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Coaching Third-year Certificate Midwives to Improve Partograph Skills: A Study of a Nurses and Midwives Training School in Western Uganda

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Abstract **Original Research Article**

Background*:** Maternal and neonatal deaths' resulting from obstructed and prolonged labor is still a major challenge in the developing countries. These complications can be prevented if a partograph is used as a labor monitoring tool. Teaching is more of theoretical which has affected partograph skill acquisition. Coaching as a teaching strategy may be helpful in advancing the development of learners' skills. This study explored the effectiveness of coaching towards improving skill acquisition of certificate midwives in labor monitoring using partograph. Benner's theoretical model from *novice to expert* guided the study. ***Methodology: The study employed an interventional quasi-experimental design. Census sampling was used to select the participants. Data was collected from third-year certificate midwives using scenarios and a checklist on partograph parameters. A paired t-test was used to determine the difference between pre-test and post-test students' scores. ***Results***: The findings indicated that before the implementation of coaching, there was inadequate skills in almost all parameters of using partograph among the third-year certificate midwives in monitoring labor. Posttest intervention indicated that there was statistically significant (P=0.000) improvement in the skill of using a partograph in monitoring labor after coaching. ***Conclusion***: Coaching as a teaching strategy showed a significant advancement in skill acquisition of monitoring labor using a partograph among the third-year certificate midwives. This study recommends that coaching may be used as an alternative strategy in the midwifery training program to enhance skill acquisition on partograph use.

Keywords: Coaching, Skill Acquisition, Partograph, Labor Monitoring.

CHAPTER ONE: INTRODUCTION

Maternal and neonatal deaths' resulting from obstructed and prolonged labor is still a major challenge in the developing countries. Strategies to address the problem led to the development of a labor monitoring tool called the partograph. A partograph is a pre-printed form of graph paper on which the midwife regularly enters data generated from the mother and fetus during labor. Its purpose is to distinguish normal from abnormal labor (Abebe, Brhanu, Awoke, & Ejigu, 2013). The World Health Organisation recommends the use of a partograph as a compulsory tool in monitoring labor progress in the health care system since it contributes to a reduction in maternal, fetal morbidity and mortality (Maphasha, Govender, Moltoba, & Barua, 2017).

Therefore, all health care providers working in maternity units must demonstrate knowledge and skill of using a partograph. Health training institutions for nurses and midwives adopted partograph training in their curricular. However, evaluation of the learners in the skill of labor monitoring using a partograph has continuously revealed incompetently plotted partographs (Uganda Nurses & Midwives Examination, 2014). This study sought to explore the use coaching as a training strategy to improve the knowledge and skills of third-year certificate midwives in labor monitoring using a partograph.

Background

A partograph is a tool recommended worldwide for use in monitoring progress of labor, the condition of the mother and fetus (Lavender, Hart, & Smyth, 2013). When properly plotted and interpreted, it alerts a midwife of any emerging complications that may require immediate corrective actions. When appropriate corrective actions are applied, a partograph has the capacity to avert maternal and infant mortality (Fawole, Hunyinbo, & Adekanle, 2008).

Over 289,000 maternal deaths occurred in 2013 worldwide and about 99% of these occurred in developing countries (WHO, 2013). Many maternal deaths in sub-Saharan Africa occur because of obstructed and prolonged labor that could have been prevented by monitoring and documenting progress of labor using a partograph (WHO, 2013). The World Health Organization (WHO) strongly recommends the use of partograph to increase the midwives' awareness on obstetric complications during labor and guide their management or appropriate referral. However, limited understanding of proper use of a partograph has led to its low utilization (Lavender, Hart, & Smyth, 2013). In a study conducted in South Africa on use of partograph, its effectiveness, training, and barriers, it was found that lack of commitment and negative attitude on partograph documentation by midwives contributed to the failure to achieve the desired results in monitoring progress of labor (Levin & Kabagema, 2011). Additionally, low knowledge in partograph use has been found among nurses, midwives, and doctors working in the primary and secondary health care levels in sub-Saharan Africa (Levin & Kabagema, 2011).

The low knowledge on partograph among midwives and other health care practitioners partly explains its underutilization (WHO, 2013). Studies have found out this relationship: in a Nigerian study about use of the partograph, medical personnel lacked detailed knowledge of the components of the partograph (Umezulike, Onah, & Okaro, 1999); in Ethiopia about 72% of midwives in rural delivery units inconsistently used partographs and the few who used it did not record the results correctly (Abebe, Birhanu, Awoke, & Ejigu, 2013).

A study to assess the risk factors for obstructed labor among 536 women in Western Uganda revealed that only 45.8% of their records had a partograph and only 3.5% of the partographs were fully documented (Kabakyenga, Östergren, Turyakira, Mukasa, & Pettersson, 2011). According to Fistula Care (2013), the quality of partographs is still poor in majority of health units and training practical sites in Rukungiri District in Uganda where training on partograph use was done in 2011. This may be associated to the methods used for teaching partographs during pre and in-service training. Training institutions for student nurses and midwives use more theoretical approaches than practical sessions.

To achieve better understanding of partographs, student midwives need to be trained using an effective psychomotor teaching strategy. Coaching is one of the teaching strategies where learners are carefully engaged and equipped with the necessary skills needed to improve the use of a partograph. Coaching as a teaching strategy is known to increase skills acquisition among the learners (Maginnis & Croxon, 2010). Similarly, Lofthouse, Leat, & Towler, (2010) defined coaching as a structured, sustained teaching and learning method continually advances the development of the specific skill and when used one-to-one, the learner easily attains more skills. Croffoot & Koerber, (2009) add that coaching enhances hands on engagement with the student in skill attainment through continuous exposure in the clinical area. Once a skill has been acquired, it promotes role development that can help a midwife in effective and efficient clinical decision making in labor management. This study aimed to determine the effectiveness of coaching towards improving skills of third-year certificate midwives in partograph use.

Statement of the Problem

Maternal morbidity and mortality rates remain a major global health problem especially in the Sub-Sharan countries including Uganda. Maternal and neonate deaths in the Sub-Saharan region are as result of obstructed and prolonged labor accounts to 70% of all maternal death (WHO, 2013). Training institutions for student nurses and midwives use more theoretical approaches than practical sessions in teaching partograph. Efforts to use a partograph as a tool for monitoring labor have been done across the region. However, statistics show that there is still under utilization of the labor monitoring tool among midwives despite the pre and in-service trainings. This study implemented coaching as a training strategy to strengthen the acquisition of knowledge and skills of partograph use among third-year certificate midwives in one of the nursing and midwifery training schools in the Western Uganda.

Study Purpose

The purpose of this study was to determine the effectiveness of coaching as a learning strategy towards improving the skills use of a partograph as a labor monitoring tool among third-year certificate midwives during clinical practice.

Research Question: Does coaching improve skills of third-year certificate midwives in partograph use?

Specific objectives

1. To determine the pre- coaching skills of third year certificate midwives in monitoring labor using a partograph.
2. To identify the immediate skill acquisition of third-year certificate midwives during the implementation phase of the coaching strategy on partograph use.
3. To assess the effect of coaching on skill acquisition in partograph use among the third-year certificate midwives, one week after the intervention.

Significance of the Study

Third-year certificate midwives who participated in the study may develop confidence and demonstrate effectiveness while managing labor using a partograph. The study findings may help to advance

midwives' practice in using a partograph and this in turn may improve the health outcome of a mother and baby. Such outcomes may include reduced morbidity and mortality of mothers and infants that lead may to effective and efficient health service delivery of midwives.

Identifying an effective method of teaching third-year certificate midwives the skills of partograph use may help educators to expand their selection of learning strategies. Educators may adopt new strategies such as coaching to reinforce the learning process related to effective use of partograph in the clinical area. The findings may provide scientific evidence about the kind of support that has beneficial effects for evidence-based training of midwives in partograph use.

Findings of this study may provide nurse leaders with knowledge of how to formulate and implement policies related to partograph use and application. In such a case, nurse leaders may use these findings to make decisions regarding partograph teaching in school and clinical settings. Findings may also provide information to the nursing leadership on how to monitor and evaluate the implementation of partograph policy to achieve best quality of care for maternal and child health.

Theoretical Model/Conceptual Framework

This study was guided by the model for the nurses' role development, *Novice to Expert* model as described by Patricia Benner in the 1980s, patterned after the Dreyfus model for medical education. The model assumed essential understanding of how knowledge and skills are acquired and directly applied to nursing practice, education and research (Altmann, 2006). Benner described how nurses continue to learn and develop in their critical thinking to become experts in their roles and skill development as an important aspect. (Benner, 2004). Benner's first published book, *From Novice to Expert* (Benner, 1984) proposed the use of Dreyfus' five levels of competency to describe skill acquisition in clinical nursing practice. In the Dreyfus model of skill acquisition, advancement in skill performance stipulates that a learner passes through five levels of proficiency namely: novice, advanced beginner, competent, proficient and expert (Benner, 1984). The strength of this model is its capacity to illustrate the process of skill development and improvement in outcomes.

The theoretical work of Patricia Benner on novice to expert role and practice development using the Dreyfus model of skill acquisition provides a framework for this study. Benner's model has been adapted by the (United States) National Council of State Boards of Nursing (NCSBN) (2011) for use in the toolkit by those who precept new graduates who are transitioning into practice. The model as adapted by the NCSBN was used to guide the researcher on how coaching as a teaching strategy may be used by educators, preceptors and mentors in the academic and clinical settings. Applying the model helped the student midwife acquire the knowledge and skill of monitoring and managing labor using a partograph. Additionally, the model incorporates the assessment and evaluation of the student to integrate the acquired theoretical knowledge to the clinical practice.

Benner's model supports this novice to expert development that occurs because of coaching strategies that this study will explore to enable the student midwife to acquire the skill of monitoring labor using a partograph (Benner, 1984). Benner, using the Dreyfus model states that the utility of the concept of skill acquisition lies in helping the teacher understand how to assist the learner in advancing to the next level (Benner, 2004). Therefore, coaching as a teaching strategy was used to assist the student to acquire the skill of monitoring labor using a partograph. The five levels of competency used by Benner were applicable to the learning transition made by the third-year certificate midwives in this study. They transitioned through the novice entirely depends on given rules with little perception of a phenomena; advanced beginner level is in which a learner is described as one whose action is based on attributes but with little likelihood of completing tasks assigned; competent level in which a learner is characterized to possess the ability to achieve tasks using own judgment; proficient level in which a learner ably takes full responsibility of owning work and coaches' others; and expert level who describes the leaner as one who ably takes responsibility beyond existing standards as well as creating own acceptable standards.

Given the levels of Benner as described above, this study focused on two levels. The first was advanced beginner because the third-year certificate midwives possessed basic knowledge on partograph obtained from the theory and practical lessons. The second was the competent level. In this level, the third-year certificate midwives were subjected to coaching intervention. They were closely monitored through sustained teaching and learning until they advanced in the development of partograph skills. In so doing, they transitioned towards accomplishment of tasks in terms of appropriate partograph plotting, interpretation and decision-making during labor management. Competent skill performance in monitoring labor using a partograph was achieved by applying the five stages of coaching. A five-step coaching model as described by Dore (2011) include the coaching stages labeled 1) inquire and/or observe, 2) diagnose, 3) intervene, 4) action steps, and 5) check-in.

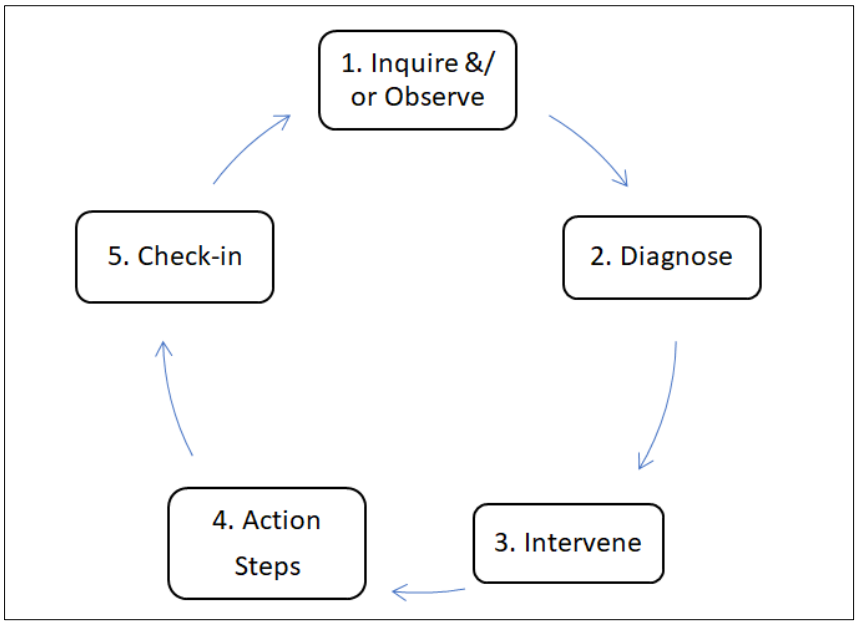


Figure 1: The Five Steps Coaching Process
Modified from (Dore, 2011)

In the first stage of coaching, the coach inquires and/or observes the performance of the one being coached. In this study, inquiring was done by use of pre-coaching test which included scenarios for the student to use a partograph.

In the second stage, the coach diagnoses the learning needs of the students for coaching. In this study, the results of the pre-coaching test revealed the third-year certificate midwives' problems concerning partograph use were as follows: inadequate theoretical knowledge, skills and confidence in using partograph. Intervention as a third stage was to coach the third-year certificate midwives in monitoring labor using a partograph.

Intervention occurred when the third-year certificate midwives pretest scores were below a minimum mark of 80 percent. In this case, all (47) third-year certificate midwives did not meet the target and were exposed to the coaching intervention to improve their partograph skills in labor monitoring. The fourth stage entailed the action of walking the students through the appropriate steps as needed for performance. This was done by showing the students how to assess the mother in labor and fill the obtained information on the partograph. The fifth and last stage of coaching is when the coach checks in with the one being coached. At this stage a check list was used to observe the progress of third year certificate midwives' skills in monitoring labor using a partograph.

Summary

Chapter one presented the background of the problem, stated the research question and specific objectives. The significance of the study to nursing was outlined. It further described the theoretical model underpinning the study. Chapter two presents the reviewed literature in relation to the study objectives. Chapter three describes the methodology employed in the study. Chapter four presents the findings and analysis of results. Finally, chapter five presents the discussion of results, recommendations and implications of findings to nursing and midwifery.

CHAPTER TWO: LITERATURE REVIEW

Chapter two presents a survey summary of the current literature. This literature is related to the proper use of partograph for monitoring and managing labor, how partograph underutilization is attributed to limited knowledge and skills that increase maternal and fetal morbidity and mortality rates. Coaching enhances Skill acquisition on partograph use and Stages of skill acquisition based on Benner's Novice to Expert Model improve with clinical performance of partograph use.

Proper Partograph Utilization is Attributed to Reduction in Maternal and New-Born Morbidity and Mortality Rate

Effective use of partograph in monitoring labor prevents prolonged and obstructed labor thus reduces maternal and infant mortality (WHO, 2013). Results of a study done in Umgungundlovu district in Dubai on the utilization of the partograph by midwives in the public hospitals revealed that the partograph was a tool which can be used to reduce maternal and new-born morbidity and mortality, as well render efficient and quality care to the client in labor (Singh, 2013). The partograph indicates the information to be filled in as generated during active labor. Data to be documented includes; cervical dilation, fetal skull moulding, descent of the fetal head, the time data is collected, the hour of active labor, membrane rupture, the color of liquor amni,

number of contractions in 10 minutes, fetal heart rate, urine character and volume, temperature, pulse, respiration, blood pressure, time of fetus and placenta delivery, medication given, and annotation of any problems. Documenting data is critical in creating the visual trended pattern of normal versus abnormal labor progression (Fawole, 2008). Accurate interpretation of the trended data aids a midwife to analyze and conclude on the multiple decisions to be made in relation to the state of mother and fetus (Opoku & Nguah, 2015).

Partograph data shows an early warning sign that can alert a midwife to deviations from normal progress of labor and indicate when a woman requires emergency intervention, such as referral to a higher-level facility, labor augmentation, or cesarean section (Fistula Care, 2013). Additionally, the World Health Organization (WHO) recommends partograph utilization to help midwives to make an early diagnosis and management of prolonged and obstructed labor (Abebe, Birhanu, Awoke, & Ejigu, 2013). A partograph when used correctly can serve as a tool for early detection of serious maternal and fetal complications during labor, allowing enough time for an appropriate response (Mathibe-Neke, Lebeko, & Motupa, 2013). Further added that accurate partograph record keeping enables an effective communication between healthcare professionals who manage women in labor.

The WHO further recommends using the partograph to follow labor and delivery, with an objective to improve health care and reduce maternal and fetal morbidity and death (Yisma, Dessalegn, Astatkie, & Fesseha, 2013). A study conducted in Ghana showed that after introduction of the WHO partograph in the labor wards of Accra in the 1990's, there was a reduction in the incidence of uterine rupture (Tayade & Jadhao, 2012). In a related study by Chaturvedi, Upadhyay, De Costa, and Raven (2015) on implementation fidelity of partograph use in India, it was concluded that successful implementation of the partograph can result in improved quality of care if potential moderators to its adherence, such as training, supervision can be strengthened. When a partograph is properly interpreted, the graphed data alerts a midwife of the developing complications, and if appropriate actions are applied, maternal and infant mortality may be reduced (Fawole, Hunyinbo, & Adekanle, 2008).

This literature review indicates that Partograph is a useful tool that can alert a midwife to deviations from normal progress of labor and indicate when a woman requires emergency intervention. The WHO recommends partograph utilization to help midwives to make an early diagnosis and management of prolonged and obstructed labor. A partograph when used correctly can serve as a tool for early detection of serious maternal and fetal complications during labor.

Underutilization of a Partograph for Monitoring and Managing Labor is Attributed to Limited Knowledge and Skills of Health Care Providers

Partograph utilization remains a challenge in many parts of Africa. Despite the WHO advocating and recommending that the partograph be used in monitoring the labor progress, it is still reported being used inadequately in many parts of Africa and other developing countries (Morogwana, 2011). Although the partograph is a simple tool that when used correctly it prevents obstructed or prolonged labor, it is not as widely implemented as it should be due to insufficient knowledge (Mezmur, Semahegn, & Tegegne, 2017). A study from Nigeria did report that only 25% to 33% of caregivers surveyed were using partograph for routine monitoring (Fawole, Hunyinbo, & Adekanle, 2008). In a related study done in Ethiopia, 72% of midwives in rural delivery units did not record the labor findings correctly on the partograph (Abebe, Birhanu, Awoke, & Ejigu, 2013).

The results in a study done in South Nigeria, with most participants from the primary and secondary levels health facilities, showed that the knowledge and utilization of partograph in monitoring labor indicated gross deficiencies in determining the normal characteristics of the frequency and duration of uterine contractions (Opiah, Ofti, Essien, & Monjok, 2012). Similarly, in a study done among public health institutions of Addis Ababa, Ethiopia on partograph use revealed that two thirds of partographs reviewed did not record contractions (Yisma *et al*., 2013).

A study by Mathibe-neke (2009) on the underutilization of partograph, revealed that inadequate exposure of midwifery students to the clinical implementation may lead not being competent in the use of partograph. Another study conducted by Lavender (2007) on factors affecting utilization of partograph as a monitoring tool revealed that little or no knowledge in the use of a tool affects its utilization. The underutilization was also further attributed to insufficient and infrequent in-service training (Lavender, Hart, & Smyth, 2014). Maphasha, Govender, Motloba, and Barua (2017) in their study on use of the partogram by doctors and midwives at Odi District Hospital Gauteng, South Africa, reported that participants did not know the symbols used when plotting a partograph.

Uganda Martyrs' University conducted a study in 2015 on partograph use and documentation in Bwera Hospital, Kasese District. Findings indicated that the partograph was still underutilized (Masika, Katongole, & Govule, 2015). In Rukungiri District, where the partograph was used and taught, data indicated that understanding the partograph labor patterns and subsequent appropriate labor management was of low and compromised quality (Engender Health, 2009).

According to Fistula Care (2013) on improving partograph use in Uganda, the tool was found to be grossly underutilized and many health care providers did not know how to use it properly. In response, the MOH, in partnership with Fistula Care, decided to implement a coaching and mentoring training approach to improve partograph use. Through coaching, it was noted that an individual with knowledge, skills, and competency in partograph use can help others to develop that skill set through on-site training and ongoing supportive monitoring and feedback (Nagat & Manar, 2013)

According to WHO (2015), Uganda's maternal mortality ratio still stands at 343 per 100000 live births in Uganda and its mainly associated with obstructed and prolonged labor that could be prevented by proper utilization of partograph. Ogwanga, Karyabakabo, and Rutebemberwa (2009) assessed partograph use in Uganda and found it low. The study further indicated that in only 872 of 1674 deliveries was blood pressure monitored; in 29 of 426 deliveries, heart rate and cervical dilation were poorly monitored.

The partograph use for labor monitoring does not meet the standard established as recommended by the WHO. Additionally, data collection by those who do use partograph is inconsistent and lacking important information. The literature review also indicated that despite of efforts being made to train on partograph use in some of the health units the tool is still underutilized by many of the health workers.

Effective Coaching for the Learning of Skills Enhances Partograph Use

Studies have demonstrated that coaching is an effective teaching strategy that enhances in clinical practice (Croffoot & Koerber, 2009; Fistula Care, 2013). In a related study by Nagat and Manar (2013) entitled teaching program regarding partograph on midwives' knowledge at delivery room in Karbala City Hospitals indicated that 80% of midwives had knowledge and skills improved after they had been coached. In addition, studies (Knight & Nieuwerburgh, 2007; Lavender, 2014; Levin, 2011) have concluded that coaching approach between the experienced, qualified midwives and the trainees builds a shared learning experience.

Traditionally, a coach is someone who closely monitors the varying practical skill and judgment development of each team player of a sport which has been learned in school and in which the coach is an expert. The role of the coach differs from that of a faculty member in that the coach does not pass or fail the player based on performance. Coaching as a structured, sustained teaching and learning method continually advances the development of the specific skill in which the learner is engaged. Practice is done with the objective of providing feedback on the learner's strengths and weaknesses in the skill to be learnt (Lofthouse, Leat, & Towler, 2010). When coaching is used one-to-one, the learner easily attains more skill on the specific aspects needed (Nash & Scammell, 2010). Coaching has been referred to as an activity of developing the abilities of a student and tends to focus on achieving a goal or specific skill (Phillips, 2006).

Coaching is an essential component of effective professional skill mastery (Knight & Nieuwerburgh, 2007). In a midwifery education program, coaching builds the learned ability to carry out a task with pre-determined results, which usually encompasses the will, knowledge and capacity of a student midwife for better task performance (Sturtevant, 2003). Lofhouse, Leat and Towler (2010) add that coaching enhances hands on engagement with the student in skill attainment through continuous exposure in the clinical area. As such, Grow (1991) concluded that in skill acquisition, coaching as a teaching strategy enables the learner to overcome their learning deficiencies and keeps them focused to the task to achieve the predetermined results.

In Kolb's (1999) experimental learning theory, four learning styles of coaching strategy are preferred to enhance skill acquisition. The theory assumes four stages of implementing a coaching strategy: a) concrete experience – reinterpretation of existing experience; b) reflective observation of the new experience; c) modification of existing abstract concept; and d) active experimentation in which the learner applies to the world around to see results (McLeod, 2013). Similarly, Dore (2011) describes five steps of coaching that enables a learner to acquire skill performance. The five-step coaching model include a) inquire and/or observe, b) diagnose, c) intervene, d) action steps, and e) check-in.

Studies (Kolb, 2013; Lofthouse, Leat & Towler, 2010; Maginnis & Croxon, 2010) have shown evidence that coaching results in increased student achievement in the clinical practice. Effective coaching encourages collaborative, reflective practice; allows learners to apply their learning more deeply, frequently, and consistently. Effective coaching as a teaching method promotes positive cultural changes among learners notably conditions, behaviors, and practices (Boyd & Ann,1983; Croffoot & Koerber, 2009). Coaching has been reported as a strategy to improve clinical decision making, and effective coaching programs respond to the needs of the student that allow improvement efforts to targeted issues such as closing achievement gaps between students and clinical instructors (**Neufeld & Roper, 2003).**

In a study done in Western Uganda by Engender Health in 2012 on improving partograph use, results indicated that coaching interventions helped to create a supportive environment for refreshing partograph knowledge and skills and improve the quality of labor monitoring and management (Fistula Care, 2013). Parsloe (1999) affirms that like coaching, a mentor identifies the problems and uses stages to assist the

mentee. The first stage is to decide on a goal. Second is to assess the current situation. The next stage is to identify the correct course of action and fourth to measure the success of the process. Nurse educators must move away from traditional approaches to nursing education, where didactic lectures, memorization and return laboratory demonstrations, are emphasized. Croffoot, Bray, Black and Koerber (2009) assert that knowledge does not consistently impart an interest in developing the skills or sustain behavioral change.

Shepherd (2010) investigated the use of simulation as a teaching strategy. Findings indicated no significant difference in performance within the cognitive and motor domains and further stated that overuse of automated equipment may potentially de-skill future generation of nurses. Relatedly is the role-play that encourages to focus on the feelings and helps learners to develop negotiation skills. However, some actors may not fully imitate the situation to the required mood (Fuller, 2019). Croffoot (2009) asserts that coaching is an effective means to assist the learner to develop skills, knowledge and judgment. Students enjoy coaching to help them improve their clinical skills, knowledge, and judgment. Professional role development can consistently be categorized by the coach based on the time in role and skill practice, accuracy of knowledge and judgment, and student's confidence level.

Coaching is an effective teaching strategy that improves partograph use in clinical practice. Coaching as a teaching strategy enables the learner to overcome their learning deficiencies and keeps them focused to the task to achieve the predetermined results. It also enhances hands on engagement with the student in skill attainment through continuous exposure in the clinical area. Different approaches of coaching were used by researchers in the literature to enable learners enhance their skills. However, this study used a five-step coaching model as described by Dore (2011) to coach the student's midwives to improve skills of using a partograph in labor monitoring.

Skill Acquisition among Student Midwives Improve Clinical Performance 0f Partograph Use

A skill is the learned ability to carry out a task with pre-determined results often within a specified amount of time (Gallo, 2012; Sturtevant, 2003). Learning a skill requires enough time for the faculty member to give attention to teaching practical skills, and for demonstrating skill complexity. The student who learns skills in the simulation laboratory adapt more readily to the clinical field (Gallo, 2012). The American College of Surgeon's Advanced Trauma Life Support course applies a five-step method for teaching psychomotor skills. The first step is conceptualization - the learner must understand the cognitive elements of the skill. The second step is visualization- the student watches the skill being accurately demonstrated. The third step is verbalization – the student hears a narration of the steps of the skill. The fourth step is practice –the student performs the skill, with correction. Finally, the fifth step is reinforcement and correction given by the clinical educator (George, 2001).

A study on nursing student and tutor perceptions of learning and teaching in the clinical setting indicated that learning best occurs when students' thoughts, feelings, actions, reactions, and behavior are altered because of experience and active teamwork (Freeth & Fry, 2005). Skill training in a clinical setting helps to close the gap between the theoretical teaching and clinical reality and prepares midwives and others with midwifery competencies. At least 50% of midwifery education should be practice-based, to allow a midwife to be in direct patient contact (WHO, 2013). Educational institutions need to strengthen the learning environment that provides clear guidance about what needs to be taught, how it is taught and to whom (Bangal, 2014).

Studies have shown that there is a positive relationship between skill acquisition and effective use of partograph in monitoring labor (Beaubien, 2004; Mathibe, 2013**).** A study on knowledge of partograph utilization and its associated factors in North Shoa Zone, Central Ethiopia indicated that pre-service training was crucial for ensuring a student acquires up-to-date knowledge and skill about monitoring labor using the partograph (Abebe, Birhanu, Awoke, & Ejigu, 2013; Beaubien, 2004**)**. It is asserted that small groups of no more than five learners easily acquire skills as compared to a larger group (Beaubien& Baker, 2004). In another study by Maginnis and Croxon (2010), findings showed that the smaller the group of learners, the greater the chance of hands-on participation during a clinical skill instruction. Additionally, small numbers of student midwives learning a skill enhances the ability to transfer what has been learned in the scenario to an actual patient situation (Bootman, Cronenwett, & Bates, 2006). In a study to assess the effect of training on knowledge and skills of the student's use of the WHO Modified partograph (Bangal, 2014), results showed significant improvement of skills after the training program.

This study adopted Benner's stages that have utilized coaching which reflect changes in three general aspects of performance. The first stage is movement from reliance on abstract principles in which a learner is expected to use the past concrete experience as a pattern. The second is a change in the learner's perception towards the skill that is being taught and imparted in the learner. Last is the passage stage in which the learner is engaged in the situation of performing the skill (Benner, Tanner & Chesla, 1996, 2009). Robinson (1974) described four stages to the development of competence and confidence and the movement of a skill from the conscious acquisition to the unconscious level of repeated accurate performance. Mwale and Kalwa

(2016) in their study on factors affecting acquisition of psychomotor clinical skills by student nurses and midwives concluded that when the student has acquired the necessary skills, the quality of care provided to the patients improves.

To have a standardized method of assessing each student's status as pertaining to partograph knowledge and competence, Benner recognizes the importance of coaching while putting into account several parameters. The parameters must be put into consideration when an instructor is assessing a skill. These are: Logical exposure to theory at three different stages namely stage one, stage two and stage three. Each of the three stages is graduated in terms of theory and clinical hours, minimum being 20 hours and maximum being 250 hours. The judgment level that varies from dependence to analysis of actions is appropriately taken during the coaching. Lastly is the confidence level of performing a task usually rated at 1 to 8 as an indicator of competence (Benner, 2006). The primary focus of the midwifery academic program is to ensure that students are effective in practice while supporting mothers and their fetus in childbirth. The professional education program must develop the skills and theoretical foundation of third-year certificate midwives so that at the point of completion, the new graduates are competent and confident in managing mothers in childbirth (WHO, 2014) and aligns well with Benner's role development stage of competency. It is requirement for the student midwife to work towards autonomous practice of a skill that necessitates demonstrating it at completion without the assistance of the mentors (Neufeld & Roper, 2003). Adds that during the entire time of training, a student midwife should be assisted to develop the skills needed to work as an effective member of the health team.

Therefore, for a learner to acquire a skill needs a specific amount of time to practice a task with pre-determined results. Different studies in literature have described ways of acquiring a skill. This study used Benner's model describing the movement from novice to expert. One's professional role development is based on time in role, amount of practice, partograph knowledge, judgment regarding the appropriate steps to take to manage the wellbeing of the mother and fetus before delivery. The student is expected to be competent (Benner's stage three) upon graduation. In this study, the student who is in the advanced beginner stage will be coached on the use of partograph and appropriate management of labor.

Summary of Literature Review

The literature review revealed that when a partograph is used effectively and efficiently can reduce maternal and fetal complications. The partograph helps a midwife to identify labor complications like obstructed and prolonged labor and appropriate decision. Despite the effectiveness of Partograph in reducing the labor complications, it's still underutilized by midwives and nurses because of being ill-equipped to apply what they have learned. The related literature review demonstrated that coaching is an effective strategy to improve the partograph labor monitoring and management skills of midwifery students. The stage of a nurse skill development can be identified based on the key indicators as described by Benner.

However, gaps in the literature were identified regarding how to propel the utilization of the partograph in clinical practice. In addition, no literature directly addressing the coaching of third-year certificate midwives on use of partograph in clinical practice was found, rather most of the literature focused on qualified midwives and obstetricians in the use partograph. Last, no literature focused on the use of Benner's model to identify the stage to which the student has developed to achieve competency. Therefore, there was need to explore the coaching strategy towards improving the third-year certificate midwives' skills of monitoring and managing labor using a partograph. The next chapter describes the methodology to research study.

CHAPTER THREE: METHODOLOGY

This chapter presents a description of the methods that were employed in this study. It presents a detailed description of the study design, study area, study population, sampling and sample size determination. The chapter further describes the data collection tools, data collection procedures, data analysis, quality control and ethical considerations.

Study Design and Rationale

The research design selected for this study was an interventional quasi-experimental design that adopted both pre-test and post-test approaches. The quasi-experimental designs are used when the research need to establish the relationship between the intervention and outcome (Polit & Beck, 2012). This study sought to establish the relationship between coaching and skill acquisition in monitoring labor using a partograph. The pre and post testing was done on the same group of participants. This was in line with the characteristics of the quasi experimental design that does not require a control group (Polit & Beck, 2012).

Study Area and Setting

The study was conducted in one of the nursing and midwifery schools in Western Uganda. The school is a private educational institution having a total population of 480 students. The school runs two academic programs namely diploma and certificate in midwifery and nursing. It is an accredited education institution that implements a curriculum of the Ministry of Education and Sports. The school admits students from within and outside the country who meet the entry requirements. One of the core course units in Midwifery curriculum is normal midwifery that teaches management of the first stage of labor using a partograph. The school has both nursing and midwifery

instructors. It also works hand in hand with the preceptors deployed in the hospital wards including maternity. One of the roles of the preceptors is to mentor student midwives in a wide spectrum of skills like partograph use in labor management.

The school is an educational institution of a faith-based hospital in the area. The hospital provides a clinical teaching and learning environment for the student midwives and nurses. It has abed capacity of 300 and it offers medical, surgical, obstetric and other health services. On average, nine (9) pregnant women are admitted and seven (7) deliveries are conducted daily. About 2,555 deliveries are conducted per year. The use of the partograph at the site is an accepted practice in the management of laboring women.

Study Population

The study population were the midwives undergoing training at certificate level in the study area. The total population of student midwives was 134. The target population was the third-year certificate midwives who were 53. According to Benner's role development criteria, an advanced beginner has been in the role only one to two years and the goal upon graduation is for the student to have moved to the competency level of skills and role development. The course unit of normal midwifery is taught in the second year of study and third-year certificate midwives are required to have learnt managing labor using a partograph.

Sampling Strategy and Rationale

Census sampling survey was used to select the participants in the study. The sampling method was preferred by the researcher because the population was well defined as there were all third-year certificate midwives. Secondly the total number of possible participants was small and therefore the researcher would not want to exclude any one from participating in the study. Consequently, the best choice was to get the highest number of participants by inviting everyone who potentially met the inclusion criteria to join the study. These participants were subjected to the pre-test assessment to ascertain their knowledge and skills in using partograph during active labor. The third-year certificate midwives were asked to state their level of confidence with interpreting partograph data and managing the labor. The pre-test was followed by engaging the third-year certificate midwives in the coaching intervention and thereafter post-test intervention to evaluate if competency would be achieved.

Sample Size and Rationale

In quantitative research designs, small samples usually have their sample sizes determined by homogeneity, size of population and availability/accessibility of subjects that meet the criteria of inclusion. These standards help to strengthen statistical conclusion validity (Polit & Beck, 2012). Based on the above factors that determine sample size requirements, the final sample size was 47 (87%) third-year certificate midwives out of the target population of 53. The reason for the 47 participants was that they were the ones available at the time of the study and consented to participate in the study.

Inclusion Criteria

All the 47 third-year certificate midwives that were available and consented to participate at the time of study were eligible. These third-year certificate midwives who did pre-test assessment also met the inclusion criteria. This group of certificate midwives in their third year of training that had been allocated in the labor unit for a minimum of four weeks during training program qualified for inclusion.

Exclusion Criteria

The third-year certificate midwives that were not available and did not consent to participate were excluded in this study.

Data Collection Instruments

The researcher used two instruments: one for pre and post-test; and a checklist that was used to determine students' knowledge and skill acquisition during intervention. The instruments were developed by the researcher based on the components of a partograph (labor progress, maternal and fetal conditions). They were reviewed by two research supervisors and adjustments were made before pre-testing them. The questionnaire for pre and post-testing the students' knowledge and skills on partograph use (Appendix F) had three sections. The first was on socio-demographic characteristics that included age in years, marital status and sponsor for tuition. The knowledge questions about partograph use were six (6) that included definition, components, importance of partograph, symbol to indicate abnormal liquor, interval of fetal heart recording and indicator for normal cervical dilation. The last section was scenarios that had 13 items to be plotted on the partograph. This tested third-year certificate midwives' skills of interpreting the scenario and plotting data on a partograph. The case scenarios were adopted and modified with permission from Wakgari, Tessema and Amano (2015) (Appendix J). The tool used for the pre and post-test was the same except that the scenario for the post-test was different from that of pre-test.

The second tool was the checklist (Appendix G). It was used in the intervention phase to determine the level of skill acquisition during the coaching strategy. It focused on whether a student knew when to start a partograph, ability to plot partograph parameters of labor progress, maternal and fetal observations, interpretation and decision on when to consult.

Procedure for Data Collection

Data was collected by the researcher and three

research assistants. The third-year certificate midwives were gathered in one classroom. The study objectives were explained, and third-year student midwives were requested to participate. All participants consented. The codes to be used during the pre and post-tests the were given before distributing the pre-test. The third-year Students were instructed to write the codes given instead of their names. This study employed Shadish, Cook, and Campbell (2002) approach of the three phases in a quasi-experiment design: pre-intervention, intervention and post intervention.

Phase 1:

Pre-intervention phase, in this phase the researcher used the first two steps of coaching that included inquire and/or observe and diagnose. The first step of inquire was done by use of pre-coaching test which included six (6) items that tested students' knowledge on meaning, components, importance of partograph, symbol used to indicate abnormal liquor, interval of fetal heart recording and indicator for normal cervical dilation. The last section was the scenario this was testing the pre-coaching skills of translating and recording on partograph. All the 47 third-year certificate midwives that had consented to participate in the study were gathered in one classroom. A pre-test of case scenario was given to 47 third-year certificate midwives to assess their pre-coaching skills in using a partograph. The case scenarios consisted of the socio-demographic data and other assessments on skills needed for partograph utilization. Each third-year certificate midwife was given a partograph case scenario to interpret. The case scenarios were adopted from Wakgari, Tessema and Amano (2015) with permission (Appendix J). The scenarios were marked, and scores were analyzed to determine the learning gaps. In the second stage, the coach diagnosed the learning needs of the students for coaching. The results of the pre-coaching test revealed the third-year certificate midwives had problems concerning partograph use and did not reach the 80% set target of competence. Therefore, the third (intervene), fourth (action) and fifth (check-in) steps of coaching were implemented in the second phase of the quasi-experimental design.

Phase 2:

Intervention phase, the researcher used the three steps of coaching to coach all the third-year certificate midwives under study. As suggested by Dore, intervene as a third step of coaching occurred when the third-year certificate midwives pretest scores were below 80% target. In this case, all (47) third-year certificate midwives did not meet the target and were exposed to the coaching intervention to improve their partograph skills in labor monitoring. The fourth step of coaching used was the action step. This coaching step, as further suggested by Dore (2011), the coach involved 'a walk through' with the person being coached for a skill to be mastered. In view of the above suggestions, the researcher put the 47 students in groups of threes. Each group was allocated a day in the labor ward. The researcher and each group of three students went to labor ward on the allocated day. Using a previous accurately plotted partograph, the researcher would first demonstrate to the third-year certificate midwives by transferring the information from the mother's chart to the partograph board. Mothers in labor would then be identified. The research assistants who were preceptors on the labor ward were allocated one student each day and the researcher would work with the third student. Therefore, the researcher and research assistants were the coaches.

After obtaining consent from the women in active labor, the coach would examine the mother in the presence of a student being coached, and thereafter sit to plot findings on the partograph. To enable students to learn and later apply the skills of monitoring labor using a partograph, the demonstrations were done systematically but rather at a very slow pace. The procedure to of examining the woman and plotting findings on partograph was repeated 2-3 times to enhance mastery of monitoring labor using a partograph. Next was to allow students examine the woman in active labor but with close guidance and instructions of the coach. This was also done 2-3 times. Finally, the students would monitor labor with minimal guidance by the coach until they felt could do it autonomously, plot findings correctly and interpret partograph data.

When the students obtained a certain level of independence, a check list was used by the coaches to evaluate the mastery of monitoring labor using a partograph. The check list had 13 items. Therefore, a score of 10 (80%) and above was interpreted as satisfactory. At this point, the third-year certificate midwives who met all the standards of the checklist were considered satisfactory while those who did not were considered unsatisfactory.

Phase 3:

Post intervention phase, this is third phase in quasi-experimental design. The same tool administered in the pre-test coaching was used in the post test. The third-year certificate midwives were gathered in a classroom for a post-test after one week of the coaching strategy. The list that they had recorded their codes was used to call them for the post-test. The participants used the codes that were earlier on assigned during the pretest for purposes of consistence and ensure the correctness of data for each participant. The post-test was to enable the researcher to determine the third-year certificate midwives' improvement in skills acquisition in monitoring labor using a partograph. The pre and post-test scores of the partograph parameters were paired for purposes of determining the impact of coaching on third-year certificate midwives' skill acquisition of partograph use during labor.

Data Quality Control

Validity and reliability are important criteria for ensuring data quality control of an instrument used to collect data for research. Validity refers to how well a test measures what it is supposed to measure. Reliability is a degree to which an assessment produces stable and consistent results (Polit & Beck, 2012).

Validity was ensured when a partograph adopted from WHO and Ministry of Health (MoH) was used to plot information given to participants in the scenarios. The case scenarios were adopted from Wakgari (2015) whose permission was sought (Appendix J) and had been tested for that study. In the case of this study, the scenarios were examples that illustrated coaching content that was meeting standards expected in plotting and interpreting partograph data.

To ensure reliability, the developed tool was reviewed by the researcher supervisors and adjustments done in line with the study objectives. Additionally, the tool was pre-tested on 10 third- year certificate midwifery students of a nearby school prior to its use during this study. This was done to cross check the internal consistency and reliability of the questions and answers obtained. A Cronbach alpha (α) test was used to measure and assess the strength of the consistency. This was computed by correlating the score for each scale item with the total score for each observation (usually individual survey respondents or test takers), and then comparing that to the variance for all individual item scores.

$\alpha = (k \times c)/ (\bar{v} + (k-1)\, \bar{c}$

Where,

k refers to the number of scale items
$\bar{c}$ refers to the average of all covariance's between items
$\bar{v}$ refers to the average variance of each item

The resulting α coefficient of reliability ranges from 0 to 1 in providing this overall assessment of a measure's reliability. If all the scale items are entirely independent from one another (i.e., are not correlated or share no covariance), then α = 0; and, if all the items have high covariance, then α will approach 1 as the number of items in the scale approaches infinity. In other words, the higher the α coefficient, the more the items have shared covariance and probably measure the same underlying concept. According to Cronbach (1951), when R squared (alpha) value is equal to 0.7 or above the instrument is considered satisfactory. *Therefore reliability* $= \frac{\text{no of questions that answer specific objectives}}{\text{Total number of questions in a questionnaire}}$

Total number of questions in the questionnaire were 22 and 19 answered the specific objectives. Therefore $\frac{19}{22}$ x100=86% reliability of the tool.

The questionnaire was reliable because the questions that answered specific objectives was above 70%. Based on the findings of the pre-test, some sentences in the scenario were rephrased by the researcher and research assistants. For instance, the time interval for the next vaginal examination in the scenario was adjusted to less than three hours after 7 cm cervical dilatation and it was in-line with the guideline of using the WHO partograph. This was done to improve consistency of the tool.

Three research assistants were used during data collection. The research assistants were diploma midwives, having worked on maternity ward for at least five years, had attended in service refresher formal training on partograph and graduated as Trainer of Trainees (ToTs) by the Ministry of Health. Relatedly, the researcher is an experienced graduate midwife and a trainer of trainees recognized by the same ministry. The research assistants and the researcher were engaged in a one-day familiarization exercise with the scenarios and the checklist. This enabled them to become more conversant with the use and application of the tools. This assisted in coaching and assessment of participants during intervention phase of this study. These qualities put both the research assistants and the researcher at the same level that provided opportunities for legitimacy in the coaching intervention. This improved accuracy in coaching, assessing third-year certificate midwives and recording data. The quality of data was maintained through the direct supervision by the researcher. These controls helped to ascertain the consistency of the same measure obtained in the use of a partograph in monitoring labor.

Data Analysis

Data generated by this study was analysed using STATA. Descriptive statistics of frequency and percentages were generated to summarize the baseline demographic characteristics of the study population, knowledge about partograph and were also used to draw conclusions in some aspects of this study. The mean, and standard deviation were used in a paired t-test to indicate whether the difference between pre-test and post-test students' scores was likely to reflect skill acquisition on using a partograph. During analysis, findings with p-valve ≤ 0.05 were taken as statistically significant.

Ethical Considerations

The proposal before submission to the university Post Graduate Ethical Review Committee was presented before supervisors at the Nursing Department. Following preliminary approvals at Nursing Department, the researcher sought approval from the Ethics Committee at Uganda Christian University and a written

permission to conduct the study at the School of Nursing and Midwifery and the Hospital was given. The research was conducted after permission was sought from the school and hospital management (Appendix A and Appendix B).

Informed Consent

Before the third-year certificate midwives were subjected to the assessments, they were informed of what the study was about including its objectives, risks, and benefits. Every participant was informed that data shared with the research team was to be kept confidential by not including the name or any individual identification information in the data collection tools and by restricting access to the collected data to the research team only. The participants consented when they accepted to participate in the study (Appendix D).

Deception

The researcher did not withhold any information about the study from the participants. The reason is that this investigation was an academic study that did not require concealment of false information. False information in concealment interferes with the participants' rights to make truly informed decisions about benefits of participation. Another justification of not concealing information is that it was to enhance validity of the findings useable in skill improvement of using a partograph in managing labor.

In managing deception, the researcher used appropriate and additional safeguards that helped to protect student participants from feelings of coercion. One significant safeguard was the fact that the researcher was the administrator of the school, therefore, the participants were informed that they were to be treated as a vulnerable group (Polit & Beck, 2012) and asked to treat the researcher as their schoolteacher of midwifery rather than their administrator. Deception further involved clarification to the student participants that the researcher was empathetic to the participants throughout the data collection process. Another additional safeguard that appropriately safeguarded the student participants from coercion was the explanation to them that the researcher was a student whose role was to coach. The researcher explained to the third-year certificate midwives that the questionnaires will not be graded as it was only for this study.

Confidentiality

Confidentiality was ensured by reporting the research findings as group data and not as individual data. To ensure privacy and anonymity numbers were used on the questionnaire instead of participants' names. The participants were assured that their participation was voluntary and that if they choose not to participate in the study, it would not affect, in any way, their performance in class and their relationship with researcher. The participants were further informed that even after recruitment; they were free to withdraw from the study at any time without penalty. Completed questionnaires were coded and the sheets ware kept under key and lock for confidentiality purposes. The researcher had a supplementary sheet with codes corresponding with names of student participants that served as reserve or point of reference in situation if they lost the code. After the completion of data collection, the sheets with codes were destroyed to maintain confidentiality of scores obtained by each participant.

Risk to Participants

Their right to beneficence was upheld to reduce harm and discomfort. This right was imposed on promoting the right of progress in advancing towards mastery of the knowledge and skill related to the use and application of the partograph. Beneficence was also promoted among the student participants by ensuring a learning environment in which they were fairly evaluated practically during the coaching session. The participants were given freedom to ask the researcher and the research assistants questions to increase benefits of the study. Their written work was valued and given due respect. The participants were also protected from making mistakes, and even when there were mistakes made, they were corrected as part of the coaching and learning process.

The right to beneficence considered the provision of experienced and qualified mid wives as research assistants and the researcher as well which protected the third-year certificate midwives from the risk of errors in the use of the partograph.

Social Cultural Sensitivity

Involvement in this study considered social cultural issues that helped prevent participants from exposure to damages. Given that the researcher holds power over the students due to the role of responsibility in the school of Nursing and Midwifery, it was sensitive that she entered into a special relationship with the student participants in order the study undertaking to achieve its intended objectives. To avoid the exploitation of this special relationship, special care was required to help build the bond. The special care in this case was the explanation to the student participants that the researcher was a student like them who needed their involvement in the study that was needed by the University as an academic requirement. This special care was a conviction that both the researcher and the student participants put both parties at the same level which was potentially beneficial to the study undertaking. In addition, the researcher explained to the participants that no grades will be assigned if they participated in the study the purpose is only to coach to improve skills in partograph use.

Summary

This quasi-experimental design study invited all third- year certificate midwives to participant in the study. Census sampling was used and 47 participants

who were available were coached in groups of threes on the use of partograph for labor monitoring and appropriate management. The procedure of data collection included the pre-test assessment, coaching strategy intervention and the post -test evaluation on the coaching strategy towards skill improvement in the use of partograph. Data was analyzed for the difference coaching made on the students' learning. Chapter four presents the results and their analysis.

CHAPTER FOUR: PRESENTATION OF RESULTS

This chapter presents findings and analysis of coaching third- year certificate midwives to improve their partograph skills in labor monitoring. A total of 47 certificate midwifery students were selected using convenience sampling and recruited into the study. They were subjected to pretest assessment to determine their pre-coaching skills, coached and subjected to a posttest assessment to ascertain gain in skills. Findings are presented under the following sub-headings; socio-demographic characteristics of participants, participants' pre-coaching knowledge and skills, immediate skill acquisition during coaching and impact of partograph coaching after one week.

Socio-Demographic Characteristics of the Participants

A total of 47 third-year certificate midwives participated in the study. All participants were females. The age range of participants was18 to 26 years. The mean age was 22 while the mode age was 21. This mode age accounted for 23% of the age distribution of the participants. Other characteristics of the participants are indicated in table1.

Table 1: Other Social-Demographic Characteristics of Participants

Variable	Freq	%
Sponsor for tuition		
Self-sponsored	31	66
Sponsored	16	34
Marital status		
Single	44	94
Married	3	6

Sixty six percent of the participants were self-sponsored. The majority 94% of third-year certificate midwives were single.

Pre- Coaching Knowledge and Skills of Third-year certificate midwives in Monitoring Labor using a Partograph

The knowledge and skills of third year certificate midwives were assessed before the coaching intervention. Knowledge on the meaning, use and components of a partograph, symbol used to indicate abnormal liquor, interval for fetal heart recording, and indicator for normal cervical dilation was assessed and findings are seen in table 2.

Table 2: Pre-Coaching Knowledge of Third-year certificate midwives on a Partograph

	Parameter	Correct		Incorrect	
		Freq	%	Freq	%
1	Meaning of partograph	26	55	21	45
2	Purpose of the partograph	39	83	8	17
3	Components of the partograph	11	23	36	77
4	**M** $^{+}$ symbol is used to indicate liquor is slightly meconium-stained	27	57	20	43
5	Fetal heart rate recorded on the partograph every 30 mins in active stage of labor	30	64	17	36
6	Cervical dilation of one centimeter per hour indicates normal progress of labor	13	28	34	72

Majority (83%) of the participants correctly mentioned the purpose of partograph. Less than half (23%) and (28%) correctly mentioned components of a partograph and indicated one-centimeter cervical dilation as normal labor progress. The mean knowledge of the pretest was 0.51.

Skills on partograph use before the coaching strategy. A scenario of a mother in labor was given to the third-year certificate midwives and an unfilled partograph tool. The information in the scenario was to be translated into a plotted partograph. There were 13 parameters being monitored and each parameter plotted correctly on the partograph scored one (1) mark. The scores of each student midwife in plotting the 13 parameters were based on to determine their skill in monitoring the progress of labor, maternal and fetal conditions. All the 47 (100%) third-year certificate midwives scored below the target of 80%. The mean score was 0.54 which accounted for 54% of the total score. Details of students' scores are presented in table 9 (Appendix H).

The third-year certificate midwives' overall skill performance was also assessed by plotting the 13 parameters on the partograph to determine the skills before the coaching strategy, as illustrated in table 3.

Table 3: Third-year Certificate Midwives' Skills on Partograph Recording before Coaching Intervention

Sn	Item (Recording)	Correct recording		Incorrect recording	
		Freq	% Score	Freq	% Score
1	Fetal heart rate	18	38	29	62
2	Membranes, liquor, molding	23	49	24	51
3	Cervical dilation	14	30	33	70
4	Descent of head	12	26	35	74
5	Contractions	6	13	41	87
6	Pulse	31	66	16	34
7	Blood pressure	24	51	23	49
8	Temperature	22	47	25	53
9	Urine output	28	60	19	40
10	Oral fluid intake	25	53	22	47
11	Albumin	46	98	1	2
12	Sugar	47	100	0	0
13	Acetone	47	100	0	0

Table 3 shows that the third-year certificate midwives were able to document laboratory tests (albumen, sugar and acetone) correctly unlike the fundamentals of a partograph which include: fetal heart rate, molding, cervical dilation, descent and contractions.

Immediate Skill Acquisition of Third-year Ccertificate Midwives during the Implementation Phase of Coaching on Partograph Use

This section presents immediate skill acquisition results. When the students obtained a certain level of independence, a check list was used by the coaches to evaluate the mastery of monitoring labor using a partograph. This was done to determine the progress of student's skill acquisition during the coaching phase. The checklist had 13 parameters: mother's bio data, history, fetal heart, rupture of membranes, cervical dilation, and descent of fetal head, contractions, maternal vital observations, oral fluid intake and urine output. Documentation and recommendations about labor process was also assessed. Table 5 shows students who satisfied and those that did not satisfy the coach in each parameter.

Table 4: Third-year Certificate Midwives' Immediate Skill acquisition on Partograph Use during the Intervention Phase of the Coaching as Observed Using a Checklist

S/n	Parameters	Satisfactory		Unsatisfactory	
		freq	% Score	freq	% Score
1	Bio-data and history recording	43	91	4	9
2	Fetal heart rate at every 30 minutes	41	87	6	13
3	Rupture of membranes, color and time	47	100	0	0
4	Cervical dilation marked with an x on alert line	39	83	8	17
5	Descent of head marked with a dot 2hrly	44	94	3	6
6	Contractions recorded in strength and duration at 30mins interval	41	87	6	13
7	Maternal vital observations blood pressure, pulse and temperature	45	96	2	4
8	Oral fluid intake at an interval of two hours	47	100	0	0
9	Urine output recorded at an interval of two hours	46	98	1	2
10	Documentation of recommendations on labor progress, maternal and fetal conditions	42	89	5	11

Majority of the third-year certificate midwives (above 83%) acquired the skills of recording the identified parameters correctly on a partograph.

Assessing the Effect of Coaching on Knowledge and Skill Acquisition in Partograph Use among third Year Certificate Midwives

This section provides an overview of the differences in knowledge and skills after coaching among the third-year certificate midwives. A post test was conducted after a week of implementation of the coaching strategy mainly to assess the level of knowledge and skill acquisition among the third-year certificate midwives.

Comparison of Pre and Post-Test Knowledge on Partograph Use

The effect of coaching on partograph use was done by comparing students' pre and post test results of their knowledge as shown in table 6. Indicate the mean knowledge for the post-test scores.

Table 5: Comparison of Pre and Post-test Knowledge of the Third-year Certificate Midwives on Partograph Use

	Parameter	Pre-test Correct		Post-test Correct		
		Freq	%	freq	%	%Change
1	Meaning of partograph	26	55	41	87	32
2	Purpose of the partograph	39	83	44	94	11
3	Components of the partograph	11	23	38	81	58
4	**M** $^{+}$ symbol is used to indicate liquor is slightly meconium-stained	27	57	40	85	28
5	Fetal heart rate recorded on the partograph every 30 mins in active stage of labor	30	64	39	83	19
6	Cervical dilation of one centimetre per hour indicates normal progress of labor	13	28	37	79	51

Table 5 shows that only 23% of participants had knowledge of the components of a partograph in the pre-test whereas there is 81% in the post test; indicating an increase of 58%. Substantive knowledge increase is also realized on cervical dilation of one centimeter per hour of labor with an increase of 51%. To assess whether the difference between the pre and posttest correct scores were statistically significant, frequencies of the pre-test knowledge were compared with those of the posttest on Partograph use. A paired sample test was done, and the findings are presented in table 6.

Table 6: Analysis of Paired sample test between Pre and posttest Knowledge on partograph use

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre-Test Knowledge	.51	47	.505	.074
	Post-Test Knowledge	.85	47	.360	.052

Paired Samples Test									
		Paired Differences					T	Df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pre-Test Knowledge - Post-Test Knowledge	-.340	.479	.070	-.481	-.200	-4.873	46	.000

As shown in table 6, the mean difference is negative because Posttest knowledge was subtracted from pretest knowledge mainly to assess the effect of the intervention on knowledge acquisition. The mean difference of -0.340 shows that the third-year certificate midwives' knowledge on Partograph use improved after an intervention of the coaching strategy. The significant value 0.000<0.05 clearly indicates a statistically significant difference between the pre-test knowledge and posttest knowledge.

Comparison of Individual Scores for Pre and Post-Test Skills on Plotting a Partograph Using Scenarios

The effect of coaching on students' skills of plotting a partograph was measured by comparing their pre and post test scores obtained from the scenarios. The information in the scenario was to be translated into a plotted partograph and the scores were compared based on the 13 parameters. Each parameter plotted correctly on the partograph was scored with one mark.

The results show that the highest score in the posttest was 92% compared to 69% in the pre- test indicating an increase of 23%. The lowest score was 77% in post-test compared to 46% in pretest representing a 31 increase in skill acquisition. The mean score in the two tests; pre and posttest was 0.308 as shown in table 10 (Appendix I).

The pre and post test results of the third-year certificate midwives in recording the 13 parameters on the partograph was further compared to determine the effect of coaching strategy on skill acquisition, as illustrated in Table 7.

Table 7: Comparison of Pre and Post-test parameter recording of Third-year Certificate Midwives on Partograph Use

		Pre-test Correct			Post-test Correct		
Sn	Parameter Recording	freq	%		freq	%	%Change
1	Fetal heart rate	18	38		41	87	49
2	Membranes liquor molding	23	49		34	72	23

3	Cervical dilation	14	30		38	81	51
4	Descent of head	12	26		40	85	59
5	Contractions	6	13		41	87	74
6	Pulse	31	66		45	96	30
7	Blood pressure	24	51		44	94	43
8	Temperature	22	47		43	91	44
9	Urine out put	28	60		37	79	19
10	Oral fluid intake	25	53		45	96	43
11	Albumin	46	98		47	100	2
12	Sugar	47	100		47	100	0
13	Acetone	47	100		47	100	0

Table 7 shows that only 13% of the total participants, recorded correctly contraction in the pretest as compared to 87% in the post test, representing a 74% increase in skill acquisition in parameter recording particularly for contraction. Significant improvement in skill acquisition was also realized on decent of the head with an increase of 59%. Table 7 further indicates a slightly lower improvement in skills of recording membrane, liquor and molding as represented by only 23% increase.

Analysis of the Pretest and Post Test Scores on Partograph Skill Acquisition

To determine whether the difference between the pre and posttest correct scores were statistically significant, frequencies of the pre-test skills were further compared with those of the posttest skills on Partograph use. A paired sample test was done, and the findings are presented in table 8.

Table 8: Analysis of Paired sample test between Pretest partograph use and Posttest partograph use

	Mean	**N**	**Std. deviation**	**Std. Error Mean**				
Pre-test partograph use	4.3404	47	2.72888	0.39805				
Posttest partograph use	8.6809	47	1.30395	0.1902				
Paired Samples Test								
	Paired differences					T	Df	Sig.
	Mean	Std. deviation	Std. Error mean	95% confidence interval of the differences				(2-tailed)
				Lower	Upper			
Pre-test & posttest partograph use	4.34043	2.76843	0.40382	3.52758	5.15327	10.748	46	0

A paired-samples t-test shows a statistically significant difference in the number of third-year certificate midwives who correctly recorded partograph parameters in the pretest (M=4.3404, SD=2.72888) and post- test after the coaching strategy on partograph use (M=8.6809, SD=1.30395). P-value =0.000 less than the alpha value (0.05).

Summary

This chapter presented and analyzed results on the socio-demographic characteristics of third-year certificate midwives. It also compared the pre-coaching knowledge and skill results on use of partograph after the coaching strategy. It further tested the significance of the pre-and posttest partograph parameters of both knowledge and skills using a paired sample t-test. The next chapter is a discussion of results on coaching to improve students' skills in using a partograph.

CHAPTER FIVE: DISCUSSION

This chapter presents the discussion of results, conclusion, and recommendations. The results were obtained from the study on coaching to improve skills of third- year certificate midwives on partograph use and role development in a nursing and midwifery institution in the western region of Uganda. The objectives that guided the discussion were; to determine the pre-intervention skills in monitoring labor using partograph, identify the immediate skill aacquisition during the implementation phase of coaching on partograph use and evaluate the effect of partograph coaching and subsequent labor management skills of third-year certificate midwives. The results were discussed following the researcher's own opinion, in relation to the literature from other researchers.

Socio-Demographic Characteristics

Majority of the certificate third-year certificate midwives were aged between 21-23years. This was not a surprise because the certificate midwives join the midwifery program after Ordinary Level (Senior Four) at a minimum age of 18 (Ministry of Education and Sports curriculum, 2014). Significant proportion of these midwives were sponsored by their parents who are peasant farmers with low income. This could mean that they were not consistent in lecture attendance that could have affected their clinical practice performance. It was also noted that majority (93.6%) of the third-year

certificate midwives were not married. This was not surprising since most of them were directly from ordinary level education and are still under the obligation of their parents although they were above a definition of a child according to Uganda.

Pre-Coaching Knowledge of Third-year Certificate Midwives on Partograph Use

The pre-test questionnaire tool included the review of knowledge of third-year certificate midwives about a partograph use. This was based on the fact that, to learn a skill a learner must have learnt a theory to enable relate to practice. Bangal, (2014) asserts that skills are developed through a transfer of knowledge and that knowledge is the bottle neck of successful skill development. The third-year certificate midwives were advanced learners because they possessed some basic knowledge on partograph obtained from the theory and practical lessons learnt in their second year of training. According to Benner's theory that guided this study, advanced beginner level is described as one whose action is based on attributes but with little likelihood of completing tasks assigned (Benner, 2004).

In relation to this study findings, 55.3% of the third-year certificate midwives knew the meaning of partograph, 57% could identify the correct symbol used for abnormal liquor and 64% knew the interval of taking and recording fetal heart. Although slightly more than half answered correctly, one could conclude that these third-year certificate midwives had some baseline knowledge about partograph use. However, when the third-year certificate midwives were asked about the components of a partograph, only 23 % answered correctly and 28% knew normal trend of cervical dilation. This indicated inadequate knowledge on partograph that needed to be improved. Equally, in a study conducted by Lavender (2007) on factors affecting utilization of partograph as a monitoring tool, it was revealed that little or no knowledge of health workers in the use of a tool affects its utilization. In another study by Opiah (2012) the findings revealed that knowledge deficit about partograph affects its utilization.

Pre-Coaching Skills of Third-year Certificate Midwives' on Partograph Use

This was assessed in two different ways: first, each student's overall score was based on 13 parameters in the scenario plotted on the partograph. The findings of student individual scores revealed that the highest score was 69 % and lowest 46%. Based on these scores a conclusion could be made that the third-year certificate midwives' skills on partograph use were inadequate and therefore needed to be improved to achieve competence.

The second assessment was based on the number of students that plotted each of the parameters correctly. When assessed to determine the frequency in plotting the parameters on the partograph, findings showed that only (38 %) of these third-year certificate midwives plotted the fetal heart rate correctly every 30 minutes. This finding implies that the third-year certificate midwives were also un able to plot the parameter on the vertical line of the graph. It might also suggest that most of the certificate midwives did not have enough knowledge and skill of fetal heart monitoring which influenced their failure to plot it on the partograph correctly. This could be associated to the limited time students spend in the labor ward and lack of adequate guided practice. The inadequate fetal monitoring skill by third-year certificate midwives may result in fetal distress and consequently intrauterine fetal death. This agrees with Mathibe-Neke, Lebeko & Motupa (2013) who found out that, incorrect fetal heart monitoring results into fetal death during labor.

According to the study findings, 70% of third-year certificate midwives exhibited inadequate skill of plotting a cervical dilation on the partograph. They did not put a mark where the alert line coordinates and majority did not know where to start plotting this parameter. This suggests that there was limited skill of plotting cervical dilation that can influence wrong interpretation and decision making on labor progress. For instance, in a study conducted by Ogwanga, Karyabakabo and Rutebemberwa (2009) in Bujumbura Health Sub District in Uganda, it was found out that 29 (6.8%) of deliveries had their cervical dilation incorrectly plotted on the partograph by midwives. This indicates that midwives lacked skills for plotting cervical dilatation on the partograph. Incorrect plotting of cervical dilatation may make it difficult to ascertain the progress of labor.

The findings of this study revealed that 13% of the third-year certificate midwives recorded uterine contractions on the partograph correctly. However, majority (87%) of them hardly plotted the duration and strength of contractions in terms of seconds. This implied that the data on the partograph can incorrectly be interpreted by a midwife giving a wrong impression of the nature of contractions. Studies by Yisma and Dessalegn (2013) and Opiah and Ofti (2012) conducted in AddisAbaba in public health institutions about partograph utilization revealed that actual recording of contractions was done poorly because midwives lacked the skills.

Findings of this study further showed that 26% of the third-year certificate midwives recorded descent of the fetal head correctly. It was further observed that majority (74%) of these student midwives did not mark such vital finding on the vertical line of the partograph and did not record it within the time interval of two hours. This finding corresponds to the findings by WHO, (2013) and Yisma *et al*., (2013), who found that recording of some partograph indicators is done poorly and does not meet standards of partograph use in many settings. This calls for improving on how partographs are taught in training schools and intensifying in-service

training of midwives on partographs for improved labor monitoring.

Immediate Skill Acquisition of Third-Year Certificate Midwives During the Implementation Phase of the Coaching Strategy on Partograph use

An assessment on mastery of biodata and history recording on the partograph was ascertained among third-year certificate midwives. It was found that most of the students (91.4%) demonstrated ability to record bio data and history on a partograph during coaching. The third-year certificate midwives ably demonstrated this skill without delay and were able to calculate the gestation age. This meant that the third-year certificate midwives understood the conditions considered for a mother to have the partograph opened. This concurs with the statement made by knight (2007) and Sturtevant (2003) that coaching on partograph use in a clinical setting is an effective professional skill training approach in midwifery education program and facilitates midwives to better grasp and perform tasks taught as fast as possible.

Third-year certificate midwives were also assessed to ascertain whether they mastered how to record the state of membranes, time of rupture and the color of liquor. All third-year certificate midwives demonstrated this skill. This meant that third-year certificate midwives were able to predict conditions that are likely to predispose the fetus to distress from deductions made on the nature and color of liquor. The understanding of the nature and color of liquor aided students to quickly demonstrate an understanding of when antibiotics are to be administered during labor since they were able to tell the deviation from normal. An understanding that antibiotics can be administered during labor when there is early rupture of membranes was demonstrated. This is in line with the findings of a study conducted in Uganda by Fistula Care (2013) which revealed that increased understanding of recording of rupture of membranes on the partograph by midwives was attributed to in service coaching sessions on partograph conducted by the ministry of health in both class rooms and clinical area in western Uganda. The importance attributed to coaching of midwives was further established by De Costa and Raven (2015) in their study in India found that coaching on partograph use can result in improved quality of care if potential moderators to its adherence through training and supervision can be strengthened.

This study found that majority of the third-year certificate midwives (87.2%) showed a progressive understanding of proper monitoring and recording of fetal heart rate, its volume and regularity. Fetal heart rate was recorded every 30 minutes and a dot was used on the vertical line and deviations from the normal ranges were reported for an appropriate action. This finding suggests that the student midwives were able to use the partograph by identifying the normal and abnormal ranges of fetal heart rate during labor monitoring. This partly agrees with the findings of Mandiwa and Zamawe (2017), which showed that slightly more than half (54.7%) of the participants partially recorded the fetal heart rate on the partograph compared to 30.5% who fully recorded the fetal heart rate correctly. This could have been due to an inappropriate coaching strategy that was used to teach labor monitoring skills to in-services midwives. Bangal (2014) asserts that when fetal heart is properly monitored it reduces the chances of fetal deaths by more than a half.

Furthermore, in a study conducted by Mwale and Kalwa (2016), on factors affecting acquisition of psychomotor clinical skills by student nurses and midwives, it was concluded that when the student acquires the necessary partograph skills, the quality of care provided to the patients improves as the students now assumes their work. Similarly, Neufeld, and Roper (2003), on coaching as a strategy for developing instructional capacity results showed that coaching a student improves skills acquisition.

This study further examined the results of participants' monitoring and plotting cervical dilation on the partograph during coaching. Findings showed that 82.9% of the third-year certificate midwives' record of cervical dilation on labor progress chat satisfied the coach. Similarly, Mandiwa, and Zamawe (2017), in their study on documentation of the partograph in assessing labor by health providers in Malawi found out that most of the partographs had cervical dilatation well documented. Not only did the participants plot the findings, but also were able to identify the normal and abnormal findings and correct action taken. Wakgari, Amano, Berta, and Tessema (2013) in their study on partograph utilization and associated factors among obstetric care providers in Ethiopia, found that on-job coaching on partograph produced significant results on partograph use among health care providers. Equally, Sturtevant (2003), asserts that coaching builds the ability to carry out a task, which usually encompasses the will, knowledge and capacity of a student midwife for better task performance.

Findings of this study indicated that majority of the third-year certificate midwives' (87.2%) were monitoring and recording contractions correctly on the partograph at an interval of every 30 minutes. This means that the third-year certificate midwives' skills of monitoring contractions were improved by the coaching sessions. When students were asked why they thought this coaching teaching strategy was good, majority stated that instructors have time to concentrate on teaching us and giving feedback which has helped us learn contraction monitoring. Nash & Scammell (2010) asserted that when coaching is used in a one-to-one approach, the learner easily attains more skill on the specific aspects needed. This finding is consistent with the study findings of Yisma (2013) conducted in Addis Ababa in Ethiopia whereby uterine contractions on 70%

of the partographs were recorded as per the recommended standard after the introduction of coaching and periodic on the job training of midwives. In a similar study conducted by fistula care (2013) in Uganda, there were significant improvements in recording uterine contractions due to coaching and mentorship that was routinely conducted using partograph teaching boards. Kolb (1999) affirms that experimental learning styles of coaching strategy enhance skill acquisition faster.

During the coaching, the majority (93.6%) of the third-year certificate midwives demonstrated the ability to identify the level of the fetal head abdominally and skillfully plotted descent of fetal head with a dot on a partograph at an interval of two hours. In addition, the third-year certificate midwives ably assessed adequacy of the pelvis in relation to the fetal head and progress of labor. This implies that the third-year certificate midwives can be able to distinguish normal from obstructed labor. The findings of this study concur with the findings of Opoku and Nguah (2015) where the midwives successfully monitored descent of head in 40-60% of mothers in labor because of the one- to-one coaching on partograph use. Similarly, Nagat and Manar (2013) noticed that 80% of the midwives in their study had their knowledge and skill improved after the implementation of the coaching teaching program on partograph and from then on wards, they maintained a skill of differentiating between normal and abnormal progress of labor.

From this study, majority of the third-year certificate midwives (95.5%) had a good understanding of taking maternal vital signs that included temperature, pulse and blood pressure. The third-year certificate midwives were able to take these vital observations and record them correctly on the partograph in line with the World Health Organization guidelines; pulse and temperature at 30 minutes interval and blood pressure at an interval of four hours (WHO, 2013). It's important that maternal vital signs are assessed to ascertain how the mother is coping with the stress of labor. Monitoring of maternal vital signs helps in assessing the general condition and detects problems like pre-eclampsia and eclampsia, obstetric shock which are among the major causes of maternal morbidity and mortality (Kabakyenga, 2011).

A good understanding of taking maternal vital signs by the third-year certificate midwives confirms that coaching had a positive impact on skill acquisition of monitoring maternal vital observations during labor. According to WHO (2014) blood pressure, temperature and pulse must be assessed and plotted on a partograph for proper monitoring of mother's condition. This was further supported by a study conducted in Ghana which revealed that when a partograph was used in monitoring labor in Accra in the 1990's, there was a reduction in complications associated with high blood pressure and sepsis during and after delivery (Tayade & Jadhao, 2012). Croffoot and Koerber, 2009 affirmed that effective coaching as a teaching method promotes acquisition of such a skill and role development among learners.

The findings of this study revealed that 100% and 97.7% of the third-year certificate midwives recorded satisfactorily the fluid intake and urine output respectively on the partograph. The recording of the oral fluid intake and urine output on the partograph was done every two (2) hours. Monitoring fluid intake and output prevents maternal distress and prolonged labor through preventing dehydration, full bladder, and obstructed labor (Fawole, Hunyinbo & Adekanle, 2008). This concurs with a bulletin released by the American College of Nurses-Midwives (2016) that low fluid intake predisposes a pregnant woman to maternal exhaustion causing slow progress of labor. The partograph has spaces for recording the volume of fluid taken and urine passed. Therefore, it is mandatory that these records are filled accurately. It is necessary that a woman in labor stay hydrated because there is evidence that dehydration is related to prolonged labor (American College of Nurses-Midwives, 2016).

The study results showed that majority of the third-year certificate midwives' (89.3%) had their recommendations drawn based on the parameters monitored on the partograph. When cervical dilation charting on partograph crossed alert line to the right side, third-year certificate midwives thought of the actions to be taken. During the intervention phase of this study no maternal and perinatal death occurred, this was because of the accurate assessment made and immediate actions taken. This study provided additional evidence that not only did the coaching help students to plot on the partograph but also improved their skills to interpret and make a rightful clinical decision of the plotted data hence role development. Equally Benner (2006), Croffoot (2009), and Phillips (2006) adds that clinical coaching helps a student to develop a judgment level of analysis of actions to be taken when performing a task. It was notably observed that not only the skills of recording partograph parameters were improved but also partograph data interpretation and judgment.

Assessment of the Effect of Coaching on Skill Acquisition in Partograph Use

The pre and posttest scores were compared regarding partograph use in monitoring labor. The post-test skill scores were obtained from the third-year certificate midwives' after the coaching intervention on partograph use and interpretation. The findings indicated that there was a significant positive difference in the scores for pre and posttest intervention partograph use with a p=0.000. This positive change in skill acquisition manifested among third-year certificate midwives in the comparative scores that changed from (13%) in the pretest to (87%) in the posttest as correct recordings of contractions, fetal heart (38%) in pretest while (87%) in

posttest, and descent of fetal head (26%) in pretest while (85% in posttest. It is imperative to conclude that the coaching strategy contributed significantly to mastery of the skill of monitoring labor using partograph among the third-year certificate student midwives.

The assessment of effect of coaching strategy was also observed in the individual scores as indicated in table 8 appendix I in which all the third-year certificate student midwives did not reach the target mark in the pretest while 43 (91%) of them scored passed the target mark of 80%. These findings indicated a big difference between the pretest and post test scores. They further imply that the third-year certificate midwives demonstrated competence after the coaching strategy by reaching the set target of 80 %. Therefore, one can conclude that there was a positive change in knowledge and skill acquisition among third-year certificate student midwives regarding monitoring labor using partograph.

Many studies concur with the above findings. For example, Freeth & Fry (2005), found that learning about the partograph is best achieved when clinical reality experiences are exposed to the learners because such practice-based coaching sessions allow third-year certificate midwives to make the right decisions while monitoring labor using a partograph. Other studies that support these findings have been made by Dore (2011); WHO (2014); Beaubien (2004); Knight & Nieuwerburgh (2007); and Matibe (2013) acknowledged that coaching is an effective teaching strategy that enhances partograph use, improves clinical decision making and the competence health practitioners. Boyd (2008) and Fistula Care (2013) support that coaching is one of the teaching strategies that can increase knowledge and skill acquisition in partograph use.

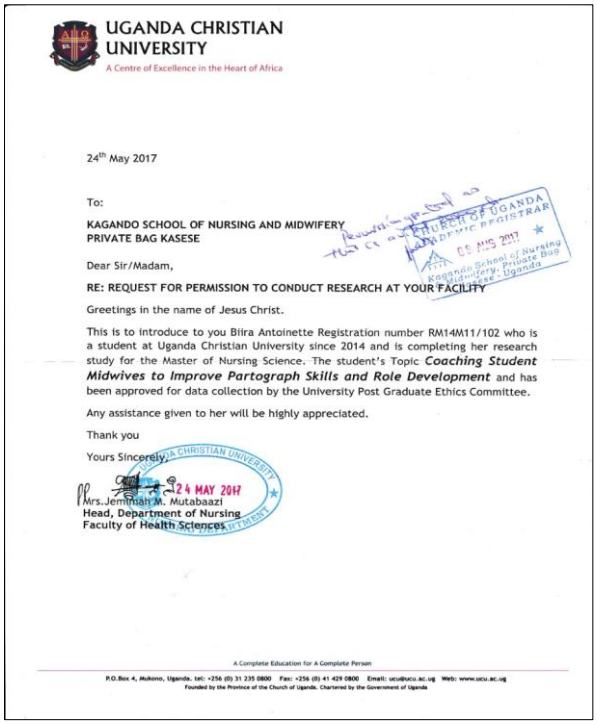
These results suggest that the coaching strategy that was used to the third-year certificate midwives made a skillful improvement in effective recording and interpreting data on a partograph during labor management. These positive results have contributed to competence in use of partograph among third-year certificate midwives and their role development. The discussion of assessing the effect of coaching on third-year certificate midwives yielded a steady progress on knowledge and skill acquisition on partograph use.

Limitation to the study

- Research assistants at times would get interrupted by their work schedules on the wards during the coaching process. This was minimized by requesting the ward in charges to reduce workload for the midwifery preceptors identified as researcher assistants to this study to allow them to have enough time to coach participants.
- The duration of coaching of participants was long together with long working hours on the ward caused fatigue for the research assistants. This was overcome by organizing the research assistants to work in two shifts day and night

Appendices

Appendix A: Introductory Letter



UGANDA CHRISTIAN UNIVERSITY
A Centre of Excellence in the Heart of Africa

24th May 2017

To:
KAGANDO SCHOOL OF NURSING AND MIDWIFERY
PRIVATE BAG KASESE

Dear Sir/Madam,

RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT YOUR FACILITY

Greetings in the name of Jesus Christ.

This is to introduce to you Biira Antoinette Registration number RM14M11/102 who is a student at Uganda Christian University since 2014 and is completing her research study for the Master of Nursing Science. The student's Topic ***Coaching Student Midwives to Improve Partograph Skills and Role Development*** and has been approved for data collection by the University Post Graduate Ethics Committee.

Any assistance given to her will be highly appreciated.

Thank you

Yours Sincerely,

24 MAY 2017
Mrs. Jemimah M. Mutabaazi
Head, Department of Nursing
Faculty of Health Sciences

A Complete Education for A Complete Person

P.O.Box 4, Mukono, Uganda. tel: +256 (0) 31 235 0800 Fax: +256 (0) 41 429 0800 Email: ucu@ucu.ac.ug Web: www.ucu.ac.ug
Founded by the Province of the Church of Uganda. Chartered by the Government of Uganda

Appendix B: Introductory Letter II

CHURCH OF UGANDA
KAGANDO RURAL DEVELOPMENT CENTRE

Kagando Hospital
Private Bag
Kasese-Uganda
Tel: 0392830150
Office Email:karudec@yahoo.com
Web:www.karudec.org

We Care and God Heals

Community Development Programms
Private Bag
Kasese-Uganda
Mob:+256 772 425 150
Email:canon.benson@gamil.com
Partners: Web:www.kagando.org.uk
Web:www.kagando.org

Our Ref:.....
Your Ref:.....

Date:.....
10/08/17

Ms. Biira Antoinette
Uganda Christian University.

Subject: Permission to carry out research at Kagando Hospital

I am writing in response to your introductory letter from Faculty of Health Sciences, Uganda Christian University request to carry out research at Kagando Hospital.

I would like to inform you that you have been granted permission to carry out research on Coaching student midwives to improve partograph skills and role development.

You will be required to make a presentation of your findings and also provide a written report upon completion of your study so as to enable us improve our service delivery.

I wish you the best during your data collection.

Dr Mary Munyagwa
Medical Director, Kagando Hospital

CHURCH OF UGANDA
MEDICAL DIRECTOR
KAGANDO HOSPITAL
PRIVATE B.G.
KASESE

Chairman Board of Governors Rev. Canon Dr. Uzziah Maate Kiriaghe

Appendix C: Informed Consent for Participants

Title: Coaching Third-year certificate midwives to Improve Partograph Skills: A study of one Nurses and Midwives training institution in Western Uganda.

Dear participants (Third Year Certificate Midwifery Student).

My name is Biira Antoinette, RN, and I am pursuing the Master of Nursing Science degree at Uganda Christian University, Mukono. I invite you to participate in this study to improve partograph skills and labor management. Kindly spare your time to answer the questions in the accompanying questionnaire. The study is aimed at improving skills of third-year certificate midwives in monitoring and managing labor using a partograph in the health facilities. Please be reassured that your responses will be treated with the utmost confidentiality. Please write-in your name, sign and date below. By signing your name, you agree to participate in this study. You may withdraw your participation in this study at any time without prejudice.

Appendix D: Participants Information Sheet

Research Topic: Coaching Third-year certificate Midwives to Improve Partograph Skills: A Case Study of a Nurses and Midwives Training School in Western Uganda.

Purpose of the Research: The purpose of this study was to explore the effectiveness of coaching as a learning strategy towards improving the use of a partograph as a labor monitoring tool among certificate third-year certificate midwives during clinical practice.

Who is Associated with the Research?

The principal investigator is a student at Uganda Christian University (UCU) perusing a Master of Nursing Science degree. The supervisors of this research are employees of the same university. Research participants of this study are third year certificate midwives of the study area. The research assistants is clinical preceptors.

Researcher's Contacts: Biira Antoinette; Registration Number: RM14M11/102; Telephone contacts: 0772974587: Email address: antoinettebiira@yahoo.com.

Supervisors: Dr. Karen Drake and Elizabeth Namukombe Ekong.

Participant Requirements:

Participants consented to participate in the study. They were be asked to respond to the items in the pre-test and post-test questionnaire. Before the post- test exercise, they were be engaged in a coaching session on monitoring labor using a partograph. The filled questionnaires were returned to the researcher. The participants were told not to indicate their name rather show codes for confidentiality purposes. They were further be informed of their freedom that participating in this study was voluntary and was not subject to coercion. Therefore, the participant had the freedom to withdraw from participating in the study.

How Much Time it Took?

Both pre-test and post-test scenarios took about 20- 30 minutes. The total coaching session took a duration 21 days and the participants were grouped in threes and taking 24 hours for group. This time frame was been determined based on the average length of labor and how the students are coped with the strategy of teaching and the eventualities that came on the way during implementation. For example, laboring woman would be one in the labor ward and the rate of acquiring skills of monitoring labor using a partograph was not uniform and therefore extra time was given to the slow learners.

What Happened to Materials Collected From Participants?

Raw data was collected from participants. Upon its collection, it was first kept under locked cupboard to prevent unauthorized access and destruction. At the analysis phase, the data was be accessed for purposes of data entry and analysis.

How to Opt Out-Participants: The researcher informed the participants that they are free to opt out from the study at any time for any reason. However, none opted out from the study.

How to Get More Information: Participants were free to contact the researcher for clarity or should there be questions.

When you cannot give all the information at the beginning (for reasons of research integrity), then *i)* tell them so and *ii)* give them complete information at the end and *iii)* get their consent again (allow them to opt out). The above information is all that was needed for the participant to participate in this study. This information was communicated to them at the beginning of the study. It included reasons for the study and attention to rights of participants.

Appendix E: Questionnaire for Participants

Code…….. Date……./……./……

Please indicate the appropriate response or tick one option in box or fill in the gaps

Socio-Demographic information:

1. Age of participant in years: _____

2. Who pays your tuition (please tick) A) Parent/Guardian ☐ B) Sponsored ☐

3. Are you married? A) Yes B) No ☐ ☐

Knowledge about partograph

4. Does a Partograph refer to as a simple graphic recording of labor progress, maternal and fetus against time in hours? A) Correct ☐ B) Incorrect ☐

5. The partograph helps a midwife to identify the normal progression of labor A) Correct ☐ B) Incorrect ☐

If your answer is incorrect list three reasons for not using the tool during labor monitoring

……

6. Does the three components of a partograph include labor progress, maternal and fetal observations? A) Correct ☐ B) Incorrect ☐

7. The fetal heart rate is recorded on the partograph every half hour in active stage of labor A) Correct ☐ B) Incorrect ☐

8. Cervical dilation of one centimeter per hour indicates normal progress of labor.

A) Correct ☐ B) Incorrect ☐

9. The **M** $^{+}$ symbol is used to indicate liquor is slightly meconium-stained

A) Correct ☐ B) Incorrect ☐

Partograph Recording and Interpretation

Directions - Plot The Data Described in Case Scenario and Record Information on the Partograph Provided.

Case Scenario 1-Pre-Test:

Mrs M. Y is carrying her4th pregnancy, 2 were carried to term and 1 was an abortion at 3/12. Mrs. M. Y was admitted in labor suit at 0830hrs in active stage of labor. Her LNMP was December 27th /2016.Calculate EDD (month /date/year). The Antenatal Record indicates that she has a normal pregnancy. On admission, blood pressure was 110/60mm/Hg, temperature 37.4^{0}c, and pulse 76b/min. On abdominal examination, regular uterine contractions ranging between 2-3 contractions in10 mins and lasting 20 seconds were observed. Descent was 4/5, fetal heart rate was regular and strong at a rate of 130b/min. On vaginal examination, cervical dilation was 5cm, the head was at station -4 and membranes were intact. Moulding not assessed. Fetal heart rate done for 3 hours was between 130-136 and another 3 hours raised between 140-146 b/min and Pulse remained between 76-80b/min. Blood pressure was taken after every 2hrs and remained between 110/70-120/60 mm/Hg and temperature same interval remained between 36.5-36.8^{0}c. Descend of head was 3/5, 2/5 2/5 and 0/5. After one-hour, contractions became moderate 1 in 10 minutes for 1hour, 2 in 1$^{1/2}$ hours, then 3 in 2 hours. In the next 1 hour had contraction 2-3 in 10 minutes lasting 45-60 seconds. Vaginal examination done after 4 hours cervical os dilation 9cm, station of head +4, membranes bulging Artificial Rupture of membranes done, liquor clear, no cord felt, moulding grade 1. After one hour, contractions became strong and expulsive in nature. V/E repeated cervical os not felt station of head at +5.

Directions - Plot the Data Described in the Case Scenario and Record Information on the Partograph Provided

Case Scenario 2- Post-Intervention:

Mrs. S. N is carrying a 3rd pregnancy. One pregnancy reached term and another pregnancy was an abortion at 22 weeks. Came to hospital today at 0800hrscomplaining of labor like pains. Observations at what time; temperature 36.8C, Pulse 80b/min and Blood Pressure 120/80 mm/Hg. Last Normal Menstrual Period (LNMP) was January/01/2016and expected date of delivery (EDD) (month /date/year). On abdominal examination, the presentation was cephalic, Height of Fundus (HF) 38/40, descent 5/5. She was getting 2 contractions in 10 minutes lasting 15 seconds. Fetal Heart Rate (FHR)was 140 b/min, pulse rate 72 b/min. On V/E, cervical OS was 4 cm dilated, the membranes were intact. Mrs S. N passed 200ml urine; it was not tested.

At 0900hrs, Mrs. S. N was given tea 300mls, passed urine 250mls FHR 138/min, pulse rate 76b/min getting 2 contractions lasting 25 sec.

At 10:00 hrs getting 2 contractions lasting 25 sec descend 4/5

At 11:00hrs FHR 140/min getting 3 contractions lasting for 25 sec, temp 36.6 ^{0}C, pulse 80b/min BP 120/70 mm/Hg

At 12: 00 hrs FHR 136/min getting 3 contractions lasting 30 sec. descend 4/5 V/E repeated cervical os 7 cm dilated

At 1:00 hrs FHR 140/min getting 3 contractions lasting 35 sec

At 2:00 hrs FHR 138/min getting 3 contractions lasting 35 sec passed urine 200 mls, descent 3/5

At 3:00 hrs took tea 300 mls FHR 138 / min getting 3 contractions lasting 45 sec. Temp 36^{0} C, Pulse 80 b/min B/P 120/80 mm/Hg. V/E repeated cervical 0s 8cm dilated membranes intact.

At 4:00 hrs FHR 142/min getting 3 contractions lasting 46 sec. Descend 1/5

At 5:00 hrs FHR 140/min getting 4 contractions expulsive lasting 50 sec, Descent 0/5 passed urine 200mls, membranes ruptured spontaneously, V/E repeated cervical os fully dilated, liquor slightly stained with meconium, no cord felt, moulding +.

Task:

1. Plot the scenario information on a partograph.
2. Interpret the information on partograph by answering the questions below.

10. Was the above case scenario a normal progress of labor? A) Yes ☐ No ☐
11. Please provide rationale for your answer:……
12. How would you tell that fetal heart rate is progressing well?
    A) Increase in fetal heart rate by 10 b/min ☐
    B) Increase in fetal heart rate by less than 10 b/min ☐
13. What would you do if you found meconium stained liquor on vaginal examination?

A)Call Doctor ☐

B)Reassure mother ☐

14. What would be your actions if the cervical dilatation mark crosses the Alert line on the partograph?
    A) Call for help ☐

    B)Continue monitoring labor ☐
15. Has this method of teaching (coaching) on use of partograph in monitoring labor been helped to you to understand and apply partograph in managing first stage of labor?
16. A) Yes ☐ B) No ☐

Appendix F: Coaching Intervention Check List

The check list below is to determine the immediate results of the coaching strategy on partograph use on labor monitoring. The kind of data required from here will be based on the scores according to satisfactory or unsatisfactory.

Indicator	**satisfactory**	**Un satisfactory**
Begin charting maternal and fetal assessments at the time of admission to the hospital if mother is in active labor.		
Fill out patient identifying information on the partogram including time of admission and rupture of membranes		
Document fetal heart rate every 30 minutes in active phase with a (●) and every 15 minutes in 2nd stage of labor.		
Document color of liquid as clear (C) or meconium (M) and degree of what? (mild +), moderate (++) or blood stained (B).		
Document dilation of cervix with an (**X**). Plot dilation on the alert line as soon as active phase is identified or at 4 cm.		
Document frequency and strength of contractions at least once per hour.		
Augmented with oxytocin, record dose.		
Augmented with oxytocin, record route.		
Augmented with oxytocin, record time.		
Augmented with oxytocin, monitor contractions every 30 minutes.		
Augmented with oxytocin, monitor fetal heart every 15 minutes until delivery.		
Document all medications given to patient while in labor including dose and time given.		
Document maternal pulse every 30 minutes.		
Document blood pressure 2 hours.		
Document temperature every 2 hours.		
Document urine volume and presence of protein in urine when patient voids.		
Identify lack of progress in labor and action to be taken.		
Document recommendations for action indicated by abnormal maternal, fetal condition or lack of progress of labor		
Consult and call obstetrician appropriately.		

Appendix G: Request to adopt your questionnaire

Re: Request to adopt your questionnaire (Action Requested)4

Hello Biira Antoinette, Hi - You just sent me an email about "Request to adopt your questionnaire". I'll be more likely to see your email and future messages if you are on my priority Guest List. Aug 23, 2016 at 8:30 PM

Biira Antoinette <antoinettebiira@yahoo.com>
To: negashwakgari@yahoo.com
Aug 23, 2016 at 8:55 PM
Am requesting for permission to allow me to adopt data some of the questions in your data collecting tool and i will acknowledge you in my research report.
Thank you
Antoinette Biira
Hello Biira Antoinette,
Hi - You just sent me an email about "Request to adopt your questionaire". I'll be more likely to see your email and future messages if you are on my priority Guest List.
Thank you,
negashwakgari@yahoo.com
Boxbe, Inc. | 65 Broadway, Suite 601 | New York, NY 10006
Negash Wakgari <negashwakgari@yahoo.com>
To: antoinettebiira@yahoo.com
Aug 28, 2016 at 12:01 PM .Fine, you can use.

Appendix H:

Table 9: Third-year Ccertificate Mmidwives' Scores on the Skill of Plotting a Partograph Using a Scenario before Coaching

Students' codes	Students Score	%age Score
1	7	54
2	8	62
3	7	54
4	6	46
5	7	54
6	9	69
7	9	69
8	9	69
9	8	62
10	8	62
11	9	69
12	7	54
13	9	69
14	7	54
15	7	54
16	6	46
17	8	62
18	6	46
19	6	46
20	7	54
21	7	54
22	8	62
23	6	46
24	8	62
25	7	54
26	7	54
27	8	62
28	8	62
29	8	62
30	8	62
31	7	54
32	7	54
33	7	54
34	8	62
35	8	62
36	7	54
37	8	62
38	7	54
39	7	54
40	9	69
41	8	62
42	7	54

43	7	54
44	7	54
45	7	54
46	7	54
47	7	54

Appendix I:

Table 10: Comparison of third year Certificate Midwives' Individual Pre & Post test Scores on the Skill of Plotting a Partograph Using a Scenario after the Coaching Intervention

Students' codes	Pre-test scores		Post-test scores	
	Freq	%age Score	Freq	%age Score
1	7	54	10	77
2	8	62	11	85
3	7	54	11	85
4	6	46	11	85
5	7	54	11	85
6	9	69	12	92
7	9	69	11	85
8	9	69	12	92
9	8	62	11	85
10	8	62	11	85
11	9	69	11	85
12	7	54	11	85
13	9	69	12	92
14	7	54	12	92
15	7	54	11	85
16	6	46	10	77
17	8	62	11	85
18	6	46	11	85
19	6	46	10	77
20	7	54	11	85
21	7	54	11	85
22	8	62	11	85
23	6	46	11	85
24	8	62	11	85
25	7	54	11	85
26	7	54	11	85
27	8	62	12	92
28	8	62	11	85
29	8	62	11	85
30	8	62	12	92
31	7	54	11	85
32	7	54	11	85
33	7	54	11	85
34	8	62	11	85
35	8	62	11	85
36	7	54	10	77
37	8	62	11	85
38	7	54	11	85
39	7	54	11	85
40	9	69	11	85
41	8	62	11	85
42	7	54	11	85
43	7	54	11	85
44	7	54	11	85
45	7	54	11	85
46	7	54	12	92
47	7	54	11	85

Appendix I:

Table 11: Analysis of individual Paired sample test between Prestest and posttest skill of Plotting a Partograph Using a Scenario after the Coaching Intervention

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre-Test Skill	.54	13	.519	.144
	Post-Test Skill	.85	13	.376	.104

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pre-Test Skill - Post-Test Skill	-.308	.480	.133	-.598	-.017	-2.309	12	.040

Appendix J: Work plan

Steps	**Dates**		
Conceptual Phase (Chapters 1 & 2)	**2015**	**2016**	**2017**
Identification of problem/topic of interest	Oct 2015		
Idea Paper I & II	Dec 2015		
Clinical fieldwork if appropriate		N/A	
Matrix with 10 references		Jan 2016	
Theoretical/Conceptual framework		Jan 2016	
Define terms/variables		Jan 2016	
Question/Hypothesis		Jan 2016	
Outline of chapter 1		Jan 2016	
Logic argument for lit review		Jan 2016	
Literature review		Jan 2016	
Design/Planning Phase (Chapter 3 & IRB)		Jan 2016	
Research design		Feb 2016	
Intervention protocols		Feb 2016	
Population specification		Feb 2016	
Sampling plan		Feb 2016	
Acquire or develop a tool		Feb 2016	
Data collection plan – in great detail		Feb 2017	
Create data code book and plan for data analysis		Feb2017	
Ethics procedures (IRB) – speak to every item in UCU's IRB requirement		June 2017	
Check all your references and formatting to APA textbook		June 2017	
Complete IRB forms		July 2017	
Submit proposal for approval chapter 1-3 and IRB for University		July 2017	
Make changes as required until approval is met		August 2017	
Collect letters of approval		August 2017	
Pilot study if required		Aug 2017	
Analyze results		Sept2017	
Adapt tool		Sept 2017	
Empirical Phase – Data Collection		Sep 2017	
Obtain permission for each site – follow the recommendations on p. 184 in research text		Sep 2017	
Collection of data		Sep2017	
Data preparation		Oct 2017	
Enter into software		Oct 2017	
Analytic Phase (Chapters 4 & 5)			Jan 2018
Data analysis		Oct2017	
Consult with statistician and advisor		Oct 2017	Feb 2018
Interpretation of results		Oct 2017	Feb2018

Outline chapter 4		Oct 2017	May 2018
Write chapter 4		Nov 2017	May 2018
Check on any new literature to compare with your findings		Dec 2017	July 2018
Outline chapter 5			July 2018
Write chapter 5			August 2018
Dissemination Phase			
Rewrite chapter 1-3 in past tense where appropriate			October 2018
Update chapter 2 if you found new literature			November 2018
Check all references and formatting of tables, figures, Table of Contents to APA and University requirements			November 2018
Submit final draft for Viva			April 2019
Prepare presentation for Viva			May2019
Make corrections as required			July 2019
Bind in book as directed by University and obtain signatures			July 2019

Presentation/reports to places where you collected data and nursing workshops, conferences and journals	August 2019
Utilization of findings – find ways that your research can be utilized	September 2019

Appendix K: Budget

Thesis Development	**Quantity**	**Unit Cost**	**Amount**
Printing Services: Photocopying, Binding		60,000	60,000=
Proposal Submission		30,000	30,000=
Proposal Correction		60,000	60,000=
Printing Questionnaires	100	660,000	660,000=
Training Research Assistants		300,000	300,000=
Data Collection		1,050,000	1,050,000=
Data Analysis		1,000,000	1,000,000=
Report Writing and Corrections		600,000	600,000=
Submission of Report		130,000	130,000=
Total		**3,890,000**	**3,890,000=**

CONCLUSION

Based on the study findings and discussion on coaching third-year certificate midwives to improve partograph skills, the following conclusions were drawn by the researcher: the study findings showed that before the coaching strategy, the third-year certificate midwives did not exhibit adequate knowledge and skills in partograph use required in labor management. Coaching strategy yielded significant skills acquisition in recording and interpreting the partograph. The coaching on partograph use significantly (p=<0.001) impacted the third-year certificate midwives' knowledge and skills, an evidence of transitioning from advanced learner to competence level.

RECOMMENDATIONS

- The Nurses and Midwifery educators should adopt coaching as an alternative strategy to improve the knowledge and skills of student midwives in partograph use during labor management.
- The Practicing midwives in the clinical area should employ coaching strategy to instruct the junior midwives, especially the second- and third-year students on partograph use.
- The nurse/midwifery leaders should emphasize coaching strategy as means of instruction in health care systems on partograph use particularly in the clinical area and follow up its utilization.
- An independent research study should be conducted on how the students are instructed on partograph use in the skills laboratory. Another research study should be conducted to investigate factors that influence skill mastery among the midwifery students.

DISSEMINATION OF STUDY FINDINGS

A copy of the research findings will be given to the school of postgraduate and Nursing department in Uganda Christian University (UCU). The findings will be shared in the Continuous Professional Development (CPD) meetings of the study area. These findings will further be shared during the principals' (heads of Nursing and midwifery institutions), nursing and midwifery conferences in Uganda. Once this dissertation is successfully defended and accepted at the School of Research and Post Graduate Studies of Uganda Christian University, the findings will be published in a nursing journal in collaboration with my research supervisors.

Funding: None

Conflict of Interest: Author declare no conflict of interests.

Acknowledgments: Authors are grateful to all the study participants.

Declaration

I Biira Antoinette, hereby declare that this work has been my own intitiative except where literature has been reviewed.To the best of my knowledge this report presented is orginal and has never been submitted before to any institution either partially or totally for any academic award.

Biira Antoinette
Signature……. Date……..
Supervisors' Approval
Signature……
Date……..
Dr. Karen Drake, RN PhD
Professor of Nursing, Bethel University
Signature……
Date……..
Elizabeth Namukombe Ekong, RN MNS
Lecturer Uganda Christian University

Dedication

I sincerely dedicate this piece of work to Kagando school of nursing and Midwifery, my dear children Abigail Pam Anyanzire and Abital Atsemire Leebu for their support and perseverance.

My spouse Moses Baluku Leebu for your love, care and support during my course of study.

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Appreciation to my family for the moral support and encouragment. In an exceptional way, I would like thank my dear spouse Moses Baluku Leebu Munyambwe for the holistic support you gave to me throughout my course of study. My dear children thank you for your unconditional love and perseverancy while I was in school. Am grateful to my dear classmates Angela Elkut, Eleanor Bulya and Harriet thank you for your warm company, acedemic and emotional support that kept me going throughtout this program.

REFERENCE

- Abebe, F., Birhanu, D., Awoke, W., & Ejigu, T. (2013). Assessment of knowledge and utilization of the partograph among health professionals in Amhara region, Ethiopia. *Science Journal of Clinical Medicine, 2*, 26-42. doi/10.11648.j.sjcm. 201302.11
- Altmann, T. K. (2006). Preceptor selection, orientation, and evaluation in baccalaureate nursing education. *International Journal of Nursing Education Scholarship*, 3, 923-1548. doi. Org/10.2202/1548-923X.1014
- American College of Nurses-Midwives. (2016). Providing oral nutrition to women in labor. *Journal of Midwifery and Women's Health*, 61, 528-534.
- doi. Org/10.1111/jmwh.12515
- Bangal, V. B. (2014). Student's perceptions and outcomes following training in WHO modified partograph. *International Journal of Biomedical Research*, 5, 677-680. doi.org/10.7439/ijbr CODEN: IJBRFA
- Beaubien, J. M., & Baker, D. P. (2004). The use of simulation for training teamwork skills in healthcare: How low can you go? *Quality and Safety in Health Care, 13*, 51–56. doi.org/10.1136/gshc.2004.009845
- Benner, P. (1984). From novice to expert: Excellence and power in clinical nursing practice. *American Journal of Nursing*, 95-97. doi.10.1097/00000446-198412000-00025
- Benner, P. (2004). Using the Dreyfus model of skill acquisition to describe and interpret skill acquisition and clinical judgment in nursing practice and education. *Bulletin of Science, Technology & Society 24*, 188–219. doi.org/10.1177/0270467604265061
- Benner. P, Tanner, C., A., & Chesta, J. (2009). *Expertise in nursing practice, caring, clinical judgment and ethics*, 17, 675-675. doi.org/10.1177/0969733010376334
- Billings, M. G., & Halstead, J. A. (2009). Teaching in nursing: A guide for faculty. (3rd ed). St. Louis, MO: Saunders Elsevier
- Bootman, J. L., Cronenwett, L. R., & Bates, D. W. (2006). Preventing medication errors. Washington, DC. Retrieved from http://psnet.ahrg.gov/resource
- Chaturvedi, S., Upadhyay, S., De Costa, A., & Raven, J. (2015). Implementation of the partograph in India's JSY cash transfer programme for facility births: A mixed methods study in MadhyaPradesh

province. *British Medical Journal,* 5, e006211. doi.org/10.1136/bmjopen-2014-006211

- Cronbach, L. J. (1951). Coefficient alpha and internal structure of tests. *Psychometrika,* 16, 297-334. Retrieved from http://www.psychometricsociety.org
- Croffoot, C., Bray, K. K., Black. A. M., & Koerber, A. (2009). Evaluating the effects of coaching to improve motivational interviewing skills of dental hygiene students. *Journal of Dental Hygiene, 84*(2), 57-64. Retrieved from http://jdh.adha.org/content/84/2/57
- Dore, K. (2011). Coaching 101[PPT]. *Slide share., Health and Medicine, Business*. Retrived from http://www.slide share.net/kristendore/coaching.101.8883277
- Fahdhy, M., & Chongsuvivatwong, V. (2005). Evaluation of World Health Organization partograph implementation by midwives for maternity home in Medan, Indonesia.*Midwifery, 21*, 301-310. doi.org/10.1016/j.midw.2004.12.010
- Fawole, A. O., Hunyinbo, K.I., & Adekanle, D. A. (2008). Knowledge and utilization of the partograph among obstetric care givers in South West Nigeria. *African Journal of Reproductive Health*, 12(1), 22-29. Retrieved from http://www.bioline.org.br/pdf?rh08004
- Fistula Care. (2013). Improving partograph use in Uganda through coaching and mentoring. *Engender Health, 2-7*. Retrieved from https://www.engenderhealth.org/files/pubs/fistula-care-digital-archive/2/2.3/Uganda_Partograph_technical_brief.pdf
- Freeth, D.& Fry, H. (2005). Nursing students' and tutors 'perceptions of learning and teaching in clinical Centre. *Nurse Education Today,* 25, 272–282. doi.org/10.1016/j.nedt.2005.01.007
- Fuller, S. (2019). Advantages and disadvantages of using role play as a training method. Retrieved from http: /bizfuent.com/info 12027484-using-role-play-training method. html
- Gallo, A. (2012, November 29). How to master a skill. Harvard Business Review. Retrieved from https://hbr.org/2012/11/how-to-master-a-new-skill
- George, H. J. (2001). A simple five-step method for teaching clinical skills. *Family Medicine,* 33, 577-578. Retrieved from http://mail.fmdrl.org/fmhub/fm2001/sep01/ftobtofm.pdf
- Grow, O. G. (1991). Teaching learners to be self – directed. *Adult Education Quarterly*, 41, 125-149. doi.10.117.000/848191041003001
- Henry, M. F & Nelson, A. G. (2013). Age Differences and Inter-relationships between Skill and Learning in Gross Motor Performance of Ten- and Fifteen-Year-Old Boys. *American Association for Health, Physical Education*, 27,162-175. doi: 10.1080/10671188.1956,10612867
- Kabakyenga, J. K., Östergren, P., Turyakira, E., Mukasa, P.K., & Pettersson, K. O. (2011). Individual and health facility factors and the risk for obstructed labor and its adverse outcomes in Southwestern Uganda. *BioMedicalCentral: Pregnancy and Childbirth*,11, 73. Retrieved from http://bmcpregnancychildbirth.biomedcentral.com/articles/10.1186/ 1471-2393-11-73
- Knight, J & Nieuwerburgh, V.C. (2012) Instructional coaching: a focus on practice, Coaching: *An International Journal of Theory, Research and Practice*, 5, 100-112, doi: 10.1080/17521882.2012.707668
  Kolb D. (1999). Experiential learning: experience as the source of learning and development. Englewood Cliffs, New Jersey: Prentice Hall. Retrieved from *https://www.d.umn.edu/~kgilbert/educ5165-731/.../experiential-learning-theory.pdf*
- Kolb A. Y. (2013). The Kolb Learning Style Inventory, Version 3. Boston: Hay Group. Retrieved from https://learningfromexperience.com/...library/the-kolb-learning-style-inventory-4-0.pdf
- Lavender, T., Hart, A., & Smyth, R. (2014). Effect of partogram use on outcomes for women in spontaneous labor at term. *Cochrane Database System Rev, 8,* CD005461. http://doi:10.1002/14651858.CD005461.pub3.
- Levin, K., & Kabagema, J. D. (2011). Use of the partograph: Effectiveness, training, modifications, and barriers. New York: *Engender Health/Fistula Care*. Retrieved from https://www.engenderhealth.org/files/pubs/fistula-care-digital-archive/2/2.3/Uganda_Partograph_technical_brief.pdf
- Lofthouse, R., Leat, D., & Towler, C. (2010). Coaching for teaching and learning: A practical guide for schools. *CfBT Education Development Trust.* Retrieved from http://www.ncl.ac.uk/cflat/news/documents/5414_CfT_FINALWeb.pdf
- Maginnis, C., & Croxon, L. (2010). Transfer of learning to the nursing clinical practice setting. *Rural and Remote Health,10*, 1313. Dubbo, New South Wales, Australia: Charles Sturt University. Retrieved from http://www.rrh.org.au/publishedarticles/article_print_1313.pdf
- Maphasha, M.O., Govender, I., Motloba, P.D., Barua, C. (2017). Use of the partogram by doctors and midwives at Odi District Hospital Gauteng, South Africa. South Africa Family Practice, 56(2). https:// doi. Org/10. 1080/20786190. 2017.1280899
- Masika. A. M., Katongole.P. S., & Govule, P. (2015). Improving partograph document and use by health workers of Bwera hospital: A process improvement research. *International journal of Nursing and Health science,* 2 (4), 37-45

- Mathibe-Neke,J. M., Lebeko, F. L.,& Motupa, B. (2013).The partograph: A labor management tool or a midwifery record? *International Journal of Nursing and Midwifery,5*, 145-153. http://dx.doi.org/10.5897/IJNM2013.0115
- McLeod, S. A. (2013). Kolb - learning styles. Retrieved from www.simplypsychology.org/ learning-kolb.html
- Mezmur, H., Semahegn. A & Tegegne, S. B. (2017). Health professional's knowledge and use of the partograph in public health institutions in eastern Ethiopia: A cross-sectional study. *BMC Pregnancy and Childbirth* 17, 291. doi.org/10.1186/s12884-017-1477-3
- Ministry of Education & Sports. (2014). Ugandan Curriculum of Certificate Midwives. Retrieved from *https://ulii.org/system/files/vol%20cx%20no%2047 .pdf*
- Morogwana, A. S. (2011). The utilization of the partograph by midwives in in Lebowakgomo and Zebediela level 1 hospitals in the Capricorn District of Limpopo Province, South Africa [master's dissertation]. University of Limpopo, South Africa. Retrieved from http://ul.netd.ac.za/handle/10386/627
- Mwale, O. G., & Kalawa, R. (2016). Factors affecting acquisition of psychomotor clinical skills of student nurses and midwives in CHAM nursing colleges in Malawi. *Journal of Bio-Medical CentralNursing, 15*. http://dx.doi.org/10.1186/s12912-016-0153-7
- Nagat, S. S., & Manar, F. H. (2010). The partograph: Knowledge, attitude, and utilization by Birth. *Medical Journal of Cairo University, 78*, (1), 165-174. Retrieved from http://www.medicaljournalofcairouniversity.com
- Nash, S., & Scammell, J. (2010). How to use coaching and action learning to support mentors in the workplace. *Nursing Times;106* (3). Retrieved from https://www.nursingtimes.net/roles/nurse-managers/how-to-use-coaching-and-action-learning-to-support-mentors-in-the-workplace/5010757.article
- National Council of State Boards of Nursing, Inc., (2011). Novice to expert chart. *Preceptor Toolkit*, 2011. Retrieved from https://www.ncsbn.org/resources.htm
- Neufeld, B., & Roper, D. (2003). Coaching: A strategy for developing instructional capacity. Anchorage, AK: *Education Matters, Inc*. Retrieved from http://annenberginstitute.org/sites/default/files/product/268/files/Coaching.pdf
- Ogwanga, S., Karyabakabo Z., &Rutebemberwa, E. (2009). Assessment of partogram use during labor in Bujumbura Health Sub District, Rukungiri District, Uganda. *Africa Health Sciences*, 1(9). Retrieved https://www.ncbi.nlm.nih.gov/pubmed/20589158
- Opiah, M.M., Ofti, A.B., Essien, E. J., & Monjok, E. (2012). Knowledge and utilization of the partograph among midwives in the Niger Delta Region of Nigeria. *African Journal of Reproductive Health, 16* (1), 125 -132. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/22783676
- Opoku, B. K., & Nguah, S. B. (2015). Utilization of the modified WHO partograph in assessing the progress of laborin a metropolitan area in Ghana. *Research Journal of Womens Health*. 2 (2) http://dx.doi.org/10.7243/2054-9865-2-2
- Orhue, A., Aziken, M. E., & Osemwenkha, A.P. (2012). Partograph as a tool for team work management of spontaneous labor.*Nigeria Journal of Clinical Practice*, *15*(1), 1-8. http://dx.doi.org/10.4103/1119-3077.94087
- Parsloe, E. (1999). *The manager as coach and mentor*. Oxford shire, England: Oxford School of Coaching and Mentoring.,
- Phillips, L. (2006). Benefits of coaching as a way of developing skills and self-confidence among nursing students [Abstract]. *Nursing Standard, 20*(46), 72. Retrieved from http://connection.ebscohost.com/c/articles/21849574/confidence-boost
- Polit, D.F. & Beck, C.T. (2012*). Nursing research*: *Generating and assessing evidence for nursing practice*. (9th ed). Philadelphia: Lippincott Williams & Wilkens
- Robinson, W. L (1974). Conscious competence--the mark of a competent instructor. *Personnel Journal, 53*, 538-9. Retrieved from http://www.integratedwork.com/wp-content/uploads/2010/12/IWS_ConsciousCompetenceLearning.pdf
- Shadish, R. W., Cook, D. T., & Campbell, T. D. (2002). Experimental and Quasi-Experimental Designs for Generalized Causal Inference (2nd ed). Retrieved from https://www.amazon.com/Experimental-Quasi-Experimental-Designs-Generalized-Infe
- Shepherd, C. K., McCunnis, M., Brown., L & Hair, M. (2010). Investigating the use of simulation as a teaching strategy. Nursing Standard. 24, 35, 42-48. Doi. 10.7748/ns2010.05.24.35.42.c7751
- Singh, R. (2013). Utilization of the partograph by midwives in the public hospitals in the Umgungundlovu District, Kwazulu-Natal [master's dissertation]. Durban University of Technology, South Africa. Retrieved from http://ir.dut.ac.za:8080/bitstream/handle/10321/1252/SINGH_2013
- Sturtevant, E. (2003). The literacy coach: A key to improving teaching and learning in secondary schools. Washington, DC: Alliance for Excellent Education. Retrieved from http://all4ed.org/articles/the-literacy-coach-a-key-to-improving-teaching-and-learning-in-secondary-schools/

- Tayade, S., & Jadhao, P. (2012). The impact of use of modified WHO partograph on maternal and perinatal outcome. *International Journal of Biomedical and Advanced Research, 3*, 256-262.doi.org/10.7439/ijbar. v3i4.398
- Uganda Nurses and Midwives Examination Board (UNMEB) (2014). Ministry of Education & Sport report for May 2014 state final examination.
- Umezulike,C. A Onah, E. H & J. M. Okaro,M. J (1999). Use of the partograph among medical personnel in Enugu, Nigeria," *International Journal of Gynecology and Obstetrics*, 65, (2). Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6042737/
- Vidyadhar, B. B., Kunaal, K. S &Rashmi, K. S. (2012). Study of course of labor by modified who partograph in rural Medical College, Pravara Institute of Medical Sciences (Deemed University), Loni, Dist.Ahmednagar, Maharashtra, India. *International Journal of Biomedical and Advance Research*, 3, (5) Retrieved from http:// ssjournals. Com/index.php/ijbar/article/download/153/1531
- Voelcker-Rehage, C. (2008). Motor-skill learning in older adults—a review of studies on age-related differences. *European Review of Aging and Physical Activity*. 5 (30) https://doi.org/10.1007/s11556-008-0030-9
- Wakgari, N., Tessema, A.G., & Amano Abdella (2015). Knowledge of partograph and its associated factors among obstetric care providers in North Shoa Zone, Central Ethiopia: a cross sectional study. *Biomed Central Research Notes*, 8, (407). Doi: 10.1186/s13104-015-1363-x
- World Health Organization (WHO). (2013). World Health Organization's partograph in management of labor. *Maternal Health and Safe Motherhood Programme*. Retrieved from http://www.sciencestage.com, on 07/03/2013.
- World Health Organization (WHO). (2013). Transforming and scaling up health professionals' education and training. Geneva: *World Health Organization Guidelines.* Retrieved from http://apps.who.int/iris/bitstream/10665/93635/1/9789241506502_eng.pd
- World Health Organization (2014). Preventing Prolonged Labor: a practical guide. The partograph. Part I: Principles and Strategy. Retrieved from: http://whqlibdoc.who.int/hq/WHO_FHE_MSM_93.8.pdf
- Yisma E., Dessalegn, B., Astatkie A., & Fesseha, N. (2013). Knowledge and utilization of partograph among obstetric care givers in public health institutions of AddisAbaba, Ethiopia. *BioMedicalCentral - Pregnancy and Childbirth*, *13* (17) http://dx.doi.org/10.1186/1471-2393-13-17