific than the themes and provided an indication of the context

of the conversation (Pope, Ziebland, & Mays, 2000). This coding was done manually using different colours for different codes. Secondly codes were categorised into groups and coded using different colours. Lastly, the dominant themes were identified and categorised together. This was followed by categorising themes that had appeared several times under broad headings in relation to the research question. At this stage, the researcher identified those themes which answered the research question and were relevant to the objectives of the research study.

In another step, the researcher compared the themes independently to determine whether the themes generated from the research answered the research study's objectives. The researcher further named and explained what each theme was about and how and why it was significant (Pope et al., 2000). A description was made along the data which described its content and relevance to the intended research question and respective research objectives. Finally, the researcher wrote the content analysis in a report including the story originating from the verbal data, field notes, themes generated and the use of literature to support the data. The process of data analysis involved content reviewing of the original verbal and the transcribed data, codes found and themes generated (Pope et al., 2000).

3.6 Trustworthiness

According to Lincoln and Guba (1985) trustworthiness is important in research as it evaluates the rigour of the study. Lincoln and Guba (1985) proposed four criteria to ensure trustworthiness within qualitative research. The four criteria of trustworthiness suggested by Lincoln and Guba (1985) are credibility, dependability, transferability and conformability

3.6.1 Credibility

Also referred to as internal validity, credibility seeks to ensure that the study measures or tests what is actually intended to (Shenton, 2004, p.64). To ensure credibility of this study, after verbatim transcription member checking was done to confirm the intention and if the transcribed

information captured the meaning expressed by the interviewee. Member checking is a process whereby the data that has been obtained is shared amongst all the participants of the study and participants are provided the opportunity to provide feedback to researcher, as to if what they had said was accurately reflected in the report. Member checking was done by e-mailing all the participants the summarised version of the results and asking for their feedback regarding it. Eight participants (n=8) responded and confirmed that the report was a true reflection of their views.

3.6.2 Dependability

Also referred to as reliability, this implies that if the same study were to be repeated in the same context, with the same method and same participants, similar results would be obtained (Shenton, 2004). Dependability in this study was ensured by keeping accurate record of all steps followed in conducting the study and this was done in a manner whereby it would be possible to retrace the research steps. The record of the followed steps can be accessed from the researcher both in hard and soft copy on request.

3.6.3 Transferability

Also referred to as external validity, transferability is concerned with the extent to which the findings of one study can be applied to other situations (Shenton, 2004). It was addressed by the researcher using a detailed description of the research findings through quotations while still maintaining the meaning of the participants' responses. This ensured that the results of this study could be used to compare with results of other studies carried out in similar settings.

3.6.4 Confirmability

Confirmability refers to the objectivity of the study where the outcomes are supported by the collected data and not the preferences of the researcher (Shenton, 2004). Confirmability in this study was ensured by an audit which was done by a third party who revised the transcripts and generated themes independently (Lincoln & Guba, 1985). The independently generated themes were close in similarity to the original themes generated by the researcher.

3.7 Ethics Considerations

Ethics clearance was obtained from the Biomedical Research Ethics Committee of the University of the Western Cape, South Africa and from Mulago Hospital Research and Ethics Committee in Uganda (Appendix 1). Permission to conduct the study was sought from the various hospitals. Information sheets (Appendix 2) were given or e-mailed to the participating physiotherapists to thoroughly inform them about the study, the importance thereof and possible benefits of the study. Participating physiotherapists were then asked to provide written and signed consent to participate in the study (Appendix 3). Signed written consent forms or verbal consent (for online interviews) were obtained from all participants who indicated willingness to participate in the study. Participants were informed that they could withdraw at any time from the study, without any consequences. Participants were assured of their anonymity through the use of codes and thus data remained confidential. Only the researcher and research supervisor had access to these codes for purposes of the researcher being able to check the information that was provided by the participants. Codes were also used to replace participants' names during the interview, transcription and reporting and was denoted as P1 to P18 with the use of N (P1-P8) or R (P9-P18) to denote quotes from those from the national versus the regional hospitals. The code list was destroyed following completion of the study. All hard data was stored in a locked cabinet in the researcher's office with the key in the possession of only the researcher and electronic data was password protected with only the researcher and research supervisor having access to the password. Scrambling of the electronic data was done to remove any reference to specific individual's data and all data will be destroyed by the researcher five years after the completion of the study and publication. In this way confidentiality was ensured. No reference to specific participants and involved institutions were made in this thesis nor will any be made in any future publication and dissemination of the results.

CHAPTER FOUR: RESULTS

This chapter presents the results of the content analysis of the transcribed data. The researcher presents the findings regarding the characteristics and the role of the physiotherapy clinical educators in the clinical setting in Uganda. It also points out the challenges of, barriers to, and solutions for barriers to the clinical educators' role at the national and regional referral hospitals. Firstly, the socio- demographic data of the participants who agreed to take part in the study are described. Secondly, a description of the emerging themes and categories that are reinforced by verbatim quotes are presented.

4.1 Characteristics of the Participants

A total of eighteen (81.8%, n=18) out of twenty-two (n=22) participants were included in the research study. Of the four physiotherapy clinicians who did not participate in the study; two declined the invitation and two were not accessible, neither physically nor telephonically. Most of the participants were men (61%, n=11/18). The age range was 32-50 years and the mean age was 41.1 (SD ± 5) years with males generally older (42 ± 6.28) than females. The majority of participants (67%, n=12/18) had five to ten years of experience working as clinical educators but 83% (n=15/18) had ten and more years of experience as a physiotherapist working in clinical practice. The majority of the participants (67%, n=12/18) held a diploma in physiotherapy as the highest education qualification (Table 4.1).

Table 4.1 Characteristics of Participants

Characteristics	National Referral Hospital	Regional Referral Hospitals	Total (n)	Percentage (%)
Participants per Health Facility Category (n)	n=8/10	n=10/12	18/22	81.8%
Gender (%, n)				
Male	50% (n=4/8)	70% (n=7/10)	11/18	**61%**
Female	50% (n=4/8)	30% (n=3/10)	7/18	39%
Age (Mean years ± SD)	41.1±5.0	40.8±7.1	40.9±6.06	
Male (mean years ± SD)	45±2.6	40.3±7.3	**42 ±6.28**	
Female (mean years ± SD)	37.3±3.3	42±8	39.28±5.77	
Years of Clinical Education Work Experience				
5 to 10 years (n)	37.5% (n=3/8)	90% (n=9/10)	12/18	**67%**
10 and more years (n)	62.5% (n=5/8)	10% (n=1/10)	6/18	33%
Years of Physiotherapy Clinical Work Experience				
5 to 10 years (n)	0% (n=0/8)	30% (n=3/10)	3/18	17%
10 and more years (n)	100% (n=8/8)	70% (n=7/10)	15/18	**83%**
Educational Qualification				
Masters	0% (n=0/8)	10% (n=1/10)	1/18	5%
Bachelor	25% (n=2/8)	30% (n=3/10)	5/18	28%
Diploma	75% (n=6/8)	60% (n=6/10)	12/18	**67%**

4.2 Emerging Themes

Four main themes emerged with individual categories and subcategories (Table 4.2). These themes and categories are 1) Physiotherapy clinical educators' role including (i) empowerment of the students, (ii) promotion of student professional behaviour and communication, (iii) integration of theory and practical skills, (iv) assessment of students, and (v) promotion of multidisciplinary team work; 2) Facilitators for the physiotherapy clinical

educators' role including (i) personal facilitators, and (ii) lack of facilitators; 3) Barriers to physiotherapy clinical education including (i) student-related barriers, (ii) clinician-related barriers, (iii) environmental barriers, and (iv) institutional barriers; and lastly 4) Solutions to barriers to physiotherapy clinical education such as (i) continuous knowledge development, and (ii) planning and setting objectives for clinical education.

Table 4.2 Emerging themes, Categories and Sub categories

Theme	Emerging Subtheme	Sub categories
Physiotherapy clinical educators' role	1. Empowerment of students	i. Imparting knowledge and skills ii. Supporting students iii. Guidance of students
	2. Promotion of students professional behaviour and communication	i. Grooming physiotherapy professionals ii. Orienting students into physiotherapy profession
	3. Integration of theory and practical skills	i. Mentoring of students
	4. Assessment of students	i. Giving feedback
	5. Promotion of Multidisciplinary team work	i. Provision of a linkage
Facilitators of the physiotherapy clinical educators' role	1. Personal facilitators	i. Good working relationship
	2. Lack of facilitators	
Barriers for physiotherapy clinical education	1. Student related barriers	i. Lack of commitment to studies ii. Misuse of social media iii. Indiscipline
	2. Clinician related barriers	i. Lack of knowledge of teaching methods and clinical education guidelines ii. Lack of updated knowledge and skills
	3. Environmental barriers	i. Inadequate materials and equipment ii. Limited space iii. Work overload iv. Patient barrier for supervision ability v. Lack of motivation and incentives
	4. Institutional barriers	i. Lack of engagement of CEs in planning the placement ii. Lack of feedback to CEs iii. Lack of student facilitation
Solutions to barriers fphysiotherapy clinical education	1. Continuous knowledge and skills development	
	2. Planning and setting objectives for clinical education	

4.2.1 Perceived Roles of the Physiotherapy Clinical Educators

The role of the physiotherapy clinical educators constitutes activities that are carried out during the interaction between students and educators in the clinical setting with the aim of producing a competent physiotherapist. The physiotherapy clinical educators perceived their role differently depending on their knowledge and skills and therefore carry out different activities while in the clinical setting as indicated in the emerged categories below.

4.2.1.1 Empowerment of Students through Support and Mentorship

According to the findings of this study, empowerment involves giving the students the required knowledge and skills and helping them to develop the attitude that can enable them to be responsible when on clinical placement. The knowledge and skills that students acquire help them to be responsible for their actions and to avoid any risks involved in clinical practice or patient management. It also helps the student to be in a better position to take the right decisions about themselves and the patient. During the interviews, the physiotherapy clinical educators perceived their role as that of empowering the students by imparting knowledge and skills to physiotherapy students. Some physiotherapy clinical educators perceived that students arrive at the clinical setting with disjointed clinical and theoretical knowledge; therefore, it is the perceived role of the clinical educators to align this knowledge and expose the students to the real life situation of clinical work with its do's and do not's. They said:

> *NP1: "I have to make sure I teach them what I do, I teach them what they should know about particular conditions on the ward…"*

> *NP5: "My role is to supervise the students, guide them and impart skills."*

> *NP7: "I find myself teaching them especially skills and specific techniques on how to apply those techniques on the patient directly…"*

On the other hand, some physiotherapy clinicians believe that the role of empowering students involves more support and guidance to the students because students come with some background clinical knowledge and skills but lack the experience of clinical application. They said:

> *RP10: "We allow them to really practice and perfect by the time they leave they are very perfect because they come with a lot of things in their brains only that organising them to make sure that they appreciate how feasible is application of this technique…"*

> *RP13: "Their work doesn't entail too much of supervision but we only just support them…"*

> *NP7: "Number one I make sure each student is busy with the patient; assessment and treatment and then as the therapist go on to see to it that they are doing it right."*

> *NP8: "If they have been on that ward for some time, I will first allocate them work for me to see what they are lacking then I guide them on what they are missing."*

One physiotherapy clinical educator perceived his role as that of helping the students to adjust to the realities of clinical practice through being a role model and sharing relevant experiences and knowledge. This enables the students to build confidence and undergo skills and intellectual development. He said:

> *RP9: "I orient the student to actual clinical work but as well as to boost their self-esteem and to motivate them love what they are doing especially when you give them an opportunity to take the lead and you just come in to patch in where you think it wasn't done so well."*

4.2.1.2 Promotion of Student Professional Behaviour

Professionalism is the conduct, behaviour and attitude of someone in the work environment. Professionalism translates to success in the clinical setting; it promotes a strong professional reputation and ensures a high level of work ethic and efficiency (American Physical Therapy

Association [APTA], 2000). The Physiotherapy clinical educators perceived their role as that of preparing future physiotherapists that are characteristically professionals who can observe the standard of the physiotherapy profession. Most of the aspects of professionalism including students' appearance, behaviour, integrity and time management are emphasised by clinical educators during clinical placement. They said:

> *RP9: "You look at time management, the qualities of a performer like commitment, general appearance at work and self-motivation to work with the patient…"*

> *RP13: "What we have been doing is basically holistic because a student is supposed to be disciplined, loyal, have certain level of integrity…"*

> *NP2: "We also groom them to be able to conduct themselves professionally."*

> *RP12: "To look at the appearance of a physiotherapist at work, how a student sees her/himself as a Professional…"*

> *RP16: "Since they know ethics as you know not all things are taught at school, so things which are not taught at school which a professional is expected to know are the things we give them clinically."*

4.2.1.3 Integration of Theoretical and Practical Skills

Many of the physiotherapy clinical educators desire that the students they supervise not only understand the theory of physiotherapy practices but also know how to apply the theoretical knowledge into practice depending on the students' year of study. The educators' main objective is to make sure that the physiotherapy students can put into practice what they have learned in the class room in order to become capable and competent physiotherapists. They said:

> *RP12: "I have found myself involved in patient management, helping the student to relate theory and practical…"*

> *RP10: "So my role is to bridge the gap they have in their knowledge. We really have*

to take them through something like that to see that they appreciate what they have learnt at school when they are directly using real patients."

NP1: "This student is taken through the implementation of what they have studied in class and they learn how to do the physical assessment of the patient, we relate what they have studied in class and we make it practical."

4.2.1.4 Assessment of Students

Clinical educators had varying perceptions of their role regarding the evaluation of students. Some clinical educators believed that it is their role to assess the students for the level of theoretical knowledge that they have gained in the class room before beginning the clinical practice. This enables the clinical educator to find out how much was covered in class, any knowledge gaps, the students' abilities and expectations. This is because in Uganda, students study the theoretical content regarding an area of specialty in physiotherapy (for example orthopaedics) and then go into clinical practice in the same period of time. They mentioned that:

RP9: "I will first go through what the student expectations and their level of study whether they in first or second semester…"

NP3: "So I first assess them about what they know and where the placement they have come on …"

NP4: "When the students come in normally you see which student is active, which student is more like a Tourist…"

NP8: "If they have been sent for Ortho, I will find out how much they have in theory then consider how far they are and then start from there to guide them."

On the other hand, some clinical educators believed that it is their role to assess the students' clinical knowledge, competencies and performance during and at the end of the placement.

This helps the clinical educator to find out whether learning has taken place and the areas

that might require his/her input. They said:

RP14: "Then at the end of like two weeks we must meet and assess progress that has been achieved."

RP13: "You go on a round table and then ask them today what have you seen, what are the problems, challenge?"

NP7: "I certainly ask them to do it practically and when they do it actually it is on spot guidance, then the next phase will be to review and see to it that the treatment is being done in the right way."

RP11: "From their feedback you give your feedback which is the guidance of what went well and what did not go well and now they can improve..."

NP6: "When I'm with the students I'm giving knowledge, examining what knowledge they have, looking at what are the gaps, do they get sufficient knowledge from school to actually handle this condition?"

4.2.1.5 Promotion of Multidisciplinary Team Work

With an increase in the aging population, many patients now present with multiple conditions or illnesses. It has become very necessary for health professionals of the different specialties to work together to solve the patient's problems at once (Bonvento et al. 2017). In the clinical setting, professionals work as a team where each professional handles a particular problem on a patient that is in his/her area of specialisation. During this interaction, professionals learn from each other, guide and support each other hence minimising the medical errors and increase the patient safety. It was evident during interviews that physiotherapy clinical educators acknowledge the importance of being a member in a multidisciplinary team in the clinical setting. Therefore, it becomes imperative that they orient the student into this practice of multidisciplinary team work. Their comments included:

RP10: "When they (students) are challenged we normally encourage them to seek a multidisciplinary approach or appropriate referrals."

NP5: "We look at a physio who should know that to manage a patient they should be together with other professionals because it is not only physiotherapy that a patient needs."

NP1: "This being award not isolated for physiotherapy patients there is a multidisciplinary team, we understand the role of other health care service team."

NP6: "And most of all I tell them (students) the importance of teamwork; it is not only a physiotherapist handling this patient…"

Two clinical educators perceived that their role of team work building extends to outside the clinical area. Since the training institution and the clinical settings or institutions both work towards a common goal of producing competent physiotherapists, there must be continued communication and working together between the training and clinical institutions. Consequently, the problems and challenges arising from the clinical placement can easily be handled. This enables the objectives of the clinical placement to be achieved and the students to acquire all the desired competencies at the right time. This was indicated in the illustrative quotes below:

NP2: "We need to give feedback to the training institution on what is the strength, gaps and limitations in that area when it comes to us."

NP6: "So my role is to look into all that (checking the students' patient management approach, attitude and professionalism) when I'm interacting with the students because I'm now the liaison between the school and the clinic…"

4.2.2 Facilitators of Clinical Educator Roles

According to this study, facilitators are resources or clinical educator attributes that provide a conducive environment for the execution of the clinical educators' role resulting in the attainment of the desired clinical

education outcomes. The perceptions of the facilitators for clinical educators' roles varied where some clinical educators said there were personal facilitators and others said there was lack of facilitators.

4.2.2.1 Personal Related Facilitators

Most physiotherapy clinical educators perceived that much of the facilitation of their role is internally generated and self-driven. Different factors were pointed out as the sources for personal facilitators and they included: love for the profession and good interpersonal relationship with other professionals, the students and the public. The love for the profession and the need to see the profession grow with its professionals able to deliver the service to the patient/clients competently appeared to be the commonest personal facilitator. Clinical educators said:

> *NP6: "Me my motivation is self-driven; I love the profession."*
>
> *RP12: "I really want to see the profession grow, we need to take our profession to another level like it is for the nurses and doctors..."*
>
> *RP15: "I personally it is out of my personal will and the desire to ensure that the student qualify as a competent physiotherapist."*
>
> *NP3: "Spiritually by the way that let me just teach them because I want them to be the best otherwise there is everything to demotivate."*
>
> *NP4: "My personal working relationship with heads of department, there are places you go to may be and find they receive you because of a good working relationship. We have some sponsors who has donated some equipment, those who have paid for the CPDs to make sure that therapists get the required skills."*
>
> *RP14: "The enthusiasm that they come with actually motivates because when they come you see someone who is willing to learn."*

Other clinical educators perceived the facilitator of their role to come from the improved

results of their interventions whereby patients reported that their conditions improved. Also, clinical educators are driven by the state in which they see some patients who are too helpless and could only be helped by the physiotherapist who is apparently not there: They reported that:

RP13: "When patients come back to you and say Hah I slept comfortably last night…"

NP1: "What motivates me to supervise is the state in which patients are in, so the empathy sometimes you need to think of the patients' condition you wanting to improve on their quality of life…"

4.2.2.2 Lack of Facilitators for Clinical Educators

Most of the physiotherapy clinical educators perceived that there was a lack of external facilitators for their role but only carried out the role voluntarily. This was expressed in the illustrative quotes below:

NP3: "This is Red Cross, we are just helping the physios of tomorrow otherwise there is no motivation, no facilitation."

RP13: "No, in terms of motivation I think it is really not there, I cannot rate it (facilitation) as poor because it is not there."

NP1: "I have not seen any (facilitation)."

NP7: "There is no motivation, so it is left at the whims, interest and responsibility of an individual…"

NP8: "There is nothing I just know it is part of my duty to train them (students)."

RP15: "generally there has not been any facilitation for clinical supervision."

4.2.3 Barriers to Physiotherapy Clinical Education

From this study, it appears that barriers are conditions which negatively influence the physiotherapy

clinical education and hinder the production of a competent physiotherapist. The barriers to physiotherapy clinical education was grouped into four categories as indicated below.

4.2.3.1 Student Barriers

This subtheme consists of barriers that originate from the students' characteristics which include the following: poor time management, lack of commitment to studies, being ill-disciplined, and the inappropriate use of social media, especially WhatsApp. Some physiotherapy clinical educators find it a challenge to effectively facilitate students learning in an atmosphere where students are undisciplined and not committed to their studies. They said:

> *NP7: "There are some students that normally do not give it (clinical practice) the importance it deserves, have poor attitude and probably they don't seem to appreciate the value of this exercise."*

> *RP9: "Some students don't need to be guided; some students claim they know it all…"*

> *NP2: "Some students their attitude is not so good towards the profession since they have just come."*

Some physiotherapy clinical educators think that students spend very little time in the clinical area because they take a long time to move from the institution to the clinics. Other students are not consistent in attendance of the clinical sessions. This was expressed in the quotes below:

> *NP5: "Time is little because actually you find someone has come for clinical supervision, he is here for thirty (30) minutes..."*

> *RP11: "Some students may not readily avail themselves for the supervision."*

> *NP1: "Many of the students are poor time keepers, inconsistency and compliance on placement..."*

One clinical educator commented that some students waste time responding to messages from social media, for example WhatsApp. This interferes with the students' concentration on the skills being demonstrated. He said:

> *RP13: "Some challenges can even be misuse of social media you find a student may get a WhatsApp message which he has to respond to…"*

4.2.3.2 Clinical Educator Barriers

This category consisted of the following subcategories namely: The dual role of being a clinician and clinical educator, lack of knowledge of teaching methods and clinical educator guidelines, lack of up-to-date technical knowledge and skills and low physiotherapy staffing levels in hospitals. One of the major subcategories under the clinical educator barriers was the dual role of being a clinician and clinical educator. The study findings indicated that in Uganda all physiotherapy clinical educators are clinicians who are employed by the hospitals primarily to provide physiotherapy care to the patients.

4.2.3.2.1 Dual Clinician and Educator Roles

The clinicians assume an added responsibility of facilitating learning of physiotherapy students in the clinical areas. The dual role of clinician and clinical educator is perceived as a barrier to clinical education for it poses a time constraint on educators to balance between the patients' and students' interests. This is further complicated by the over whelming numbers of patients and students who are constantly flooding the clinics. The clinical educators expressed their concerns as illustrated by the quotes below:

> *RP12: "Given a fact that our primary role is patient care, we can only find time to serve the interests of both the students and patients but of course with the patient being priority."*

> *NP7: "Because of the patients numbers you have your own workload which you have to clear, you have a certain timeframe for instance in this station where I work in the*

gym we have particular time frame for each condition and you find that the students have come and you must take them through the orthopaedic conditions, they are many and you have one or two hours that you must have finished with that group so you divide your time between teaching and making sure that your workload is finished so as to move on."

RP14: "We are shared between work, it's me and my colleague on the ground and we have cases on the ward, cases in OPD; so two people divided to see patients and critically look at what these students are doing it is a challenge."

NP2: "You may find that the student is given a patient to look at and present but most times you may find that by the time their time elapses they have not presented to you because you are working on the patients who are waiting on the queue…"

NP6: "If I have come here (to the hospital) in the morning now like I want to see my patients and then go and do other work and here you are giving me students, I have many patients I want to clear my line then my students are here I have to teach them then I feel like my time is being impinged on."

4.2.3.2.2 Lack of Knowledge of Teaching Methods and Clinical Education Guidelines

Physiotherapy clinical educators perceived that they lacked the formal knowledge of teaching methods and the knowledge related to clinical education guidelines. The approach to clinical education used in all settings seemed to be based on the clinical educator's educational background, choice, interest and experience. They said:

RP12: "There are no guidelines. We just use experience of what we know and probably what we gone through."

RP18: "No, I just teach them the way I was taught ... [laughter]. I don't have teaching skills …[laughter], oh God of me."

RP15: "No, I don't know what you mean by clinical educational guidelines but I would expect that may be there is a document to follow."

NP1: "Many times the teaching on the wards tends to be one-size-fits-all, if it is a fracture femur how I communicate to group A is the same how I communicate to group B."

4.2.3.2.3 Lack of Up-to-date Technical Knowledge and Skills

Some clinical educators mentioned during the interview that they have a problem of either lack of up-to-date technical knowledge and skills or forgetting the theoretical knowledge that is implicit. Updating the knowledge and skills has not been easy due to lack of clinical educator facilitation and limited resources. Clinical educators said:

NP6: "It takes somebody an extra mile to sit down and research on the internet; you need that time to begin researching when students are coming…"

NP7: "Normally the theory is always a bit of problematic, no present guideline that I follow, I just approach it the way I feel or the way I know."

RP9: "One, for foreign students when you tell them your qualification (diploma) and they compare with their qualification, as if you are not in best position to tell them what to do."

Other physiotherapy clinical educators perceived that research and innovations in the physiotherapy profession were creating gaps and variations in the clinical educators' knowledge and skills that they pass on to students. This is especially in circumstances where there is a scarcity of resources like the internet, which these educators could have used to get the updated information. They said:

NP3: "I can practice what is most recent and I tell it to the students but remember in their lecture rooms/class room they have been told something different…"

NP2: "Because the theory keeps changing, we have the theory because we went through the training school and all people (clinical educators) know what is to be done but over time things change and maybe we are still stuck in the old days when things have changed…"

RP9: "I don't think I have all the physiotherapy skills because the skills keep on changing every single day."

RP13: "I don't say I know everything because things keep on changing and even research is advancing so physiotherapy is one of the areas where a lot has happened…"

4.2.3.2.4 Low Physiotherapy Staffing Levels in Hospitals

Some physiotherapy clinical educators perceived that the number of physiotherapist staff in hospitals is still low yet the students' enrolment has gone up. The number of students per clinical educator is relatively high which makes the supervision ineffective. They said:

NP4: "The issue is the student numbers because it becomes a bit tricky to have a patient crowded by ten (10) students so you have to apportion them…"

RP11: "I will use Mulago as an example first of all the staffing levels are low, you find one therapist is meant to cover about three (03) wards minimum…"

NP2: "I think it is the clinician to student ratio which looks to be slightly high compared to the clinicians who are here."

4.2.3.3 Environmental Barriers

The physiotherapy clinical educators described a number of barriers that originate from within the environment that they work. They included mainly: patient/student workload, patient related barriers and lack of motivation and incentives. The majority of the clinical educators revealed that there are inadequate materials to use on the wards as well as limited equipment to train students' certain skills, both in classroom and in clinical areas. This has led to clinical educators improvising the equipment to be used or progressing the students to other levels without them achieving certain skills. They said:

NP5: "One of the barriers would be the machines, they are not there for example someone may ask you I read about ultraviolet how it prevents infection but we don't

have ultraviolet machines."

RP16: "Sometimes you find that we lack certain equipment and sometimes you may not be able to give the right modality…"

RP15: "We knew how to treat patients using SWD but from the time I started practising I have not been to a hospital where there is SWD machine."

RP13: "Supervision may also need some resources because in these peripheral hospitals even sundries may not be enough, for example you may be working on the ward and you don't have even gloves to give the students."

NP1: "Sometimes the supporting equipment like an Orthopaedic placement the patient has fractures of the ribs and they have some insufficiencies in their breathing and you need to do some chest physiotherapy and you need spirometers, you may find they are not available on the ward…"

4.2.3.3.1 Patient/Student Workload

Some physiotherapy clinical educators pointed out that the number of patients on the wards is overwhelming. This may sometimes result into lack of time to attend to the students and lack of space where demonstration of certain skills and bedside teaching could be done. At times the number of students is also large, which again magnifies the work that clinical educators have to do. This challenge is expressed in the quotes below:

NP1: "Sometimes the ward is overcrowded that you don't have space to put your group to attend to a patient."

RP12: "Given a fact that our primary role is a patient, we can only find time to serve the interest of both the student and the patient but of course with the patient being priority."

NP7: "The patients are so many and even the students are many so it may not pull out that these students fully get the full potential that we could actually offer."

RP14: "When we have assigned somebody (student) cases you want that every time this person is handling this case you should be there and you will realise because of the workload the line is long you are forced to do otherwise…"

NP3: "It (workload) is really big, yes it does affect my role because these students who come for the clinical need time because they are learning but I cannot give them the time they need."

4.2.3.3.2 Patient Barriers for Supervision

Some physiotherapy clinical educators noticed that some patients' conditions are so sensitive that it renders it risky for learning of students to take place. Some wards/units are inaccessible to students due to fear of causing injuries to patients in the process of learning yet the objectives of particular placements require the students to do practice from such a unit. The clinical educators said:

NP4: "There are some places where students are not required to go say the intensive care unit, so they are mainly for qualified staff by virtual of the sensitivity of clients…"

NP1: "And the nursing management sometimes is lacking, the patient is in extreme pain they have not been given their pain meds and that makes our intervention difficult sometimes."

4.2.3.3.3 Lack of Motivation and Incentives

Some clinical educators perceived that their role of clinical education was faced by a barrier of lack of motivation. They feel they invest a lot of time in supporting the students yet they don't get any compensation for that time. The lack of equipment in the physiotherapy departments also demotivates the clinical educators. They said:

RP15: "We are poorly facilitated; we don't have all what we need in the department and the hospital generally."

NP7: "There is no motivation, so it is left at the whims, interest and responsibility of

an individual…"

RP11: "These supervisors feel they are putting in their time but then how motivated are they for the time they are putting in to support the student?"

4.2.3.4 Institutional Barriers

The quotes below reflect the institutional barriers experienced by physiotherapy clinical educators. The clinical educators reported that they are not always engaged in the planning and preparations of clinical placements for students, they only receive letters informing them of the students' due dates for the placement. This interferes with their other duties and responsibilities. Most placements take place at a time that is not convenient for the clinical educators. They reported:

NP3: "You might see these students have been brought to the ward at a particular hour and I have my social issues so that I'm not going to come at that time and then the students come…"

NP7: "Like sometimes we don't seem to harmonise the school and us the clinical supervisors, it would have been a good thing for the school to engage with me on the intended supervision."

NP8: "To me the only barrier I could find is time because the school can have a specific time when they will want to place their students to the clinic then you of course as a physio you also know your programme of when you will go to the wards so you end up following them as if you are also in school."

Two clinical educators were concerned about lack of feedback on how they carry out the clinical education that the institution does not give them a report about the outcome of the previous placement. Therefore, it becomes difficult for the clinical educators to make any adjustments that may be necessary with regards to the approach of clinical education. They said:

NP6: "I may be doing the right thing but I may not be confident because there is no body to check me whether I'm doing the right thing so I may relax."

RP12: "I wish there could be workshops where they invite us for feedback about how we perform the student's supervision, this is because I have nobody to evaluate me."

Furthermore, the lack of support to students in terms of feeding and accommodation while on placement posed another challenge to clinical educators especially in circumstances when the clinical practice sessions have to go beyond lunch time. It was realised during the study that the students are not provided with meals and accommodation while on clinical placement at regional referral hospitals which are far away from the training institution, this makes it difficult for the clinical educators to take on the students in extra hours of practice when the patients number to be attended to is reduced. Time is always a challenge yet there is too much to learn. Clinical educators said:

RP17: "There is lack of facilitation of students, you know in government hospitals they don't provide lunch we fund lunch on our salaries, so you can't keep the students beyond lunch time…"

RP14: "When they (students) come we don't have accommodation; they have to get their own accommodation."

RP16: "The ministry of education has a very short time table for the students' clinical placement especially for us who are not in Mulago."

4.2.4 Solutions to Barriers or Challenges of Clinical Education

Clinical educators admitted that their role is faced by numerous challenges arising from different sources. There are challenges for which educators never had control especially those arising from the institution. Many of the solutions put forward by educators are directed towards solving mainly environmental and clinical educator barriers and these included;

continuous knowledge and skills development and planning and setting objectives for clinical education.

4.2.4.1 Continuous Knowledge and Skills Development

Clinical educators reported that because they lack formal knowledge of teaching methods and clinical education guidelines, they have tried to overcome this challenge through research and attending continuous professional development courses (CPD). They have managed to update their technical knowledge and skills and acquire partial teaching skills that they use to impart knowledge to students. They said:

> *NP1: "I'm reading, researching published work and attending Continuous Professional Development (CPDs) and Continuous Medical Education (CMEs) this helps a lot."*

> *NP5: "The little education skills I acquired them by reading, researching, googling and CME which we normally have."*

> *NP3: "You know the advantage with this hospital is that we have CMEs, we have ward rounds which have consultants, SHOs, in turns and it is a teaching round…"*

> *RP14: "Expansion on what I have as a diploma is enormous; I have read."*

> *RP10: "You find that there is also constant reading to update yourself about new methods and techniques of managing certain conditions."*

> *NP8: "With these Google and research of evidence based you have to keep reading what to keep us updating our knowledge."*

4.2.4.2 Planning and Setting Objectives

Clinical educators reported that for some of the environmental and student barriers, the solution has always been planning for the day's activities and setting objectives. They also set

strict terms of reference that students must adhere to. They said:

> *RP11: "Well as an individual it was about setting objectives for myself and say I have these patients; I have the students to supervise so I would set my time."*

> *NP1: "I always plan my day; I know I will see ten patients once I reach my burn out I do not have to add, so it is scheduling your day's load."*

> *NP5: "You can reschedule patients, you find some days are easier than others in OPD, you can find light days and push in some patients."*

> *NP3: "I adjust myself and I take the day as it comes, if I get a social issue today I tell the students tomorrow I will not be around…"*

> *RP14: "Normally when students are here we shorten the number of patient bookings for particular interesting cases that we have assigned to the students that they can see them more frequently."*

Furthermore, one clinical educator suggested that the only way to make clinical educators carry out their role diligently is to empower them and then later demand accountability from them in terms of students' performance.

> *NP7: "Everybody should be under an obligation and has to put it among his schedule; we must be taking it very serious just as we take it serious to work."*

In summary, the overall perceptions of the role of the physiotherapy clinical educators in Uganda are empowerment of students, promotion of student professional behaviour, integration of theory and practical skills, evaluation of students, promotion of multidisciplinary teamwork and facilitators and barriers of their role are; personal facilitators, lack of facilitators and student-related, clinical educator, environmental and institutional barriers respectively. The solutions to the barriers for the clinical educator role are continuous knowledge and skills development, planning and setting objectives.

CHAPTER 5: DISCUSSION

In this chapter, the researcher integrates the findings with other related evidence on the topic. The main aim of the study and its objectives are discussed in terms of the resultant findings and an analysis of the implications of the findings on the role of physiotherapy clinical educators at the national and regional referral hospitals is highlighted and discussed. Furthermore, the strengths and limitations of the study and recommendations for future study and improvements in physiotherapy clinical education are explored. The perceptions of physiotherapists with regard to their role, the barriers to, the facilitators of and the solutions to the barriers of physiotherapy clinical education are scrutinised according to the emerging themes and their categories and subcategories in an integrated way together with evidence supporting or negating findings. The discussion of the results follows an integral pattern in which the facilitators of, barriers to and solutions to the barriers to clinical education are discussed in relation to the clinical educator roles which form the core stem of the discussion. The researcher describes the identified clinical educators' role and highlights how the role is facilitated, the barriers that face it and the possible solutions to the barriers.

5.1 Discussion of the Study Findings

The study achieved its aim to explore and describe the perception of physiotherapists regarding their role as clinical educators and to identify the barriers to and facilitators of clinical education at national and regional referral hospitals in Uganda. From the results chapter, physiotherapists from the national referral hospital are represented by P1 to P8 and those from regional referral hospitals are represented by P9 to P18. The physiotherapy clinical educators in Uganda were young to middle-aged, mainly men and mainly held diplomas as their highest educational qualification. They had many years of experience (more than ten years) as physiotherapy clinicians and (five to ten years) as clinical educators. Research suggests that students learn more readily when their mentor is an experienced and

knowledgeable professional without regard to the age or gender (Ezenwanko et al., 2018). However, the impact of age and gender on the effectiveness of physiotherapy clinical education is not conclusive. Newstead et al. (2017) noted that many physiotherapy clinical educators get involved in clinical education not because they are skilful or experienced but because they are willing to perform the role, available and as an expectation of their job. The perceptions of the physiotherapy clinical educators were related to how they perceived their role of clinical educator in the clinical setting, including the barriers to and facilitators of their role. The perceptions of the participants were in relation to the four predetermined themes; the role of clinical educators, facilitators of clinical education, barriers to clinical education and solution to the barriers of clinical education as it is experienced elsewhere in the world.

5.1.1 The perceived clinical educator roles

Five categories were elaborated on under the theme of the roles of physiotherapy clinical educator in the clinical setting. These areas were the perceived roles in empowerment of students, promotion of student professional behaviour, integration of theory and practical skills, assessment of students and multidisciplinary team work. In this part of the discussion, the role of clinical educators is presented in an integrated manner with the facilitators of and barriers to the role of clinical education and incorporates aspects of the theoretical framework used in this study to explain some of the findings of this study.

Most physiotherapists viewed their role as that of empowerment of students through providing them with knowledge and skills which would enable them to manage the different patients' conditions. Empowerment of students takes the highest percentage of the goal of any clinical placement and it is central to the physiotherapy clinical education. As in other professions, for example nursing, empowerment helps the student to practise safe patient management through taking all the necessary precautions while being motivated to learn and

perfect more skills (Babenko-Mould, Iwasiw, Andrusyszyn, Laschinger, & Weston, 2012; Al-Niarat & Abumoghli, 2019). Clinical educators impart knowledge and skills to students to enable them to become responsible for their actions and take informed decisions about patient management while on placement. The findings of the current study are in agreement with Lynn and Adefila (2017) who stated that empowerment should foster students' autonomy, personal growth and the ability to learn. This links in with the constructivism theory regarding experiential learning for students to learn theory and practice as this experiential learning allows empowerment (Lankveld, Maas, Wijchen, Visser, & Staal, 2019). The constructivism theory focuses on how students generated their own knowledge and skills during clinical education placement through experience; thus being able to apply the same knowledge and skills later when faced with a different but related situation.

According to the University of Gloucestershire's guidelines titled *Physiotherapy clinical educators handbook* (2019-2020, page 23), the empowerment of students appears to be two dimensional; helping students to learn how to make own decisions and identifying their learning needs. In addition to preparing the student to take on increasing responsibilities and decision making about patient management, empowerment should enable the student to identify their own learning needs and make full use of all the available learning opportunities. Lynn and Adefila (2017) and Taylor and Hamdy (2013) emphasise that the way in which knowledge is imparted should allow the students to construct their own knowledge and develop new ideas that are applicable to new situations.

However, the results of the current study reveal that empowerment of students tends to focus on only one dimension of equipping the students with knowledge and skills (knowledge transmission) to handle patients' conditions at that particular time thus keeping knowledge static. According to the constructivism theory which was used to guide and underpin the

findings of this study, empowerment of students was found to lack the practice that would enable learners to make own decisions and to identify their learning needs. With the constructivist theory, the individual students are at the centre of creating their own experiences through active interactions with the environment in the clinical setting (Thomas, Menon, Boruff, Rodriguez, & Ahmed, 2014). The theory works on an assumption that knowledge is active, dynamic and a process not a product which can easily be passed onto the students by the educators but rather the students should be actively involved in the construction of knowledge through interactions in the clinical setting (Plack, 2005). With physiotherapy being a profession known for "hands on" practice in many of its interventions, Qasem (2015) noted that the constructivism approach, if used to train motor activities, presents a unique opportunity to illustrate the transmission of knowledge in a way that fully encompasses the learner's experience.

The lack of complete empowerment of physiotherapy students can be related to the current environment in which the clinical education takes place in Uganda. Clinical educators, because they perform a dual role of clinician and clinical educator, are overwhelmed by the increased patients and student number in the clinical area. Therefore, they are constantly faced by time constraints to attend to the interests of both the patients and students. This is supported by findings of Ong et al. (2019). In a qualitative study with occupational therapists and physiotherapists, they found that when clinical educators fail to recognise the significance of their dual role, one beneficiary (patient or student) becomes disadvantaged. This is because some clinical educators tend to experience misalignment between their role identity standards and perceptions as well as the required competence levels thus negative thoughts and emotions which hinder learning (Ong et al., 2019).

According to Chetty et al. (2018) the workload, time constraints and shortage of clinical

educators are some of the factors that hinder teaching and learning in the clinical area. In the current study, the focus of clinical educators tends to be more on patient management as their primary role and only empower the students to gain some skills and confidence such that they can give a hand in clearing the patient workload. Contrary to the practice, in developed and some developing countries for example South Africa and Nigeria; physiotherapy clinical education is carried out by independent clinical educators employed by the training institution/university and are only re-enforced by the clinicians in some areas when the need arises (Rindflesch et al., 2009; Lo, Curtis, Keating & Bearman, 2017; Odole & Oladoyinbo, 2014; Voges & Frantz, 2019). However, Edgar and Connaughton (2014) in their study noted that given the varied role of the clinical educator, it is not appropriate to simply add the role of educator to that of clinician because it demands a combination of many skills.

Another factor that could hinder the complete empowerment of the students is the lack of formal knowledge of the teaching methods and the clinical education guidelines as was reported by all clinical educators. In the current study, the methods used in physiotherapy clinical education depend on the educators' knowledge, choice and convenience. There is a likelihood that this could result in students missing out on some skills or acquiring undesired knowledge, skills and attitudes that translate to undesirable practices and outcomes. Studies carried out by Edgar and Connaughton (2014) and Rodger et al. (2008) emphasise that institutions should facilitate clinical educators to have the required teaching skills in order to effectively help the students integrate the theoretical knowledge and practical while on placement in the clinical area.

In Uganda, information is not available about the institutions or government facilitation of physiotherapy clinical educators to acquire teaching skills. Clinical educators always facilitate themselves to informally gain some knowledge about teaching which they use during their

interaction with students. They achieve this through continuous reading and searching of the internet. Sometimes clinical educators hold CPDs organised by the Uganda Association of Physiotherapists (UAP) but these are mainly for the development of physiotherapy professional knowledge and skills and not for teaching skills.

The integration of theoretical knowledge and practice is another role carried out by physiotherapy clinical educators. Educators desire that the students they supervise not only understand the theory of physiotherapy practices but also how to apply the theoretical knowledge into practice depending on the student's year of study. The educators' main objective is to make sure that the physiotherapy students are able to put into practice what they have learned in the class room in order to become capable and competent. Integration of theory and practice if successfully achieved will foster the critical thinking skill which is important in problem solving (Delany & Molloney, 2009).

However, the physiotherapy clinical educators in this study had varying perceptions about the theoretical knowledge that students gain in the classroom. Some educators believed that students who come for the placement have some background knowledge and skills acquired while in class and therefore only need to be supported to improve or perfect their skills in patient management practically. This concurs with Edgar et al. (2014) who found that one of the roles of clinical educators was to support learners while in the clinical environment to put into practice the theoretical knowledge they have. On the other hand, some physiotherapy clinical educators perceived that the students regardless of their year of study come to the clinical placement when they have little or poorly aligned theoretical knowledge and skills. It is therefore the clinical educator who must provide the correct knowledge and skills (clinician- centred) first by the students observing then later reproducing what they have

observed the educator do (apprenticeship). According to Stalmeijer, Dolmans, Wolfhagen and Scherpbier (2009), the apprenticeship model of clinical education has its own shortcomings especially of not allowing the students to exploit their potential and limits creativity. Clinical practice education under this model is based on day-to-day demands of the clinical area where setting objectives for student practice of the day is not apriority.

In the current study, students' practice in the clinical setting by first observing which is a teaching and learning method commonly used by the physiotherapy clinical educators due to lack of knowledge of other teaching methods has limitations especially in instances where students are not committed to their studies, are poor time keepers and are not regular in attending clinical sessions as reported in the barriers for clinical education in this study. When a student misses observing the educator demonstrating a particular skill, it may become difficult for such a student to appreciate the missed skill despite having the corresponding theoretical knowledge. This is because preclinical theoretical knowledge is not easily appreciated by the students in relation to the practice as it is more in abstract (Stalmeijer et al., 2009). Clinical educators in this case are under increasing stress levels because of the environmental barriers that they face when trying to integrate theory and practice.

The unconducive training environment characterised by inadequate training resources, inadequate medical equipment and space have been reported to hinder training of certain skills or results in training a skill using improvised equipment that may not allow the student to perfect that particular skill. This finding is in agreement with that of Moghadam, Abdi and Ardehjan (2017) that states that an unsuitable training environment has an adverse impact on clinical education. Moghadam et al. (2017) describes an unsuitable training environment as the lack of appropriate space, inadequate medical training equipment and lack of planning and educational approach.

Another role that physiotherapy clinical educators find themselves carrying out during their interaction with the students is the promotion of students' professional behaviour that ensures professionalism. Professionalism is the conduct, behaviour and attitude of someone in the work environment. Professionalism translates to success in the clinical setting; it promotes a strong professional reputation and ensures a high level of work ethics and efficiency (APTA, 2000). The physiotherapy clinical educators perceived their role as that of preparing future physiotherapists that are characteristically professionals who can observe the standard of the physiotherapy profession. Most of the aspects of Professionalism including students' appearance, behaviour, integrity and time management are emphasised by the physiotherapy clinical educators in this study. Promotion of students' professional behaviour also involves making sure that the students are helped to adapt to the ethics of both physiotherapy and the health profession in general. Professionalism describes the qualities, skills, competencies and behaviours students are expected to bring to the physiotherapy profession.

From the findings of this study it is noted that physiotherapy clinical educators believed that the success of any professional depends on how he/she conducts himself/herself; how one handles the client and one's general appearance while in the work environment. Physiotherapy being a profession that demands a lot of ''hands-on'' practice, whereby the physiotherapist is in contact with the patient for a long period of time both physically and emotionally that requires a high level of self-respect and control that can only be ensured through observing the professional ethics. These findings of the study are consistent with the guidelines of the World Confederation for Physical Therapists (WCPT, 2011) about the standards of physical therapy practice. In addition to being able to take on increasing responsibilities, students should be empowered to be accountable for their actions while on placement. Accountability is one of the seven core values described by the APTA required for

excellent professional practice and effective patient care (Hayward & Blackmer, 2010).

Furthermore, physiotherapy clinical educators perform the role of assessment of students' level of knowledge at the beginning of the clinical placement and skills competency at the end of the placement. However, none of the clinical educators mentioned anything about assessing the students' ability to learn before engaging in any interaction. According to Oyeyemi (2013), clinical educators should be able to assess the students' learning abilities in the three main domains: cognitive, psychomotor and affective. Students have different learning abilities therefore understanding how they learn in the clinical setting can enhance knowledge and skills acquisition and development of competency in skills performance (Qasem,2015).

Generally, assessment of the students in the clinical setting tends to pose a challenge to most clinical educators since many clinical learning environments are unpredictable (Meyer, Louw, & Ernstzen, 2017). Given the situation of physiotherapy clinical education in Uganda where clinical educators are not certified teachers and lack training; assessing learning in such an environment is more likely to be ineffective. Oyeyemi (2013) noted that assessment of learning in the clinical setting may not be easy if it is to be done by someone unskilled because it involves assessment of behaviour that varies.

It was also not clear about the methods of assessment used by the physiotherapy clinical educators in this study since there seem to be no formal unified assessment tools apart from the logbook. A logbook is an assessment tool that contains an outline of the main physiotherapy skills in the particular study areas, which a student must acquire and practice during a given period of placement. From the findings of this study, assessment of the students appeared to be concentrated on the technical knowledge and skills performance

leaving out the non-technical skills for example interpersonal and communication skills. Jones (2019) recommends that the assessment of students should include non-technical skills as they are crucial in providing effective patient care. The assessment should be through the use of appropriate assessment methods that are objectively structured. Objective and purposeful assessments ensure quality education and provide reliable feedback about students' performance (Moghadam et al., 2017). In countries including Uganda where physiotherapy training and practice is not well developed, assessment of students' clinical performance is not based on any standardised clinical assessment practice guide (Hu et al., 2020). However, the World Confederation of Physical Therapists (WCPT) recommends that assessment of students should include aspects of patient assessment and management, professional behaviour and communication using either; the American Physical Therapist Clinical Performance Instrument (APTCPI), Australia Assessment of Physiotherapy Practice (AAPP) or Ireland's Common Assessment Form, (ICAF) (Hu et al., 2020).

Finally, some physiotherapy clinical educators in this study perceived that their role is to ensure that students adapt to the multidisciplinary team approach (MDTA) to patient management right at the beginning of clinical practice orientation in circumstances where its application is possible. MDTA in the clinical setting not only helps the patient to have his/her problems solved at once but also increases the awareness of professionals about each other's roles and responsibilities in patient management. Most physiotherapy clinical educators acknowledge the importance of being a member in a multidisciplinary team as it provides an opportunity for professionals to learn from each other while in the clinical setting, thus reducing the medical errors one is bound to make and thereby improving the quality of healthcare. Many articles support the latter finding of the study. Bonvento, Wallace, Lynch, Coe and McGrath (2017) emphasise the need for MDTA in the care of patients who present with multiple clinical symptoms, for example in the fields of neurology, orthopaedics, general

medicine and surgery, paediatrics and obstetrics. Benevento et al. (2017) note that the MDTA enables professionals to coordinate the patient care and allows the patient to access the specialty expertise easily.

5.1.2 Facilitators of the physiotherapy clinical educator role

Despite the clinical educator roles facing a number of barriers, clinical educators have tried to carry out this role for many years amidst challenges. The motivation of the physiotherapy clinical educators in this study to keep supporting students in the clinical areas is derived from personal facilitators. Love for the profession and the need to see the profession grow were identified as the main facilitators of the physiotherapy clinical educator role perceived by all clinical educators in this study. In order to minimise the effect of lack of knowledge of teaching methods and clinical education guidelines on clinical education, the physiotherapy clinical educators' use continuous knowledge and skills development strategies through regular reading of evidence-based practices and teaching methods. The finding is consistent with that of Rodger et al. (2008) that emphasises that programmes of formal and informal education are required to support clinical educators in developing their clinical education skills. After students have arrived at the clinical placement sites, the physiotherapy clinical educators use a planning and setting objectives strategy in order to solve the challenges related to busy patient and student workloads day by day. This finding is supported by the previous study of Moghadam et al. (2017), that found that planning at both institution and clinical practicum level forms the basis of any training programme and can provide effective learning. Therefore in conclusion while there are many barriers faced by physiotherapy clinical educators' in Uganda, they have found minimal solutions or facilitators to continue to motivate themselves and continue to provide clinical education to the physiotherapy students however, they need assistance in improving this role in this particular setting.

5.2 Summary

In summary, physiotherapy clinical educators' played varied roles while in the clinical setting studied with regards to clinical training and supervision of students. However, the implementation of the perceived physiotherapy clinical educator roles is not well-structured in Uganda. There is a general lack of knowledge of teaching methods and clinical education guidelines, implying that students are not taken through a unified body of knowledge, skills and attitudes yet they are expected to acquire the same competencies at the end of the placement. The environment in which physiotherapy clinical education takes place in Uganda is not supportive of the clinical teaching-learning process. The number of physiotherapy clinical educators is low compared to the number of students and patients they are mandated to take care of while in the clinical setting. Facilitators for the physiotherapy clinical educators' role are lacking as the physiotherapy clinical educators' state that they derive their motivation to perform and do their role from personal factors such as their own personal drive and motivation. The findings of this study therefore suggest that physiotherapy clinical educators in Uganda need to be empowered with clinical education knowledge and skills in order to effectively carry out their educator role. A suitable clinical practice framework within which the physiotherapy clinical education practice can be structured may also be needed and could be a facilitator to improved clinical practice outcomes in Uganda.

5.3 Strengths of the Study

This research study is the first to be conducted in Uganda on the perception of physiotherapy clinical educators regarding their clinical education role in the clinical setting. The research design was particularly appropriate to obtain an in-depth understanding of the research question and the number of participants was sufficient to allow for the collection of a rich set of views. The researcher was able to explore an area of physiotherapy clinical education that has not been explored before and has provided baseline information that can support further

research in physiotherapy clinical education and other allied health professions in Uganda, to improve the current status of physiotherapy clinical education in Uganda. The study has identified the lack of knowledge of teaching and learning methods and clinical education guidelines by clinical educators and the un conducive clinical environment in which clinical education takes place which if well addressed can bring about improved physiotherapy clinical education in Uganda.

5.4 Limitations of the Study

There were a few limitations of the study. Firstly, it was difficult to find all the clinical educators in the clinical setting due to the limited human movement caused by the outbreak of COVID-19. Data collection from five participants was through telephone interviews, as the COVID-19 social distancing and lockdown regulations made it impossible to do the last face-to-face interviews. The researcher thus could not obtain the nonverbal information usually gained in face-to-face interviews. However, this did not have an impact on the collected data as the researcher carefully followed all the steps to call and record the interview and then analyse the data taking note of the participants' voice intonation which provides a hint on the non-verbal information. Moreover, some participants from distant regional referral hospitals had poor network connectivity therefore reaching them on telephone for an interview was difficult but the researcher tried different times and days until he finally succeeded to obtain an interview with the said participants.

5.5 Recommendations for the Way Forward

Based on the findings of this study it is recommended that the Uganda Ministry of Education (MoE) reviews the allied health clinical education and training policies to restructure the role of clinical educators, particularly that of physiotherapy. Physiotherapy clinical educators should be empowered with clinical education knowledge and skills through formal training (clinical instructor/educator courses) and the role of the clinician should be separated from

that of the clinical educator because it is now the practice in most developed and developing countries where physiotherapy training and practice is well developed. Physiotherapy clinical education guidelines should be developed and implemented in the Ugandan context. Further research should explore how physiotherapy students perceive the roles of clinical educators in the context of Uganda and explore the impact of the current clinical education approach in Uganda on the quality of physiotherapy patient care. The Uganda Association of Physiotherapists should advocate for updating the profession to meet the current international clinical training and practice demands of having Bachelor degree training as the minimum physiotherapy qualification, recommended by the WCPT.

CHAPTER 6: CONCLUSION

This study and its findings are pioneering and have added much needed evidence to the allied healthcare professional clinical education and training database. The information gained from this study can be used by the Ministry of Health in Uganda to predict the quality of physiotherapy patient care that graduates from such a training environment are likely to offer to patients and their communities. It is evident that physiotherapy clinical education lacks a mechanism for evaluating its effectiveness; therefore, this study has identified the gaps and provides an insight on how to improve the teaching-learning outcomes in physiotherapy clinical education. The perceived roles of the physiotherapy clinical educators are those that are consistent with the findings of international clinical education studies which if well facilitated can support the production of a competent physiotherapist.

Exploring and understanding the role of physiotherapy clinical educators, the facilitators of and the barriers to clinical education has also provided evidence that educators are committed to mentor future physiotherapists but need empowerment and facilitation in this context. In addition to the core physiotherapy skills, physiotherapy clinical educators in this setting need to be equipped with the teaching skills to enable them to perform the various clinical education activities effectively. There is a need for the Ministry of Education to streamline clinical education training and practice and to fully engage the physiotherapy clinical educators in planning for clinical placements in physiotherapy clinical education in Uganda. This can improve the physiotherapy clinical educators' commitment and motivation to facilitate the students' learning. If physiotherapy clinical education in Uganda is to achieve its goal of producing a competent physiotherapist, the role of the physiotherapy clinical educators should be well structured and its implementation well guided in order to achieve unified learning outcomes.

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APPENDIX ONE

UNIVERSITY of the WESTERN CAPE

OFFICE OF THE DIRECTOR: RESEARCH
RESEARCH AND INNOVATION DIVISION

Private Bag X17, Bellville 7535
South Africa
T: +27 21 959 4111/2948
F: +27 21 959 3170
E: research-ethics@uwc.ac.za
www.uwc.ac.za

02 December 2019

Mr C Kibuuka
Physiotherapy
Faculty of Community and Health Sciences

Ethics Reference Number: BM19/9/14

Project Title: Exploring the role of the physiotherapy clinical educators in the clinical setting in Uganda.

Approval Period: 22 November 2019 – 22 November 2020

I hereby certify that the Biomedical Science Research Ethics Committee of the University of the Western Cape approved the scientific methodology and ethics of the above mentioned research project.

Any amendments, extension or other modifications to the protocol must be submitted to the Ethics Committee for approval.

Please remember to submit a progress report in good time for annual renewal.

The Committee must be informed of any serious adverse event and/or termination of the study.

Ms Patricia Josias
Research Ethics Committee Officer
University of the Western Cape

NHREC REGISTRATION NUMBER -130416-050

FROM HOPE TO ACTION THROUGH KNOWLEDGE.

TELEPHONE: +256-41554008/1
FAX: +256-414-5325591
E-mail: admin@mulago.or.ug
Website: www.mulago.or.ug

IN ANY CORRESPONDENCE ON THIS SUBJECT PLEASE QUOTES NO…

MULAGO NATIONAL REFERRAL HOSPITAL
P.O. Box 7051
KAMPALA, UGANDA

18th December, 2019

Mr. Charles Kibuuka
Principal Investigator
UIAHMS

Dear kibuuka,

Re: Approval of Protocol MHREC 1782: "Exploring the role of the physiotherapy clinical educators in the clinical setting in Uganda".

The Mulago Hospital Research and Ethics Committee reviewed your proposal referenced above and granted approval of this study on 18th December, 2019. The conduct of this study will therefore run for a period of one (1) year from 18th December, 2019 to 17th December, 2020.

This approval covers the protocol and the accompanying documents listed below;

- Consent Form
- Information sheet

This approval is subjected to the following conditions:

1. That the study site may be monitored by the Mulago Hospital Research and Ethics Committee at any time.
2. That you will be abide by the regulations governing research in the country as set by the Ugandan National Council for Science and Technology including abiding to all reporting requirements for serious adverse events, unanticipated events and protocol violations.
3. That no changes to the protocol and study documents will be implemented until they are reviewed and approved by the Mulago Hospital Research and Ethics Committee.
4. That you provide quarterly progressive reports and request for renewal of approval at least 60 days before expiry of the current approval.
5. That you provide an end of study report upon completion of the study including a summary of the results and any publications.
6. That you will include Mulago Hospital in your acknowledgements in all your publications.

I wish you the best in this Endeavour.

DR. NAKWAGALA FREDERICK NELSON
CHAIRMAN- MULAGO HOSPITAL RESEARCH & ETHICS COMMITTEE.

Vision: "To be the leading centre of Health Care Services"

APPROVED
APPROVAL DATE EXPIRY DATE
18 DEC 2019 17 DEC 2020
MULAGO RESEARCH ETHICS COMMITTEE
IRC

APPENDIX TWO

UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa
Tel: +27 21-959 2542 Fax: 27 21-959 1217
E-mail: ckibuuka27@gmail.com

APPENDIX 1

INFORMATION SHEET

Project Title: Exploring the role of the Physiotherapy clinical educators in the clinical setting in Uganda

What is this study about?
This is a research project being conducted by Mr Charles Kibuuka at the University of the Western Cape. We are inviting you to participate in this research project because you are a physiotherapy clinical educator and the study involves research about the role of the physiotherapy clinical educator in the clinical setting. The aim and purpose of this research project is to find out how physiotherapists understand their role as clinical educators and the challenges they face during interaction with the students in the clinical setting. This information will allow us to review and improve the curriculum and the environment in which physiotherapy clinical education takes place. The study is expected to enrol twenty-five (25) physiotherapists in total, thirteen (13) from the National referral hospital and three (03) from each of the four main regional referral hospitals.

What will I be asked to do if I agree to participate?
You will be asked to participate in an individual face to face interview following your informed consent. This will involve a verbal interaction between you, the physiotherapy clinical educator, and the researcher. The duration of your participation if you choose to participate and remain in the study is expected to be 30 minutes. You will be asked to talk about your perceived role as a physiotherapy clinical educator and the challenges and facilitators of your clinical educator role. The interview will take place at a time and place convenient to both you and the researcher.

Would my participation in this study be kept confidential?
The researcher undertakes to protect your identity and the nature of your contribution. To ensure your anonymity, pseudonyms and codes will be used on the recorded audiotapes, transcripts and other data. Your name will not be included during the recorded interviews nor will it be included on the transcripts, only a code will be placed on the transcript and other collected data. Through the use of an identification key, the researcher will be able to link your recording or transcript to your identity; and only the researcher will have access to the identification key. To ensure your confidentiality, a code will be attached to all audio-taped data and transcripts that will be linked to an identification key only known to the researcher. All tapes will be destroyed after five years once they have been transcribed, documented

according to themes and a thesis submitted to the University of the Western Cape. Transcribed data will be stored in a locked filing cabinet with the researcher having the only access to the key of the filing cabinet. Any electronic data will be protected on a password protected computer in password protected files, with only the researcher having access to the passwords. No unauthorized party will be able to access the information. If we write a report or article about this research project, your identity will be protected.

What are the risks of this research?

All human interactions and talking about self or others carry some amount of risks. We will nevertheless minimise such risks and act promptly to assist you if you experience any discomfort, psychological or otherwise during the process of your participation in this study. Where necessary, an appropriate referral will be made to a suitable professional for further assistance or intervention. In case of such risk, the affected physiotherapist will be referred to a professional clinical psychologist for help. (Dr Kasigaire Paul, Tel: +256772610680, e-mail: paulsocialcare@gmail.com)

What are the benefits of this research?

This research is not designed to help you personally, but the results may help the investigator learn more about the perceived role of physiotherapy clinical educators, the facilitators and challenges in this role in the chosen setting. The information you provide could help the Ministries of Education and Health in Uganda review the curriculum and the environment in which physiotherapy clinical education takes place. This in turn could contribute to the improvement of physiotherapy service and care.

Do I have to be in this research and may I stop participating at any time?

Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify. Refusal to participate or withdraw from the study will not carry any consequences. The researcher may terminate your participation in the study in case of an emotional or psychological break down. Participants are not expected to incur any costs by getting involved in this study. Transport refund by public means, 10,000/= (ten thousand shillings) will be provided to those who will be delayed by the study (interview) at the work place.

What if I have questions?

This research is being conducted by ***Mr Charles Kibuuka, Physiotherapy Department*** at the University of the Western Cape. If you have any questions about the research study itself, please contact ***Mr Charles Kibuuka*** at: +256782290483/+27784972394 and email: ckibuuka27@gmail.com.

Should you have any questions regarding this study and your rights as a research participant or if you wish to report any problems you have experienced related to the study, please contact:

Prof Michael Rowe
Head of Department: Department of Physiotherapy Therapy
University of the Western Cape
Private Bag X17
Bellville 7535
mrowe@uwc.ac.za

Prof Anthea Rhoda
Dean: Faculty of Community and Health Sciences
University of the Western Cape
Private Bag X17
Bellville 7535
chs-deansoffice@uwc.ac.za

This research has been approved by the University of the Western Cape's Biomedical Research Ethics Committee.

Biomedical Research Ethics Committee
University of the Western Cape
Private Bag X17
Bellville
7535
Tel: 021 959 4111
e-mail: research-ethics@uwc.ac.za

REFERENCE NUMBER: *to be inserted on receipt thereof from the Biomedical Research Ethics Committee before research commences*

APPENDIX THREE

UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa
Tel: +27 21-959 2542, Fax: 27 21-959 1217
E-mail: ckibuuka27@gmail.com

APPENDIX 2

CONSENT FORM

Title of Research Project: ***Exploring the role of the Physiotherapy clinical educators in the clinical setting in Uganda***

The study has been described to me in a language that I understand. My questions about the study have been answered. I understand what my participation will involve and I agree to participate of my own choice and free will. I understand that my identity will not be disclosed to anyone. I understand that I may withdraw from the study at any time without giving a reason and without fear of negative consequences or loss of benefits.

___ I agree to be audiotaped during my participation in this study.
___ I do not agree to be audiotaped during my participation in this study.

Participant's name……..

Participant's signature……

Date……

APPENDIX FOUR

APPENDIX 3

ROLE OF THE PHYSIOTHERAPY CLINICAL EDUCATORS IN UGANDA
INDIVIDUAL PARTICIPANT INTERVIEW GUIDE

Participant's demographic data

Participant Code: .....

Age: .....

Gender: .....

Highest education qualification: .....

Number of years in service as a Physiotherapy clinician: .....

Number of years as a Physiotherapy clinical educator: .....

Name of the hospital where you are employed: .....

Explanation of the purpose of interview/discussion:

Researcher introduces self and the moderator to the participant (physiotherapist) and explains the purpose and importance of the physiotherapist's participation in the study and assures them of anonymity, confidentiality and the ground rules for a smoother interview.

Semi-structured interview guide:

1. Describe your role as a physiotherapy clinical educator.

Probe: what activities do you perform during clinical education?

2. Describe the barriers you face as a physiotherapy clinical educator.

Probes:

- Teaching methods
- Clinical education guidelines
- Practical skills
- Logistics, workload, time
- Knowledge (theoretical)

3. How can you overcome these barriers?
4. Describe any facilitators for your physiotherapy clinical education role.