

**AN EVIDENCE-BASED MODEL FOR ENHANCING OPTIMAL
MIDWIFERY PRACTICE ENVIRONMENT IN MATERNITY UNITS
OF PUBLIC HOSPITALS, LIMPOPO PROVINCE**

by

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DECLARATION

I, **Magdeline Kefilwe Thopola**, declare that “**An Evidence-Based Model for Enhancing Optimal Midwifery Practice Environment in Maternity Units of Public Hospitals, Limpopo Province**” is my original work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references, and that this work has not been submitted before for any other degree at any other institution of higher education.

Magdeline Kefilwe Thopola :

Date Signed :

DEDICATION

This thesis is dedicated to my late grandmothers, Eva Mpolokeng Molubi and Lerutla Naomi Maponyane, for bringing me up. The thesis is also dedicated to the memory of my beloved parents, Johannah and Peter Maponyane. It is also dedicated to my trinity, Mohau, Tshegofatso and Emmanuel for their prayers and support, and Deo, Bonolo and Boikanyo for the laughter they brought during this journey. Lastly, it is dedicated to puerperal mothers, midwifery practitioners and learner midwives who participated in this study.

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ABSTRACT

The purpose of this study was to develop an evidence-based model for enhancing optimal midwifery practice environment in maternity units of public hospitals, Limpopo Province. A mixed method sequential explanatory design was adopted. The study was conducted in four phases, namely: quantitative, qualitative, model development and validation of the model.

Self-developed 4-point Likert scale questionnaires consisting of 81 item questions for learner midwives and 89 item questions for midwifery practitioners were administered. The questionnaires were pre-tested prior to being administered to the respondents of the main study. The sample size of midwifery practitioners was 174 and that of the learner midwives was 163. Data collected from respondents were analyzed quantitatively using descriptive and inferential statistics. Tables, pie and bar graphs were drawn to present the results.

The results from the quantitative phase were utilized to formulate the interview guides that were used to explore the experiences of midwifery practitioners, experiences of learner midwives and perceptions of puerperal mothers. Phenomenological semi-structured individual interviews were conducted for midwifery practitioners (n=20), 3 Focus group discussions of learner midwives (n=18) and 3 focus group discussions of puerperal mothers (n=18) were held until data reached saturation. Data were analyzed qualitatively using Tesch's open-coding method.

Themes and sub-themes were coded manually. Results that emerged from the corroboration, comparison and integration of quantitative and qualitative results revealed the existence a sub-optimal midwifery practice environment, sub-optimal midwifery experiential learning environment and provision of sub-optimal midwifery interventions in the public hospitals of Limpopo province. Development of an evidence-based model emanated from the findings of numeric quantitative data and qualitative narratives. The evidence-based information from the existing situation as seen from the world of participants brought about a gap of optimal midwifery practice environment. The ideal situation was designed in a way of addressing the gaps identified. Experts were given the validation tool to assess whether the model was clear, simple, understood and that it can be utilized by any discipline in future.

Keywords: Evidence-based model, enhancing, optimal midwifery practice environment, midwifery experiential learning environment, learner midwives, midwifery practitioners, puerperal mothers

ABBREVIATIONS

BPG	Best Practice Guidelines
CEO	Chief Executive Officer
COHSASA	Council for Health Service Accreditation for Southern Africa
CTG	Cardiotocograph
CT	Comfort Theory
DENOSA	Democratic Nursing Organization of South Africa
DoH/NDoH	Department of Health/National Department of Health
EMS	Emergency Medical Service(s)
HEQF	Higher Education Qualification Framework
ICN	International Council of Nurses
IFOM	International Forum of Midwives
LCN	Limpopo College of Nursing
MREC	Medunsa Research Ethics Committee
NHMRC	National Health and Medical Research Council
NICE	National Institute of Health and Clinical Excellence
Nape MMCO	National Perinatal Mortality and Morbidity Committee
NEI	Nursing Education Institution
NQF	National Qualifications Framework
NQPN	Newly Qualified Professional Nurses
NST	Non-Stress Test
PIH	Pregnancy-Induced Hypertension
PMTCT	Prevention of Maternal-to-Child Transmission
QIIP	Quality Improvement and Innovative Partnership

SANC	South African Nursing Council
SDGs	Sustainable Developmental Goals
UL	University of Limpopo
UNIVEN	University of Venda
UN	United Nations
WHO	World Health Organization

DEFINITIONS OF CONCEPTS

Evidence-Based Practice	Evidence-based practice is defined as conscientious integration of best research evidence with clinical expertise and patient values and needs in the delivery of quality cost-effective health care. It uses research findings to guide decisions, actions, interventions and policies (Turkel, Reidinger, Ferket & Reno, 2005; Burns & Grove, 2009). In this study, evidence-based practice refers to midwifery care formulated, based on the best evidence and research done in midwifery sectors.
Model	A model refers to representation of a concept, phenomenon, relationship, structure, system or an aspect (Coventry & Nixon, 2010). In this study, a model means a graphical presentation of the structure of the developed model.
Enhancing	Enhancing refers to rising to a higher degree, increasing or improving the quality and value (Coventry & Nixon, 2010). In this study, enhancing, means heightening the quality of the midwifery practice environment.
Optimal Practice Environment	Optimal practice environment as defined by International Council of Nurses (ICN, 2007) are settings that support excellence and decent work, striving to ensure the health, safety and personal well-being of staff, supporting quality patient care and improving the motivation, productivity and performance of individuals and the organization. In this study, an optimal practice environment means a favourable setting supporting excellence and decent work, striving to ensure quality and safe midwifery care as well as supporting midwifery practitioners and learner midwives with adequate and efficient material resources.
Midwifery Practice Environment	Midwifery practice environment refers to the services which the midwifery practitioner as a sensitive professional will facilitate in the implementation of standard midwifery interventions through mobilization unto individual pregnant woman, family and community (WHO, 2010a). In this study, midwifery practice environment refers to the environment which serves as an employment area for midwifery practitioners, an experiential learning environment for learner midwives and a midwifery health service unit catering for low and high

risk pregnant women.

Midwifery Practitioner

In terms of the Nursing Act No. 33 of 2005 (SANC, 2005), midwifery practitioner means a person registered as such in terms of Section 31 (1) and practising caring profession registered under South African Nursing Council (SANC). In this study, midwifery practitioner means midwives working in maternity units, particularly antepartum, intrapartum and high care areas.

Midwifery Interventions

Midwifery interventions are actions, procedures, therapies and treatments which result in changes, taken by health professionals to improve the health of the patient/client in a particular situation, to move the patient/client condition towards desired outcomes that are beneficial to the patient/client (Sheridan & Sandall, 2010). In this study, midwifery interventions refer to those evidence-based actions and procedures midwifery practitioners adapt and implement towards high risk pregnant women to provide quality midwifery care, thus enhancing optimal midwifery practice environment.

Maternity Units

Maternity units are 24-hour comprehensive health service with a midwifery and obstetric unit managed by midwifery practitioners (DoH, 2015). In this study, maternity units mean facilities that cater for pre-natal, antenatal, intrapartum and postpartum services to low and high risk pregnant women.

Public Hospitals

Public hospitals refer to the organizations that are accessible and available to all citizens, supported by public funds and under the governance of the state (Coventry & Nixon, 2010). In this study, public hospitals refer to all the level 1, 2 and 3 health care institutions which cater for pregnant women.

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CHAPTER 1

OVERVIEW OF THE STUDY

1.1 Introduction and Background

South Africa needs an optimal midwifery practice environment which is characterized by effective and efficient midwifery skills, adequate and appropriate material resources. This will influence professional development of learner midwives and pregnant women's safety. South Africa, like the rest of the world, needs midwives providing quality midwifery care towards pregnant women and babies (International Forum of Midwives, 2006). Optimal midwifery practice environment is a prerequisite for a healthy midwifery workforce and their ability to provide quality midwifery care. Optimal midwifery practice environment refers to the conducive, resourceful setting that facilitate excellent, efficient, effective and skillful midwifery interventions that will ensure sound mind and good personal well-being of staff and proper mentoring of learner midwives (ICN, 2007).

Optimal midwifery practice environment denotes the best or most favourable environment under a particular set of circumstances (Coventry & Nixon, 2010). According to Pretorius (2009), the concept of 'optimality' means desired best possible outcome rather than the occurrence of undesired adverse events and that 'optimal' engenders good desired outcomes and differs from normality, the most favourable outcome (Sheridan & Sandall, 2010). Beal, Riley and Lancaster (2008) stated that optimal midwifery practice environment embraces scholarly nursing practice and balances care-giving with professional development. In support of this notion, Shirey (2006) affirmed that healthy work environment's characteristics are attractive work environment, quality midwifery care provision and effective learner midwives' clinical practice. Based on the evidence from the studies cited above, the three concepts of optimal practice environment, positive practice environment and healthy work environment are the same in terms of influencing professional retention and satisfaction, enhancing patient safety and improving patient family outcomes.

The general nature of the midwifery practice environment is marked by critical shortage of midwifery practitioners and might infringe globally on the quality of midwifery care offered by these practitioners (ICN, 2007). Furthermore West, Griffith and Iphofen (2007) indicated that the problem is global in scope and heading for crisis if not abated. The World Health Organization (WHO, 2006) has stated that midwifery, like many health professions, is experiencing global workforce shortages that may put the midwifery practice environment in crisis throughout Europe.

Bauman (2007) reported that shortage of staff contributes to an unhealthy work environment. The WHO (2006) estimated a global shortage of 4.3 million health professionals, including 2.4 million physicians, nurses and midwives. Breier, Wildschut and Mqgqolozana (2009) stated that thousands of nurses left their countries to seek better conditions abroad. Several authors are of the opinion that the scarce number of midwives and unfavorable working conditions are common worldwide (Hassan-Bitar & Narrainen, 2009; Warwick, 2009). Across the globe, some midwives find themselves practicing in impoverished and low-resource settings. Chadwich, Cooper and Harries (2014) stated that women experienced poor quality of intrapartum care in South African public maternity settings.

According to the National Perinatal Mortality and Morbidity Committees' (NaPeMMCo, 2011) triennial report, the Limpopo Province is one of the poorest provinces in South Africa with an estimated population of 5.5 million people. The child population is 14% of the total child population in South Africa, made up of over 2.6 million children. Over 88% of these children live in rural areas with limited access to advanced health care facilities, poor transport facilities and very little recreation facilities. These seem to impact on the midwifery practice environment which will then affect the quality of care that the midwifery practitioners have to render. Currently there is poor midwifery care which is clearly demonstrated by increased maternal and perinatal mortality rates at all levels of care that South Africa is currently facing. Sixty percent (60%) of maternal deaths in South Africa were considered by the assessors to be potentially avoidable. This is based on the sub-standard care and missed opportunities as indicated in the tenth interim report on Confidential Enquiries into Maternal Deaths (Pattinson, Fawcus & Moodley, 2012). Furthermore, Moodley, Pattinson, Fawcus, Schoon, Moran and Shweni (2014) reported that health care providers' problems occurred in 14-38% maternal deaths due to not assessing patients properly, delays in referral, failure to recognize

the problem, not following standard protocols and poor monitoring.

According to World Bank Data (2012) and Statistics SA (2012) South Africa's infant mortality rates were as follows: 2010 35 per 1000 live births; 34 per 1000 live births in 2011; 34 per 1000 live birth in 2012 whereas 33 per 1000 live births were recorded in 2015. Based on the given statistics it is evident that there are increased infant mortality rates in South Africa. Out of a total of 15 million babies born preterm in 2011, 84,000 occurred in South Africa, about 10% of these babies did not survive despite most births occurring at health care facilities (Howson, Kinney, McDougall & Lawn, 2013). Poor midwifery care is clearly demonstrated by increased maternal and perinatal mortality at all levels of care that South Africa is currently facing. Buchmann, Pattinson and Nyathikazi (2003) affirmed that South Africa experiences a high infant mortality rate of 48 deaths per 1000 births during intrapartum which are related to sub-standard midwifery care. In South Africa, the challenges of poor midwifery care, evident by problems indicated in the Saving Mothers Report (DoH, 2008), revealed increased maternal morbidity and mortality rates.

There are three different levels of care in the health care system in South Africa, each with different functions, different resources and staffing. The referral system: community services refer to level 1 hospitals, level 1 hospitals refer to level 2 while level 2 hospitals refer to level 3 hospitals (DoH, 2007). Level 1 or district hospitals refer to a base hospitals for a health district which applies best to rural areas (DoH, 2007). There are 6 level 1 hospitals in Capricorn district, 7 in Mopani district, 6 in Sekhukhune district, 7 in Waterberg district and 7 in Vhembe district. Therefore, there are 33 level 1 hospitals in Limpopo Province that cater for high risk pregnancies, 24-hour delivery services for intermediate and high risk women and high risk puerperium (Pattinson et al., 2012). It is therefore important that level 1 hospitals provide quality midwifery services within their limited resources, thus performing a pivotal role ensuring healthy lives and promote well-being for all at all ages as targeted by Sustainable development goals by 2030 (UN, 2015). According to DoH (2007), a level 2 or regional hospital is the base hospital for a health region which will include a number of districts. The Capricorn district of Limpopo Province has two level 3 hospitals, Mankweng and Polokwane Hospitals.

Midwifery practitioners in the implementation of their professional duties should bear in mind that as persons tasked with the rendering of quality midwifery care to pregnant women, developing fetuses, mothers and neonates, they are simultaneously responsible and accountable for their actions and omissions in accordance with the South African Nursing Council (SANC, 1993) Rule 2598 code of conduct. In this specific regard, “responsibility” means that midwives are personally liable and obliged to carry out their professional activities; whereas “accountability” would mean they have to implement midwifery care meticulously as a duty towards the welfare of those whose health needs are entrusted to them (Robin & De Cenzo, 2001).

Teaching and supervision is also the function of the midwifery practitioner to learner midwives allocated to the practice environment where midwifery practitioner is working. Therefore, the function of enhancing teaching and learning of midwifery learners as clinical supervision is a hands-on involvement, aims at effective teaching, serves as a means of correlating theory and practice. This function seems unclear for competence in clinical practice and professional development to be achieved (Park & Jones, 2010). However, the brevity of training combined with insufficient midwives for clinical supervision resulted in midwives qualifying with insufficient practical skills (Makowiecka, Achadi, Izati & Ronsmans, 2008).

Maternity units are expected to achieve within constrained resources, significant improvements in the quality and continuity of care as required by government policy. The practice environment during the study appeared to be detrimental to the ability of midwifery practitioners to provide quality care. Therefore, the state of affairs regarding the practice environment seemed to be toxic in nature. In this case, a toxic work environment, based on the literature provided in the above paragraphs, indicate a less conducive environment. This practice environment is characterized by shortage of human and material resources, bringing about an unsafe, unattractive and inadequate practice environment. This leads to bad practice impacting negatively on the culture of learning for learner midwives and safety of pregnant women.

Midwifery practitioners were unable to monitor the foetal condition during intrapartum management due to the fact that there is inadequate essential equipment. Therefore, the

decelerations were not timeously identified which meant that the foetuses demised without appropriate intervention implemented. These factors led to sub-optimal midwifery provision and hence increased maternal and child morbidity and mortality rate, and inability to attain MDG 2 (United Nations, 2008). This is supported by DoH (2008) in Saving Mothers Fourth Report of Confidential Enquiries in maternal deaths 2005-2007, namely, that if pregnant women are not managed efficiently and effectively, it gives the picture of inadequate clinical practice environment, sub-optimal midwifery practice environment and challenged midwifery care in South Africa. According to Gerova, Griffiths, Jones and Bick (2008) puerperal mothers are in need of quality midwifery care and are not to be left to languish on an ever lengthening waiting list, they need midwifery care right away. Midwifery practitioners are a unique resource, whose expertise in care for puerperal women and their babies is not replicated by any other health professional. Therefore, shortage of midwifery practitioners is already having an appalling impact on midwifery care that has to be rendered to these mothers (Gerova et al., 2008).

The supervision and mentoring of learner midwives also seemed to be hindered based on the influence of shortage of midwifery practitioners. This is based on the assumptions made by the researcher which evolved due to observations made when accompanying learner midwives during their clinical exposure. All these gave the picture of inadequate clinical practice environment, sub-optimal midwifery practice environment and challenged midwifery care in South Africa.

The unhealthy work environment is supported by Beal et al. (2008) and Bauman (2007) who affirmed that unhealthy work is not an enhancement of quality midwifery provision in South Africa. Thus, midwifery practitioners in their specific practice environment will be able to provide quality midwifery care and ensure safety of the pregnant women, foetuses and neonates. Stone, Hughes and Dailey (2010) asserted that it is important to improve the work environment since it will enhance the quality and safety of patient care through development of the optimal midwifery practice environment to address the issues prevailing in midwifery practice environments.

Based on the background and literature cited in this study, there was disparity between the midwifery practice environment, conducive clinical learning practice environment and the

sub-optimal midwifery care observed. Although research has been conducted in the area of midwifery care in a general context, there is no existence of an evidence-based model for enhancing optimal midwifery practice environment, optimal midwifery provision and effective clinical learning practical nationally and internationally based on data base.

1.2 Research Problem

The sub-optimal midwifery practice environment in the Limpopo Province was witnessed by the researcher whilst undertaking clinical accompaniment of learner midwives in the clinical areas of maternity units. There seemed to be disparity of practice environment, midwifery provision and supervision of learner midwives. The researcher observed that there was a shortage of midwifery practitioners to manage the number of pregnant women in antenatal, intrapartum and postpartum units. There were also limited material resources when caring for these pregnant women. The material resources that were not available included soap for correct hand washing and unavailability of paper towels to dry hands in between caring for patients, which caused cross-infection, linen, sanitary pads and sterile gloves. Pregnant women were delivered with bare hands and on plastics. Hassan-Bitar and Narrainen (2009) observed a similar situation of giving birth on plastic bags when sheets were not available in the delivery rooms. They found that this practice predisposed the women, newborn babies, and the midwifery practitioners to infection. Chadwich, Cooper and Harries (2014) stated that across the globe, midwives find themselves practicing in impoverished and low-resource settings.

Midwifery practitioners' encountered challenges pertaining to monitoring of foetal, maternal status during intrapartum period due to the inadequate equipment and essential tools. Therefore, the fetal distress were not promptly identified, and that lead to maternal complications and foetal complications without appropriate intervention implemented. These factors led to sub-optimal midwifery provision that will led to increased maternal and child morbidity and mortality rate, and inability to attain MDG 2 (United Nations, 2008). This is supported by DoH (2008) in Saving Mothers Fourth Report of Confidential Enquiries in maternal death 2005-2007 that if pregnant women are not managed efficiently, it gives the picture of inadequate clinical practice environment, sub-optimal midwifery practice environment and challenged midwifery care in South Africa.

The existence of the disparity between the midwifery practice environment, conducive clinical learning practice environment and the sub-optimal midwifery care observed, motivated the researcher to explore the concept Optimal Midwifery Practice Environment. Although research has been conducted in the area of midwifery care in a general context, no clearly integrated picture of an evidence-based optimal midwifery practice environment model exist for enhancement of optimal midwifery provision and effective clinical learning practical in South Africa.

The researcher thus found it necessary to develop an evidence-based model for enhancing optimal midwifery practice, utilizing the empirical evidence identified and explored in the midwifery practice environment in order to facilitate a resourceful setting, sound clinical decision-making, optimal patient care and good mentoring of learner midwives.

1.3 Conceptual Framework

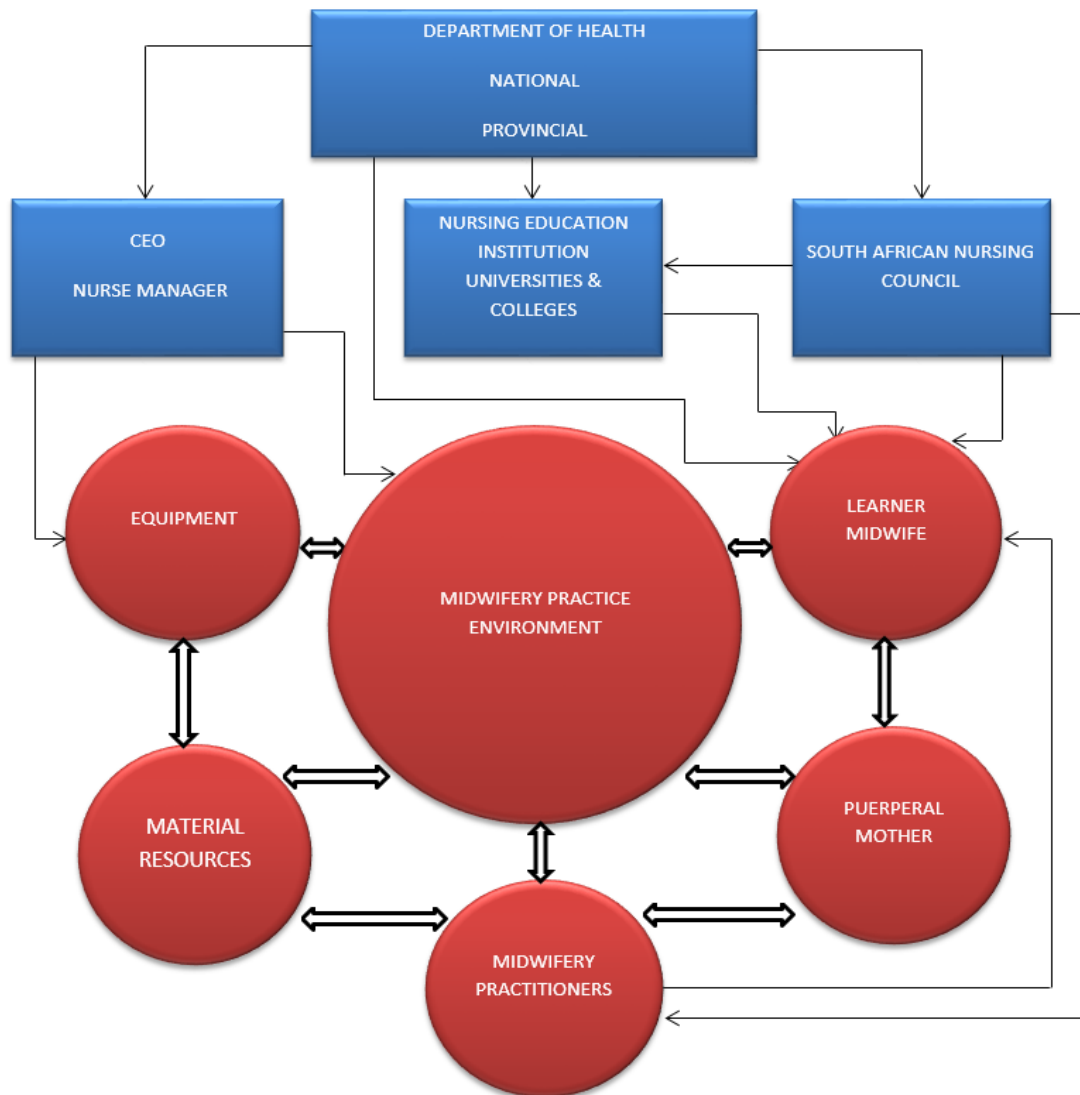


Figure 1.1: Self-designed schematic field of investigation

Figure 1.1 presents an overview of the field of investigation of midwifery practice environment. The rectangles on the schematic presentation of the field of investigation indicate the midwifery practice governance and are indirectly involved as they do not form part of the focus of the study. These are the DoH (National and Provincial), Chief Executive Officer (CEO) and nurse manager, Nursing Education Institution (NEI) (Universities and Colleges) and the South African Nursing Council (SANC). The circles on the schematic presentation of the field of investigation indicate the focus of the study. The midwifery

practice environment governance roles are discussed as follows:

1.3.1 Department of Health: National and Provincial

The Government of South Africa, through the National Department of Health (NDoH) nationally directs the Provincial Departments of Health to ensure that the Chief Executive Officers (CEO) of the public hospitals and nurse managers supervise the midwifery practice environment, monitor patient quality care, supply enough material resources and adequate equipment and employ adequate competent and skilled midwifery practitioners. The government is responsible for providing adequate relevant material resources and efficient number of midwifery practitioners per institution.

1.3.2 Management of Hospitals: CEO and Nurse Manager

CEO of a hospital is a top position that can be acquired in a hospital setting and thus years of experience and education are needed. The role of the CEO is to direct staff, meet departmental heads to make sure the hospital goals are being carried out correctly and control all day-to-day operations of the hospital. A review of hospital managers conducted by Hutchinson, Walker and McKenzie (2014) found that some CEOs were political appointees with neither health care nor managerial qualifications. Some provincial health departments had appointed former teachers to manage complex institutions with multimillion rand budgets. Furthermore, 2% of CEOs had matric as their highest qualification. The situation seemed to influence the failure of having basic tools in the hospitals for the implementation of quality midwifery care.

1.3.3 South African Nursing Council

The SANC is an autonomous, financially independent and statutory body established by the Nursing Act 33, 2005 (SANC, 2005). The SANC is entrusted to set and maintain standards of nursing and midwifery by:

- Registering midwifery practitioners, therefore permitting them to practice as midwives. Thus, SANC ensures patient care and safety by giving midwifery practitioners licences to practice and oversee that the training of learner midwives is relevant and according to stipulated requirements by accrediting nursing education institutions (SANC, 2005).

- Safeguarding the health and welfare of the public by being the watchdog of the public. Serves and protect the public in matters involving midwifery care rendered by either midwifery practitioner or learner midwife to women during antepartum, intrapartum and postpartum (SANC, 2005).
- Performing its functions in the best interest of the public in accordance with national health policy as determined by the Minister.
- Promoting the provision of nursing and midwifery services to the inhabitants of the Republic that complies with universal norms and values.
- Upholding professional and ethical standards within nursing and midwifery and maintain professional conduct and practice standards for practitioners within the ambit of any applicable law.
- Conducting inspections of and investigations of nursing education institutions.

Furthermore, SANC, by administrative rules and regulations, set standards for the establishment and outcomes of nursing education and training programmes, including clinical learning programmes and approves such programmes that meet the requirements of the Nursing Act No. 33, 2005 (SANC,2005).

1.3.4 Nursing Education Institutions: Universities and Nursing Colleges

According to Nursing Act No. 33, 2005 (SANC, 2005), Nursing Education Institutions (NEIs) which are the Universities and Nursing Colleges have to do situational analysis in the hospitals and write a Formal Agreement. The agreement includes a description of the nature of the agreement, roles and responsibilities of both parties with the clinical facility where the learner midwives are allocated for clinical learning based on approval for education and training of a nurse (SANC, 1985a).

NEIs plan and design curricula in order to meet national and international education criteria, as well as professional and regulatory requirements for practice and thus satisfy the requirements of Higher Education Qualifications Framework (HEQF), Council for Higher Education (CHE), National Qualifications Framework (NQF) and SANC. The focus of the

study is outlined in the following subsections:

1.3.5 Midwifery Practice Environment

Midwifery practice environment is a centre of discussion for the study. The nature of the midwifery practice environment in maternity units was found to be lacking adequate supply of resources, inadequate equipment and shortage of medications. Midwifery practitioners are understaffed, thus putting them in a risk of unmanageable workloads. The learner midwives are unable to practice skills due to limited equipment and puerperal mothers are not receiving quality of care due to shortage of staff and material resources. The midwifery practice environment has rules and regulations, standards and policies which emanate from the NDoH.

1.3.6 Learner Midwives

The learner midwives in this study are all those in the universities and nursing colleges who are following programme leading to registration of R425. The learner midwives were registered in the two universities namely, University of Limpopo (UL) and the University of Venda (UNIVEN) and also in the three campuses of Limpopo College of Nursing namely, Sovenga, Giyani and Thohoyandou. These are finalists who are placed in the experiential learning environments based on the service agreements between the NEIs and appropriate hospitals. The objective of clinical placement is that these learner midwives should acquire cognitive, affective and psychomotor skills with regard to midwifery and neonatal care.

1.3.7 Puerperal Mothers

Puerperal mothers are all the pregnant mothers during intrapartum period who are the consumers of the midwifery and neonatal care rendered to them during labour. These mothers have the right to choose the hospital where they want to deliver and they also have the right to be respected. They received midwifery care from the learner midwives and midwifery practitioners.

1.3.8 Midwifery Practitioners

Midwifery practitioners are competent, knowledgeable and skillful professionals who are

obliged to render quality midwifery care to pregnant mothers under their care and mentor learner midwives during the process of becoming professionals. Therefore, they are accountable and responsible to their actions and their omissions as stipulated by SANC.

1.3.9 Material Resources

Material resources include gloves, urinary catheters, syringes, pads, soap, hand paper towels, toilet papers, but not limited to sterile delivery packs. These material resources are supplies needed for provision of quality midwifery care to pregnant women.

1.3.10 Equipment

Equipment include baumanometers, Cardiotocograph (CTG), episiotomy scissors, haemoglobin machines and all other essential equipment needed to monitor women during pregnancy, labour and puerperium.

1.3.11 Arrows

The one-way single arrows show one way control from the authoritative bodies, namely: SANC (statutory), DoH (national and provincial), CEO and nurse managers (at institutional level). The double arrows denote the two-way communication, influence and interaction between all components of the focus of the study. The size of the double arrows is thick and implies the strong bond and influence each component has upon each other.

1.3.12 Summary of circles and arrows

The circles and arrows in figure 1.1 represent the focus of the study and indicate continuous and synergistic interactions among all components of the framework. The conceptual framework suggests that the individual component is influenced by interactions between each component and the practice environment. If any component is negatively affected, it will impact negatively on the other components. Therefore, the focus of this study was to examine the impact of each component on the others since the existing state of midwifery practice environment seemed to be in crisis. This was affirmed by shortage of midwifery practitioners, lack of material resources, non-functional equipment, many pregnant women and many learner midwives who have to be mentored by the few available midwifery

practitioners, thus resulting in challenges faced in Limpopo Province maternity units regarding the implementation of quality midwifery care.

1.4 Aim of the Study

The aim of the study was to develop an evidence-based model for enhancing optimal midwifery practice environment.

1.5 Research Question

What evidence-based model for enhancing optimal midwifery practice environment in maternity units of public hospitals can be developed to improve the practice environment of midwifery practitioners and learner midwives in Limpopo Province?

1.6 Objectives of the Study

The objectives of this study were to:

- Identify the factors that influence the existing midwifery practice environment for enhancement of optimal midwifery provision in maternity units of Public hospitals of Limpopo Province.
- Establish relations among factors that influence the existing midwifery practice environment for enhancement of optimal midwifery provision in maternity units of Limpopo Province.
- Determine the nature of the midwifery practice environment in maternity units of public hospitals in the context of quality midwifery provision.
- Explore the lived experiences of midwifery practitioners within their specific midwifery practice environment that influences optimal midwifery execution.
- Describe the experiences of learner midwives regarding experiential placements.
- Explore the perceptions of puerperal mothers regarding the midwifery care and delivery of their babies by midwifery practitioners.

- Develop evidence-based model for enhancing optimal midwifery practice environment.
- Validate the model for its effectiveness and relevancy to midwifery practice environment.

The above-mentioned objectives are also indicated in the relevant phases of the study.

1.7 Researcher's Assumptions

The assumptions seem to be that adequate human and material resources in the midwifery practice environment enhances optimal midwifery practice. The assumptions of this study include the meta-theoretical, ontological and epistemological that will be described as follows.

1.7.1 Meta-Theoretical Assumptions

Meta-theoretical assumptions are based on the researcher's view of the world and society (Botes, 1995). The researcher believes that midwifery practitioners and learner midwives are accountable, dedicated and responsible individuals who embrace a humanistic and holistic philosophy of midwifery interventions. Provision of optimal midwifery interventions occur in a context-bound environment.

The researcher believes that the midwifery practice environment is an unpredictable environment that presents constant impediments. The researcher is influenced by the positivist (quantitative) paradigm and constructive (qualitative) tradition to which self alignment was done. In positivist paradigm, therefore, the midwifery practitioners, learner midwives and puerperal mothers create their own realities by attaching meaning to different situations. Meaning is expressed through words and meanings of words, which form the basis of actions and interactions of respondents and participants.

1.7.2 Ontological Assumptions

All research participants have an idea of an optimal midwifery practice environment and that such an environment exist in public hospitals of Limpopo province. During this sequential mixed method study, at the ontological level, the midwifery practitioners, learner midwives and puerperal mothers shared their experiences about the midwifery practice environment of public hospitals in Limpopo province.

1.7.3 Epistemological Assumptions

During this sequential mixed method research, at the epistemological assumption, which reflected the relationship of the researcher to that researched, the level concerning what knowledge entails, it was assumed that:

- In terms of positivist paradigm (quantitative phase) the researcher was independent and objective using larger samples from midwifery practitioners, learner midwives and puerperal mothers that been researched.
- Furthermore, in the constructivism (qualitative phase), the researcher interacted and sought to examine the context of human experience as multiple realities and different interpretations that might result from any research endeavour (Doyle, Brady & Byrne, 2009).

1.7.4 Methodological Assumptions

An evidence-based model for enhancement of optimal midwifery practice environment would be developed based on the findings derived from the sequential mixed method approach. The conceptual framework was designed by the researcher, gaps identified based on the existing evidence-based data. The conceptual framework's pragmatic elements would become implemental guidelines that would be utilized as mechanisms of support to midwifery practitioners, learner midwives and puerperal midwives. Thereafter, accomplish the delivery of optimal midwifery practice environment; optimal midwifery experiential learning environment and optimal midwifery interventions since midwifery practitioners have the obligation of promoting the welfare of public.

During phases 1 and 2 of the study, at the methodological level, the level of operationalizing and implementing the study it was assumed that:

- Quantitative methodological assumption, as a deductive process, yielded the accurate reliable numeric data that sought to answer the research questions and objectives.
- The self-developed questionnaires through reliability and validity also could yield the data sought to answer the research questions and objectives. Generalizations leading to prediction, explanation and understanding were done in this study.
- Following quantitative findings, the qualitative methodological assumptions, as an inductive process would yield the accurate and reliable narrated data through verification that sought to answer deeply the research questions which were formulated based on the findings of the quantitative research.
- Face-to-face individual semi-structured interviews and focus group discussions with the aid of interview guides would yield data that sought to answer the research questions and objectives. Narrated data from learner midwives and puerperal mothers were accurate and reliable through verification through member checks.

The evidence-based knowledge that was gained from this study was used to develop an evidence-based model to enhance optimal midwifery practice environment in maternity units of public hospitals in Limpopo Province, thereafter the model will pass through the process of validation.

1.8 Overview of Research Method and Design

The mixed method of sequential explanatory quantitative and qualitative research was used in order to provide answers to the research problem and research question (Plano-Clark, Huddleston-Casas, Churchill, Green & Garrett, 2008). The aim of the study was to develop an evidence-based model for enhancing optimal midwifery practice environment through the use of mixed method research sequential approach. The use of mixed method enabled the researcher to confirm, cross-validate and corroborate the findings of the study (Hanson,

Creswell, Plano-Clark, Petska & Creswell, 2005; Babbie, 2007). The study adopted 4 phases, namely: phase 1: quantitative; phase 2: qualitative; phase 3: model development and phase 4: model validation. Phases 1 will be discussed in chapter 4 and phase 2 will be discussed in detail in Chapter 5. Phase 3 and phase 4 will be discussed in Chapter 6.

This study was conducted within the mixed methods research quantitative and qualitative research paradigms. A quantitative descriptive design was used aimed at identifying patterns and relationships within and between conceptions and variables in developing the optimal midwifery practice environment to enhance quality midwifery care. The participating maternity units of public hospitals in Limpopo Province were selected according to the fact that they were accredited by the SANC for meeting criteria of being teaching hospitals where learner midwives could acquire their experiential learning.

A total of 13 maternity units from thirteen 13 public hospitals were utilized as research settings. The target population of the study were all midwifery practitioners employed in maternity units accredited by SANC; R425 learner midwives at level 4 that is final year of learning from University of Limpopo, the University of Venda and from Limpopo College of Nursing. Non-probability purposive sampling was used to select the respondents and informants. Self-developed questionnaires were used to collect quantitative data from the midwifery practitioners and learner midwife from the 2 universities and from the 3 nursing college campuses in Limpopo Province.

A generic research design is descriptive, explorative, phenomenological and contextual in nature. The main aim of a qualitative inquiry is to understand phenomena in its naturally occurring context without imposing any control or manipulation (Polit & Beck, 2008). The qualitative component of the research study employed a qualitative descriptive design in order to produce lucid descriptions of the everyday experiences, experiences and perceptions of study participants. This research study was explorative in nature, firstly aimed at exploring midwifery practitioners' lived experiences in their specific midwifery practice environment; secondly, the experiences of learner midwives pertaining to their experiential learning environment and thirdly the perceptions of puerperal mothers regarding the type of midwifery care they received from midwifery practice environment. Thus, the lived experiences of midwifery practitioners, experiences of learner midwives and the perceptions

of puerperal mothers were chosen as phenomena to be studied in-depth.

The purpose of focusing on such named phenomena was to find insight that applied more generally beyond the cases that were studied in order to emphasize what they may have in common as human-beings (Gerrish & Lacey, 2006). The study was conducted within the context of South African professionals, ethical and legal framework governing midwifery practice, midwifery practitioners, learner midwives and pregnant and labouring women. Qualitative data collection methods selected were semi-structured interviews for midwifery practitioners and focus group discussions for learner midwives and puerperal mothers. Focus groups were chosen because they tend to reduce pressure young participants feel when facing one-on-one interviews with an adult. Narrative data collected were analyzed qualitatively through Tesch's approach (Polit & Beck, 2008). A detailed discussion of the research methodology and design follows in Chapter 3 of this thesis.

1.9 Significance of the Study

There is a silence in the literature regarding the optimal midwifery practice environment. This research would, therefore, make an important contribution to the development of optimal midwifery practice environment. The study could benefit the education of midwives and other nurses in the health institutions. Health care planners and decision makers might also benefit from the model developed to improve the quality and execution of quality midwifery practice and experiential learning.

The evidence-based model for enhancing optimal midwifery practice environment could enhance the optimal midwifery care that will affect pregnant women, foetuses, neonates and puerperal mothers positively. Learner midwives' mentoring and supervision could be improved and their professional growth and competence could be achieved. The midwifery practitioners' skills of supervision and mentoring of learner midwives and assessment of pregnant women could be upgraded. The findings from this study might also provide insight into the varying factors that impinged on the optimal midwifery practice environment.

1.10 Delineation of the Subsequent Chapters

Chapter 2 Literature Review

Chapter 3	Research Methodology
Chapter 4	Discussion of Quantitative Results
Chapter 5	Discussion of Qualitative Results
Chapter 6	An Evidence-Based Model for Enhancing Optimal Midwifery Practice Environment
Chapter 7	Summary, Conclusions, Limitations and Recommendations

1.11 Conclusion

Chapter 1 provided the overview of the study, including introduction and background as well as research problem. The conceptual framework was discussed in detail, and the aim of the study, research question, objectives and the overview of the research method and design were also outlined. The significance of the study and the delineation of the subsequent chapters were also sketched. The next chapter will focus on the literature review.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

The purpose of the literature review is to provide an appraisal of current research that relate to the study, to discuss and provide a supportive theoretical framework. The researcher conducted electronic search in the following data bases: Science Direct, SABINET and PubMed. These data bases provided access to abstracts and full-text articles related to the research topic. Published scholarly articles related to the research topic, book chapters and computer-accessed materials were also reviewed. Another free database is Google Scholar which provided a broad search for literature across many disciplines and sources such as peer-reviewed papers, theses, books, abstracts and articles from academic publishers. Information uncovered from the literature review contributed to the writing of this thesis and literature control in the qualitative phase of the study. The researchers in the reviewed literature used quantitative and qualitative designs separately and the populations used were midwifery practitioners and learner midwives. The research study utilized the findings from the literature to control and support the observed results. Knowledge gaps that were identified are absence of triangulations of research methods and data collection methods as no mixed methods were adopted.

2.2 Models Reviewed

2.2.1 Iowa Model

The Iowa model was developed in 1994 in the USA to answer the question of “How can we improve practice?” or “What does the latest evidence tell us about patient care problems?” The model was also developed to help nurses translate evidence into practice. If evidence was sufficient, a practice change would be initiated (Titler, Kleiber, Steelman, Rakel, Everett & Goode, 2001). The Iowa model focused on organization and collaboration incorporating conduct and use of research, along with other types of evidence. This model also allowed

focus on knowledge and problem-focused triggers, leading staff to question current nursing practices and whether the care can be improved through the use of current research findings (Titler, 2006). Since its origin in 1994, it has been continually referenced in nursing journal articles and extensively used in clinical research programs. Thus, in this study, the midwifery practice environment was investigated and based on the quantitative and qualitative findings the optimal midwifery practice environment model was developed to enhance quality midwifery provision. The seven steps of Iowa model are delineated as follows:

2.2.1.1 Step 1: Selection of the Topic

Several factors need to be considered in selecting a topic for evidence-based practice. These include the priority and magnitude of the problem, its application to all areas of practice, its contribution to improving care, the availability of data and evidence in the problem area, the multidisciplinary nature of the problem and the commitment of the staff (LoBiondo-Wood & Haber, 2006).

2.2.1.2 Step 2: Forming a Team

According to LoBiondo-Wood and Haber (2006), the team is responsible for development, implementation and evaluation. The composition of the team should be directed by the chosen topic and include all stakeholders. The process of changing a specific area of practice will be assisted by specialist staff team members who can provide input, support and discuss the practicality of guideline implementation (Gagan & Hewitt-Taylor, 2004).

2.2.1.3 Step 3: Evidence Retrieval

Based on the topic selected and team's viewpoints, the identification of available resources and key terms should be done to guide the research for evidence. Evidence should be retrieved through electronic databases such as Cinahl, Medline, Cochrane, Web of Science and Blackwell Synergy, utilizing key terms. Other sources of evidence such as the National Institutes of Health and Clinical Excellence (NICE) and Quality Improvement and Innovation Partnership (QIIP) should be consulted with regard to relevant care standards and guidelines (Onwuegbuzie, Johnson & Collins, 2009; Doody & Doody, 2011).

2.2.1.4 Step 4: Grading the Evidence

According to Titler et al. (2001), the team will address quality areas of the individual research and the strength of the overall body of evidence. Quantitative data are based on the process of deduction, hypothesis testing and objective methods in order to control the phenomena with its focus on model testing and prediction. Conversely, qualitative data are collected in order to derive understanding of the phenomena from a subjective perspective. The focus is on description, understanding and empowerment.

2.2.1.5 Step 5: Developing Evidence-Based Practice Standards

After a critique of the literature, the team members come together to set recommendations for practice. According to Tashakkori and Creswell (2007), the type and strength of evidence used in practice needs to be clear and embedded in the consistency of replicated studies. The design of the studies and recommendations made should be based on identifiable benefits and risks to the patients. This sets the standard of practice guidelines, assessments, actions and treatments as required (Doody & Doody, 2011). These will be based on the group decision considering the relevance for practice, its feasibility, appropriateness, meaningfulness and effectiveness for practice (Pearson, Field & Jordan, 2007).

2.2.1.6 Step 6: Implementing EBP

For implementation to occur, aspects such as written policy, procedures and guidelines that are evidence-based need to be considered (LoBiondo-Wood & Haber, 2006). There is a need for a direct interaction between the direct care providers, the organization and its leadership roles (nurse managers) to support these changes (LoBiondo-Wood & Haber, 2006). The evidence also needs to be diffused and should focus on its strengths and perceived benefits, including the manner in which it is communicated (Titler & Everett, 2001). This can be achieved through in-service education, audit and feedback provided by team members (Titler, 2004).

2.2.1.7 Step 7: Evaluation

Evaluation is essential to seeing the value and contribution of evidence into practice. A baseline of the data before implementation would benefit as it would show how the evidence has contributed to patient care. Evaluation would highlight the optimal midwifery practice environment's impact, but its consistency can be assessed against an actual change occurring and having the desired effect (Pearson et al., 2007).

2.2.2 Comfort Theory

Kolcaba, Tilton and Drouin (2006) in the Comfort Theory (CT) proposed that when the comfort of nurses/midwives is enhanced, they are more satisfied, more committed to the institution and able to work more effectively. These midwifery practitioners outcomes result in improved midwifery outcomes and increased organizational strength. Furthermore, Kolcaba et al. (2006) affirmed that the CT was used to provide a coherent and consistent pattern for enhancing care and promoting professional practice, as well as to serving as a unifying framework. It is stated that by utilizing the CT as a guide enhances practice and working environment in the following ways: articulates what is already being done by many in the health care environment, it provides direction for quality improvement, comfort rounds with patients, performance review, improvement of work environment, patient and institutional outcomes research, and implementation and evaluation of comfort and comforting interventions, it has guided the development of clinical practice guidelines that are essential for the implementation and dissemination of best practices, speaks to comfort nurses/midwives, managers, nurse executives, to scope and standards of midwifery, making outcomes of comfort for patients and families explicit, a holistic outcome that is highly valued by them during their hospital stays and improvement of working environments for midwifery practitioners.

This CT was developed for critical nurses and their staffing matrixes were critically reviewed and modified within patient care units in order to maintain a comfortable and safe environment to patients (Kolcaba et al., 2006). Shirey (2006) reported that getting a healthy work environment is a priority for maintaining adequate nursing work force. The adequate numbers of midwives seem to influence the quality of midwifery interventions to be offered to high risk pregnant women. Furthermore, Chadwich et al. (2014) affirmed that optimal midwifery care promotes optimal health among women. Based on the stated information

regarding CT, the researcher did not adapt guidelines used in CT , however, developed an evidence-based model based on the findings from quantitative and qualitative research conducted, for the purpose of enhancing optimal midwifery practice environment, optimal midwifery experiential learning environment and provision of optimal midwifery interventions.

2.2.3 Mentorship Model

Lekhuleni, Khoza and Amusa (2012) developed a mentorship model for newly qualified professional nurses that addressed the self-care deficiencies and incompetencies of these nurses. A mixed research method was adopted. Concept analysis of mentorship was explored as the experience of nurturing the personal, professional and intellectual growth and development. Concepts related to mentorship were analysed. Critical attributes of mentorship were trust, closeness and friendship between the newly qualified professional nurses (NQPNs) and mentors. The model further discusses that supervision refers to the overseeing role of the supervisor on activities of NQPNs and promotes transfer of knowledge to the clinical setting. The mentoring was highlighted as serving as self-care agency and providing to NQPNs to enhance transition from self-care deficiencies to self-care competencies that even the learner midwives in this study facing (Lekhuleni et al., 2012).

A model for mentorship of NQPNs employed in community health care services was developed in order to provide NQPNs support and guidance. The NQPNs had some self-care deficiencies with regard to cognitive, psychomotor and affective skills required for community health care services. The mentors would assist these nurses to acquire optimal competence and retention in community health care services (Lekhuleni et al., 2012). Furthermore, these authors stated that the transition of NQPNs from classroom culture to working culture of community health care services is problematic. It seemed that these nurses had self-care deficiencies with regard to cognitive, psychomotor and affective skills required for these services. However, the model was based on the self-care deficiencies regarding execution of specific competencies, enhancement of adaptation and adjustment to organizational culture and enhancement of transition from self-care deficiencies to self-care competencies. The learner midwives in this study require mentorship from midwifery practitioners.

2.2.4 A Framework for the Evaluation of Quality of Care in Maternity Services

A framework for the evaluation of quality of care in maternity services were developed as part of a research project on maternal health in India (Hulton, Matthews & Stones, 2007). Their focus was “The question should not be why do women not accept the service that we offer, but why do we not offer a service that women will accept?” The framework has been designed for use of institutional facilities and it was recognized that the care of labouring women, unborn foetus and newly born foetus are closely related. They further identified six elements related to the provision of care: human and physical resources; the referral system; management information systems; the use of appropriate technologies; internationally recognized good practice and the management of emergencies.

The researcher in the development of an EBM adopted these elements. To make the framework a practical and analytic tool, criteria for each constituent element needed to be developed and corresponding standards defined by which quality could be developed. Then, once appropriate standards had been explicitly defined, varieties of indicators were selected to evaluate how closely the standards are being met (Hulton et al., 2007).

The researcher integrated the condensed information based on the reviewed research studies, which matched with the findings from the practice environment of midwifery practitioners and experiential learning environment of learner midwives, as well as puerperal mothers as consumers of care. The framework of meaningful measurable elements of quality of care was developed based on the extensive review of evidence from a range of disciplines. The creation of this framework provided a practical basis on which the systemic improvement of care as a vital part of maternal and child health chain might be developed. Evidence-based optimal midwifery practice environment to enhance quality midwifery care in maternity units of public hospitals in Limpopo Province was formulated according to some major elements of Hulton et al.’s framework (2007).

In this study, the supervision and mentoring of learner midwives seemed to be hindered based on their inability to acquire midwifery skills during their exposure in the clinical learning environment. This was influenced by the shortage of midwifery practitioners who could not cope due to the unreasonable workload of patients. The preparation of learner midwives towards professional growth and development became challenged. The literature review supported the existence of a knowledge gap of an evidence-based optimal midwifery practice

environment model needed to provide optimal midwifery care that will attract and retain competent skilful midwifery practitioners.

Shortage of midwives, lack of material resources, poor supervision and poor midwifery care were reported as the problems encountered globally (Chadwich et al., 2014; Hassan-Bitar & Narrainen, 2009). The implication is that shortage of midwifery practitioners, lack of material resources, absence of relevant equipment, sub-optimal midwifery provision and poor supervision of learner midwives put pregnant women, fetuses and neonates at risk. Nevertheless, an evidence-based model of optimal midwifery practice environment have three key stakeholders, namely: midwifery practitioners, learner midwives and puerperal mothers, and it is initiated by the existence of sub-optimal midwifery practice environment, which influence negatively on patient care and experiential learning of learner midwives.

Based on the literature, it is evident that multiple factors affecting the midwifery practice environment may influence the ability to provide quality midwifery care. In this study, the experiences of midwifery practitioners, the experiences of learner midwives and the perceptions of puerperal mothers regarding these factors, were explored and described. Midwifery practitioners in their personal and professional lives were encroached by multiple factors in their specific practice environment. Snyman (2007) who indicated that midwives are facing several challenges in public health services, which need to be addressed, supported this.

2.3 Low Resourced Settings

2.3.1 Shortage of Midwifery Practitioners

There is an estimated shortage of 4.3 million midwives, nurses and doctors with the shortage more severe in 57 poverty countries worldwide (Chadwich et al., 2014; Gerova et al., 2008; WHO, 2006). The cited research done in England revealed that shortage of midwives is dangerously high and more midwives are needed across England to keep up with the rising birth-rates and added pressure of high risk conditions of pregnant women and newborn babies. The combination of increasing shortage of midwives, rising birth-rates and complexity of problems of pregnant women is a dangerous cocktail threatening the safety and quality of midwifery care. It means that many maternity units across England are

understaffed and under resourced to meet demands made of them.

Furthermore, shortage of midwifery practitioners is a concern shared by health care systems globally and nationally. This severe shortage of midwives is seen also in countries like Nigeria, Sri Lanka, Burkina Fasso and Bangladesh (Fujita, Abe, Rotem, Tung, Keat, Robins & Zwi, 2013; Roskam, Pariyo, Hounton & Aiga, 2011; du Preez, 2007). Fujita et al. (2013) in their study conducted in Cambodia and Japan focused on human resource crises and maternal mortality in fragile resource-constrained environments. It was a qualitative case study which reviewed published and grey literature. Key stakeholders were senior middle managers whose perceptions were explored. This research methodology is said to be qualitative case studies and snowball sampling, but relevancy was not clear. However, the results showed that senior managers did not support midwives with an adequate supply of human resources despite the increased number of deliveries midwives conducted.

Shortage of staff and long hours routinely seem to exacerbate the challenging working condition of midwifery practitioners, thus making job dissatisfaction and overwork prevalent and turnover more attractive. Aiken and Fagin (2007) highlighted in the study they conducted of 43,000 nurses practising in more than 700 hospitals in 5 countries (United States, Canada, England, Scotland and Germany), on the effects of hospital organization and nurse staffing on nurse outcomes measured by job satisfaction and overwork which were similar across countries.

According to Smith, Dixon and Page (2009), findings from their study of 600 maternity care professionals who responded to a call for evidence, majority of whom were midwives (80%) and obstetricians (3%) were low staffing levels and lack of resources. Hence, they further stated that despite the differences in health care systems, staff shortages and their contributory factors and their consequences on quality of midwifery care no longer seem to be solely country-specific. Public hospitals in South Africa, as in other countries, are facing serious challenges in the care of pregnant women and neonates (Smith et al., 2009; Richer, Ritchie & Marchionni, 2009). Richer et al. (2009) highlighted factors such as shortage of health professionals and material resources that have added pressure to the health care system. In addition, the findings of a study conducted by Aiken and Fagin (2007) and that by Keegan (2006) indicated that shortages of nurses predispose them to overwork in their

specific practice environment.

There is increased turnover of midwives in South Africa thus the remaining midwifery practitioners are to cater for the low and high risk pregnant women holistically as unique individuals in need of their assistance. WHO (2006) affirmed that the impact of shortages in the health workforce result in unsafe, inadequate and unattractive working conditions. Furthermore, WHO (2006) also stated that there is significant disparity in the distribution of health workers between rural and urban areas, and between private and public sectors.

ICN (2007) agreed that the inadequate number of nurses has a significant negative impact on patient outcomes and the well-being of the world's people is impaired. Pillay (2009) confirmed that one of the major challenges facing health systems in developing countries is the international migration of professional nurses/midwives coupled with migration from rural to urban areas and from public sector to private sector.

2.3.2 Non-Availability of Material Resources

Across the globe, midwives find themselves practicing in impoverished and low-resource settings. Material resources that were not available included equipment, soap for correct hand washing and unavailability of paper towels to dry hands in between patients, which caused cross-infection. Also linen, sanitary pads and sterile gloves were most of the time out of stock. Due to the lack of sterile gloves pregnant women were delivered with bare hands and on plastics due to absence of linen (Chadwich et al.,2014; Pretorius, 2009).

This is supported by Hassan-Bitar and Narrainen (2009) who asserted that women were seen giving birth on plastic bags when sheets were not available in the delivery rooms. Such scenarios predispose women and newborn babies and the midwifery practitioners to infection. However, DoH (2006) expects midwives to have tools in order to execute their midwifery care effectively and efficiently without any challenges. It is the responsibility of the hospital management to ensure that midwives have material resources and equipment to enable them to practice in safe and efficient ways. Hauck, Fenwick, Domnie and Butt (2006) and Ndikom and Onibokun (2007) reported that midwives found it difficult to practice in some cases due to insufficient supply of gloves, which made the use of gloves longer than necessary. Also face masks, goggles and sharp boxes were not always available and

needles were being recapped since there were no sharp boxes (Ndikom & Onibokun, 2007).

2.3.3 Lack of Equipment

In some maternity units, it was difficult for the midwifery practitioners to monitor maternal and foetal conditions during intrapartum management due to the fact that the tools were not available or not functioning. Chandrabharan and Arylkumaran (2007) stated that appropriate usage and interpretation of CTG traces during labour prevent birth asphyxia.

2.3.4 Sustainable Development Goals

Factors that lead to sub-optimal midwifery provision result in increased maternal and child morbidity and mortality rate, and inability to attain Millennium Developmental Goal (MDG) 2 out of 8 (United Nations, 2008). Furthermore, on the 25th September 2015 global countries adopted a set of goals to end poverty, protect planet and ensure prosperity for all as part of a new sustainable development agenda. Each goal has specific targets to be achieved over the next 15 years (United Nations, 2015). Also, United Nations (2015) highlighted the following in Sustainable Development Goals (SDGs):

SDG 1: Poverty: End poverty in all its forms everywhere

SDG 2: Food: End hunger, achieve food security and improved nutrition and promote sustainable agriculture

SDG 3: Health: Ensure healthy lives and promote well-being for all at all ages and

SDG 5: Women: Achieve a gender equality and empower all women and girls

Bryce, Black and Victoria (2013) affirmed that knowledge of child health epidemiology has greatly increased and although more and better interventions are available they still do not reach large number of mothers and children. However, the authors emphasized that the children and maternal survival should remain global goals post-2015. Furthermore, leadership and accountability should be strengthened and shared among the United Nations (UN) systems, governments in high-income, middle-income, low-income and non-governmental organizations (Bryce et al., 2013). This is supported by DoH (2008) in Saving

Mothers Fourth Report of Confidential Enquiries in Maternal Death 2005-2007, which reported that if pregnant women are not managed efficiently and effectively, it gives the picture of inadequate clinical practice environment, sub-optimal MPE and challenged midwifery care in South Africa which might lead to increased maternal and perinatal morbidity and mortality rates.

2.4 Sub-optimal Midwifery Provision

Maternal and perinatal morbidity and mortality rates are indications of poor midwifery provision. Over 10 million pregnant women experience some form of morbidity due to pregnancy and childbirth each year (Snyman, 2007). Morbidity rates present serious challenges to providers of perinatal care, particularly midwives, in South Africa. The percentile frequency of the most avoidable factors are said to be midwifery-related problems where the most frequent adverse event cases incorrectly interpreted foetal condition (24.9%); inadequate foetal monitoring (18.0%) and failure to timeously identify which fetuses are at risk, prior to the risk becoming very noticeable and apparent (Buchmann et. al., 2003).

Shokane, Thopola, Jali, Kgole and Mamogobo (2013) corroborated that midwives in South Africa use the partograph incorrectly and inappropriately. The study conducted by Foster, Burgos, Tejada, Caceres, Altamonte, Peres, Noboa, Urbaez, Heath, Hilliard, Chiang & Hall (2010) evaluated the experiences of midwives during the antenatal and the intrapartum periods illustrated poor-quality maternal health services that left pregnant women and their families feeling disrespected and afraid. Mathibe-Neke (2009) also affirmed that midwives use the partograph incorrectly. According to Adali and Lemonidou (2001), midwives may be equally or more susceptible to implementation of poor midwifery care, as well as having to cope with the additional demands of crisis management and other emergency situations within the delivery rooms and high care areas with constrained material resources.

One key recommendation made in *Saving Mothers: The Third Report on Confidential Enquiries into Maternal Deaths in South Africa 2002-2004* emphasized that staffing and equipment norms must be established for each level of care for every institution concerned with the care related to pregnant women (Fawcus, Mbombo & Mangate, 2006). The Council for Health Service Accreditation for Southern Africa (COHSASA) described the problems

faced in the South African context as being issues such as finance, physical infrastructure, medication, consumable supplies and staffing shortages (Keegan, 2006).

Fullerton, Thompson and Lacey (2005) acknowledged that skilled birth attendance varies widely in terms of the knowledge and practice of the attendants. Furthermore, Fayers (2006) emphasized that the criterion must not be quantity but quality. However, the DoH (2006) indicated a great need for health care providers to improve their skills and that there should be ongoing education and orientation of midwives and doctors. Midwives have an important role in narrowing the gap between what is known and what is practiced (Fullerton et al., 2005).

Midwifery practitioners are in need of empowerment and support regarding improvement of their midwifery care as determined by the appropriate legislative framework and health care system so that they are able to execute as expected without committing unprofessional conduct because once they commit the offence they shall be charged by SANC (Fries, Lake, Aiken, Silber & Solchalski, 2008). Midwifery practitioners need support in terms of human and material resources for enhancement of optimal practice environment. More favourable practice environments have been linked with lower mortality beyond the beneficial effects of nurse staffing and educational level (Bogaert, Meulemans, Clarke, Vermeyen & van de Heyning, 2009; Aiken, Clarke, Sloane, Lake & Cheney, 2008; Fries et al., 2008).

2.5 Inconducive Midwifery Experiential Learning Environment

Midwifery experiential learning environment is of paramount importance in the midwifery curriculum and provides the learner midwives with the opportunity to combine cognitive, psychomotor and affective skills. The experiential learning environment enables the learner midwives to acquire competencies in the application of midwifery knowledge, midwifery skills and attitudes to existing midwifery clinical field situations. It is, therefore, vital that resources, equipment and time should be available to be utilized effectively and efficiently. Midwifery course requirements are stipulated by the regulatory body SANC with the overall aim of equipping learner midwives with the necessary midwifery skills to safely and competently commence practice as a midwife (Carolan-Olah, Kruger, Walter & Mazzarino, 2014).

Generally, maternity units of public hospitals are viewed as facilities that provide midwifery

and obstetrical interventions for pregnant women prepartum, intrapartum and postpartum, research and teaching. Furthermore, these units are used as experiential learning environments for learner midwives from universities and college campuses, who should acquire midwifery knowledge and skills. The non-optimal environment contributes to medical errors, ineffective care delivery and overwork. This, in turn, might influence unsafe, inadequate and unattractive working environment impacting negatively on the culture of learning of learner midwives and safety of pregnant women (WHO, 2006; ICN, 2007). Furthermore, Ulrich, Zimring, Zhu, DuBose, Seo, Choi, Quan and Joseph (2008) reported that lack of adequate educational preparation of nursing students result from lack of supervision due to shortage of staff. Jones and Wylie (2008) reported that student midwives indicated that they had difficulty in coping in the clinical setting due to lack of support from the midwives.

In this study, the researcher selected student midwives since, based on literature review, it was evident that significant research has been carried out with student nurses. The qualitative design was adopted and methods of data collection involved focus groups from 2nd and 3rd year learner midwives from 2 universities. The research findings of Begley and White (2003) and Evans and Kelly (2004) reported that student midwives experienced lack of support and mentorship dynamics. These researchers used focus groups which consisted of 6-10 people per session. Based on these previous assertions, the study reported in this thesis adopted a qualitative research approach, and data collection also involved focus groups as focus groups are good in measuring the degree of consensus on a topic and that the group members stimulate each other to think and express opinions. The present study explored the experiences of learner midwives in the experiential learning environment and thus focused on their clinical placements.

In cases of healthy work environments there are adequate supplies of material and human resources as well as improved patient/family outcomes (Beal et al., 2008). In support of this view, Shirey (2006) defined a healthy work environment as a work setting in which policies, procedures and systems are designed so that the employees are able to meet the organizational objectives and achieve personal satisfaction in their work. Fullerton et al. (2005) highlighted that midwives have an important role in narrowing the gap between what is known and what is practised. Midwifery lecturers are instrumental in knowledge utilization

and knowledge transfer in order to put research into practice and therefore improve quality midwifery care (du Preez, 2007).

It is evident that multiple factors affecting the midwifery practice environment may influence the ability to provide quality midwifery care. In this study, the experiences of midwifery practitioners and the experiences of learner midwives regarding these factors, were explored and described. Midwifery practitioners in their personal and professional lives seem to be encroached by multiple factors in their specific practice environment. This was supported by Snyman (2007) who indicated that midwives are facing several challenges in public health services which need to be addressed.

The literature review supported the existence of a gap between optimal midwifery practice environment model developments, adequate number of midwifery practitioners, availability of relevant equipment and material resources, provision of optimal midwifery provision, safety of pregnant women and supervision of learner midwives. The literature review that was conducted focused on the process of model development and the evidence-based models nationally and internationally. During the process of conducting the literature review, the researcher found that there was lack of literature pertaining to the evidence-based model for enhancing optimal midwifery practice environment. However, studies conducted focus on models and theoretical frameworks related to critical care nursing such as the Iowa model of evidence-based practice to promote quality care (Titler et al., 2001).

Other models address management of health services, nursing education and psychiatric nursing. Most researches focus on evidence-based practice separately and some deal with the positive practice environment of the private hospitals and the healthy work environment. All these studies are silent on the evidence-based optimal midwifery practice environment. The proposed model for enhancing optimal midwifery practice environment could enhance the optimal midwifery care that will affect pregnant women, fetuses, neonates and puerperal mothers positively. The learner midwives' mentoring and supervision will be improved and their professional growth and proficiency will be achieved. The midwifery practitioners' skills of supervision and mentoring of learners and assessment of patients could also be upgraded.

2.6 Conclusion

This chapter provided the literature review of the IOWA model, Comfort theory and Mentorship model. A framework for evaluation of quality care was also discussed. Furthermore, low resourced settings, sub-optimal midwifery provision and inconducive midwifery experiential learning environment were discussed. In order to assess the strength of evidence in the existing research the researcher abstracted, encoded information, analyzed, critiqued and integrated previous literature.

Only one of the models reviewed used the mixed method; all used either qualitative or quantitative research methods. No recent and relevant evidence-based practice environment model could be found during a deliberate literature search. Models found mostly dated back to the 1994 and none addressed the evidence-based practice environment.

However, there is the Iowa Model of Evidence-Based Practice to Promote Quality Care Developed in the Department of Nursing Services and Patient Care at the University of Iowa Hospitals and Clinics, Iowa City in United States of America. This model provides a framework for nurses to make decisions about day-to-day practices that affect patient care outcomes. It facilitated sound clinical decision making and is evidence-based (Titler et al., 2001). Other models address management of health services, nursing education and psychiatric nursing. Most research focus on evidence-based practice separately and some dealt with the positive practice environment of the private hospitals and the healthy work environment. All these studies are silent on the evidence-based optimal midwifery practice environment.

There seemed to be a knowledge deficit in alignment to the title of this research due to the paucity in the literature regarding the development of an evidence-based model for enhancing optimal midwifery practice environment. There was no literature pertaining to mixed methods research conducted with regard to development of an evidence-based model for enhancing optimal midwifery practice environment. This research was not a simple duplication of other studies, however, it is expected to contribute new information, thus adding to existing body of knowledge. Furthermore, it was to advance the midwifery scientific knowledge, influence midwifery clinical management, influence health policy and guide further midwifery research.

However, the literature review in this chapter indicated that there are factors that impeded on the nature of midwifery practice environment, midwifery experiential learning environment and the midwifery provision. These factors cause the sub-optimal practice environment which is characterized by absence of human and material resources and limited relevant equipment. Sub-optimal midwifery care influence the unsafe midwifery care to pregnant women and poor supervision of learner midwives impacting negatively on the professional growth and development of these learner midwives. The next chapter explicates the research methodology.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the research methodology, including the nature of mixed methods research, brief history, criteria of selecting an appropriate mixed methods strategy and the rationale for the mixed methods approach. The first three phases of the study are captured in this chapter. Furthermore, a detailed description of the mixed method research design that the researcher adopted and the aim of choosing the design is explicitly discussed.

3.2 Mixed Method Research

Creswell and Tashakkori (2007) defined mixed methods as the class of research in which the researcher combines quantitative and qualitative research techniques, methods, approaches, concepts or language in a single study (Ivankova, Creswell & Stick, 2006; Johnson, Onwuegbuzie & Turner, 2007). Furthermore, Creswell and Tashakkori (2007) stated that mixed method research in which the investigator collects and analyzes data, integrates the findings, draws inferences using both quantitative and qualitative approaches and methods in a single study, or a programme of inquiry. Tashakkori and Creswell (2007) further defined mixed methods as a procedure for collecting, analyzing and mixing or integrating both quantitative and qualitative data at some stage of the research process within a single study for the purpose of gaining a better understanding of the research problem.

3.2.1 Historical Background of Mixed Methods

According to Tashakkori and Teddlie (2003), mixed methods research has a short history as an identifiable and quite revolutionary methodological movement focusing on resolving tensions between quantitative and qualitative methodological methods. Furthermore, Tashakkori and Teddlie (2003) asserted that mixed methods research as the third

methodological movement based on the fact of its application has increased in many disciplines across the world. A number of authors have initiated the utilization of mixed methods research since the 1960s, citing the work of Campbell and Stanley; Glaser and Strauss as examples (Ivankova et al., 2006; Creswell, 2003). Johnson and Christensen (2004) affirmed that mixed methods have attracted increasing attention and popularity. It complements purely quantitative and qualitative inquiries (Creswell & Stick, 2006; Gilbert, 2006; Polit & Hungler, 2006).

Several authors have emerged as mixed methodologist researchers and theorists, some wrote the textbooks and articles for mixed methods as a proof of increased emerging mixed methods research (Creswell & Plano-Clark, 2007; Bergman, 2008). Johnson, Onwuegbuzie and Turner (2007) reported that seven years later the primary philosophy of mixed research is that of pragmatism. Furthermore, Johnson et al. (2007) stated that although mixed methods research is not new, it is a new movement, or discourse, or research paradigm with a growing number of members that has arisen in response to the currents of quantitative and qualitative research. Mixed method research is an approach to knowledge, namely, theory and practice that attempts to consider multiple viewpoints, perspectives, positions and standpoints always, including standpoints of quantitative and qualitative research (Gilbert, 2006; Johnson et al., 2007).

According to Plano-Clark et al. (2008) mixed methods research has been lately the subject of articles, special editions of journals and books (Bergman, 2008; Johnson & Collins, 2009; Plano-Clark, Garrett & Lesley-Pelecky, 2010). The mixed methods approach has become progressively common (Chow & Quine, 2010; Doyle et al., 2009; Leech & Onwuegbuzie, 2009). Doyle et al. (2009) asserted that, in the past, researchers were encouraged to position their research in a particular worldview or paradigm. The intent of using mixed methods in this research study was to gather rich data during vigorous research in order to develop an evidence-based optimal midwifery practice environment model based on the findings.

3.2.2 Typologies of Mixed Methods

Factors which seemed to help determine the various types of mixed methods designs were priority, weight, emphasis of approaches, implementation of data collection, time and orientation. In terms of priority and weight in mixed methods, the researcher can give the

same priority, weight or status to the quantitative and qualitative aspects of the research design. Alternatively, the researcher might give a different or greater weight to one of the designs (Onwuegbuzie, Johnson & Collins, 2009; Dunne, 2012). Moreover, regarding the implementation of data collection, time orientation refers to the order in which the researcher collects quantitative and qualitative data. Also Onwuegbuzie et al. (2009) maintained that the two options are collecting data at the same time, simultaneously, concurrently or in parallel designs, or obtaining data at different points sequentially or in a two-stage design.

However, according to Hanson et al. (2005) and Johnson et al. (2007) there are six primary types of mixed methods research designs: three sequential, namely: explanatory, exploratory and transformative. The other types are three concurrent, namely: triangulation, nested and transformative. Each varies with respect to its use of an explicit theoretical or advocacy lens, approach to implementations which are sequential or concurrent data collection procedures. The priority might be given to the quantitative and qualitative data on an equal or unequal basis. The stages at which the data are analyzed and integrated could be separated, transformed or connected and procedural notations done (Tashakkori & Teddlie, 2010; Johnson & Onwuegbuzie, 2004; Creswell, 2003). In these designs, quantitative data are collected and analyzed followed by qualitative data. The sequential explanatory design in which the collection and analysis of quantitative data is followed by collection and analysis of qualitative data was used in this study (Creswell & Plano-Clark, 2007; Dunne, 2012). Priority is first given to the quantitative and then qualitative data in two consecutive phases within one study. Data analysis is usually connected and integration typically occurs at the data interpretation stage and in the discussion (Powell, Mihalas, Onwuegbuzie, Suldo & Daley, 2010; Johnson & Collins, 2009).

Thus, the researcher chose the sequential, explanatory—the priority had been given first to the quantitative, then qualitative data in two consecutive phases within one study. Data analysis was connected and integrated at the data interpretation stage and in the discussion of the findings. These designs are useful in explaining relationships of the study findings (Powell et al., 2010; Doyle et al., 2009). Furthermore, these designs are useful for exploring relationships when the study variables are not known, refining and testing an emerging theory, developing new assessment instruments based on the initial qualitative analysis and generalizing qualitative findings to a specific population (Doyle et al., 2009). Accordingly,

Leech and Onwuegbuzie (2009), in contrast to the two stated sequential designs, highlighted that the sequential transformative designs use an explicit advocacy lens (e.g., feminist perspectives, critical theory), which is reflected in the purpose statement, research questions, and implications for action and change. In these designs, quantitative data may be collected and analyzed, followed by qualitative data or conversely, qualitative data may be collected and analyzed, followed by quantitative data (Ido & Daley, 2008; Leech & Onwuegbuzie, 2009). Thus, either form of data may be collected first, depending on the needs and preferences of the researchers. Furthermore, Leech and Onwuegbuzie (2009) stated that priority may be unequal and given to one form of data or equal and given to both forms of data. Data analysis is connected, integration occurs at data interpretation stage and in the discussion. These designs are useful for the purpose of diverse or alternate perspectives, advocating for research participants and better understanding a phenomenon that may be changing as a result of being studied (Ido & Daley, 2008; Chow & Quine, 2010).

3.2.3 Rationales for Conducting Mixed Methods Research

Plano-Clark et al. (2010) and Creswell (2009) affirmed that the rationales for conducting the sequential mixed methods research were to complement, converge or triangulate broad numeric trends from quantitative research and the specific details from qualitative research (Tashakkori, Teddlie & Johnson, 2015). Furthermore, this design allowed the researcher to obtain statistical and quantitative results, and to follow up with a few individuals to help explain the results in more depth. It also allowed for a robust analysis, taking advantage of the strengths of each and enable confirmation, corroboration and cross-validation of the findings of the study.

3.3 Adopted Mixed Methods Research

The researcher adopted a mixed methods research in a single study due to the fact that the researcher opted to develop proficiency and competency in both quantitative and qualitative methods. However, the disadvantage could be the extensive data collection and resources needed to undertake the mixed methods study.

3.4 Sequential Explanatory Mixed Methods Design

The mixed method research design that was adopted by the researcher in this study (Figure 3.1) was the sequential explanatory mixed method design. The sequential explanatory mixed method design is characterized by a collection and analysis of quantitative data in the first phase, followed by collection and analysis of qualitative data in the second phase. The two phases were given equal priority and more length of time involved in data collection with the two separate phases (Teddlie & Tashakkori, 2009). This chosen design was assumed to give the most definite answers about the research question as the researcher believed that it is an appropriate design to deal with the research topic.

3.4.1 Purpose of Sequential Explanatory Design

The purpose of choosing this sequential explanatory mixed method design was to develop an evidence-based model for enhancing optimal midwifery practice environment by:

- Obtaining quantitative results from a survey of the midwifery practitioners and learner midwives.
- Development of interview guides for individual interviews and focus group discussions for purposively selected participants as a qualitative data collection instrument in order to explore quantitative findings in more depth through qualitative data analysis.

3.4.2 Schematic Sequential Explanatory Mixed Methods Research

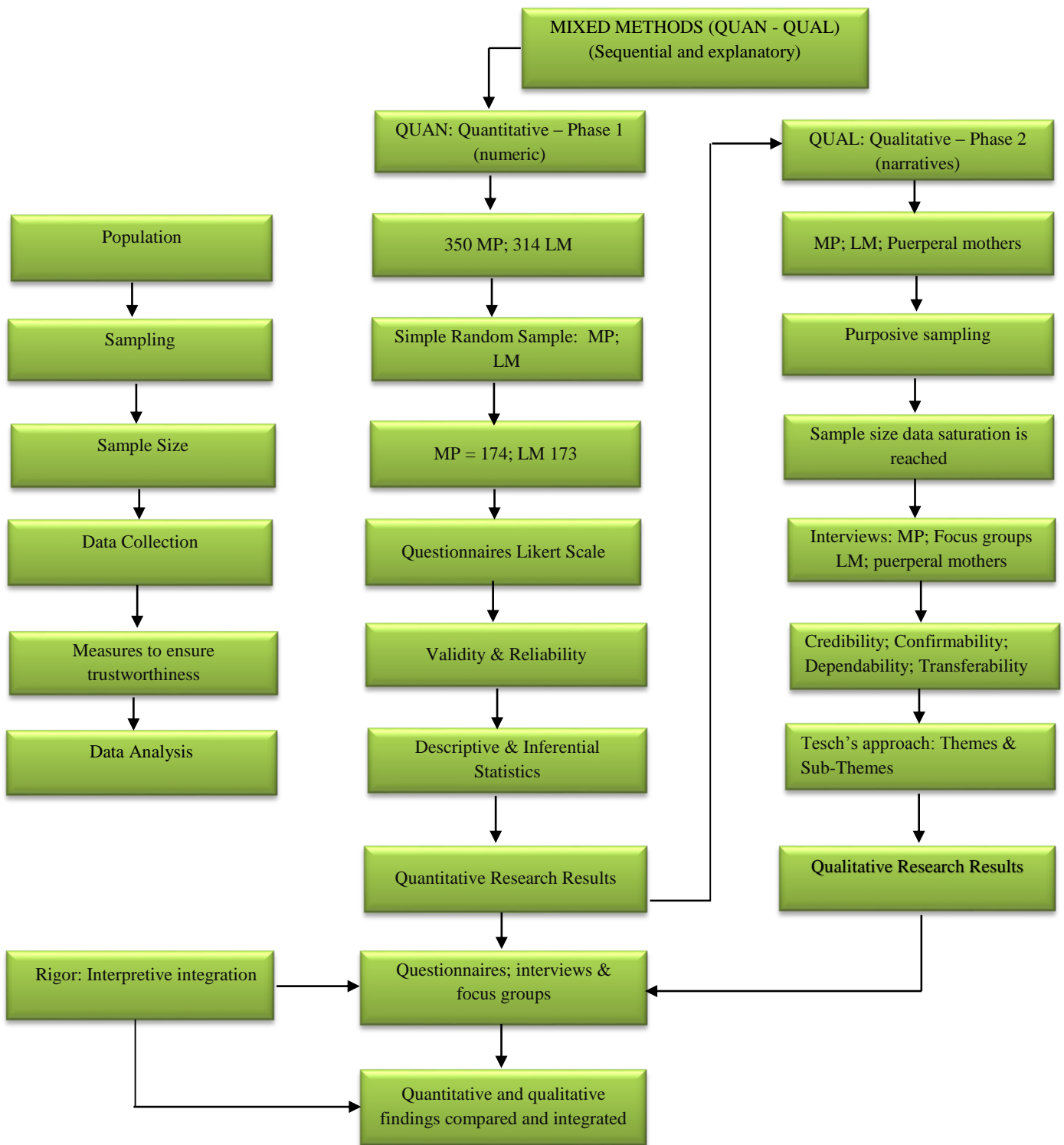


Figure 3.1: Schematic presentation of Sequential Explanatory Mixed Method Research.

Figure 3.1 depicts the process of sequential explanatory mixed methods. QUAN–QUAL indicates that upper case letters, which have, equal weight. The (-) designates that the

quantitative method precedes the qualitative method. Qualitative methods were used based on the results of quantitative data collection.

3.4.3 Rationales for Conducting Sequential Explanatory Mixed Methods Research

The researcher's rationales for conducting a sequential mixed method research were of its equal weighting to complement each other and to increase its objectivity. Furthermore, it made it possible for the researcher to confirm, cross-validate and corroborate the quantitative and qualitative findings of the study. Thus, the researcher gained a comprehensive, in-depth understanding of the phenomenon of optimal midwifery practice environment. Firstly the quantitative analysis of numeric data from midwifery practitioners and learner midwives were done. Thereafter, qualitative analysis of narratives of midwifery practitioners and focus groups discussions of learner midwives and puerperal mothers were done. The strengths of mixed methods were used to add precision to words and narratives whereas words and narratives were used to add meaning to numbers.

3.5 Research Setting

Limpopo Province is situated in the northern part of the Republic of South Africa and it shares borders with Mpumalanga, North-West and Gauteng Provinces, as well as Zimbabwe. Between the 2011 census and 2001 census Limpopo's land area changed because of the provincial boundary changes in Mpumalanga and North-West. The increase in the province land area was due to Elias Motsoaledi, Ephraim Mogale and Greater Tubatse cross boundary municipalities which Limpopo previously shared with Mpumalanga and a portion of Moretele municipality in North-West being demarcated to Limpopo Province.



Figure 3.2: Map of Limpopo Province showing geographical demarcations of its five districts

Limpopo Province is one of the nine provinces in South Africa. It is said to be one of the biggest provinces in the country as far as the land area is concerned. The province is basically rural with some peri-urban areas, towns and a capital city Polokwane. Figure 3.2 provides a visual overview of the geographical demarcations of the five districts of Limpopo Province, which are Waterberg, Capricorn, Sekhukhune, Mopani and Vhembe. These districts are the location for this research study. According to Statistics South Africa (Stats' SA, 2012), South Africa's population in 2013 was 51.811 million. However, Limpopo Province's population accounts for about 12,8% of the country's total population. Furthermore, the statistics reveal that Limpopo Province covers 123,910 km² with a population of 5.5 million translates into a population of 44 people per km². Nearly 2.9 million (53.3%) of the province's population are females in contrast to only just over 2.5 million (46.7%) males. Women of reproductive age are estimated to number above 1.4 million.

Maternity units of Capricorn, Mopani, Sekhukhune, Waterberg and Vhembe districts of Limpopo Province are designated research settings. The study was conducted in the SANC accredited maternity units which are antepartum, intrapartum and postpartum. The maternity units are the midwifery practice environments in which midwifery practitioners are executing their services. These maternity units also served as experiential learning environments for

learner midwives. Learner midwives are placed at 13 hospitals, namely: Mankweng, Seshego and Mokopane hospitals for the University of Limpopo. Letaba, Malamulela, Tshilidzini and Siloam hospitals for the University of Venda; Elim, Kgapanne and Nkhensani hospitals for the Limpopo College of Nursing (LCN) Giyani Campus; Donald Fraser, Tshilidzini and Siloam hospitals for LCN Thohoyandou Campus whereas Seshego, Mankweng, Polokwane and St Rita's hospitals are utilized by learner midwives of the LCN Sovenga Campus. These maternity units of public hospitals provide services for pregnant women residing in the five districts of Limpopo Province and are the consumers of midwifery care executed by MPs and LMs.

3.6 Research Design

LoBiondo-Wood and Haber (2010) defined *research design* as a blue print for conducting a study. This blueprint guides the planning and implementation of a study in such a manner that the intended goal can be achieved (Burns & Grove, 2009). Terreblanche, Durkheim and Painter (2006) clarified *research design* as a strategic framework that guides research activities to ensure that sound conclusions are reached. The research design then, served the purpose of facilitating and planning how this study was executed (Polit & Hungler, 2006). A four phased approach was used to answer the research question which was:

“What evidence-based model for optimal midwifery practice environment can be developed to improve the practice environment of midwifery practitioners and experiential learning environment of learner midwives?”

The phases are: phase 1: quantitative, phase 2: qualitative, phase 3: model development and phase 4: validation of the model. The intent of the two-phase, sequential explanatory mixed methods study was to develop evidence based optimal midwifery practice environment to enhance quality midwifery care in maternity units of public hospitals in the Limpopo Province. In the first phase, quantitative research questions addressed the variables and relationship of independent and dependent variables of different respondents at the research setting. Data from the quantitative phase were explored further in the qualitative phase for which interviews and narratives of focus groups were used to probe significant quantitative results by exploring aspects of the central phenomenon with midwifery practitioners (n=20) and learner midwives (n=18) and puerperal mothers (n=18) at

the research setting. The reason for following-up with qualitative research in the second phase was to obtain a better understanding, to explain the quantitative results, and to confirm, cross-validate and corroborate the findings of the research study.

3.6.1 Phase 1: Quantitative Phase

3.6.1.1 Purpose of the Quantitative Phase

The purpose of quantitative phase was to identify the variables of the study, and to specify how variables would be measured, related and described.

3.6.1.2 Objectives of the Quantitative Phase

The objectives of the quantitative phase were to:

- Identify the factors that influence the existing midwifery practice environment for enhancement of optimal midwifery provision in maternity units of public hospitals of Limpopo Province.
- Establish relations among factors that influence the existing Midwifery practice environment for enhancement of optimal midwifery provision in maternity units of public hospitals of Limpopo Province.
- Determine the nature of the midwifery practice environment in maternity units of Public hospitals in the context of quality midwifery provision.

3.6.1.3 Overview of the Quantitative Research Method

The quantitative epistemological view is that the researcher remains objective when collecting numerical data using self-developed questionnaires for midwifery practitioners and learner midwives. Therefore, in this study, a quantitative formal objective systemic process was used to obtain information about the variables, and describe and examine the variables. This quantitative research design was used to identify and describe factors that influenced the existing midwifery practice environment, establish relations among those factors in order to determine the nature of the midwifery practice environment in maternity units of public

hospitals of Limpopo Province.

3.6.1.4 Descriptive Research Design

Through a quantitative descriptive research design, concepts were described and relationships identified that provided a basis for further quantitative research and theory testing (Burns & Grove, 2009). A descriptive design was used to describe the identified factors that influenced the existing midwifery practice environment and established the relations among those factors. Furthermore, the design described the determined nature of the practice environment of midwifery practitioners, the midwifery experiential learning environment of R425 learner midwives, in maternity units of public hospitals in Limpopo Province. These pertinent factors were regarded as critical to the development of an evidence-based optimal midwifery practice environment model to enhance optimal midwifery care within the South African context.

3.6.1.5 Population

The term population refers to the total of all subjects that conform to a set of specifications (Polit & Beck, 2012). The first population comprised of all 350 midwifery practice environment employed in SANC accredited maternity units of the five districts, namely: Capricorn, Mopani, Sekhukhune, Waterberg and Vhembe of Limpopo Province. These midwifery practitioners needed to have executed their services in maternity units, namely antepartum, intrapartum, high care and postnatal units. The second population consisted of all 314 final year learner midwives, registered at the selected nursing education institution during 2013. These learner midwives were from the University of Limpopo-Turfloop Campus, University of Venda and Limpopo College of Nursing campuses, namely: Sovenga, Giyani and Thohoyandou as outlined in Table 3.1.

Table 3.1: Final year learner midwives per institution

Institution		Population
1.	University of Limpopo	54
2.	University of Venda	47
3.	Limpopo College of Nursing	213
Total		314

3.6.1.6 Sampling

According to Polit and Beck (2012), sampling means the process of selecting a portion or subset of the designated population to represent the entire population so that inferences about the population can be made. The sampling strategy that was used in this study was simple random sampling which means that each element of the population had an equal and independent chance of being included in the sample. All respondents had an equal chance of being included in the study. A table of random numbers was used to draw a sample of the desired size. The researcher assigned a number to each learner midwife on the lists from the college and the 2 universities. The researcher found a starting place in a table of random numbers by blindly placing a finger at some point on the page to find a three-digit on the table of random numbers. The random number which was pointed with a finger was 319 which became a starting point. The researcher moved the finger to the right, then down to the next row to the right until reaching a sample of 173 learner midwives in the college and the 2 universities. All those learner midwives whose numbers corresponded to the numbers pointed on the table of random numbers were selected (Polit & Beck, 2012). The Krejcie and Morgan's Table (Krejcie & Morgan, 1970) was used for determining the sample size of learner midwives as follows:

$$S = \frac{x^2 NP (1-P)}{d^2 (N-1) + X^2 P (1-P)}$$

S = the required sample size

X² = the table value of Chi-square for 1 degree of freedom at the desired confidence level (3.841)

N = population size

P = population proportion (assumed to be 0.5 to provide the maximum sample size)

D = the degree of accuracy expressed as a proportion (0.05).

$$S = \frac{X^2 NP(P-1)}{d^2(N-1) + X^2 P(1-P)}$$

$$S = \frac{3.841(314)(0.5)(0.5)}{(0.05^2((314-1) + 3.841(0.5)(0.5))} \approx 173$$

Learner midwives sample size was (n = 173).

The sample was 173 respondents, subtracted 10 respondents who participated in the pilot study; thus, the sample was 163 respondents derived from the total number of R425 final year students. The completed and returned questionnaires from learner midwives were 148 (91%). The high response rate might have been attributed by the presence of the researcher.

The researcher assigned a number to each midwifery practitioner on the lists from the maternity units of public hospitals. The researcher used the table of random numbers by blindly placing finger at some point on the page to find a three-digit number. The number which was pointed with a finger was 150 which became a starting point. The researcher moved the finger to the right, then down to the next row to the right until reaching a sample of 174 midwifery practitioners in all the five districts was reached. All those midwifery practitioners whose numbers corresponded to the numbers pointed on the table of random numbers were selected (Polit & Beck, 2012). The Krejcie and Morgan's Table (Krejcie & Morgan, 1970) was also used for determining the sample size of midwifery practitioners as follows:

$$S = \frac{X^2 NP (1-P)}{d^2 (N-1) + X^2 P (1-P)}$$

S = the required sample size

X² = the table value of Chi-square for 1 degree of freedom at the desired confidence level (3.841)

N = population size

P = population proportion (assumed to be 0.5 to provide the maximum sample size)

D = the degree of accuracy expressed as a proportion (0.05).

$$S = \frac{X^2 NP(P - 1)}{d^2 (N - 1) + X^2 P(1 - P)}$$

$$S = \frac{3.841(350)(0.5)(0.5)}{(0.05^2 (350 - 1) + 3.841(0.5)(0.5))} \approx 174$$

Midwifery practitioners sample size was (n= 174).

The sample size of the midwifery practitioners was 174, minus 10 respondents who participated in the pilot study; therefore, the remaining sample size was 164.

Inclusion Criteria

Inclusion criteria were:

- All midwifery practitioners who were employed in SANC accredited maternity units of public hospitals of Limpopo Province and had experience of 2 years or more.
- All R425 level 4 learner midwives registered with universities and nursing colleges.
- All puerperal mothers admitted in the SANC accredited maternity units.

Exclusion Criteria

Exclusion criteria for respondents were as follows:

- All the maternity units of public hospitals in Limpopo Province which were not accredited by SANC.
- All midwifery practitioners who were not employed in SANC accredited maternity units of public hospitals in Limpopo Province.
- Student nurses who were in level 1 and level 2 of their studies because they had not yet commenced with the Midwifery curriculum. Also, the level 3 learner midwives as it was their first year exposure to midwifery.

3.6.1.7 Sample selection

The CONSORT flow chart was used as shown in figure 3.3 to show sample selection of the two groups namely, learner midwives and midwifery practitioners. Schulz, Altman and Moher (2010) indicated that the CONSORT 2010 guidelines were developed to assist authors in writing reports of randomized controlled trials, editors and peer reviewers in reviewing manuscripts for publication, and readers in critically appraising published articles. This study adapted CONSORT flow chart which is used for experimental studies to suit the non-experimental health studies.

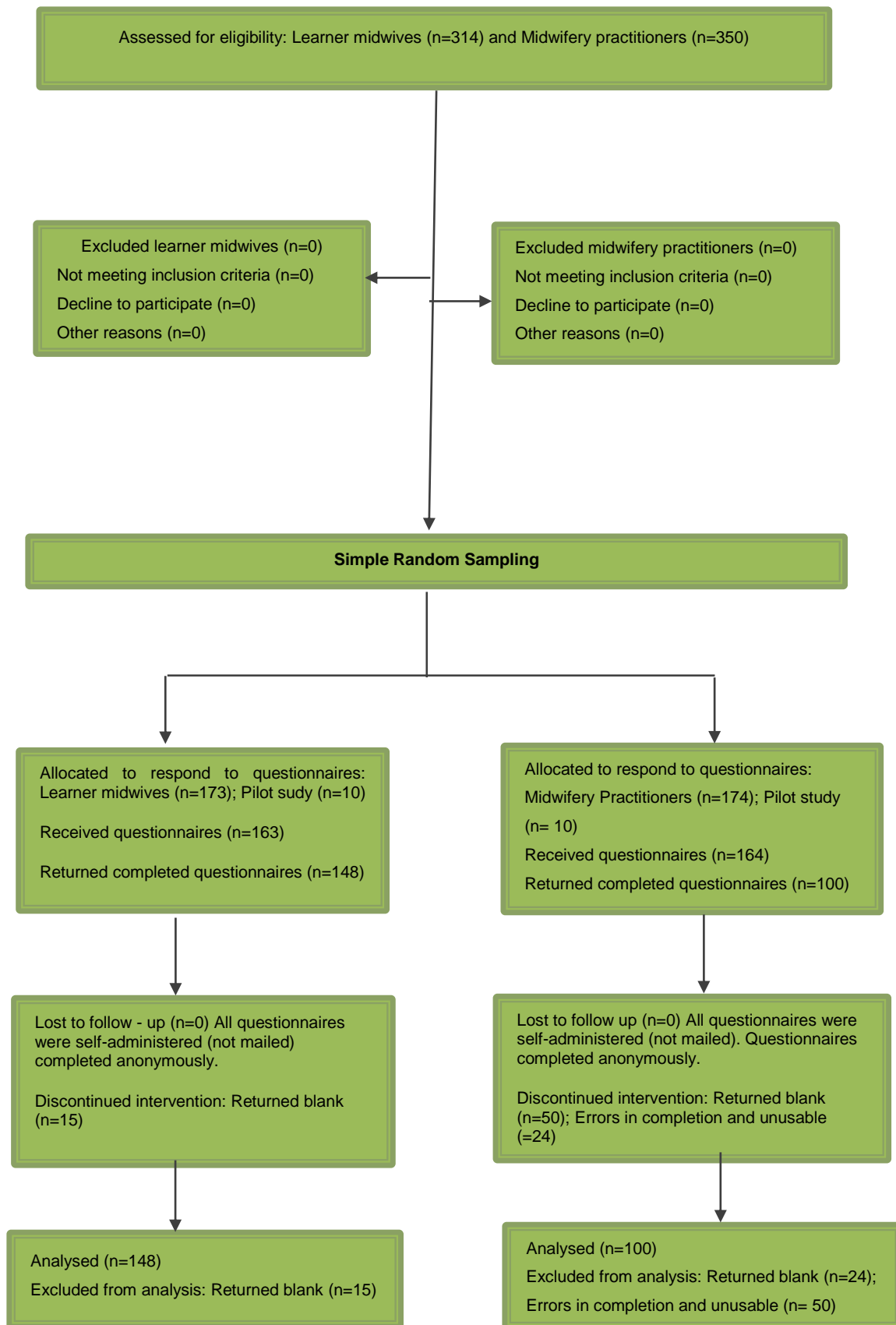


Figure 3.3: Adapted CONSORT Flow chart (Shultz et al. 2010)

The sample size of the midwifery practitioners was 174, minus 10 respondents who participated in the pilot study the sample was 164. One hundred (57%) of respondents which represents almost a 60% response rate could be attributed by returning their questionnaires at their own time and during their lunch time. Fifty questionnaires were not completed and this could be the result that questionnaires had to be completed during their lunch time when they were free not disturbed from the routine of their unit and out of their own free will. The other 24 questionnaires were incomplete and not usable.

3.6.1.8 Developing questionnaires for learner midwives and midwifery practitioners

- The process of developing questionnaires for learner midwives and midwifery practitioners commenced with literature review relevant to the research topic. The researcher developed the questionnaires based on the extensive literature review. Literature review revealed the essential variables and characteristics that were included in the content of the questionnaires.
- The items of the questionnaires came from the extensive literature review and reflective journals of learner midwives and interaction with midwifery practitioners and puerperal mothers, done by the researcher during accompaniment of learner midwives in the maternity units of public hospitals of Limpopo province. Different sections of the questionnaires were developed based on the conceptual framework of this study.

The studies that were reviewed revealed that women were giving birth on plastic bags, unfavourable working conditions, poor quality of intrapartum care, patients not assessed properly, infant mortality rate, lack of material resources, shortage of midwives, poor students learning environment and poor quality maternal health (Hassan-Bitar & Narrainen, 2009; Warwick, 2009; Chadwick, Cooper & Harries, 2014; Moodley et al., 2014; Howson et al. 2013; Pretorius, 2009; Fujita et al., 2013; Levett-Jones, Lathlean, Higgins & McMillan, 2008; Foster et al., 2010).

3.6.1.9 Pilot Study

A pilot study is a trial run in preparation for a major study (Polit & Hungler, 2006). The pilot

study was carried out with a small population that possessed homogenous characteristics to the research population to test the questionnaires prior to being used in the main study. A pilot study was conducted with a convenience sample of 10 midwifery practitioners and 10 learner midwives. Internal validity of the questionnaire was tested by asking respondents employed in maternity units and respondents placed in maternity units for midwifery experiential learning in order to give direct feedback on the readability, difficult questions and time taken to complete the questionnaires for completion.

Purpose of Pilot Study

The purpose of pilot study was to:

- Assess the feasibility of the main study
- Establish the effectiveness of the respondents recruitment
- Obtain information in order to assess and test validity and reliability of the main study.
- Ensure clarity and operational appropriateness of questions
- Assess if the respondents understood the questions and were able to respond to all questions.
- Ensure that the ambiguity of questions and vague questions could be rectified before the main study.
- Enable the researcher to refine the questionnaires should that be necessary prior embarking on the actual data collection process.
- Ensure that the questions answer the aim and objectives of the study.
- Assess if the questions were worthy of informing evidence-based practice.

Results of Pilot Study

Results of pilot study post analysis were:

- Comments based on the pilot study highlighted the typing error in two statements and the corrections were effected.
- Almost all the questions asked were clear and easy, thus the respondents were able to complete all the questions without leaving any empty spaces for unanswered questions.
- Feedback on readability was good.
- Time taken by respondents to complete questionnaires for completion was fairly rated 30 to 60 minutes as such the duration was not adjusted and all the questions were answered.

3.6.1.10 Data Collection

A self-developed questionnaire was used for quantitative data collection in order to assess the nature of midwifery practice environment and midwifery experiential learning environment.

- **Preparations for Data Collection**

Prior to actual data collection, the researcher met CEOs and nurse managers of the selected public hospitals of Limpopo Province to present the official documents and permission to conduct the study following fax and telephone calls. During the meeting the parties discussed the objectives, entire aspect of the study and how their organizations might benefit from the study. In addition, issues on how the findings would be presented to respective areas and stakeholders were also discussed. Furthermore, the researcher was advised to ensure that data collection does not interfere with the planned patient care and other essential activities for the mother and newborn babies. The issue was then referred to their organizational research committees and nurse managers of maternity units and the date was later communicated to the researcher. Learner midwives and midwifery practitioners were later met and appointment dates fixed for Wednesdays since during that day those midwifery practitioners going on day-off the following day and who returned from their day-off were all present.

It meant that on Wednesdays most of the midwifery practitioners were on duty and the researcher was able to obtain the requisite number of respondents.

- **Description of Questionnaires for Learner Midwives**

The questionnaires for both learner midwives and midwifery practitioners were developed with the assistance of a statistician and after consulting the literature. The questionnaires were in a format of checklists with closed-ended questions. Instructions on how to complete every section of the questionnaire and the process for completing questionnaire were attached. The researcher distributed the questionnaires to the respondents at the selected hospitals and collected them after completion. The self-developed questionnaires for R425 learner midwives consisted of 4-point Likert scale of 5 sections. The questionnaires consisted of 81 items (close-ended questions) which were distributed to learner midwives. Learner midwives were requested to indicate the extent to which they agreed that each of the items were present in their experiential learning environment. The duration for the completion of the questionnaires ranged between 45-60 minutes.

Section A Demographic Information (6 items): In this section the demographic profile of learner midwives were explored which included age, gender and qualification.

Section B Experiential Learning Environment (15 items): In this section the learner midwives were to respond on the type of experiential learning environment they are exposed at, whether was it conducive for them to acquire learning or not.

Section C Material Resources (14 items): In this section learner midwives were to indicate if material resources are always available for them to be able to execute the care by practising correct procedures without compromising the safety of the pregnant women in labour.

Section D Equipment (13 items): The section focused on the availability and good functioning of the equipment for investigating and monitoring of the maternal and foetal statuses.

Section E Competency (27 items): In this section learner midwives were to assess

themselves and capture the level of their competencies regarding to midwifery care.

Section F Assessment (6 items): Learner midwives were to respond whether they were given opportunity to assess their peers in order to gain more knowledge.

- **Description of Questionnaires for Midwifery Practitioners**

The self-developed questionnaire consisted with 89 items (close-ended questions) which were distributed to midwifery practitioners. The questionnaire for midwifery practitioners ranged from 1 (strongly agree) to 4 (strongly disagree) on a 4-point Likert scale. The instrument included 7 sections:

Section A Demographic Profile (12 items): In this section, the demographic profile of midwifery practitioners which included age, gender and qualifications were explored.

Section B Staffing and Workload (10 items): The section focused on the staffing ratios of midwifery practitioners in selected antepartum, intrapartum, high care and postpartum units of maternity units of public hospitals of Limpopo Province.

Section C Material Resources (14 items): In this section midwifery practitioners were to indicate if material resources are always available for the smooth running of the selected maternity units of public hospitals of Limpopo province.

Section D Equipment (13 items): The section focused on the availability and good functioning of the equipment for investigating and monitoring of maternal and foetal status.

Section E Competency (27 items): In this section midwifery practitioners were to assess themselves and capture the level of their competencies and the consultation of their seniors with regard to midwifery care.

Section F Remunerations (4 items): Midwifery practitioners were asked to respond on issues related to salaries if done according to their experience, qualification or seniority.

Section G Staff Development (9 items): Midwifery practitioners were supposed to answer on whether they were granted opportunity to keep themselves abreast by pursuing their studies, attending symposia, seminars and workshops nationally and internationally.

- **Procedure for Data Collection**

The researcher went to different selected midwifery practice environments for midwifery practitioners to complete the questionnaires. The midwifery practitioners who were willing to participate in the research, after explanation, gave informed consent and completed the questionnaires which had no codes thus enhancing anonymity. After completion of the questionnaires the midwifery practitioners gave the completed copies of questionnaires to the researcher.

All the questionnaires issued to learner midwives who were on duty during the day of data collection were organized in a spacious room used for meetings. The purpose, objectives and ethical considerations particularly anonymity and confidentiality and the instructions of how the respondents were supposed to complete the questionnaires were explained. The completion of questionnaires which lasted from 45 to 60 minutes was done during lunch time in order not to disturb the smooth running of the unit. The completion of questionnaires took longer than for the pilot group. This indicated that the respondents in the main study were a bit slower in comparison to the pilot group. A total of 100 questionnaires were completed by midwifery practitioners. The researcher collected the completed questionnaires from all the respondents at the selected maternity units. The questionnaires were grouped according to maternity units where midwifery practitioners were employed and then submitted to the statistician for data analysis.

The 163 self-developed questionnaires were delivered to the learner midwives based on the sample size by the researcher at their different midwifery experiential learning environments in Limpopo Province. No codes were used on the questionnaires in an effort to ensure absolute anonymity in order to obtain honest answers without identifying non-respondents. The learner midwives who completed the questionnaires were finalists of R425 programmes since they have knowledge and skill of midwifery. The sample size of the learner midwives

was 173, minus 10 respondents who participated in the pilot study; therefore, the sample was 163 respondents. Out of 163 questionnaires 148 (91%) were completed and returned from the learner midwives. Fifteen questionnaires were incomplete and not usable. The learner midwives from the three Limpopo nursing colleges and the two universities have completed the questionnaires on different dates. The completed and returned questionnaires from learner midwives were 148 (91%). The high response rate might have been attributed by the presence of the researcher.

The researcher explained the purpose of the research, its objectives, the ethics pertaining to collection of data, their rights for anonymity, confidentiality, beneficence, no harm and right to withdraw at any time they wish. Thereafter, 100 respondents gave informed consent and completed the questionnaires. The learner midwives and midwifery practitioners completed questionnaires on two separate occasions, three weeks apart. Learner midwives completed the questionnaires from December 2013 to February 2014. Midwifery practitioners completed the questionnaires during April to July 2014.

3.6.1.11 Data Analysis

The IBM Statistical Package for Social Sciences (SPSS) version 22 for Windows was used for data analysis. Statistical procedures enabled the researcher to organize, evaluate, interpret, summarize and communicate numeric information. Data analysis was done using descriptive and inferential statistical procedures to facilitate impartial interpretation of the findings (Rudd & Johnson, 2010; Tashakkori & Newman, 2010).

The questionnaires were coded for entries and to trace entry errors. The items on the questionnaires were grouped in terms of categories for analysis. Material resources were grouped into availability of basic material resources and availability of medical material resources. Equipment was grouped into availability of essential equipment and availability of delivery equipment. The responses on the Likert scale were up as Never and hardly ever became hardly ever; often and always, sometimes was not combined with any response.

Descriptive statistics included measures of central tendency, the mean, median and mode using percentages, frequencies and averages. The dispersion, standard deviation, variance and range were also determined (Lo-Biondo & Haber, 2010; Burns & Grove, 2009; Polit &

Beck, 2008). According to Chow and Quine (2010) inferential statistics examine the relations between the variables of interest by calculating correlation coefficients for regression analysis.

A questionnaire was developed to collect data from midwifery practitioners. The questionnaires included variables of age, qualification, state of employment, years of experience, type of unit, number of beds, number of years, number of midwifery practitioners, absenteeism, staffing, workload, material resources, equipment, remuneration and competency. A questionnaire was developed for learner midwives to collect data included variables such as age, qualification registered for, sex, type of unit, number of beds, number of midwifery practitioners, experiential learning environment, material resources, equipment, competency, assessment, supervision/mentoring. The variables that were correlated were qualification and competency; qualification and remuneration and number of staff and workload. Pearson correlation coefficient was calculated for the relationship between all variables. The statistical significance was set at a probability level of $p \leq 0.05$ which meant that researcher could be 95% certain that the results did not arise by chance. Statistical significance does not accept anything greater than $p=0.05$ value (Creswell, 2009).

Inferential statistics would enable the researcher to estimate how reliable conclusions can be made, predictions and generalize findings about the population of interest based on the data. Inferential statistics (e.g., the chi-square test for relationships between variables) combined mathematical processes and logic about a population using data obtained from probability samples. Statistical inference was used to estimate the probability that statistics found in the sample accurately reflected the population parameters. It was based on probability and allowed judgments to be made about the variables such as supervision (LoBiondo-Wood & Haber, 2010).

3.6.1.12 Validity and reliability

- **Validity**

Validity deals with the extent to which the instrument measures that which it is intended to

measure and principles to be applied in order to ensure validity (Burns & Grove, 2005).

- **Content Validity**

Content validity was determined by ascertaining whether the measuring instrument included all the essential elements relevant to the items to be measured (LoBiondo & Haber, 2010). The questionnaires were submitted to four academics that are experts in quantitative research methodology and were facilitating modules on quantitative research. Furthermore, these academics have published articles in accredited journals and supervised postgraduate students who followed quantitative research methodology. These academics hold a PhD degree and are professors. Content validity was achieved by having the instrument reviewed by these four experts in the field of quantitative research methodology who commented about the appropriateness, completeness and variables and wording of the items. The items that were agreed upon were used and those that were not irrelevant were deleted. With regard to the concepts and sentences that needed corrections same were done as suggested. Also, four advanced midwives in selected maternity units were requested to scrutinize questionnaires to ensure content validity. The questionnaires were thus given to experts in the field of the study (Midwifery) in order to ensure content validity to review and validate interpretation of the items in the questionnaires for the purpose of validity. An in-depth literature search was conducted and the relevant aspects were included in the questionnaire. A self-developed checklist was administered to the eight experts in quantitative research in order to review the questionnaires.

- **Face Validity**

Face validity is the degree to which the questionnaire looks as though it is measuring the appropriate construct (Creswell, 2009). This was achieved by asking 10 respondents from the learner midwives population and 10 respondents from the midwifery practitioners' population to complete and comment on the questionnaires. This was a pilot study that was conducted and yielded positive results. Pre-testing internal validity of the instrument was tested by asking 10 midwifery practitioners employed in maternity units and 10 learner midwives placed in maternity units for experiential learning. The questions addressed the research questions and the objectives of the study.

- **Reliability**

Reliability refers to the consistency of an instrument and deals with the ability of the instrument to produce the same results over a period of time when used with the same respondents in terms of stability, equivalence and homogeneity. It means that if the same variable is measured under the same conditions the instrument will produce identical findings (Burns & Grove, 2005; de Vos, Strydom, Fouche & Delpont, 2006). The reliability of the questionnaires were enhanced by checking and testing and re-testing. The questionnaires were administered twice to the same group of respondents to assess the possibility of ambiguity. Pre-testing of the questionnaire contributed towards reliability of the data collection instrument. Reliability existed in degrees and is indicated as a correlation coefficient. Therefore, the correlation coefficient of 1.00 is indicative of perfect reliability whilst a coefficient of 0.00 indicated no reliability. Cronbach's alpha coefficient is most commonly used measure of reliability (Babbie & Mouton, 2009; Burns & Grove, 2009).

Cronbach's alpha (α) is the most common measure of internal consistency (reliability). It is a measure of the squared correlation between observed scores and true scores. Reliability is measured in terms of the ratio of true score variance to observe score variance. Reliability estimates showed the amount of measurement error in a test (Tavakol & Dennick, 2011). According to Tavakol and Dennick (2011), the theory behind Cronbach's alpha is that the observed score is equal to the true score plus the measurement error ($Y = T + E$). For example, the people know 80% of the materials but the people score is 85% because of lucky guessing. In this case, the people observed score is 85 while the people's true score is 80. The additional five points are due to measurement error. Therefore, a reliable test should minimize the measurement error so that the error is not highly correlated with the true score. Cronbach's alpha can be written as a function of the number of test items and the average inter-correlation among the items. The formula for the standardized Cronbach's alpha is as follows:

$$\alpha = \frac{N \cdot \bar{c}}{\bar{v} + (N - 1) \cdot \bar{c}}$$

It is expressed as a number between 0 and 1. It is commonly used when the researcher have

multiple Likert questions in a questionnaire that form a scale, and wish to determine if the scale is reliable. The researcher has devised a 17- item questionnaire to measure the factors impacting on optimal midwifery practice environment. Questions have a 4 - point Likert scale item-“strongly disagree” to “strongly agree.” In order to understand whether the questions in these administered questionnaires were all reliably measured, Cronbach’s alpha was used on the sample size of 10 midwifery practitioners and 10 learner midwives as in Table 3.2.

Table 3.2: Cronbach's alpha reliability coefficients

Cronbach's Alpha	Internal Consistency
$\alpha \geq 0.9$	Excellent (High-Stakes testing)
$0.8 \leq \alpha < 0.9$	Good (Low-Stakes testing)
$0.7 \leq \alpha < 0.8$	Acceptable (Surveys)
$0.6 \leq \alpha < 0.7$	Questionable
$0.5 \leq \alpha < 0.6$	Poor
$\alpha < 0.5$	Unacceptable

A “high” value of alpha is often used (along with substantive arguments and possibly other statistical measures) as evidence that the items measure an underlying (or latent) construct. However, a high alpha does not imply that the measure is unidimensional. If, in addition to measuring internal consistency, the researcher wishes to provide evidence that the scale in question is unidimensional, additional analyses can be performed. Cronbach’s alpha test was done and the results revealed reliability statistics of $\alpha < 0.686$ which were considered acceptable as shown in table 3.2.

3.6.2 Phase 2: Qualitative Phase

3.6.2.1 Purpose of the Qualitative Phase

The purpose of using a qualitative phase was to provide insights into people’s lifestyle

behaviour, lived experiences, their knowledge, feelings, attitudes, opinions and values, through explorations, in-depth and in a smaller groups of participants in a natural setting, uncovering meaning in an articulated essences of participants.

3.6.2.2 Objectives of the Qualitative Phase

The objectives of the qualitative phase were to:

- Explore the lived experiences of midwifery practitioners within their specific midwifery practice environment that influence optimal midwifery execution.
- Describe the experiences of learner midwives regarding experiential placements.
- Explore the perceptions of puerperal mothers regarding the midwifery care and delivery of their babies by midwifery practitioners.

According to Creswell (2009), characteristics of a good qualitative purpose statement, should be focusing on a single phenomenon, using action words and non-directional language, mentioning the strategy of inquiry, and specifying the participants and research site for the research. Babbie and Mouton (2009) defined the qualitative research method as an “in-depth contextual research aimed at gaining insight into the world and lived experiences of a small sample of people.” Qualitative research seeks to answer questions that stress how social experience is created (Babbie & Mouton, 2009). Qualitative research is used when little is known about the phenomenon, also as an approach in which procedures are not strictly formalized, where the scope is more likely to be undefined (Mouton & Marais, 2003; Kader, 2006). Creswell (2009) stated that qualitative research aims to acquire a better understanding through first-hand experience, truthful reporting and quotations of actual conversations. It also aims to understand how participants derive meaning from their surroundings and how their meaning influences that behavior.

This qualitative design enabled the researcher to describe events as accurately as possible as they occurred in the participants concrete natural context (Burns & Grove, 2005). Furthermore, it helped the researcher to gain a deep understanding and generate data about human groups in social settings. Its meaning emerged from the participants. Thus, in this study, the researcher listened to midwifery practitioners in their practice environment allowing them to share their personal and professional experiences without the restrictions and pressure of being objective. R425 learner midwives told their story regarding their experiences regarding their experiential learning environment. Puerperal mothers were also allowed to articulate how they perceived the antepartum care and delivery of their babies by midwives. An explanation of each design, namely, descriptive, explorative, phenomenological and contextual follows:

3.6.2.3 Descriptive Design

To describe the status of midwifery practitioners, the nature of the midwifery practice environment, as well as the personal and professional “lived experiences” of midwifery practitioners in their specific midwifery practice environment of level two hospitals of Limpopo Province (LoBiondo-Wood & Haber, 2006). This afforded the researcher an opportunity to describe the status of midwives, nature of practice environment and lived experiences of midwives as they narrated. The major concepts were analyzed and synthesized then the development of an optimal midwifery practice environment model for enhancement of quality midwifery provision based on the findings were conceptualized. A descriptive design is a method which yields findings based on conversations and observations (Parse, Coyne & Smith, 2007). With the descriptive research method, the important element was the researcher’s goal, which was to describe that which existed as accurately as possible (Mouton & Marais, 2003; Glesne & Peshkin, 2003). The description of phenomena is always interpretive. The purpose is to describe the social setting of investigation and make it less complicated (Fouché & de Vos, 2005). To gain understanding and insight, the researcher has to enter into, or take the viewpoint of another (Denzin & Lincoln 2005). In addition, Creswell (2009) indicated that the emphasis on description entails the attending to mundane detail and particulars.

An important contribution of descriptive detail is mapping out the context for the

understanding of a participant's interpretation by using bracketing and intuiting techniques. This ensures an interacting process of what was going on in a particular context (Denzin & Lincoln, 2005; Creswell, 2009). The purpose is to provide a picture of situations as they naturally happen, to determine what others in similar situations are doing (Burns & Grove, 2009). In this study, the researcher had opportunity of describing and exploring the experiences of midwifery practitioners, the experiences of learner midwives and the perceptions of puerperal mothers, so as to obtain understanding of evidence-based optimal midwifery practice environment model, its purpose, processes and outcomes.

3.6.2.4 Explorative Design

This study was explorative in nature, firstly aiming at exploring the status of midwifery practitioners' personal and professional "lived experiences" in their specific practice environment and learner midwives' emic views regarding the clinical placements (Polit & Beck, 2014). In this study, utilizing this method was aimed at assisting the researcher in gaining insight and understanding of status, nature of the current practice of midwives and the personal and professional "lived experiences" of their specific practice environment in level two hospitals of Limpopo Province. This study also explored the experiences of learner midwives regarding experiential placements and explored the perceptions of puerperal mothers regarding the midwifery care and delivery of their babies. An explorative design attempts to investigate whether the phenomenon has deeper meaning. It explores a relatively unknown territory to gain new insight on the phenomenon rather than evaluate it.

As this investigation focused on an inadequately understood phenomenon that had a deeper meaning to it, the researcher remained open to any new ideas as they emerged so that a meaningful explorative process could be facilitated. Therefore, the researcher's interest and curiosity in the work was of vital importance in order to work from a point of view of "not knowing" as indicated by Denzin and Lincoln (2005).

3.6.2.5 Phenomenological Design

According to de Vos et al. (2006), phenomenology offers methodology that values a holistic perspective of experiences and enables the participants to make sense and reflect on them. Phenomenological research begins with gathering examples of everyday lived experiences

-“the life world”- describing them and reflecting on them (Gerrish & Lacey, 2006; Babbie, 2007; Creswell, 2009). The individual participants who experience the phenomenon are capable of communicating to their outside world. The purpose of phenomenology is to develop an understanding of phenomena or events through human experience.

Thus, the lived experiences of midwifery practitioners within their specific practice environment was chosen as the phenomenon to be explored, described and studied in-depth. The purpose of focusing on such a named phenomenon was to attain insight that applied more generally beyond the cases that were studied to emphasize what they might have in common as human beings. The phenomenological design is an inductive, descriptive and interpretative approach which is appropriately used when the purpose was to understand and describe the subjective perspective of MPs and the individual’s experience and behaviour (Hammack, 2009; LoBiondo-Wood & Haber, 2010). The focus in this design is to describe the use of a method of interpretative phenomenology, inspired by the work of Benner (1994) who was influenced by Heidegger. Heidegger (1996) stated that human experience is based on participating in linguistic and cultural practices.

Heidegger emphasized that human existence is participatory and relational with no isolated egos. Interpretive phenomenology was employed to acquire an understanding of persons everyday lived experiences through uncover meanings found in human experience in different problem areas (LoBiondo-Wood, 2010). The use of interpretive phenomenology appears to be a new way to illuminate this phenomenon; an illumination that directs thoughtful reflection towards attentive activities in daily midwifery practice. The interpretive phenomenological method could provide useful knowledge for nursing practice.

The researcher was interested in how the participants gave meaning to their lived world, in other words, how midwifery practitioners and learner midwives perceived their practice environment. The puerperal mothers narrated their experiences pertaining to the care they received in maternity units. Phenomenology afforded the researcher to interpret the nature of the practice environment of midwifery practitioners and of the individual’s involvement in their specific environment. According to Burns and Grove (2009), phenomenologists view the person as an integral part of the environment. Participants were selected based on their experiences of the phenomenon investigated and their ability to articulate that experience.

The aim of the phenomenological design is to interpret the meaning that participants give to their everyday life. Phenomenology is useful when is used to grasp the meaning of an experience as those who have lived the experience and understood it. The meaning of experience as lived by participants is pursued through a dialogue process that requires the thoughtful presence and participation of the researcher.

Phenomenology also includes bracketing and intuition. Bracketing occurs when the researcher should suspend what is known about the experience being studied, thereby excluding preconceived ideas. The researcher identifies what is expected to be discovered and deliberately brackets out any preconceived ideas to consider every available perspective (de Vos et al., 2006; Hammack, 2009).

3.6.2.6 Contextual Design

Qualitative research is contextual in nature due to the unique, imminently defined context of the real event (Mouton, 2004). This means that the research is only valid within a certain time, space and value context. Qualitative research exhibits a preference for contextualism in its commitment to understand events in their context which entails the examining of social entities. The implications of contextualism engender a style of research in which the meanings that participants ascribed to their own and other's behaviour, have to be set in a context of values, practices and underlying structures of the appropriate entity as well as multiple perceptions that pervade that entity (Schurink, 2004). In this study, an evidence-based optimal midwifery practice environment model was developed founded on the experiences and perceptions that were explored and described by midwifery practitioners, learner midwives and puerperal mothers, respectively.

This study was conducted within the context of South African professionals as well as the ethical and legal framework governing midwifery practice and midwifery practitioners. A significant part of the study was designed to ascertain, explore and describe the status, nature of practice environment and lived experiences of learner midwives, midwifery practitioners and the puerperal mothers in their specific midwifery practice environment, maternity units of level 1, 2 and 3 public hospitals of Limpopo Province. The researcher sought to understand the events, actions and processes in the midwives' context as well. This design allowed for unfettered expression of personal accounts to be shared without any

fear of reprisals.

3.6.2.7 Sampling

According to Teddlie and Yu (2007), non-probability purposive sampling was used to obtain the sample that answered the research questions under investigation and all the participants were concerned with issues of generalizability to an external context or population. A purposive sampling method was used to select the 18 learner midwives and 20 midwifery practitioners from the quantitative samples while puerperal mothers were included only in the qualitative phase. Participants were also selected based on the inclusion criteria and data saturation.

3.6.2.8 Data Collection

Data collection methods employed in this study were semi-structured in-depth interviews, tape recorder, field notes and focus groups. Participants who were interviewed were midwifery practitioners and the participants who formulated focus groups were the learner midwives and puerperal mothers. Prior to qualitative data collection, the researcher established rapport with the participants in order for them to develop trust and to open up, and thus to describe their true feelings, thoughts and intentions. Asking of open-ended questions was done in such a way that the participants talked freely.

Prior to conducting the semi-structured interviews and focus group discussions, the researcher explained the purpose of the interviews and focus groups to the participants. Informed consent was obtained from each participant. Participants were informed that a number will be allocated to each one of them and they should not mention their names during the process of data collection, to ensure confidentiality and anonymity. Interviews were conducted from April to July 2014. The semi-structured interviews of midwifery practitioners lasted for 45-60 minutes and were conducted until data was saturated.

- **Semi-Structured Interviews of Midwifery Practitioners**

Semi-structured in-depth interviews with a guide were used to collect qualitative data from the midwifery practitioners who were on duty during the data collection period which were

conducted in person by the researcher. The interviews were conducted in a private room in an attempt to prevent interruptions and to encourage free discussions without disturbances. A tape recorder was used to capture all information in order to save the full record of the interviews for later analysis. The researcher wrote field notes to capture non-verbal cues. The duration of the interviews ranged between 45 to 60 minutes.

A central question was posed to midwifery practitioners: *“What are your personal and professional experiences of the specific midwifery practice environment?”*

This was followed by probing questions depending on the responses of the participants. Interviews were conducted until data saturation was reached (de Vos et al., 2006; Babbie & Mouton, 2009).

- **Focus Group Discussions**

Focus group discussions were utilized as data collection technique which enabled the researcher to facilitate the flow of the discussion among the 6 groups of participants without one participant dominating the discussion. Focus group allowed a number of learner midwives and a number of puerperal mothers to be included at one time, making this form of data collection more cumulative, economical, elaborative, flexible and stimulating as well as assisting in information recall.

The researcher conducted 6 focus groups, 3 of which consisted of 6 learner midwives each and 3 of 6 puerperal mothers each were utilized in order to obtain the participants' perceptions in a focused area in a setting that was permissive and non-threatening. The groups' dynamics helped the learner midwives and puerperal mothers to express and clarify their views in ways that were less likely to occur in a one-to one interview (Kader, 2006; Burns & Grove, 2009).

- **Focus Groups for Learner Midwives**

A central question that was directed to learner midwives was: *“Please tell me about your experiences regarding your exposure at clinical placement area for midwifery?”*

Subsequent probing questions were asked to encourage the participants to elaborate and clarify their experiences pertaining to their exposure at clinical placement area for midwifery. The interview guide for focus group of learner midwives covered in their experiential learning environment how they acquired their midwifery clinical skills, what challenged them or were regarded as problems, including what they thought an optimal experiential environment ought to be. The English language was used during learner midwives focus groups which all participants understood. The focus group discussions with the three different groups were conducted on different dates though the venue was the same. The private room utilized was a boardroom which had a round table and chairs. The sitting arrangement was in a circular pattern which allowed two-way communications with the moderator. The setting was appropriate because group discussions went on without any disturbances. All participants and the moderator had eye contact and all participated actively, giving each other opportunity to answer questions posed to them without one becoming dominant. An audiotape recorder was placed in the centre of the table for easy recordings and the researcher was able to write fields notes during discussions. The assistant was available for easy usage of the audiotape recorder.

- **Focus Groups for Puerperal Mothers**

Three focus groups for the puerperal mothers were conducted with the purpose to gather their perceptions on the nature of midwifery care/or service delivery. The researcher directed the inquiry and the interaction among participants in a structured manner. The focus group discussions were used successfully as it aided the participants to recall specific experiences shared by all members of the group. All the focus group sessions were audio recorded and field notes were written. The sessions were conducted in a private room to encourage free discussions without disturbances with mutual agreement of the participants. The duration for the focus groups ranged between 60 minutes to 1 hour 30 minutes. The focus group sessions were conducted in the languages of the puerperal mothers, namely Sepedi, Tsonga and Venda, until data saturation was considered if no new information was emerging. A research assistant who could speak the languages of the puerperal mothers was employed to assist during focus groups of puerperal mothers.

A central question that was directed to puerperal mothers was: *“Please tell me about your*

perceptions during antenatal care and delivery of your babies by a midwife?”

This question was interpreted for the mothers in their preferred language. Subsequent probing questions were asked to encourage the participants to elaborate and clarify their perceptions of antenatal and delivery of their babies by midwives. The interview guide for the puerperal mothers covered issues in maternity units that they were not happy with, the type of care they received from midwifery practitioners during antenatal care and intrapartum care, the attitude of midwifery practitioners and how they handled situations they felt that infringed their rights. During the interviews and focus group discussions, the researcher maintained rigour and collection of relevant data. The central question gave all the participants opportunities to become comfortable with data collection processes prior to the researcher asking more direct questions. By using probing questions the researcher confirmed and acquired more detailed information about phenomena participants described. The utilization of central and probing questions facilitated the emergence of rich data.

- **Member Checking**

Fox and Bayat (2011) stated that during data verification the authenticity and trustworthiness could be achieved through the processes of member checks. Member checking concerns the plans made by the researcher relating to the feedback about emerging interpretations from respondents, informants or members and can be used as another form of validating findings. In this study, member checks were conducted with the participants after completion of interviews and focus group discussions for verification of findings. Data from the tape-recorder and field notes were transcribed in codes. A copy of the final transcribed data, specific descriptions, report or themes was then taken to participants for testing whether the findings were a true reflection of the information provided by the participants. The participants were given opportunity to assess and validate whether the researcher's interpretations were realistic interpretations of their realities. All the information from the audiotape and field notes were transcribed verbatim thereafter, coded into themes and sub-themes. The appointments with participants were scheduled. Participants and the interviewer sat around table. The copies were given to participants for verification which went well, based on the fact that the participants affirmed that it was a true record of their narratives.

3.6.2.9 Measures to Ensure Trustworthiness

To ensure that the findings were a true reflection of the study, a range of trustworthiness criteria were adopted, as outlined by Polit, Beck and Hungler (2008).

- **Credibility**

Credibility refers to the confidence derived from the truth value of data (Polit, Beck & Hungler, 2008; Taylor, 2014). Credibility was ensured by prolonged engagement for three months, on-going rapport with the midwifery practitioners, learner midwives and puerperal mothers, use of reflection, maintenance of field notes and peer examination of the data. The researcher's interpretations of data were shared with the participants who had the opportunity to discuss and clarify the interpretation and contribute new or additional perspectives on the issue under study. An independent coder was consulted and the transcripts, themes and sub-themes were submitted for coding. The credibility of this study was improved by triangulating data sources and peer debriefing. Member-checking was ensured by giving learner midwives and midwifery practitioners a final report of participants' phenomenological narratives.

- **Transferability**

Transferability refers to the extent to which the research findings will be applied in other contexts with other participants (Babbie & Mouton, 2009). With regard to this study, transferability was ensured through an extensive description of the research design process, the methods opted for, and supporting literature to maximize the applicability of findings and results in other contexts with the Limpopo midwifery health care. Transferability was ensured by giving rich, thick descriptions of learner midwives' experiences, midwifery practitioners' lived experiences and puerperal mothers' perceptions, respectively. Recurrent data were observed after the 15 interviewee because it became apparent that no new information was forthcoming.

- **Confirmability**

Confirmability refers to "the degree to which the findings are products of the focus of inquiry

and not the biases of the researcher.” The researcher maintained neutrality during the research process and the description of the research findings (Babbie & Mouton, 2009). An independent coder was used to analyze transcriptions and review raw and tape recorded data, documents, and results without any influence from those directly or indirectly linked with the study (Polit, Beck & Hungler, 2008).

- **Dependability**

Dependability refers to “that inquiry which must provide its audience with the evidence that if it was to be repeated with the same or similar respondents in the same context, its findings would be similar” (Babbie & Mouton, 2009). In this study, dependability was ensured through the extensive description of the research methodology and the use of an independent coder and recognized experienced qualitative researcher who independently coded a set of data and then came together to reach consensus on the emerging codes and categories. Dependability was ensured by asking the internal coder to code all sections of the transcripts independently and compare the resulting analysis.

3.6.2.10 Data Analysis

Data captured during semi-structured interviews and focus group discussions through audiotapes and field notes were interpreted and analyzed in the context of the real situation. The purpose of data analysis is reduction of data to a clear and understandable form in order to study its relation to research objectives and hypotheses may be generated for future studies once conclusions had been drawn. Data analysis was done in accordance with Tesch’s approach (Polit & Beck, 2008) as follows:

- The researcher listened to the tapes to get a sense of the whole interview, and the research expert was consulted to internalize the content and then transcribed the content verbatim. This allowed the researcher opportunity to get actively involved with the narratives thus facilitating immersion of self within the text.
- The researcher randomly chose one transcript interview, and read through it; asked the following questions: “What is it about? What is the underlying meaning?”

- Thereafter, the researcher repeatedly listened to the tape and scribbled ideas on the margins of the transcript as they came to mind;
- When the researcher has completed the above task for all interviews, a list of all topics was made, clustered together on the basis of similar topics. At this level, the researcher synthesized and analyzed the information;
- Researcher then found the most descriptive wording of topics, grouped them into related themes and reduced the total list of themes. Then lines were drawn between the themes to show interrelationships formed between and among concepts and statements;
- A final decision about the abbreviation of each themes was made and alphabetized;
- The data that belonged to each theme were assembled and a preliminary analysis performed. The researcher synthesized the relationship statement from concepts to provide links between and among concepts; and
- If necessary, the existing data were re-coded.

The audiotapes of semi-structured interviews for midwifery practitioners and focus groups discussions for learner midwives and puerperal others were listened to on different days and data transcribed to capture everything that were stated by all participants. Thereafter, data analysis began with transcription and review of the first interview. The transcriptions from 20 interviews, each from 3 focus groups of learner midwives and puerperal mothers were transcribed into a written format to enable easier examination and analysis of the data.

- **Independent Coder**

The independent coder met with the researcher to discuss the essence of capturing the elements of the narratives that were clustered according to the similarity and regularity pattern. All transcripts from the interviews and focus groups discussions were captured

separately based on different participants. The recorded interviews and two focus groups discussions were all transcribed and coded manually for recurrent themes. The analytical process involved discussions between the researcher and the independent coder to identify and agree on significant themes. Both consensus on the cited themes and sub-themes as well as their inter-connectedness, with some few changes. The independent coder's letter of certificate was obtained to ensure credibility.

3.6.2.11 Interpretive integration of Quantitative and Qualitative Designs

Fox and Bayat (2011) stated that during data verification the authenticity and trustworthiness could be achieved through the processes of interpretive integration. Interpretive integration is defined as the process of analyzing one data strand method and results and used to inform the other data strand and analysis of the second. Furthermore it focusses on the comparisons between the two strands resulting in convergent results, divergent results or nuanced (qualifying) results (Polit & Beck, 2012). In this study, interpretive integration was ensured with the utilization of different data collection methods, namely: questionnaires, semi-structured interview guides and focus group discussions. Methodological and data interpretive integration were used.

- **Methodological Interpretive Intergration**

Methodological interpretive integration was employed to good effect by utilizing sequential explanatory mixed method research, both quantitative and qualitative methods. Sequential mixed method research was adopted to ensure complementation of each method, thus increasing its objectivity. In this sequential mixed methods research the researcher started with the quantitative method prior to commencing with the qualitative method. Later after completing the quantitative methods the qualitative method was used.

- **Data Interpretive Integration**

Data interpretive integration was used in that data were collected from learner midwives and midwifery practitioners by means of self-developed questionnaires. Quantitative questionnaires were completed by 148 learner midwives and 100 midwifery practitioners. The response rate was 99% which was viewed as a good. Quantitative data analysis was

done using the IBM Statistical Package for Social Sciences version 22 for Windows. Descriptive statistics was used for mean, median, frequency and standard deviations.

The Kruskal Wallis test and Whitney U test were used to compare more than two groups. The groups of the learner midwives were five. Findings of the quantitative analysis were used to formulate the interview guides in order to strengthen the learner midwives, midwifery practitioners and puerperal mothers. Qualitative data were collected through semi-structured individual phenomenological interviews from 20 midwifery practitioners and focus groups discussions from learner midwives and puerperal mothers.

Data were captured by means of audiotapes and field notes. These enabled data to be examined for person triangulation using individual interviews and focus groups discussions. Furthermore, it provided a complete picture of the world of all learner midwives, midwifery practitioners and the puerperal mothers. The phenomenological approach was chosen to inform the conduct of the qualitative section. The goal was to describe the world as experienced by the participants and to interpret and understand rather than to observe and explain. Within each interview, the following was achieved: person interpretive integration which is individual and group interviews where data were collected from different levels of people, individuals with the aim of validating data through multiple perspectives on the phenomenon (Polit & Beck, 2014).

Interpretive integration of communication skills was utilized in order to be able to represent more accurately the lived experiences of midwifery practitioners; experiences of learner midwives and perceptions of puerperal mothers. All participants technically assisted the researcher to notice and document non-verbal cues which might add depth and quality to the reporting of participants' statements/narratives.

- **Data Analysis**

For the questionnaires, SPSS descriptive and statistics were employed to identify the percentages of respondents who agreed or disagreed with statements which were further explored in qualitative results. All qualitative data were analyzed using Tesch's open-coding approach. Themes and sub-themes emerged.

3.7 Methodological overview of the model development

Table 3.3: Methodological overview of the model development

SEQUENTIAL MIXED METHODS				
OBJECTIVES OF THE STUDY	DATA COLLECTION	POPULATION & SAMPLING	RIGOR	DATA ANALYSIS & REASONING STRATEGIES
Phase 1: Concept Identification				
Quantitative Phase To identify the factors that influence the existing midwifery practice environment. To establish relations among factors that influence the existing midwifery practice environment. To determine the nature of the midwifery practice environment in maternity units.	Questionnaires for midwifery practitioners	Midwifery practitioners (N=174) Simple random sampling	Content validity Face validity Reliability	Descriptive & inferential statistical analysis
	Questionnaires for learner midwives	Learner midwives (N= 173) Simple random sampling	Content validity Face validity Reliability	Descriptive & inferential statistical analysis
Qualitative phase To explore the lived experiences of midwifery practitioners within their specific midwifery practice environment that influences optimal midwifery execution	Semi structured interviews (Interview guide)	Midwifery practitioners (N=20) Purposive sampling	Measures to ensure TrustworthinessCredibility, Transferability, Confirmability Dependability	Tesch's approach: Open coding Themes & sub-themes
To describe the experiences of learner midwives regarding experiential placements	Focus group discussions (Interview guide)	Learner midwives 3 focus groups x 6 (N=18)	Measures to ensure Trustworthiness Credibility, Transferability, Confirmability Dependability	Tesch's approach: Open coding Themes & sub-themes

To explore the perceptions of puerperal mothers regarding the midwifery care and delivery of their babies by midwifery practitioners	Focus group discussions (Interview guide)	Puerperal mothers 3 focus groups x 6=18	Measures to ensure TrustworthinessCredibility, Transferability, Confirmability & Dependability	Tesch's approach: Open coding Themes & sub-themes
Phase 2: Concept Analysis, Definition & Statement Formulation				
To describe the concepts in an evidence-based model for enhancing optimal midwifery practice environment	Results from: quantitative phase qualitative phase		Content validity face validity construct validity Measures to ensure trustworthiness: credibility, transferability, confirmability, dependability	Deductive Concept analysis, Concept synthesis Derivation Inductive Concept analysis, Concept synthesis Derivation
To construct relational statements between concepts in evidence-based model for enhancing optimal midwifery practice environment	Results from quantitative and qualitative phases	Concepts derived from concept analysis, related statements formed		Statement and theory synthesis (Walker & Avant, 2005)
Critical reflections of the model	Description of the process of the model	Description of the structure of the model		Synthesis
To describe the guidelines for the operationalization of the model	Feedback data from model validators	Formulation of guidelines based on the findings	Recommendations aligned with the model	Deductive Inductive reasoning Derivation

Table 3.3 shows the methodological perspectives of data to be collected, analysed to meet the objective of phase 1 which was concept identification for model development. The data that was collected and analysed in quantitative phase and qualitative phase of this study were used to meet the objective of phase 2 which was concept analysis, definition and

formulation of relational statements for development of an evidence-based model for enhancing optimal midwifery practice environment.

3.8 The approach for developing the model

Table 3.4: Cross-tabulation of elements of theory and approaches to model development (Walker & Avant, 2005).

ELEMENTS OF THEORY	APPROACHES/ STRATEGIES		
	ANALYSIS	SYNTHESIS	DERIVATION
Concept	Strategy: Concept analysis Use: To clarify or refine an existing concept.	Strategy: Concept synthesis Use: To extract or pull together concepts from a body of data.	Strategy: Concept derivation Use: To shift and redefine concepts from one field to another.
Statement	Strategy: Statement analysis Use: To clarify or refine an existing body of statements.	Strategy: Statement synthesis Use: To extract or pull together one or more statements from a body of data.	Strategy: Statement derivation Use: To shift and reformulate the content or structure of statements from one field to another.
Theory	Strategy: Theory analysis Use: To clarify or refine an existing theory.	Strategy: Theory synthesis Use: To pull together a theory from a body of data or set of empirical statements.	Strategy: Theory derivation Use: To shift and reformulate the content or structure of theories from one field to another.

Table 3.4 shows the three basic approaches to theory building which the researcher adopted when embarking on the development of an evidence-based for enhancing optimal midwifery practice environment. The three basic approaches are analysis, synthesis and derivation. The strategies of the process of model development in this study are discussed in chapter 6.

3.9 Concept identification, Classification and Description

Table 3.5: Concept classification

CATEGORIES	DESCRIPTION
------------	-------------

Agent	The person that executes a particular activity (Midwifery practitioners; Learner midwives)
Recipient	The person who receives the activity (Puerperal mothers; Learner midwives)
Context	The setting in which the activity occurs
Goal	The outcome to be achieved through implementation of the activity
Procedure	The protocol to be followed to achieve the goal
Dynamic	The ingredient to drive the activity towards goal achievement

Table 3.5 shows the list of classified concepts according to this study. Concept identification followed by concept classification and concept description, which correspond with the first level of theory. The level one theory, factor isolation theory's function requires concepts to be classified and and categorised. The list is made up of the agent, recipient, context, goal, procedure and dynamics. The abstractness of concepts was reduced, become clearer when attributes are added to them thus making them applicable. The concepts will be defined and described in detail in chapter 6.

3.10 Ethical Considerations

The researcher chose and abided to specific codes of ethics as stipulated by national bodies (DENOSA, 1998); University of Limpopo (2015) and international bodies (WHO, 2004; ICN, 2007). Ethical principles of both the national and international bodies were applied in the two phases of the research study as follows:

- **Ethical clearance and permission**

Ethical clearance was obtained from the University of Limpopo's Medunsa Research and Ethics Committee (MREC). Permission to conduct the study was obtained from the Limpopo province DoH and the CEOs of the public hospitals. The study only commenced after the MREC and DoH had granted permission.

- **Informed consent**

Before requesting the participants' consent to participate in the research the investigator provided the information, in the language that the individuals understood:

- That the individual was invited to participate in research, the reasons for considering the individual suitable for the research and that participation was voluntary;
- That individual was free to refuse to participate and was free to withdraw from research at any time without penalty or loss of benefits to which s/he would otherwise be entitled. The purpose of research, the nature and the procedure of the study and their expected roles as respondents/participants were explained (Gerrish & Lacey, 2006).
- After adequate explanation of the purpose of the research, participants were asked and provided with the consent form to voluntarily sign; on the proviso that they fully understood the form's contents and agreed to participate in the study. Data collection took place only after individual informed consents were obtained (Gerrish & Lacey 2006).
- The responsibility of the researcher to protect the rights of the participants and the institution.
- **Autonomy**

The principle of autonomy and fairness was upheld to those participants who wished to withdraw, were able to do so during any stage of data collection. Participants had the right to determine conditions under which private information might be shared and the extent to which such information would be shared. Participants were given the assurance that they might withdraw at any stage, that they would not be coerced to continue, without any prejudice, and that they would not be disadvantaged in any way by the researcher or the outcomes of the study (LoBiondo-Wood & Haber, 2006; Burns & Grove, 2009).

- **Anonymity**

Names of midwifery practitioners, learner midwives and puerperal mothers and institutions were not divulged. Assurance was given that there would be no traces to the participants personally, as codes were used. Audiotapes and scripts were kept locked safely for 5 years after completion of the study. During the completion of the questionnaires, names of

respondents were not required. Anonymity was maintained during the analysis and reporting of research findings.

- **Confidentiality**

The uses of the recording device during interviews were explained to participants and permission to use the same was sought prior to interviewing. Permission to disclose and to report on the interview data was obtained verbally prior the study (Burns & Grove, 2009; LoBiondo-Wood & Haber, 2010). Participants were assured that the information collected would be treated in the strictest confidence and would be available to the researcher and her supervisors only and would be destroyed after data analysis. No unauthorized persons would access the questionnaires or the tape recorded and unstructured interviews.

3.11 Conclusion

Chapter 3 provided a discussion of the research methodology. The research study adopted four phases: quantitative phase; qualitative phase; model development phase and model validation phase.

The sequential explanatory design was adopted for this study; a schematically visual figure was drawn and defined the design type and gave rationale for adopting the design. Detailed description of separate phases: quantitative first then followed with qualitative design was provided. The collection of diverse types of data provided an understanding of the research problem and addressed the objectives of the study.

The study began with a quantitative research method through the use of self-developed questionnaires in order to generalize findings to the population and formulate interview guides based on the findings. Following quantitative data collection, qualitative individual interviews and focus groups discussions were conducted in order to collect detailed perceptions and interpret the lived experiences of participants. The next chapter will deal with the discussion of the quantitative results.

CHAPTER 4

DISCUSSION OF THE QUANTITATIVE RESULTS

4.1 Introduction

The previous chapter discussed the research methodology used in the quantitative and qualitative phases of the study. This chapter provides a discussion of the quantitative results. Since the research design was explanatory sequential mixed methods, the results are presented in a consistent flow of the design and starts with the quantitative phase in this chapter that is followed by the qualitative phase in Chapter 5.

Objectives of the Quantitative Phase

The objectives of the quantitative phase were to:

- Identify the factors that influence the existing midwifery practice environment for enhancement of optimal midwifery provision in maternity units of public hospitals of Limpopo Province.
- Establish relations among factors that influence the existing midwifery practice environment for enhancement of optimal midwifery provision in maternity units of public hospitals of Limpopo Province.
- Determine the nature of midwifery practice environment in maternity units of public hospitals in the context of optimal midwifery provision.

4.2 Presentation of the Results

The discussion of quantitative results is based on descriptive and inferential statistics to allow for proper summarization, organization, evaluation, analysis, interpretation and communication of numeric information. Descriptive statistics helped in making sense of a

large volume of data whereas the inferential statistics helped to make inferences about a subset of the population from the study. The results are presented in tables, bar graphs and pie graphs.

4.2.1 Respondents Response Rate

A total of 163 questionnaires were administered to learner midwives, and about 148 (91%) questionnaires were completed. However, for the midwifery practitioners 164 questionnaires were administered and 100 (57%) were completed.

4.2.2 Section A: Demographic Data

Demographic data of respondents were age, qualifications, gender, and their clinical placements, number of beds and number of midwifery practitioners per day. The purpose of using the demographic information was to depict an accurate picture of the group of respondents who participated in the study. These demographic profiles of learner midwives and midwifery practitioners are compared and discussed concurrently.

4.2.2.1 Age and gender

Table 4.1: Age and gender of respondents

Variable	Learner Midwives (n=148) Frequency (%)	Variable	Midwifery Practitioners (n=100) Frequency (%)
1.Age		Age	
Less than 22 years	31 (21%)	20-29 years	22 (22%)
22-23 years	83 (56.1%)		
26-28 years	18 (12.2%)	30-39 years	13 (13%)
29-30 years	5 (3.4%)	40-49 years	26 (26%)
More than 31 years	11 (7.4%)	50-59 years	35 (35%)
		Greater than 60 years	4 (4.4%)
2.Gender			
Female	112 (77.2%)		
Male	33 (23%)		

Table 4.1 provides evidence that 83 (56.1%) learner midwives who are finalists were more

concentrated between 22-23 years followed by <22 years 31 (20.9%); 26-28 years 18 (12.2%); 29-30 years 5 (22%) and 11 (7.4%) more than 31 years.

More midwifery practitioners were older females from 50-59 years with frequency of 35 (35%), followed by 40-49 years with frequency of 26 (26%); 30-39 years with frequency of 13 (13%); 20-29 years with frequency of 22 (22%). The youngest learner midwife was 22 years and the older was 28 years. However, the older midwifery practitioner was 63 years. These results provide evidence that the aging midwifery practitioners were of retirement age which is 55 years and others had already retired based on the evidence of the oldest midwifery practitioners who were 63 years old. Mollart, Skinner, Neving and Fourer (2013) affirmed that aging is a physiological change thus influences tiredness. With regard to gender, the R425 learner midwives composed of more females 112 (75.7%) than males 33 (22.3%). The total is 148 (100%). This shows that nursing is still a profession for females rather than males, though nowadays the number of males entering the profession are increasing.

4.2.2.2 Education-related (Learner Midwives)

Table 4.2: Education-related variables for learner midwives

Variables	Characteristic	Learner Midwives (n=148) Frequency (%)
1. Programme followed	R 425 Diploma	70 (47.3%)
	R 425 B Cur	78 (53%)
2. Experiential Learning Environment	Antenatal	39 (26.4%)
	High Care	11 (7.4%)
	Intrapartum	55 (37.4%)
	Puerperium	42 (28.4%)

Table 4.2 shows the programmes followed by the learner midwives and indicates that there is a high percentage of R425 learner midwives who were pursuing degree in the University of Limpopo and University of Venda (52.7%) as compared to the diploma in Giyani, Sovenga and Thohoyandou (47.3%). A degree and diploma was the highest level of education for all these respondents. In terms of the midwifery experiential learning environment, the results

revealed that R425 learner midwives who were placed in intrapartum unit were 55 (37.2%), puerperium 42 (28.4%), antenatal unit 39 (26.4 %) and high care 11 (7.4%) during the data collection period. According to learner midwives <9 beds had 21 (14%), 10-15 beds had 57 (38%); 16-20 beds had 23 (15.5%) and 21-26 beds had 46 (31.1%0). Thus, more learner midwives and midwifery practitioners were allocated for close monitoring of maternal and foetal status during intrapartum unlike in the other units, for the purpose of appropriate supervision and mentoring in a likely busy unit.

4.2.2.3 Work-related (Midwifery Practitioners)

Table 4.3: Work-related variables for Midwifery Practitioners

Variable	Characteristic	Midwifery Practitioners (n=100) Frequency (%)
1. Qualifications	Qualifications obtained	
	1 year Diploma Midwifery	33 (33%)
	R 425 Diploma	29 (29%)
	R 425 B Cur	15 (15%)
	Advanced	18 (18%)
	M Cur	5 (5%)
2. Employment status	Permanent	98 (98%)
	Temporary	0 (0%)
	Missing	2 (2%)
3. Midwifery Practice Environment	Antepartum	12 (12%)
	High Care	14 (14%)
	Intrapartum	55 (55%)
	Postpartum	16 (16%)
4. Function at the unit	Functional	69 (69%)
	Team leader	26 (26%)
	Nurse manager	5 (5%)

Table 4.3 shows the seven variables which were work-related namely qualifications, employment status, midwifery practice environment, beds, day duty staff, staff during night duty and function at unit. The midwifery practitioners who had Diploma in Midwifery were 33 (33%); Diploma in General Nursing 29 (29%); B Cur 15 (15%); only 18 (18%) had Advanced Midwifery and 5 (5%) M Cur. A high percentage of respondents had a Diploma in Midwifery (33%) and a Diploma in General Nursing (29%), respectively. This suggests that the

midwifery practitioners in the older age groups mostly hold a Diploma in Midwifery and were possibly supervising these young learner midwives, a relatively higher percentage to those who graduated with a B Cur and Advanced Midwifery. According to Jordan, Fenwick, Slavin, Sidebotham and Gamble (2013) about 87% of midwives have a dual registration of nursing and midwifery, whilst 13% had completed their undergraduate midwifery programme and were registered as midwives only.

Therefore, there is a need for older midwifery practitioners with a Diploma in Midwifery to keep abreast and being able to mentor the learner midwives appropriately. The highest qualification (M Cur) was 5(5.6%) which indicated that few midwifery practitioners pursued it. Due to possession of the professional qualification of midwifery at different levels by all respondents these attest that all the respondents had midwifery knowledge and skills.

Most midwifery practitioners 98 (98%) were employed on permanent basis and there were no moonlighting or sunlighting opportunities in all the maternity units of public hospitals in Limpopo Province. Information was missing from two respondents that could mean that this portion of employment was not completed by two-respondents. The majority of midwifery practice environment midwifery practitioners were in the very busy unit, which caters for most of the low and high-risk vaginal deliveries.

This table also indicates that there were 69 (69%) functional midwifery practitioners, who were many compared to the midwifery practitioners at managerial and team leader levels. Therefore, many functional midwifery practitioners need managerial support in order to implement optimal midwifery care to pregnant women.

4.2.2.4 Beds

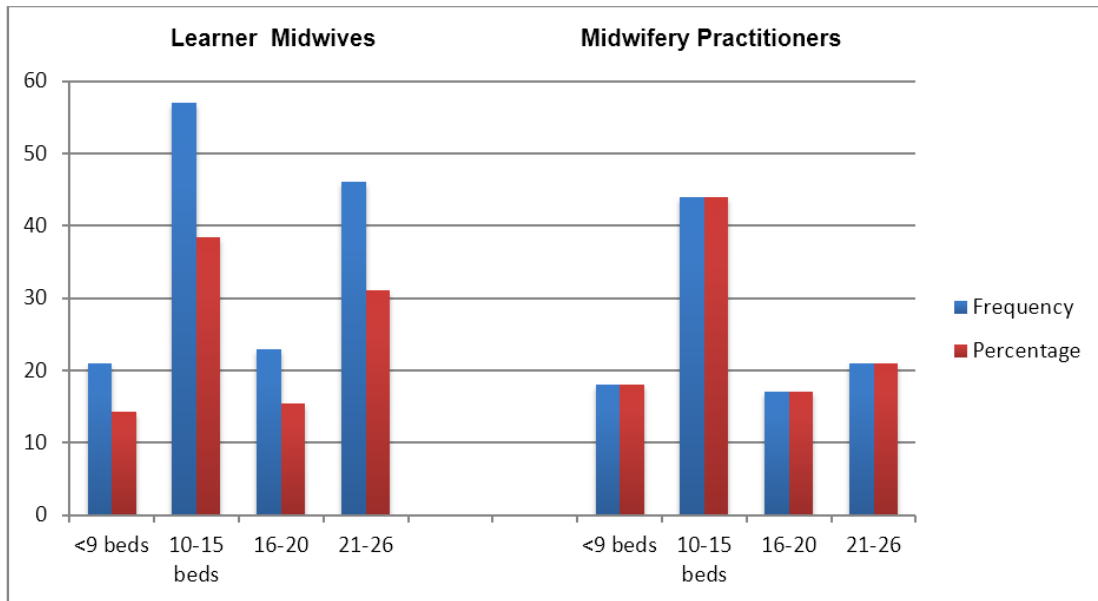


Figure 4.1: Beds in the midwifery experiential learning and practice environments

Figure 4.1 shows the number of beds in the midwifery experiential learning and practice environment. Based on the findings, midwifery practitioners in 10-15 beds per unit were 44 (44%) whereas learner students were 57 (38.4%). However, in 21-26 beds per unit learner midwives were 46(31.1%) whereas midwifery practitioners were 21 (21%). The unit which seemed very busy was the one with 10-15 beds as shown in responses of both the learner midwives and midwifery practitioners. The number of beds does not determine the busyness of the unit, but could give some indication of the size of the unit, how many patients, learner midwives and midwifery practitioners were in the unit. These learner midwives depended on midwifery practitioners for supervision, mentoring and coaching for professional development and growth. The acuity and the learner midwife to patient ratio determines the busyness of the maternity unit.

4.2.2.5 Number of learner midwives and midwifery practitioners per unit

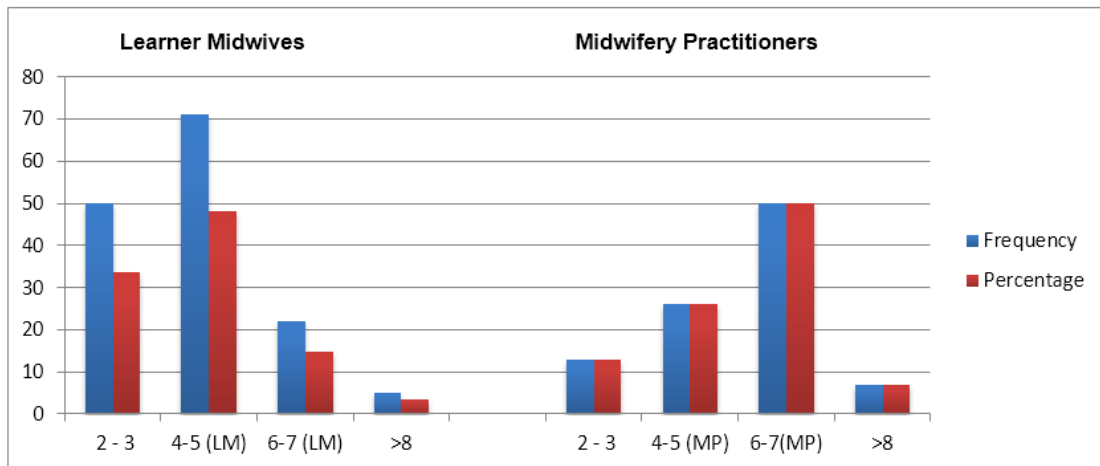


Figure 4.2: Number of learner midwives and midwifery practitioners per unit

It was evident based on figure 4.2 that more learner midwives 71 (48%) were allocated in 4-5 beds whereas midwifery practitioners in 4-5 beds were 26 (26%). However, more midwifery practitioners 50 (50%) were allocated in 6-7 beds as compared to learner midwives who were 22 (14%) in 6-7 beds. Thus, there were more learner midwives versus midwifery practitioners' supervision equivalence. Thopola and Lekhuleni (2015a) stated that the inadequate number of midwifery practitioners employed in maternity units influence lack of supervision of learner midwives.

4.2.2.6 Number of Midwifery Practitioners per Day and Night Duty

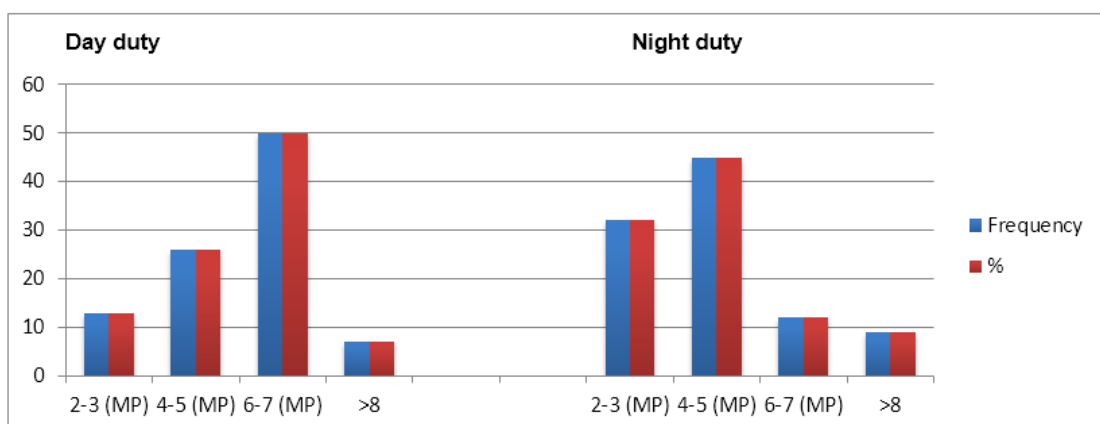


Figure 4.3: Number of midwifery practitioners per day and night duty

Figure 4.3 showed the increased midwifery practitioners 6-7 in number with 50 (50%) doing day duty in comparison with less in 4-5 midwifery practitioners were 45 (45%) doing night duty. Based on the findings, it is clear that the number of staff during the day and night does differ significantly. This indicates that there were more midwifery practitioners doing day duty as compared to night duty and this poses a problem for the number of midwifery practitioners versus patient ratio and supervision of learner midwives (Jones & Wylie, 2008).

4.2.3 Section C: Material Resources

4.2.3.1 Availability of Basic Material Resources

The following Table 4.4 shows the lack of basic material resources: sanitary pads 110 (74%), linen 77 (72%) gloves 89 (59.8%) and soap 69 (46.6%) according to learner midwives. Midwifery practitioners responded: linen 61 (61%), sanitary pads 52 (52%) and soap 51 (51%). This supported the narrated data that was shortage of sanitary pads and soap, thus puerperium mothers were made to buy these for themselves. Furthermore, linen was not available, thus pregnant women were found delivering on plastics instead of sheets (Hassan-Bitar & Narrainen, 2009). Therefore, pregnant women were at risk of acquiring infection and this posed a challenges to midwifery practitioners and learner midwives who should monitor and manage these patients.

Table 4.4: Availability of basic material resources

Availability of Resource	Learner Midwives				Midwifery Practitioners			
	N	Hardly Ever F (%)	Sometimes F (%)	Often F (%)	N	Hardly Ever F (%)	Sometimes F (%)	Often F (%)
1. Linen	149	77 (51.7)	66 (44.3)	6 (4)	100	61 (61)	20 (20)	19 (19)
2. Night gowns	149	51 (34.2)	63 (42.3)	35 (23.5)	100	13 (12.1)	55 (55.6)	32 (32.2)
3. Paper towels	149	69 (46.3)	45 (30.2)	35 (23.5)	100	51 (51)	42 (42)	7 (7)
4. Pillows	148	39 (26.4)	51 (34.5)	58 (39.1)	100	46 (46)	34 (34)	20 (20)
5. Sanitary pads	149	110 (73.8)	31 (20.8)	8 (5.4)	100	52 (52)	37 (37)	11 (11)
6. Soap	149	69 (46.3)	66 (44.3)	14 (9.4)	100	51 (51)	33 (33)	16(16)

4.2.3.2 Availability of Medical Material Resources

The results shown in Table 4.5 reveal that learner midwives and midwifery practitioners experienced a lack of gloves, urine catheters and urine dipsticks. Gloves were hardly ever available: Most 78 (52%) of learner midwives and 49 (49%) midwifery practitioners; urine catheters at 97 (65%) learner midwives and 55 (55%) midwifery practitioners; urine dipsticks 46 (31%) learner midwives and 52 (52%) midwifery practitioners. Sterile surgical gloves are required for internal examination for instance per digital vaginal examinations. Deliveries of babies also require sterile surgical gloves instead of medical gloves which are not strong and protective enough to prevent cross-infection.

Every pregnant woman who is unable to pass urine due to some reason or has to undergo Caesarean section needs to be catheterized. Urinary catheters should always be available in order to obtain a specimen of urine for testing, monitoring output and Caesarean section purposes. Also, availability of urine dipsticks is equally important for testing purposes of proteins, glucose, leukocytes, ketones and blood. Limited material resources impede the respondents from managing pregnant women effectively and efficiently. This might cause the learner midwives and midwifery practitioners to improvise (Thopola & Lekhuleni, 2015a). Therefore, this is the evidence that there is scarcity of material resources in the maternity units of public hospitals in Limpopo Province. This is supported by Moyo (2013) that lack of sterile gloves influence midwives to acquire and transmit cross-infection. Deliveries of babies also require sterile surgical gloves instead of medical gloves which are not strong and protective enough to prevent cross-infection (Thopola & Lekhuleni, 2015a).

Table 4.5: Availability of medical material resources

Availability of Resources	Learner Midwives				Midwifery Practitioners			
	N	Hardly Ever F (%)	Sometimes F (%)	Often F (%)	N	Hardly Ever F (%)	Sometimes F (%)	Often F (%)
7. Administrative sets	149	8 (5)	31 (20)	110 (74)	100	7 (7)	48 (48)	45 (45)
8. Endotracheal tubes	149	24 (16)	43 (29)	82 (55)	100	28(28)	37 (37)	35 (35)
9. Gloves	149	78 (52)	66 (44)	5 (3)	100	49 (49)	34 (34)	17 (17)
10. Suction catheters	149	10 (7)	43 (29)	96 (64)	100	10 (10)	55 (55)	35 (35)
11. Sutures	149	10 (7)	44 (30)	95 (64)	100	13 (13)	45 (45)	42 (42)
12. Urine bags	149	12 (8)	40 (27)	97 (65)	100	16 (16)	46 (46)	38 (38)
13. Urine catheters	149	97 (65)	40 (27)	12 (8)	100	55 (55)	27 (27)	18 (18)
14. Urine dipsticks	149	46 (31)	66 (44)	37 (25)	100	52(52)	31(31)	17 (17)

4.2.4 Section D: Equipment

4.2.4.1 Availability of Essential Equipment

Table 4.6 shows the high percentage of limited BP apparatus at 105 (70.9%); stethoscope 99 (66.9%); CTG machine 99 (68.9%) and tracing paper 79 (54%) based on learner midwives' numeric data. Therefore, learner midwives were unable to practice the midwifery skills due to lack of equipment. Midwifery practitioners also experienced a challenge of limited essential equipment namely BP apparatus, doptones, non-stress test and tracing papers. Such equipment is essential in monitoring blood pressure, foetal status and recording of evidence of the status of the foetal heart rate during pregnancy and labour. If essential equipment is limited or not in good functioning order it might lead to sub-optimal midwifery provision. This lends support to the narrated data that limited essential equipment made participants unable to diagnose timeously and prevent complications. Furthermore, Table 4.6 indicates the lack of essential equipment in maternity units of public hospitals, Limpopo Province.

Table 4.6: Availability of essential equipment

Availability of Resources	Learner Midwives				Midwifery Practitioners			
	N	Hardly Ever F (%)	Sometimes F (%)	Often F (%)	N	Hardly Ever F (%)	Sometimes F (%)	Often F (%)
1. BP apparatus	149	105 (71)	35 (24)	9 (6)	100	57 (57)	24 (24)	19(19)
2. CTG machine	149	99 (66)	31(20)	24(16)	100	52 (52)	29 (29)	19 (19)
3. Doptone	149	78 (52)	66 (44)	5 (3)	100	72 (72)	19 (19)	9 (9)
4. Foetoscope	149	14 (9)	21 (14)	114 (77)	100	22 (22)	22 (22)	56 (56)
5. Non-stress test	149	65 (44)	49 (33)	35 (24)	100	56 (56)	32 (32)	12 (12)
6. Stethoscope	149	99 (66)	31 (20)	19 (13)	100	40 (40)	35(35)	25 (25)
7. Tracing paper CTG	149	79 (53)	46 (31)	24 (16)	100	56 (56)	35 (35)	9 (9)

4.2.4.2 Availability of Delivery Equipment

Table 4.7: Availability of delivery equipment

Availability of Resources	Learner Midwives				Midwifery Practitioners			
	N	Hardly Ever F (%)	Someti mes F (%)	Often F (%)	N	Hardly Ever F (%)	Someti mes F (%)	Often F (%)
8. PV packs	149	26 (17)	38 (26)	85 (57)	100	25 (25)	34 (34)	41 (41)
9. Delivery packs	149	23 (15)	28 (19)	98 (66)	100	6 (6)	26 (26)	68 (68)
10. Episiotomy scissors	149	117 (79)	23 (15)	9 (6)	100	62 (62)	23 (23)	15 (15)
11. Oxygen cylinder	149	12 (9)	16 (11)	121 (81)	100	20 (20)	22 (22)	56 (56)
12. Suction apparatus	149	12 (9)	34 (23)	103 (69)	100	9 (9)	56 (56)	35 (35)

Table 4.7 indicates the lack of delivery equipment in maternity units of public hospitals, Limpopo Province. Most of the learner midwives (79%) and midwifery practitioners (62%) reported that the episiotomy scissors were limited. If episiotomy scissors are blunt it put the person that is delivering the pregnant woman in a position that is likely not acceptable.

This is supported by the narrative data from learner midwives and midwifery practitioners that episiotomy scissors were blunt and thus participants improvised and used the scalp blade to cut an episiotomies (Thopola & Lekhuleni, 2015a). Due to the non-availability of sterile equipment, prevention of cross infection and prevention of mother to child transmission in this present HIV AND AIDS epidemic. This is an indication of sub-optimal care in the maternity units of public hospitals, Limpopo province. Performance of unsterile per vaginal examinations to pregnant women in labour and have a negative impact on their safety.

4.2.5 Section E: Competency

4.2.5.1 Competency of Learner Midwives

Section E items related to self-perceived competence of the respondents. Table 4.8 shows the competency of learner midwives based on their self-rated results, namely, respondents rated themselves 89 (61%) to 139 (94%) good in the following knowledge and skills levels: Utilization of BANC and HB; measuring of MUAC and implementation of prevention of maternal-to-child transmission (PMTCT). This indicates that the respondents have acquired midwifery skills (DoH, 2015).

Table 4.8: Competency of learner midwives

Competency	N	Somewhat F (%)	Fair F (%)	Good F (%)
1. Utilization of basic antenatal care (BANC)	145	4 (3)	18 (12)	123 (85)
2. Measuring of mid-upper arm circumference (MUAC)	148	7 (5)	18 (12)	123 (83)
3. Utilization of haemoglobin equipment	147	18 (12)	22 (15)	107 (73)
4. Utilization of Non-Stress Test (NST) machine	148	29 (20)	30 (20)	89 (60)
5. Analysis of NST	147	27 (18)	32 (22)	88 (60)
6. Interpretation of NST strip	146	21 (14)	33 (23)	92 (63)
7. Implementing the prevention of maternal-to-child-transmission (PMTCT) strategy	145	1 (0.7)	17 (12)	127 (88)

The findings indicate that these respondents have acquired knowledge and skills of midwifery; however few of respondents are having between somewhat and fair regarding the knowledge and skills of midwifery. These respondents still need support of their facilitator and mentors in order to develop and grow professionally.

4.2.5.2 Continuation of Competency of Learner Midwives

Continuation of Table 4.8: Competency of learner midwives

Competency	N	Somewhat F (%)	Fair F (%)	Good F (%)
8. Knowledgeable regarding cardiocotograph (CTG) machine	148	5 (3)	35 (24)	108 (73)
9. Analysis of CTG strip	147	5 (3)	25 (17)	117 (80)
10. Interpretation of CTG	146	8 (6)	27 (19)	111 (76)
11. Ability to perform intrapartum resuscitation based on CTG	145	12 (8)	32 (22)	101 (70)
12. Ability to plot foetal heart rate on partograph	145	1 (0.7)	8 (6)	136 (94)
13. Ability to plot the station of foetal head on partograph	148	3 (2)	19 (13)	126 (85)
14. Skillful in plotting cervical dilatation on partograph	147	1 (0.7)	7 (5)	139 (95)
15. Analysis of findings plotted on partograph	148	1 (0.7)	9 (6)	138 (93)
16. Ability to interpret foetal and maternal statuses plotted on the partograph	147	0 (0.0)	9 (6)	138 (94)
17. Ability to interpret progress of labour plotted on partograph	148	0 (0.0)	9 (6)	139 (94)
18. Ability to give oxygen to patient with foetal distress	147	1(0.7)	10 (7)	136 (93)
19. Resuscitation of newborn babies effectively without complications	147	9 (6)	35 (24)	103 (70)
20. Ability to implement "Let baby breathe strategy"	146	9 (6)	34 (23)	103 (71)
21. Insertion of drip without fail	148	3 (2)	17(12)	128 (87)

Table 4.8 indicates the competency of learner midwives based on how they perceived themselves. Respondents rated themselves high in terms of analysis of CTG 117 (80%); interpretation of CTG 111 (76%) based on the results shown on Table 4.8. These competencies are done during the intrapartum period focusing on the monitoring of maternal and foetal status as well as resuscitation of a newborn infant. Some of the skills that the learner midwives which they rated

themselves high were as follows:

- Able to plot and analyze findings plotted on partograph, foetal and maternal status, progress of labour 138 (94%);
- Knowledge regarding CTG, analysis and interpretation of CTG 111 (76%);
- Ability to perform intrapartum resuscitation based on CTG 101 (70%) and resuscitation of newborn baby 103 (70%).

4.2.5.3 Competency of Midwifery Practitioners

Table 4.9: Competency level of midwifery practitioners

Competency	N	Somewhat F (%)	Fair F (%)	Good F (%)
1. Utilization of basic antenatal care (BANC)	100	5 (5)	18 (18)	77 (77)
2. Measuring of mid-upper arm circumference (MUAC)	100	4 (4)	12 (12)	84 (84)
3. Utilization of haemoglobin equipment	100	22 (22)	14 (14)	64 (64)
4. Utilization of Non-Stress Test (NST) machine	100	25 (25)	18 (18)	57 (57)
5. Analysis of NST	100	24 (24)	19 (19)	57 (57)
6. Interpretation of NST strip	100	21 (21)	18 (18)	61 (61)
7. Implementing the prevention of maternal-to-child-transmission (PMTCT) strategy	100	6 (6)	15 (15)	79 (79)

Table 4.9 shows the results regarding the competency level of the respondents. The scale ranged between somewhat, fair and good. The respondents rated themselves high which is unlikely in all questions of their knowledge and skills. However, these are midwifery practitioners who have more than two years' experience and some are advance midwives who have expertise. The results indicated the following: utilization of BANC 77 (77%); measuring of MUAC 84 (84%) and implementation of PMTCT 79 (79%). Midwives have an obligation of delivering the standard midwifery care according to the statutory function of the SANC, which is to safeguard the

health and well-being of the public.

4.2.5.4 Continuation of Competency Level of Midwifery Practitioners

- Continuation of Table 4.9: Competency of midwifery practitioners

Competency	N	Somewhat F (%)	Fair F (%)	Good F (%)
8. Knowledgeable regarding cardiocograph (CTG) machine	100	19 (19)	9 (9)	72 (72)
9. Analysis of CTG strip	100	20 (20)	5 (5)	75 (75)
10. Interpretation of CTG	100	20 (20)	10 (10)	70 (70)
11. Ability to perform intrapartum resuscitation based on CTG	100	5 (5)	17(17)	68(68)
12. Ability to plot foetal heart rate on partograph	100	0 (0)	9 (9)	91 (91)
13. Ability to plot the station of foetal head on partograph	100	0 (0)	9 (9)	91 (91)
14. Skillful in plotting cervical dilatation on partograph	100	0 (0)	18 (18)	82 (82)
15. Analysis of findings plotted on partograph	100	0 (0)	8 (8)	92 (92)
16. Ability to interpret foetal and maternal statuses plotted on the partograph	100	0 (0)	12 (12)	88 (88)
17. Ability to interpret progress of labour plotted on partograph	100	0 (0)	15 (15)	85 (85)
18. Ability to give oxygen to patient with foetal distress	100	0 (0)	21 (21)	79 (79)
19. Resuscitation of newborn babies effectively without complications	100	12 (12)	10 (10)	78 (78)
20. Ability to implement "Let baby breathe strategy"	100	17(17)	18 (18)	75 (75)
21. Insertion of drip without fail	100	15 (15)	15 (15)	70 (70)

Table 4.9 illustrates the continuation of competency of midwifery practitioners pertaining to their ability to: plot foetal heart rate, station of foetal head, cervical dilatation on the partograph; able to analyze findings plotted on partograph 92 (92%), foetal and maternal status, progress of labour 85 (85%); knowledge

regarding CTG, analysis and interpretation of CTG 75 (75%); ability to perform intrapartum resuscitation based on CTG; let baby breath 75 (75%) resuscitation of newborn baby 78 (78%).

The evidence reveals that midwives are knowledgeable and competent based on self-report and evidenced by qualifications they obtained as reflected on their demographic profile. The results on the competency of midwifery practitioners proves that midwives are trained to provides quality midwifery interventions in order to prevent maternal and perinatal mortality rate and negligence which is supported by SANC (1993); United Nations (2008) and WHO (2010a). The midwifery practitioners have other responsibilities of teaching and supervising learner midwives, therefore, it is imperative that they are qualified and registered with SANC.

This is achieved by SANC through maintaining a register of qualified midwives, establishing and monitoring standards of education and training, conducting and investigating allegations made against midwifery practitioners and learner midwives who may not have followed the scope of practice.

4.2.6 Mean and standard deviation for resources, equipment and competency

Table 4.10: Total scores of resources, equipment and competency

	Respondents	Population	Mean	Standard deviation
Resources	Learner midwives	N=148	34.17	9.245
	Midwifery practitioners	N=100	27.77	7.387
Equipment	Learner midwives	N=148	36.93	8.383
	Midwifery practitioners	N=100	27.61	9.056
Competency	Learner midwives	N=148	87.36	11.457
	Midwifery practitioners	N=100	85.76	17.407

Table 4.10 shows the mean scores and standard deviations for resources, equipment and competency as were completed by learner midwives and midwifery practitioners. There is low mean of between 27.77 (midwifery practitioners) and 34.17 (learner midwives) with regard to resources and equipment was also low 27.61 (midwifery practitioners) and 36.93 (learner midwives), however, the mean for competency of both the learner midwives (87.36) and midwifery practitioners (85.76) was high.

4.2.7 T- tests for resources, equipment and competency

Table 4.11: T-test

	f	Sig	t	df	Sig. (2-tailed)
Resources					
Equal variance assumed	9.775	.002	8.465	246	.000
Equal variance not assumed			8.837	239.093	.000
Equipment					
Equal variance assumed	.985	.322	8.310	246	.000
Equal variance not assumed			8.186	201.357	.000
Competency					
Equal variance assumed	36.315	.000	.872	246	.384
Equal variance not assumed			.807	156.407	.421

Total scores were computed for the resources, equipment and competency subscales for learner midwives and midwifery practitioners. An independent samples t-test found that there were significant differences between learner midwives and midwifery practitioners about resources ($t=8.465$, $p=.000$) and equipment ($t=8.310$, $p=.000$) in that learner midwives reported more resources and equipment than midwifery practitioners. There was no significant differences in the self-reported competency ($t=.872$, $p=.384$).

Table 4.11 shows the average total score of material resources, equipment and competency between learner midwives and midwifery practitioners. The differences were compared. The differences between the total material resources and equipment scores was significant with p-value of < 0.05 .

The difference in the total competency scores was not significant. The Cronbach alpha for material resources were .904; for equipment was .876 and for competency was .887.

4.2.8 Assessment of Learner Midwives

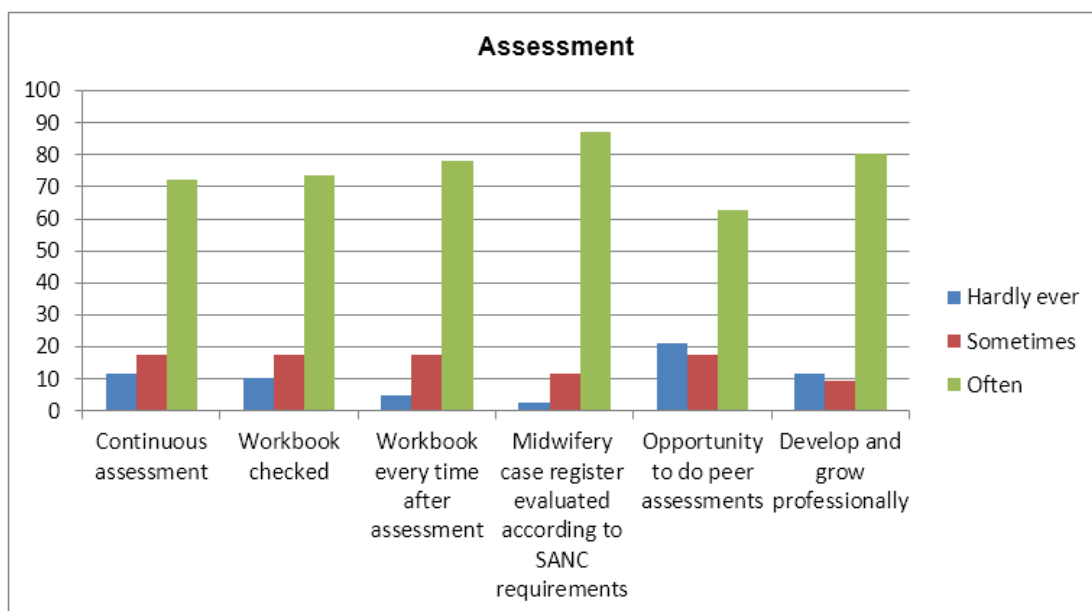


Figure 4.4: Assessment of learner midwives

Figure 4.4 indicates that the respondents' midwifery case registers, workbooks were checked and continuous assessment done for grading the learner midwives. In South Africa, the midwifery profession is regulated by the SANC which lays down rules and standards to determine the preparation of learner midwives (SANC, 2005) and practice of midwives (SANC, 1993). The number of continuous assessments, number and types of skills in the workbooks and midwifery case registers are to be completed according to SANC's requirements for the individual learner midwives to have accomplished her training. The universities and colleges also have to follow the requirements as laid down by the statutory body. These demonstrate that the learner midwives' training is standardized nationally and internationally.

4.2.9 Section F: Consultation of Learner Midwives and Midwifery Practitioners

Table 4.12: Consultation of learner midwives and midwifery practitioners

Statement	Learner Midwives				Midwifery Practitioners			
	N	Hardly Ever F (%)	Sometimes F (%)	Often F (%)	N	Hardly Ever F (%)	Sometimes F (%)	Often F (%)
1. Consultation with seniors	149	0 (0)	8 (5)	141 (95)	100	0 (0.0)	12 (12)	88 (88)
2. Seeking senior opinion	149	0 (0)	8 (5)	141 (95)	100	13 (13)	7 (7)	80 (80)
3. Timeously response of senior personnel	149	5 (3)	37 (25)	107 (72)	100	11 (11)	10 (10)	79 (79)
4. Referral of patient	149	3 (2)	10 (7)	136 (91)	100	5 (5)	10 (10)	85 (85)
5. Knowledge of protocols and guidelines	149	2 (1)	13 (9)	134 (90)	100	10 (10)	10 (10)	80 (80)
6. Application of protocols and guidelines	149	0 (0)	10 (7)	139 (93)	100	12 (12)	10 (10)	78 (78)

Table 4.12 shows that the learner midwives consulted very often seek opinion at 141 (95%); refer patients and know and used protocols often at 94%. These indicate that as learners they still need more support from their seniors. This is an indication of learning and developing of these respondents in becoming knowledgeable and skillful thus developing and growing professionally.

Again, it shows that the midwifery practitioners as well consult very often, seek opinion, refer patients, have knowledge and implement protocols and guidelines at about 78 (78%) to 88 (88%). These result indicate that as professionals they still need support of other professionals to strengthen the teamwork and provision of quality midwifery care and thus to reduce the maternal and perinatal morbidity and mortality rates locally and that can impact positively nationally and internationally.

4.2.10 Section G (Midwifery practitioners): Remunerations

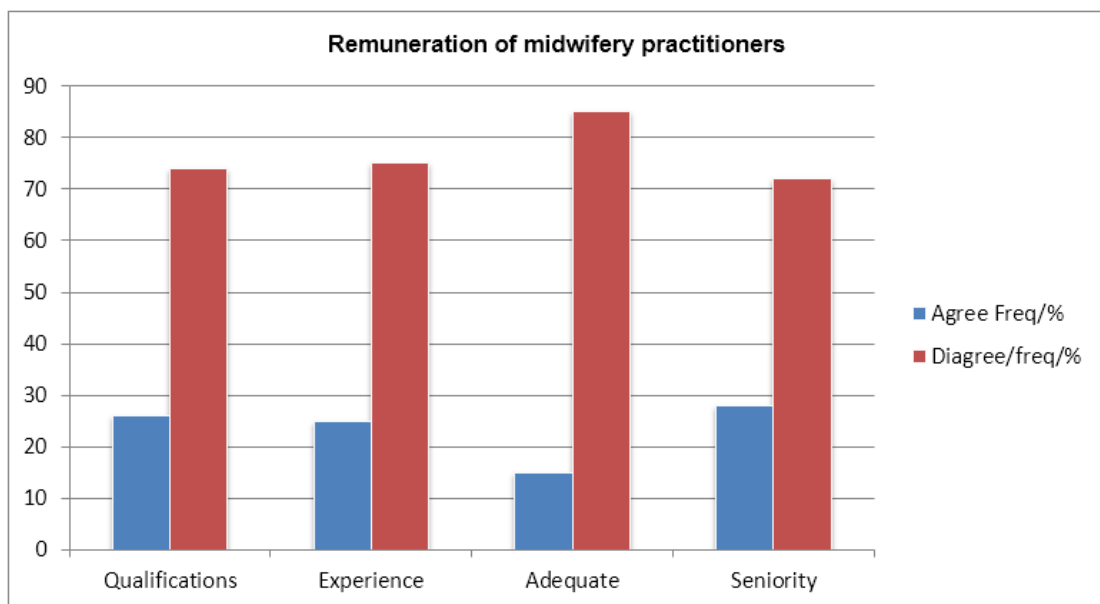


Figure 4.5: Remunerations of midwifery practitioners

Figure 4.5 shows that the respondents strongly disagreed that they were remunerated according to their experience 66 (76%); qualifications 64 (74%)

and according to their seniority 62 (71%). The results of 75 (84%) revealed that respondents were not adequately remunerated. Despite the low remuneration, midwifery practitioners are still rendering midwifery service. Therefore, midwifery practitioners need organizational support for improved remunerations and working conditions.

Midwifery practitioners who never attended national conferences were many at 80 (90%); those who attended once were 7 (8%); those who attended twice were 2 (2%) whereas those who attended more and always was zero (0%). Furthermore, midwifery practitioners who never attended midwifery symposia were 68 (76%); once were 13 (15%); twice were 6 (7%); more and always were 1 (1%), each. Regarding midwifery seminars, those who never attended were 67 (74%); those who attended once 14 (16%); those who attended twice 5 (%); attended more 3 (3%); always 1(1%). Midwifery practitioners who never attended perinatal mortality rate meetings were 32 (36%); once 16 (15%); more were 15 (17%); and twice and always had the same results of 13 (15%), each. In the case of maternal morbidity and mortality rate meetings the high percentage of attendance were those who attended more 23 (26%); followed by those who attended once 20 (23%); those who never attended 18 (20%) and those who ate 18 (20%); those who attended twice and always were 14 (16%).

4.2.11 Section H: Staff Development

Table 4.13: Staff development

Midwifery Practitioners				
Statement	N	Never F (%)	Sometimes F (%)	Often F (%)
1. International conferences	100	91 (91)	8 (8)	1 (1)
2. National conferences	100	89 (89)	11 (11)	0 (0)
3. Midwifery and Neonatology Symposia	100	78 (78)	20 (20)	2 (2)
4. Midwifery seminars	100	74 (74)	22 (22)	4 (4)
5. Midwifery seminars	100	24 (24)	38 (38)	38 (38)
6. Perinatal morbidity and mortality rates meetings in Limpopo Province	100	38 (38)	30 (30)	32 (32)
7. Workshops related to Midwifery practice	100	37 (37)	30 (30)	33 (33)
8. In-service education in the unit you are working	100	16 (16)	26 (26)	58 (58)
9. Permission granted for furthering studies	100	50 (50)	30 (29)	20 (20)

Table 4.13 shows how the respondents were given opportunities to upgrade themselves, thus keeping themselves abreast in terms of knowledge and midwifery skills. In terms of attendance of international conferences, most MPs never attended 81 (90%); those who attended once were 7 (8%) and those who attended twice or more were the same number of 1 (1%) and those who attended always 0 (0%).

Those who never attended the workshops 33 (37%); more attendance 18 (20%); however, those who attended once, twice and always were 13 (14 %). Those who always had opportunity of attending in-service education always had the opportunity always were 33 (38%); more often 18 (21%); twice 16 (18%); never attended 13 (15%); and those who had the opportunity once 8 (9%). However, those who were never given opportunity to further their

education were 44 (49%); those who had a chance once were 23 (26%); always 12 (14%); more chance 7 (8%); and those who had chance twice were 3 (3%). Perinatal and maternal mortality meetings, workshops and in-service education were well attended, based on the results. Permission to further studies could be a problem since almost 44 (50%) were never given permission versus those who were more and always permitted to further their studies. Brodie (2013) affirmed that midwifery practitioners need professional support that enables them to fulfil their roles, and initiatives to nurture graduates entering their initial year of practice.

4.2.12 Mean Scores by Resources

Table 4.14: Mean scores by resources

Learner midwives		Limpopo Nursing College (70)	University of Limpopo (34)	University of Venda (44)	Total
B learning Environment score	Mean	5	2.5	2.3	3
	Median	5	2.5	2.3	2
Material resources score	Mean	5	3.0	2.6	2.4
	Median	4.9	3.0	2.8	2.5
Equipment score	Mean	5	3.1	3.0	2.5
	Median	5	3.1	3.2	2.5
Competency score	Mean	6	3.5	3.2	2.7
	Median	6.2	3.5	3.3	2.9
Procedure score	Mean	6.9	3.5	3.6	2.7
	Median	7	3.7	3.7	3.1
Assessment score	Mean	3.6	3.4	3.1	2.5
	Median	3.2	3.6	3.2	3.3

Table 4.14 gives the mean and the median of different nursing education institutions based on midwifery learning environment, material resources, equipment, competency, procedure and assessment. The University of Limpopo had high mean scores of 3.0; 3.1; 3.5, respectively, whereas the University of Venda had relatively high mean scores on equipment,

competency, and procedure of 3.0; 3.2 and 3.6. Limpopo Nursing College had lowest mean score related to equipment (1.4); material resources (1.8); equipment (2.5); competency (2.0); assessment (2.0) procedure (2.3) respectively.

The vaginal packs mean score of 2.6 proves that there was a lack of this resource followed by relatively similar mean score of 3.0 for suction apparatus; oxygen cylinder 3.2 mean score; episiotomy scissors mean score 3.3; delivery packs mean score 3.5, respectively. Vaginal packs were mostly not available, thus hindering the good practice of performing sterile per vaginal examination procedurally as stipulated. Episiotomy scissors might be available although blunt and not functioning well (Thopola & Lekhuleni, 2015a). All the total score of means of the three institutions indicated a mean of less than 5 which implied that there were limited material resources in the midwifery experiential learning environments.

4.2.13 Mean Scores by Institution

Table 4.15: Mean scores

Learner Midwives		Mean	Median	Standard Deviation
BMean	Sovenga	2.43	2.40	0.35
	UL	2.49	2.47	0.36
	Univen	2.35	2.47	0.33
	Limpopo NC	2.58	2.60	0.43
CMean	Sovenga	2.76	2.71	0.61
	UL	3.00	3.04	0.56
	Univen	2.65	2.82	0.68
EMean	Sovenga	2.6	2.00	0.57
	UL	3.00	3.19	0.41
	Univen	2.65	3.55	0.52
	Limpopo NC	2.28	3.26	0.43
E22Mean	Sovenga	3.09	3.67	0.43
	UL	3.50	3.67	0.59
	Univen	3.23	3.67	0.46
	Limpopo NC	2.93	3.33	0.32
FMean	Sovenga	3.47	3.58	0.56
	UL	3.42	3.58	0.74
	Univen	3.05	3.17	0.70
	Limpopo NC	2.51	2.83	0.99

Table 4.15 shows the median scores of each institution. Based on the results in the table, the mean scores between the nursing education institutions were relatively similar. There was not much differences noted. Kruskal–Wallis Test is used when the groups are more than 2. In this study, the groups of learner midwives were 4.

4.3 Discussion of Quantitative Results

Findings from this quantitative data analysis provided evidence that the midwifery service has more aging midwifery practitioners, fewer young midwifery practitioners and younger learner midwives. Turner and Williams (2010) emphasized that an ageing workforce does not have sufficient

investments to afford retirement. The respondents were asked to provide their actual ages as opposed to choosing from the categories and this variable is continuous variable.

The results indicated that R425 learner midwives who were finalists were more concentrated between 23-25 years (56.1%) followed by <22 years (20.9%); 26-28 years (12.2); 31+ years (7.4%) and 29-30 years (22%). The highest percentage of older women were 50-59 years old with a frequency of 35 (35%) followed by 40-49 years with frequency of 26 (26%); 30-39 years with frequency of 13 (13%); 20-29 years with frequency of 22 (22%). The SANC (2007) indicated that statistics of midwives is 35% and are between the ages of 40-49 years. The results revealed that R425 learner midwives were mostly females (75.7%) than males (22.3%). Females are more likely to choose nursing as their profession.

However, males are increasingly choosing nursing as a profession. In terms of the midwifery experiential learning environment results, most R425 learner midwives placed in intrapartum unit were 55 (37.2%), puerperium 42 (28.4%), antenatal 39(26.4 %) and high care 11(7.4%) during the data collection period. However, all the R425 learner midwives should have equal exposure in all maternity units for professional development and growth, skill development and competency acquisition. The majority of learner midwives and midwifery practitioners were allocated for close monitoring of maternal and foetal status during intrapartum, unlike in other units.

The number of beds does not determine the busyness of the unit. Number of beds could give an indication of the size of the unit, how many patients in the unit and how many learner midwives versus midwifery practitioners. These learner midwives depend on midwifery practitioners for supervision, mentoring and coaching for professional development and growth. The acuity and the learner midwife-patient-ratio determines the business of the maternity unit. Cullinan (2006) highlighted that malfunctioning of equipment is another reality in the daily work-life of public hospital-based professionals.

Based on the availability of basic material resources, the study revealed a lack of sanitary pads, linen, gloves and soap, according to learner midwives. Midwifery practitioners also indicated limited availability of sanitary pads and soap. This supports the narrated data that there were no sanitary pads and soap thus puerperal mothers were made to buy these items. Linen was not available, thus pregnant women were found delivering on plastics (Hassan-Bitar & Narrainen, 2009). The results revealed that learner midwives and midwifery practitioners experienced a lack of gloves, urine catheters and urine dipsticks, and this made learner midwives and midwifery practitioners to improvise, putting the lives of pregnant mothers and fetuses in danger. Learner midwives were unable to practice appropriately their skills due to lack of equipment.

Midwifery practitioners also experienced a challenge of limited essential equipment such as doptones, BP apparatus, non-stress test and tracing papers. These support the narrated data participants were unable to diagnose timeously and prevent complications. Therefore this is the evidence that there is scarcity of material resources in the maternity units of public hospitals in Limpopo Province. Episiotomy scissors according to the learner midwives 117 (79.6%) and midwifery practitioners 62 (62%) were limited. This is supported by the narrative data from learner midwives and midwifery practitioners that episiotomy scissors were blunt, thus participants improvised and used the scalp blade to cut an episiotomy (Thopola & Lekhuleni, 2015a). This is an indication of sub-optimal care that could cause medico-legal hazards. The results revealed that respondents were not adequately remunerated. This was supported by Cullinan (2006) who highlighted that malfunctioning of equipment is another reality in the daily work-life of public hospital-based professionals.

The learner midwives consulted their seniors, sought senior opinion, applied protocols and guidelines and referred patients. This is the indication of learning and developing of these respondents in becoming knowledgeable and skillful professionals. The respondents' midwifery case registers, workbooks were checked and continuous assessment done for grading the learner midwives. The results revealed that the competency of the respondents ranged between

good and very good. Respondents rated themselves very high which is unlikely in all the questions of their knowledge and skills. The respondents were given opportunities to upgrade themselves thus keeping themselves abreast in terms of knowledge and midwifery skills.

4.4 Conclusion

Chapter 4 discussed the quantitative results derived from the learner midwives and the midwifery practitioners. Competent and skilled midwifery practitioners are accountable and responsible in delivering optimal midwifery care and the creation of a favourable experiential learning environment for the learner midwives. But these midwifery practitioners and learner midwives cannot do these alone, nor can they sustain their efforts without support. Therefore, it is of paramount importance for them to receive organizational support in terms of human and material resources, equipment; professional support; social support and good remunerations. All these might influence them to earn respect from the women and community they serve. The next chapter will focus on the results of the qualitative phase.

CHAPTER 5

DISCUSSION OF THE QUALITATIVE RESULTS

5.1 Introduction

Chapter 4 discussed the qualitative results. This chapter focusses on the analysis and discussion of the qualitative data of the study. The findings are based on the narratives from the semi-structured individual interviews of midwifery practitioners; focus group discussions of learner midwives and puerperal mothers. The findings are presented according to the themes and sub-themes that were formulated and identified. A literature control was done to support or refute the results. The purpose of the qualitative phase was to obtain in-depth inferences regarding experiences and perceptions of midwifery practitioners, learner midwives and puerperal mothers.

- **The Objectives of the Qualitative Phase**

The objectives of the qualitative phase 2 were to:

- Explore the lived experiences of midwifery practitioners within their specific midwifery practice environment that influence optimal midwifery execution.
- Describe the experiences of learner midwives regarding experiential placements.
- Explore the perceptions of puerperal mothers with regard to the midwifery care and delivery of their babies provided by midwifery practitioners.

5.2 Results of Semi-Structured Interviews with Midwifery Practitioners

The researcher organized the data by listening to the tapes to get a sense of the whole interview, internalize the content and then transcribed it verbatim. Thereafter, the researcher scribbled ideas on the margins of transcripts. Similar topics were clustered and the most descriptive wording of topics was turned into themes. All data within the same theme were then grouped into sub-themes as needed. Five themes emerged from the findings of the study, namely, shortage of human resources in antepartum, intrapartum and postpartum units, constrained material resources, scarcity of essential equipment for provision of maternal and foetal health care, provision of sub-optimal midwifery care and failure to adhere to infection control principles and prevention of maternal-to-child transmission (PMTCT). Table 5.1 shows the evidence that emerged from midwifery practitioners verbatim transcripts in the form of themes and sub-themes.

Table 5.1: Themes and sub-themes related to midwifery practitioners lived experiences within their specific midwifery practice environment

Themes		Sub-Themes	
1.	Shortage of human resources in antepartum, intrapartum and postpartum units	1.1	Inadequate number of midwifery practitioners.
		1.2	Absenteeism of midwifery practitioners from duty
		1.3	Increased workloads
		1.4	Burnout of midwifery practitioners
2.	Constrained material resources	2.1	Inadequate hand washing materials
		2.2	Insufficient sterile gloves
		2.3	Lack of the required sizes of syringes
		2.4	Insufficient urinary catheters and dipsticks
		2.5	Absence of bed linen, night dresses and sanitary pads
3.	Scarcity of essential equipment for provision of maternal and foetal health care	3.1	Non-availability of baumanometers and haemoglobin meters to monitor maternal status
		3.2	Absence of doptones and poorly functioning cardiotocograph machine to predict the maternal and foetal well-being.

		3.3	Absence of functioning episiotomy scissors
		3.4	Absence of sterile vaginal pack
4.	Provision of sub-optimal midwifery interventions that can lead to medico-legal hazards	4.1	Use of blades when performing episiotomies
		4.2	Catheterizing laboring women by means of suctioning tubes
		4.3	Multiple injections to PIH patients by use of 2-ml syringes
		4.4	Failure in mobilization of pregnant woman in labour to facilitate descent
		4.5	Non-utilization of pain relief during labour
5.	Failure to adhere to infection control principles/PMTCT	5.1	Incorrect hand washing practiced
		5.2	Usage of non-sterile gloves when performing digital vaginal examination
		5.3	No adherence of aseptic technique observed

5.2.1 Theme 1: Shortage of Human Resources in Antepartum, Intrapartum and Postpartum Units

Shortage of human resources was experienced by participants in antepartum, intrapartum, high care and postpartum units in maternity units of public hospitals in Limpopo Province. Four sub-themes emerged: inadequate number of midwifery practitioners; absenteeism of midwifery practitioners; increased workloads and burnout of midwifery practitioners. Human resources in maternity units of public hospitals is a complex issue that needs to be addressed by policymakers. Staff-to-patient ratios and recruitment of midwifery practitioners across South Africa, particularly in rural areas, have negative impact on staffing adequacy and therefore potential risk on provision of optimal quality midwifery care.

Owing to the human resource constraints, midwifery practitioners often do not sit with their patients (Von Holdt & Murphy, 2006). Also, shortage of human resources leads to rituals and routines of practice which impede the

development of evidence-based model of optimal midwifery practice environment in the public hospitals of maternity units. The regulation of staffing in maternity units of public maternity units of South Africa is not yet formulated. However, DoH (2010) in the Saving Mothers Report, recommended adequate staffing levels for 24-hours acute care in labour and postpartum; but also maternity theatres and monitoring post-delivery and post Caesarean section.

Furthermore, until norms are provided in South Africa, the WHO labour ward norm of 1 midwife in labour ward per 175 deliveries per year will be used. The scope of practice Regulation 2598 (SANC, 1993) stipulates that a midwife shall not leave the woman during labour. Failure of a midwifery practitioner to observe the scope of practice means s/he is liable for her actions and omissions in terms of R387 (SANC, 1985b) as further accentuated by the reported increase in maternal and perinatal mortality rates (Hennessy, Hicks & Koesno, 2006). The potential benefits of optimal midwifery practice environment were offset by the perceived barriers and emic views and problems experienced.

5.2.1.1 Sub-Theme 1.1: Inadequate Number of Midwifery Practitioners

All 20 participants reported that they experienced challenges with regard to inadequate number of midwifery practitioners versus the number of pregnant women they were expected to monitor and manage. Examples of the challenges expressed by participants are:

“We are short-staffed, thus inadequate in number in order to render quality midwifery care. I am alone in the intrapartum unit with 10 pregnant women who are in active phase of labour and my colleague went to maternity theatre to receive the newborn infant. This means that I am unable to prevent certain things from happening, for instance complications.”

“Day and night can be horrific in a way due to increased number of patients we received from neighbouring clinics with

unacceptable reasons of referrals. It can be very busy, but not always.”

Naicker, Eastwood, Plange-Rhule and Tutt (2010) found a critical shortage of health workers, the deficit amounting to 2.4 million doctors and midwives/nurses personnel per 10,000 population compared with 19 doctors and 49 midwives/nurses per 10,000 for the USA; 32 doctors and 78 midwives/nurses per 10,000 for Europe. Scheffler et al. (2009) estimated the midwives supply of South Africa to 4.8 per 1000 population in 2015, this is a proof of shortage of midwives according to Scheffler et al., (2009) in their research report of 31 Sub Saharan countries. The severe shortage of midwives is seen also in countries like Nigeria, Sri Lanka, Burkina Faso and Bangladesh (Fujita et al., 2013; du Preeze, 2007). Furthermore, shortage of midwifery practitioners in Indonesia was estimated at 26 midwifery practitioners per 100,000 people which means that quality of antenatal, perinatal and postnatal care varies widely per region and country.

In addition, the findings of a study conducted by Aiken and Fagin (2007) and that by Keegan (2006) indicated that shortages of nurses predisposed them to overwork in their specific practice environment. Poor remuneration and a high inflation rate are some of the factors that influenced midwives to migrate to greener pastures. Therefore, migration of midwives causes shortage of staff. Pillay (2009) affirmed that one of the major challenges facing health systems in developing countries is the international migration of professional nurses/midwives coupled with migration from rural to urban areas and from public sector to private sector.

There is an increased turnover of midwives in South Africa, thus the remaining midwifery practitioners have to cater for the low and high risk pregnant women holistically as unique individuals in need of their assistance. WHO (2006) cautioned that the impact of shortages in the health workforce result in unsafe, inadequate and unattractive working conditions. Furthermore, WHO (2006) stated that there is a significant disparity in the distribution of health workers

between rural and urban areas, and between private and public sectors. ICN (2007) corroborated that the inadequate number of nurses has a significant negative impact on patient outcomes and the well-being of the world's people is impaired. Inadequate numbers of midwifery practitioners resulted in heavy workloads and unsatisfactory physical states of midwifery practitioners. Forster, MaLachian, Yelland, Rayner, Lumley and Davey (2006) stated that there were significant issues associated with inadequate staff-to-patient ratios which might impact on staff adequacy and provision of quality care.

Von Holdt and Murphy (2006) affirmed that in South Africa it is difficult to quantify the inadequate number of staff at different hospitals because little systematic work has been done to establish what a realistic staff establishment should be for each hospital. Despite its limits, the survey done by Von Holdt and Murphy (2006) highlighted a serious shortage of midwives with ratios very far from the WHO norm (1/5,000 population).

Staff-to-patient ratios and recruitment of midwives across the state, particularly in rural areas, are the two areas that appeared to have the greatest negative impact on the staffing adequacy and, therefore, potentially on the provision of quality care (Foster et al., 2006). However, the results of the study conducted by Fujita et al. (2013) showed that senior managers did not support midwives with adequate supply of human resources, despite the increased number of deliveries midwives conducted.

Shortage of staff and long hours routinely seem to exacerbate the challenging working condition of midwifery practitioners, thus making job dissatisfaction and overwork prevalent and turnover more rampant. Aiken and Fagin (2007) highlighted in the study they conducted of 43,000 nurses practicing in more than 700 hospitals in five countries (United States, Canada, England, Scotland and Germany), that the effects of hospital organization and nurse staffing on nurse outcomes measured by job satisfaction, overwork were similar across countries.

According to Smith et al. (2009), findings from their study of 600 maternity care professionals who responded to a call for evidence, majority of whom were midwives (80%) and obstetricians (3%) were low staffing levels and lack of resources. Hence, these authors further stated that despite the differences in health care systems, staff shortages and their contributory factors and their consequences on quality of midwifery care no longer seem to be solely country-specific.

Public hospitals in South Africa, as in other countries, are facing serious challenges in the care of pregnant women and neonates (Smith et al., 2009; Richer et al., 2009). Richer et al., (2009) highlighted factors such as shortage of health professionals and material resources that have added pressure on the health care system. In addition, the findings of a study conducted by Aiken and Fagin (2007) and that by Keegan (2006) indicated that shortages of nurses predisposed them to overwork in their specific practice environment.

5.2.1.2 Sub-Theme 1.2: Absenteeism of Midwifery Practitioners from Duty

Analysis of the data indicated the following participant views:

“The midwifery practitioners absented themselves which impacted negatively on the job that were to be covered.”

“I could not go to work because I was exhausted. The other challenge is that patients and community do not notice our hard work. Any slightest mistake you are reported.”

“Midwifery practitioners are human beings as well, they do fall sick, absent themselves due to social reasons, terminate service and demise. Management do not replace them timeously and during that period we share the workload among ourselves and it is too much really.”

According to Maluleke, Thopola and Lekhuleni (2014) factors that contributed

to absenteeism were articulated as exhaustion, moonlighting and sunlighting as well as long working hours. Furthermore, Bogossian, Long, Benefer, Reid, Kellett, Zhao and Turner (2011) stated that midwives participation is likely to decrease due to ageing midwifery workforce.,

5.2.1.3 Sub-Theme 1.3: Increased Workloads

Increased workloads are one of the main barriers to optimal midwifery practice environment observed in the maternity units. Some participants indicated that increased workloads were caused by several factors such as inadequate number of midwifery practitioners on duty, feeder clinics not adhering to the referral criteria set, thus referring pregnant women without genuine reasons.

Some participants indicated:

“We have many pregnant women under our care; therefore, we are always busy since there is overcrowding of patients which makes us not to be able to cope with the demand of work.”

“Always you are faced with increased workloads and your level of activeness becomes reduced. Most of the time you sit down because of the exhaustion.”

Thopola and Lekhuleni (2015a) demonstrated that increased workloads are brought about the inadequate number of midwifery practitioners in their specific practice environment. According to von Holdt and Murphy (2006), excessive workloads caused the inexperienced/underqualified staff taking responsibility beyond their scope of practice; increased patients complications; risk of infection and poor patient recovery.

All informants made comments regarding the inadequacy of staff-to-patient ratios, particularly in relation to overwork during day and night duties. It was stated explicitly that overnight staff ratio was 1 midwifery practitioner to 15 patients, whereas during the day it was 1 midwifery practitioner to 8-10

patients. Most of the participants indicated that they encountered a serious shortage of midwifery practitioners.

These observations were also strongly supported by the above sentiments expressed by some participants in this study. According to Midwifery 2020 Programme (2010), providing quality midwifery care depends on the availability of a workforce of practising, skilled midwives who can lead and contribute to the care of the women.

5.2.1.4 Sub-Theme 1.4: Burnout of Midwifery Practitioners

Repeated exhaustion without any period of some adequate rest in between will lead to burnout as indicated by one of the participants:

“Always you are faced with overwork and your level of activeness is reduced. So most of the time you will sit down which other seniors sees it as a sign of laziness not exhaustion.”

Mollart, Skinner, Newing and Foureur (2013) in their study found that 60.7% of midwives experienced moderate to high level of burnout related to increased workloads and 30.3% experienced a low level of burnout. Yoshida and Sandall (2013) affirmed that there was a significant higher level of burnout among hospital midwives compared to community midwives due to high levels of emotional exhaustion.

5.2.2 Theme 2: Constrained Material Resources

Constrained material resources make it impossible for midwifery practitioners to render quality midwifery care. Improvising is accepted, but not always as it can jeopardize the health status of a patient. Most midwifery practitioners indicated that they experienced constraints of material resources, hence, it is impossible to proffer quality midwifery care to pregnant women.

One participant stated that:

“What is not good is that the pregnant women share the same bed whilst others sit on benches waiting for a vacant bed.”

Midwifery practitioners need support in terms of material resources for enhancement of optimal practice environment. More favourable practice environments have been linked to lower mortality beyond the beneficial effects of midwife staffing and educational level (Bogaert et al., 2009; Aiken et al., 2008; Fries et al., 2008). Constraint material resources that were experienced by midwifery practitioners were hand washing materials; sterile gloves; required sizes of syringes; urinary catheters and dipsticks; bed linen, nightdresses and sanitary pads.

5.2.2.1 Sub-Theme 2.1: Inadequate Hand Washing Materials

Hands are to be washed between client contact, after contact with blood, body fluids, secretions and excretions, and after contact with equipment or articles contaminated by midwifery practitioners; and immediately after the gloves are removed. Soap and paper towels were not available. Therefore, unavailability of soap for correct hand washing and unavailability of paper towels for drying hands made it impossible for easy adhering to infection protocols. Greater risk of infection occur due to poor infection control where proper procedures of washing hands with liquid soap and thoroughly wiping hands with paper towel is not adhered to. This was indicated by some of the participants:

“For instance, soap is needed for proper washing of hands and hands to be rinsed with warm water, then hands to be dried-up with clean paper towel or put under drier. But it is not like that always. We do not have soap and paper towels so our hand washing is compromised.”

“Nowadays, we wash hands without soap and without proper way of drying our hands. We dry our hands with our clothing.”

This is not a good practice since our clothes harbour microorganisms.”

The WHO (2009) advocated that proper hand washing requires the use of soap or detergent to dissolve fatty materials and microorganisms and facilitate their subsequent flushing with water. Paper towels and even a warm air dryer to dry washed hands are requisites to avoid cross-infection. This is supported by Smeltzer, Bare, Hinkel and Cheever (2010) who stated that for proper hand washing you ought to wet your hands with water, apply a small amount of soap or antiseptic, lathering thoroughly to hands, wrist and elbows. Then rinse hands and wrists thoroughly with warm water, keeping hands down and elbows up. Dry hands thoroughly from fingers, wrists and forearms with paper towel or dryer, discard paper towel in proper receptacle. Failure to adhere to the stated ways of washing hands will cause infection. Transmission of infection occurs due to failure to wash hands thoroughly between patients (Verklan & Walden, 2014).

5.2.2.2 Sub-Theme 2.2: Insufficient Sterile Gloves

Disposable sterile gloves should be worn if sterile procedure is to be performed. Un-powdered, latex-free gloves should be worn if the MP has latex allergy.

In this regard a participant responded:

“We don’t have sterile gloves for performing per vaginal examination. Gloves are also protective in terms of prevention of infections caused by body fluid. Utilization of unsterile gloves when performing internal vaginal examination and or conducting delivery is purely infecting the patient.”

According to Thopola and Lekhuleni (2015a) sterile gloves should be worn for procedures that involve contact with body fluids, such as per vaginal examination, performing and suturing of episiotomies. Gloves are worn when

touching blood, body fluids, secretions, excretions, non-intact skin, mucous membranes or contaminated items. Latex-free gloves should be used with caution because of the increased incidence of latex allergies. Gloves should be removed and hands washed between the clients (Davidson, London & Ladewig, 2014). Hands should be washed immediately after glove removal. New gloves should be used with new patient contact and before touching the non-contaminated items or surfaces.

5.2.2.3 Sub-Theme 2.3: Lack of Required Sizes of Syringes

Pregnant women who have severe pregnancy-induced hypertension (PIH) need to be given magnesium sulphate intramuscular injection regime of 4 g in 12 ml and 5 g to each buttock which is 14 g of magnesium sulphate (DoH, 2008). Magnesium sulphate is given to prevent women from having convulsions or eclamptic fit. If there are no 20-ml and 10-ml syringes, the MPs have to use 2-ml syringes. By use of 2-ml syringes, the MP might cause multiple injections to PIH patients. Thus the MP will inject 5 times in each buttock, and it is possible to injure the pregnant woman based on the fact that the intramuscular injection has to be deep muscular and is painful (Davidson et al., 2014).

A participant indicated:

“More often we have only 2-ml syringes and it is so challenging when administering magnesium sulphate intramuscular regime to the severe pregnancy-induced hypertension woman. You know, I did use the 2-ml syringes for more than 10 patients this month and it really challenged me. It is risky because you can end up injuring the patient since you will prick her 5 times in one buttock and 5 times in the other buttock. You know what, you as well you can pricking yourself in the process.”

Evidence from the midwifery practitioners revealed lack of syringes for injections as evidenced by the following response:

“There were no size 10-ml and 20-ml syringes for administering stat doses of magnesium sulphate regimen. We used 2-ml syringes despite the huge amount of the solution that was prepared to be administered to the pregnant women.”

According to DoH (2007), the size of syringe used to withdraw and inject depends on the amount of the solution to be given to the pregnant women. Von Holdt & Murphy (2006) stated that lack of resources and a shortage of supplies were decried by nurse managers as key issues that organizations should address to enhance nurses retention as hospitals have deteriorated.

5.2.2.4 Sub-Theme 2.4: Insufficient Urinary Catheters and Dipsticks

A full bladder when managing pregnant women during intrapartum indicates sub-optimal action. Therefore, the midwifery practitioner needs to empty the bladder of the woman to cause the presenting part to descent and thus to enhance good progress of labour. Emptying of the bladder can be done by instructing the pregnant woman to void urine and if the pregnant woman has advanced in cervical dilatation the midwifery practitioner should empty the pregnant woman’s bladder by inserting a urinary catheter and drain the urine into the receiver. Post obtaining the urine it needs to be tested by use of dipsticks as it is a diagnostic measure that must be carried out to each pregnant woman. Participants indicated that:

“Often we do not have urinary catheters and dipsticks in stock so we compromise by using suctioning catheters for emptying the urinary bladder of pregnant women in labour. We are certain that the suctioning catheters are hard not soft in comparison to urinary catheters and that can easily injure the pregnant woman. But what can we do? We just have to improvise.”

“We need to do urinalysis as a standard procedure for diagnostic purposes to pregnant women. If dipsticks are not

available, there is nothing that we can do since we cannot even improvise. This can even cause complications since the patient would not be diagnosed properly.”

Davidson et al. (2014) stated that catheterization of the bladder involves insertion of a rubber tube and not a plastic tube through the urethra and into the bladder with the aim of draining urine from the bladder. The usage of a suction catheter, which is made of plastic, can excoriate the pregnant woman's urethra as it is softer due to pregnancy hormones and introduction to infection. This was supported by DoH (2010) that a urine specimen must be obtained from all pregnant women in labour and tested urine for diagnostic purposes, thus to make it possible for provision of optimal midwifery care to every low and high risk pregnant woman.

5.2.2.5 Sub-Theme 2.5: Absence of Bed Linen, Night Dresses and Sanitary Pads

Bed linen, night dresses and sanitary pads were most of the time unavailable in the intrapartum and postpartum units.

Most participants said:

“When there is no bed linen we end up improvising by usage of plastics as sheet and let the pregnant woman sleep and deliver on it. Whilst still in hospital, often they become soiled with blood and do not have any clothing to change and is not nice to see them moving around the units with blood stained nighties.”

Some participants indicated that:

“We do ask pregnant women to call their families to bring nighties and small blankets for them. Most often we contribute some money and buy sanitary pads for our patients because

they need to use them after delivery. Sometimes we ask patients to ask their families to buy pads for them.”

This is supported by Hassan Bitar and Narrainen (2009) who asserted that pregnant women were seen giving birth on plastic bags when sheets were not available in the delivery rooms. This predisposed the women, newborn babies and the midwifery practitioners to contracting infection.

5.2.3 Theme 3: Scarcity of Essential Equipment for Provision of Maternal and Foetal Health

Based on midwifery practitioners' evidence there is a scarcity of essential equipment, namely, baumanometers and haemoglobin meters; doptone, CTG and NST as well as tracing paper; good working episiotomy scissors; and vaginal packs. This equipment is essential because they are utilized for appropriate monitoring of maternal and foetal conditions. According to DoH (2007), midwifery practitioners need to monitor blood pressure and urine of gestational hypertensive patients, Hb for assessment of level of haemoglobin with appropriate good functioning equipment. This is also the recommendation of DoH (2010) in the Saving Mothers Report, ensuring basic monitoring equipment such as baumanometers, pulse oximeters, haemoglobin meters, on-site HIV testing kits are available at all institutions conducting deliveries. If pregnant women are not monitored efficiently and effectively, it gives the picture of an inadequate clinical practice environment, sub-optimal midwifery practice environment and challenged midwifery care in South Africa.

5.2.3.1 Sub-Theme 3.1: Non-Availability of Baumanometers and Haemoglobin Meters to Monitor Maternal Status

An adequate number of working baumanometers are needed for monitoring gestational hypertensive women in order to ascertain the state of their blood pressure for effective management. Non availability of these tools might impede the midwifery practitioners and obstetricians to be able to manage the patients effectively and proficiently.

Most participants indicated that:

“We do not have baumanometers in the intrapartum unit we go around the other units borrowing before you can take the blood pressure of the pregnant woman.”

“One of the obstetricians was very angry to us after realizing that pre-eclampsia in pregnancy women blood pressures were not monitored because we did not have any baumanometers.”

“We have only 1 baumanometer in the maternity unit which has to be used in antepartum, intrapartum, high care area and postpartum unit. So we all wait for 1 baumanometer, which is very stressing based on how urgent you need the equipment. It becomes tiring to keep on waiting for others to use it before it is your turn.”

Schutte, Steegers, Schuitemaker, Santema, de Boer, Vermeulen, Visser and van Roosmalen (2010) attested that sub-standard care leads to maternal mortality because of insufficient diagnostic testing and failure to consider timely delivery. Chadwich (2014) and Pretorius (2009) stated that across the globe, midwives find themselves practising in impoverished and low-resource settings. Essential equipment was most of the time not available. Furthermore, DoH (2007) affirmed that midwifery practitioners need to monitor blood pressure of every low risk and high risk pregnant woman, particularly the gestational hypertensive women. An adequate number and good working baumanometers are needed for monitoring these women in order to be able to know their state of their blood pressure for effective management. Absence of this tool might impede the midwifery practitioners and obstetricians to be able to monitor the pregnant women effectively.

5.2.3.2 Sub-Theme 3.2: Absence of Doptones and Poorly Functioning Cardiotocograph Machine to Predict Maternal and Foetal Well-Being

Doptones are good and easy to utilize in antenatal and intrapartum units since it easily picks up foetal heart rate when participants are unable to auscultate by means of a foetoscope. A CTG serves as a good tool to be used when pregnant women are in labour or not. During pregnancy, the Non-Stress Test (NST) serves as a good predictor of foetal well-being. The NST strip will reveal whether it is non-reactive, re-assuring or reactive.

The midwifery practitioners will be able to analyze, interpret and implement midwifery interventions based on the findings. During labour, the CTG will reveal whether there is early, late, variable, or prolonged decelerations and thus the MP will be able to manage the woman based on the findings. Again, if the induction of labour should be done, the CTG will assist in monitoring the foetal and maternal status. If CTG machines do not have tracing paper it will not be functioning and it will be difficult for overworked midwifery practitioners to monitor pregnant women. It is of prime importance to monitor high risk pregnant women by means of NST and CTG when in labour since their fetuses are compromised in utero and when they go into labour their condition become worse. The majority of participants experienced not having doptones and CTGs as they stated that:

“It was very difficult to monitor the pregnant women, especially the high risk pregnant women since during pregnancy their fetuses are already compromised without the mother falling into labour.”

“Most of the time we progress high risk pregnant women without the use of CTG and this has made us to end up delivering the fresh stillborn babies since we were not able to identify foetal distress upon the already compromised foetus.”

Schutte et al. (2010) stated that sub-standard care leads to increased mortality if there are insufficient diagnostic testing where indicated by failure to consider timely delivery. In addition, DoH (2008) affirmed that if high risk pregnant women are not managed efficiently and effectively antepartum, intrapartum and postpartum, it gives the picture of inadequate clinical practice environment, sub-optimal midwifery practice environment and challenged midwifery care in South Africa.

In instances where the CTG was not functioning, the decelerations were not timeously identified which meant that the foetus demised without appropriate intervention. These factors lead to sub-optimal midwifery provision which will lead to increased maternal and child morbidity and mortality rates, and inability to attain MDG 2 out of 8 (United Nations, 2008). Also Bryce et al. (2013) highlighted the following in terms of MDGs: Eradication of extreme poverty and hunger by 2015; Reduction of child mortality of children less than 5 years improved for some time (1999 to 2004). However, it has to decrease by two thirds in 2015; Improvement of maternal health by reducing it to three quarters in 2015 and Combating HIV and AIDS, malaria and other diseases.

5.2.3.3 Sub-Theme 3.3: Absence of Functioning Episiotomy Scissors

Absence of functioning episiotomy scissors was common based on the narrations by the participants.

Most participants indicated that:

“We are faced with episiotomy scissors that are not functioning. Functioning episiotomy are scarce and the available ones are blunt. Therefore, they are not ideal to be used. If not careful the patient can sustain 3rd degree tears. We need new episiotomy scissors.”

“We do implement prevention of maternal-to-child transmission strategy to pregnant women during antepartum,

intrapartum and postpartum, by not performing episiotomy routinely. However, the perineum of the pregnant woman might warrant performance of episiotomy to shorten the second stage of labour.”

Episiotomies are not to be done routinely unless there is a genuine rationale. The scope of practice stipulated that episiotomy should be performed if the perineum is rigid and to shorten the second stage of labour (SANC, 1993). The DoH (2008; 2010; 2013; 2015) affirmed that maternal-to-child-transmission (MTCT) risk is increased by episiotomies, thus it is of prime importance to avoid episiotomies in order to prevent MTCT.

5.2.3.4 Sub-Theme 3.4: Absence of Sterile Vaginal Packs

Findings revealed that some midwifery practitioners experienced absence of sterile vaginal packs. This is supported by the narratives of participants who said that:

“There are no or not enough sterile vaginal packs so that we can use when we perform the first per vaginal examination before we can deliver the woman in order to prevent infection.”

“We need to adhere to prevention of control of infection in order to prevent reinfection to patients and self.”

According to WHO (2010a), internal vaginal examinations must be done through the use of sterile vaginal packs to prevent maternal and neonatal infection.

5.2.4 Theme 4: Provision of Sub-Optimal Midwifery Interventions that Can Lead to Medico-Legal Hazards

Provision of sub-optimal midwifery interventions are actions that might lead to medico-legal hazards. The sub-optimal midwifery interventions are the most

unfavourable and not required standard of midwifery care which can cause danger to the life of pregnant woman in labour and the newborn infant. According to the findings of this study, the sub-optimal midwifery interventions are: use of blades in performing episiotomies; catheterization of pregnant women by means of a suctioning tube; multiple injections to PIH patients by use of 2-ml syringes; failure in mobilization of pregnant women in labour and non-utilization of pain relief during labour.

5.2.4.1 Sub-Theme 4.1: Use of Blades When Performing Episiotomies

Participants narrated that when a need to perform episiotomy arise they encountered problems because there were no functioning episiotomy scissors.

Participants indicated that:

“Most of the time we find ourselves caught in dilemma. You will find that there are no functioning episiotomy scissors and to save life you improvise by using a sterile blade to cut the episiotomy. At the end, you are likely to cause medico-legal hazards since blades are not suitable. Therefore, this is a sign of provision of sub-optimal midwifery practices.”

“We do not have functioning episiotomy scissors and if we have episiotomy scissors, you find that they are blunt. So we use a blade instead of episiotomy scissors when performing episiotomy.”

Some participants stated:

“We try to improvise so we try to be more careful not to injure the woman or head of the baby during the performance of the episiotomy to shorten the second stage of labour.”

Cunning, Leveno, Bloom, Hauth, Gilstrap and Wenstrom (2010) sustained that the episiotomy should be performed with a sharp scissors that has rounded points to prevent injuring the mother or baby. This is done just before birth approximately 3 to 4 cm of foetal head is visible during the contractions. The DoH (2007) stated that episiotomy should only be performed for a valid reason like thick or rigid perineum; foetal distress and prolonged second stage; maternal conditions where rapid delivery is needed. If the guidelines, rules and regulations of performing episiotomies are not adhered to, it is a medico-legal hazard and negligence on the part of the midwifery practitioners that can cause them to be charged by a professional committee (SANC, 1993).

5.2.4.2 Sub-Theme 4.2: Catheterizing Labouring Women By Means of Suctioning Tubes

A full bladder when managing the pregnant women during intrapartum is sub-standard action, therefore, the midwifery practitioner needs to empty the woman's bladder to facilitate the presenting part to descent and thus to enhance good progress of labour. Emptying of the bladder can be done by asking the pregnant woman to pass urine and if the pregnant woman is in advanced stage of labour, the midwifery practitioner has to empty the bladder by inserting a urinary catheter through the urethra into the bladder and drain the urine in the receiver.

Most participants indicated that: *“Often we experience absence of urinary catheters, so we compromise by using suctioning catheters for emptying of the bladder of pregnant women in advance stage of labour. We are aware that the suctioning catheters are hard and not soft in comparison to the urinary catheters and that it is easy to injure the patient. But what can we do?”*

Catheterization of the bladder needs a sterile rubber tube, a Foley's catheter not a suction catheter that is hard and can cause excoriation of the urethra which will become a good medium for urinary infection to set in (Davidson et al., 2014).

5.2.4.3 Sub-Theme 4.3: Multiple Injections to Pregnancy-Induced Hypertension (PIH) Women by Use of 2-ml Syringes

Pregnant women diagnosed with severe PIH need to be given magnesium sulphate intramuscular injection regime of 4 g in 12 ml and 5 g to each buttock, which is 14g of magnesium sulphate. This magnesium sulphate is given to prevent women from having convulsions/eclamptic fits. If there are no 20- and 10-ml syringes and the midwifery practitioners have to use 2-ml syringes it necessitates that more injections are needed when diluting the magnesium sulphate, thus worsening the situation as the midwifery practitioner has to inject the magnesium sulphate 5 times in each buttock, and it is possible to injure the pregnant woman based on the fact that the intramuscular injection has to be deep muscular and is painful (Davidson et al., 2014).

Some of participants indicated thus:

“More often we have only 2-ml syringes and it is so challenging when administering magnesium sulphate intramuscular regime to the severe pregnancy-induced hypertension woman. You know, I did use the 2-ml syringes for more than 10 patients this month and it really challenged me. It is risky because you can end up injuring the patient since you will prick her 5 times in one buttock and 5 times in the other buttock. You know what, you as well you can pricking yourself in the process.”

Davidson et al. (2014) stated that catheterization of the bladder involves insertion of a rubber tube and not a plastic tube, through the urethra and into the bladder with the aim of draining urine from the bladder. The usage of suction tube which is made of plastic, can excoriate the pregnant women's urethras as it is softer due to pregnancy hormones and introduction of infection.

5.2.4.4 Sub-Theme 4.4: Failure in Mobilization of Pregnant Woman in Labour to Facilitate Descent

If every low risk pregnant woman who is in labour should be encouraged to be upright and mobile, labour is likely to progress more quickly—reason being that the descent of the foetus will occur and the presenting part will influence Ferguson reflex which will stimulate the prostaglandins to be released thus dilatation of cervical os takes place. Therefore, if mobilization is not implemented, the progress of labour becomes slower.

Most interviewees indicated that:

“There is no time to let the pregnant women move around to encourage descent due to the fact that we are short-staffed and overworked. No one will be able to keep an eye on the patient because you will be busy in the cubicle delivering the other patient. I cannot even take chance of involving the students in observing the one that is moving up and down since they also need to progress and deliver the due pregnant woman.”

“It is very good to let the pregnant women to move around before they are seven centimetres dilated to facilitate descent, but there is no time to do that.”

According to DoH (2008) and Better Birth Initiatives, pregnant women in labour must be mobilized as long as they are still less than 7 cm dilated in order to increase descent of the presenting part thus speeding up labour.

5.2.4.5 Sub-Theme 4.5: Non-Utilization of Pain Relief During Labour

Delivery of a baby is accompanied by labour pains which the mother experiences irrespective of their educational, ethical, financial and social background. Davidson et al. (2014) stated that parturition is a normal

phenomenon, most painful and stressful experience during labour of pregnant women.

Most participants indicated that:

“Patients seemed unhappy when not given pain relief because they will scream for help when the contraction comes.”

Some participants stated that:

“Our seniors don’t want us to give labouring pregnant women pain relief because they say we will not be able to resuscitate the newborn baby. I do not agree with their opinion.”

Klomp, Mannien, de Jonge, Hutton & Lagro-Janssen (2014) and Gibson (2014) affirmed that parturition is a normal phenomenon, most painful and stressful experience of pregnant women. Pain surpassed and frequently exceeds the pregnant woman’s intrapartum expectations. Pregnant women rarely appreciate the fully incessant nature and prolonged duration of labour pains in their first labour (Amedee-Perret, 2013). Therefore, comfort in labour is not merely an emotional or physical relieving of malaise and labour pains. It is a complex process in which the midwifery practitioner (meaning with pregnant woman) or ‘sage-femme’ (wise woman) combines research-based knowledge and skills with warmth, empathy and sensitivity in order to provide a birth environment which is safe, caring and conducive to a satisfying birth experience. Hutton, Kasperink, Rutten, Reitssma and Wainma (2009) stated that sterile water injection can be used to reduce labour pains.

Amedee-Perret (2013) stated that the pain experienced by pregnant women during the first stage of labour is caused by uterine contractions and dilatation of the cervix, whereas during the second stage of labour pains are caused by the stretching of the vagina and pelvic floor to accommodate the presenting part. The sacral nerves do not transmit the pain of the cervical dilatation. The nerve supply of the uterus passes to last two thoracic nerves, T11 and T12, via

the paracervical plexus. These nerves transmit the pain caused by cervical dilatation. In the later first stage, T10 and the first lumbar nerve, L1, are also involved. The pudendal nerve relays the pain impulses from the stretching of the pelvic floor to the sacral nerves S2, S3 and S4.

According to Hodnett, Gates, Hofmeyr, Sakala and Weston (2011), non-pharmacological pain relief might be used either instead of or as an adjunct to analgesia. The techniques diminish the painful stimuli at its source; or provide powerful alternate stimuli to compete with and inhibit the awareness of pain; or reduce the woman's negative mental, emotional and physical reaction to pain (Madden, Turnbull, Cyna, Adelson & Wilkinson, 2013). Vargens, Silva and Progianti (2013) stated that environmental support, position, tactile stimuli and energy level support are also non-pharmacological methods. Other non-pharmacological methods are anxiety relief; distraction; midwife/patient relationship; breathing exercises; relaxation techniques; maternal position; attendance by significant others and doulas; superficial heat and cold massage of the lower back and hydrotherapy.

5.2.5 Theme 5: Failure to Adhere to Infection Control Principles/PMTCT

Failure to adhere to infection control and PMTCT principles will influence the spread of infection to others. Midwifery practitioners are at risk of acquiring and transmitting maternity unit acquired infections in the course of executing midwifery care. Measures to prevent the transmission of infectious microorganisms are therefore a significant component of midwifery care.

5.2.5.1 Sub-Theme 5.1: Incorrect Hand Washing Practised

Absence of soap and paper towels makes it difficult for MPs to adhere to prevention of cross-infection. This is evident based on the following statement done by some of the participants:

“We need to adhere to prevention of control of infection in order to prevent reinfection to patients and self. We really need soap

and paper towels. Nowadays we wash hands without soap and without proper way of drying our hands. We dry our hands with our clothing. This is not good since our clothes harbour microorganisms.”

This is supported by Smeltzer et al. (2010) who stated that for proper hand washing you ought to wet your hands with water, apply a small amount of soap or antiseptic, lathering thoroughly to hands, wrist and elbows. Then rinse hands and wrists thoroughly with warm water, keeping hands down and elbows. Dry hands thoroughly from fingers, wrists and forearms with paper towel or dryer, discard paper towel in proper receptacle. Failure to adhere to the stated ways of washing hands will cause infection.

5.2.5.2 Sub-Theme 5.2: Usage of Non-Sterile Gloves When Performing Digital Vaginal Examination

Non-sterile gloves must not be used when performing digital vaginal examinations since it will cause transmission of infections. A participant indicated:

“Also linen, sanitary pads and sterile gloves were most of the time out of stock. Due to the lacking of sterile gloves pregnant women were delivered with bare hands and on plastics due to absence of linen”.

This is supported by Hassan-Bitar and Narrainen (2009) who asserted that women were seen giving birth on plastic bags when sheets were not available in the delivery rooms. These predispose the women and newborn babies and the midwifery practitioners to infection control.

5.2.5.3 Sub-Theme 5.3: No Adherence of Aseptic Technique Observed

Midwifery practitioners are at risk of acquiring and transmitting maternity unit acquired infections in the course of executing midwifery care. Measures to

prevent the transmission of these infectious microorganisms are therefore a significant component of midwifery care.

This was evident when some participants stated that:

“Utilization of unsterile equipment when performing procedures or not adhering to principles of infection control it can cause transmission of infections.”

This was supported by Moyo (2013) who affirmed that midwives are at risk of acquiring and transmitting hospital acquired infections. Verklan and Walden, (2014) stated that the Standard Precautions are developed to protect patients and health care workers from blood-borne and other body fluid-borne infections; designated to prevent cutaneous and mucous membranes exposure to blood and body fluids. According to Verklan and Walden (2014), barrier precautions prevent cutaneous and mucous membrane exposure to blood, body fluids, secretions, excretions and contact with any items that might be contaminated with these fluids.

5.3 Results of Focus Groups Discussions of Learner Midwives

Table 5.2 shows the evidence that emerged from learner midwives verbatim transcripts, presented in the form of themes and sub-themes.

Table 5.2: Themes and sub-themes related to learner midwives experiences

pertaining to their experiential learning environment

Themes	Sub-Themes
1. Factors that impeded learner midwives acquiring midwifery skills	1.1 Failure of midwifery practitioners to mentor learner midwives
	1.2 Poor supervision of learner midwives
	1.3 Limited material resources
	1.4 Performance of non-midwifery duties

		1.5	Being workforce rather than learners
2.	Negative attitude of midwifery practitioners towards pregnant women	2.1	Verbal abuse pregnant women during parturition
		2.2	Physical abuse of labouring women during parturition
		2.3	Failure of midwifery practitioners to respond timeously when called by pregnant women
3.	Implementation of sub-optimal midwifery care to pregnant women	3.1	Failure to mobilize labouring pregnant women
		3.2	Failure to localize labouring pregnant woman
		3.3	Cutting of episiotomies with a blade
4.	Acknowledgements of learner midwives' professional growth	4.1	Gained confidence, competence and independence
		4.2	Ability to guide junior learner midwives
		4.3	Independence role sharpened

5.3.1 Theme 1: Factors that Impeded Learner Midwives from Acquiring Midwifery skills

Five sub-themes emerged as factors that impeded learner midwives from learning and acquiring midwifery skills during their midwifery experiential learning. The emerged sub-themes were discussed as failure of midwifery practitioners to mentor learner midwives; poor supervision of learner midwives; limited material resources; performance of non-midwifery duties and being workforce rather than learners.

5.3.1.1 Sub-Theme 1.1: Failure of Midwifery Practitioners to Mentor Learner Midwives

Mentoring refers to the voluntary relationship initiated by the mentor that may vary along a continuum from informal/long term. The experienced midwifery practitioners should mentor learner midwives with less experience and knowledge to enable them to grow professionally. Participants narrated failure of the midwifery practitioners to mentor them with regard to midwifery skills.

Some participants affirmed this:

“Midwifery practitioners informed us that they are short staff and they would not be able to mentor us.”

Other participants stated that:

“It seemed that midwifery practitioners have forgotten that we are learners on training. We are still acquiring midwifery skills and thus need to work according to our objectives. Sometimes we even conducted deliveries of pregnant women without their support.”

Jones and Wylie (2008) reported that student midwives indicated that they had difficulty at clinical settings due to lack of mentoring and support from midwifery practitioners. ICN (2007) and WHO (2006) as well as Evans and Kelly (2004) reported that learner midwives experienced lack of mentoring dynamics and support. If learner midwives are not mentored adequately this will impede the professional development and growth of the learner midwives. Absence of mentoring might result in the sub-optimal midwifery experiential learning environment, which contributes to medical errors, ineffective care delivery and overwork. This, in turn, might influence unsafe, inadequate and unattractive working environment impacting negatively on the culture of learning of learner midwives and safety of pregnant women (WHO, 2006; ICN, 2007). This was upheld by Berk, Berg, Mortimer, Walton-Moss and Yeo (2005) as the faculty with useful experience, knowledge and skills and/or wisdom offer advice, information, guidance, support or opportunity to another faculty member or student for that individual's professional development.

5.3.1.2 Sub-Theme 1.2: Poor supervision of Learner Midwives

Supervision of learner midwives seemed not to be done as it was supposed to. This was evident based on five participants who narrated that:

“We had difficulty in coping at experiential learning environment because most of the time the midwifery practitioners left us to work alone without their support. When mistakes occur, they will ask why you worked alone without involving them.”

“Midwifery practitioners refused to counter sign our midwifery case registers and workbooks despite the fact that we were allocated with them and we monitored our patients. When the delivery is imminent, you summoned for them and they will tell you to continue and conduct the delivery because they are sure you can do it. The problem crops up when they have to sign for you, stating that they didn’t see you conducting the delivery.”

Supervision of learner midwives offer individualized, high quality evidence-based midwifery care. Sidebotham, Fenwick, Carter and Gamble (2015) stated that supervision is instrumental in enabling learner midwives to learn midwifery skills and provide a safe environment for the practice of evidence-based midwifery. Sidebotham et al. (2015) stated that the learner midwives should be given support, advice and guidance in terms of midwifery practice issues whilst ensuring that the learner midwives comply with midwifery rules and regulations. Furthermore, Jones and Wylie (2008) and Driscoll (2007) reported that student midwives indicated that they had difficulty at clinical settings due to lack of support from midwives.

5.3.1.3 Sub-Theme 1.3: Limited Material Resources

Focus group discussions revealed that material resources such as sterile gloves, syringes, soap, paper towels, baumanometers, episiotomy scissors and suturing materials were often limited or even not available at all. These influenced participants to improvise which put the pregnant women, learner midwives and midwifery practitioners at risk of injury and contracting infection. The limited material resources were above the competency of participants.

Almost all focus groups participants said: *“There are limited material resources in the experiential learning environment. This cause some challenges to us since we are to practice midwifery skills so that we become skilful. Most of the time we improvise and it might put the pregnant women’s life in danger.”*

“There are no sterile gloves to wear and perform per vaginal examination and delivering of pregnant. Midwifery practitioners put away some gloves for their own utilization. We learner midwives use examination gloves which do not cover our hands completely and we end up with blood stained hands after delivery.”

“When performing episiotomy, the episiotomy scissors are blunt, so midwifery practitioners improvise with a blade. Suturing episiotomy becomes a nightmare because of the small type of the available suturing material you ought to use. You can prick yourself in the process.”

Improvising using of unsuitable gloves and blades could put pregnant women and their foetuses as well as the midwifery practitioners in danger. Chadwich (2014) and Pretorius (2009) shared the same view that midwives across the globe find themselves practicing in impoverished and low-resource settings.

5.3.1.4 Sub-Theme 1.4: Performance of Non-Midwifery Duties

All the participants highlighted that midwifery practitioners instructed them to perform non-midwifery duties which were damp dusting, packing of storerooms and running midwifery practitioners’ personal errands.

This was evident based on the narratives of participants: *“We were tasked to perform non-midwifery duties in spite of monitoring the pregnant women allocated to us. Therefore, it was impossible to know the condition and progress of the pregnant women that were allocated to us. Thus we were unable to learn and give report about our patients when asked.”*

These non-midwifery duties have the negative impact of hindering learner midwives from learning and acquiring midwifery skills because instead of them monitoring pregnant women they were busy damp dusting or packing storerooms (McKenna, Hasson & Smith, 2002; Keeney, McKenna & Hasson, 2010). At the end of their midwifery exposure, these learner midwives would not have achieved their learning objectives as stipulated by their nursing education institution. Furthermore, Keeney et al. (2010) reported that non-midwifery duties identified could be categorized as clerical, stock, porter, domestic and other basic care-related duties that student midwives were supposed to perform.

5.3.1.5 Sub-Theme 1.5: Being Workforce Rather Than Learners

Most of the focus group participants narrated that they were regarded as workforce who have to work and complete the day's work as delegated. Despite the participants being learner midwives, the midwifery practitioners expected them to manage pregnant women on their own. Participants stated that:

“It seemed that midwifery practitioners have forgotten that we are learners on training, not workers. We are to achieve our determined objectives at the end of our stay. Most of the time we monitor and conduct deliveries of pregnant women without their support.”

McLachlan, Forster, Ford and Farrell (2011) stated that maternity services are under significant strain due to student midwives used as workforce who are expected to carry out the delegations and cover the unit without considering that they are learner midwives who are expected to practice procedures in order to develop and grow professionally.

5.3.2 Theme 2: Negative Attitude of Midwifery Practitioners Towards Labouring Pregnant Women

Negative attitudes of midwifery practitioners towards labouring pregnant women that learner midwives narrated were verbal abuse; physical abuse and failure to respond timeously when summoned by labouring pregnant women. According to learner midwives, labouring pregnant women passed through unreasonable midwifery care that caused them to be abused by midwifery practitioners. This was evident based on the narratives of learner midwives:

“Pregnant women don’t like these rude midwives who shout at them and insult them when they are asking for help. The puerperal mothers said to us that the midwives stated that they are not responsible for their pregnancies.”

During this difficult period, midwifery practitioners need to be there and support the pregnant woman emotionally, physically and provide information during childbirth. Hence, midwifery practitioners who exhibit a negative attitude to pregnant women are not the right breed of midwifery practitioners. As such, negative attitude might bring about a negative outcome of the parturition such as severe labour pains, severe primary post-partum haemorrhage, prolonged labour and even fresh stillbirth (Davidson et al., 2014).

In support, Onasoga, Opiah, Osaji and Iwolisi (2012) conducted research in order to determine the perceived effects of midwives’ attitude towards women in labour in Bayelsa State, Nigeria. The results of their research revealed that midwives exhibited both positive and negative attitudes, but the negative attitude (55%) were outweighing the positive attitude of (45%). They further concluded that the negative attitudes have effects on the pregnant women in labour and it is a major factor influencing the parous women’s choice and decision about where to give birth in future. Midwives’ negative attitudes towards women in labour influence their decision about where to give birth because of fear of being ill-treated by midwives (Ambruso, Abbey & Hussein 2005).

According to Adeyemo, Oyadiran, Ijedimma, Akinlabi & Adewale (2013) research of comparative analysis of Health Institutions on the Attitude and Practice of Midwives towards pregnant women during child delivery in Ogbomosho, revealed that the attitudes of midwives from the mission and government hospitals were significantly different. The attitude of midwives from mission hospitals during labour is significantly higher than the value for attitude of midwives from government hospitals. This implied that the midwives from the mission hospital show better positive caring attitude towards their clients than the midwives in government hospitals. It therefore explained the rationale why mission hospitals receives better patronage from pregnant women since inadequate care affect the patients' utilization of hospital facilities. But it has the capacity to adversely affect the midwifery profession.

5.3.2.1 Sub-Theme 2.1: Verbal Abuse, Rudeness, Shouting and Insulting of Pregnant Women During Parturition

Pregnant women, foetuses and newborn babies require protection from risks associated with their consuming of the midwifery care. The risks include the following verbal abuse and transmissible infection, as articulated by most participants:

“Midwifery practitioners abuse pregnant women verbally, shouting at them and insulting them. One midwifery practitioner told the woman that her finger is smaller in size and she must not be restless when she performs digital vaginal examination.

The other participants said that:

“Midwifery practitioners insult these patients in front of us learner midwives. They asked the age of the first born child of the pregnant women who told them and she was warned not to make noise since her time to give birth has elapsed and is time for her first born girl-child to fall pregnant and give birth.”

Natukunda (2007) and Beck and Watson (2010) affirmed that women in labour cited that midwives were very aggressive, rude, unfriendly and abusive verbally when they were delivering their babies in the hospital. These women expected kind, courteous and professional care from them. However, they received the opposite. Based on the inhumanely behaviour of midwives, parturient women might choose to seek care of the unqualified personnel resulting in complications like severe haemorrhage, fresh stillbirth, neonatal and maternal morbidity and mortality.

The National Core Standards for Health establishment in South Africa stated that staff must treat patients with care and respect with consideration for patient privacy and choice (NDoH, 2011). Regulation R2598 (SANC, 1993) and the Republic of South Africa (1996) stipulate that midwifery practitioners are not licensed to ill-treat pregnant women; they are not given authority to be rude to pregnant and labouring women.

According to SANC (1993), a midwifery practitioner is employed to fulfil her role as stipulated, however, by virtue of their registration they would remain accountable and responsible for their actions and omissions. Therefore, they are bound by the scope of practice and code of conduct and if found guilty could be charged for negligence.

5.3.2.2 Sub-Theme 2.2: Physical Abuse of Pregnant Women During Parturition

Physical abuse includes beating of pregnant women during parturition. This is an abomination and is not accepted. The midwifery practitioners were found to be rude, uncaring, unfriendly, cold and impatient to learner midwives and puerperal mothers who delivered their babies at intrapartum unit under their care. Some of participants stated that:

“Midwifery practitioners are still beating pregnant women when they are in labour when they cannot cope with the amount of pain they are experiencing.”

Patient safety, clinical governance and clinical care domain stipulated how to ensure quality midwifery care and ethical practice to reduce unintended harm to health care users or patients in identified cases of greater clinical risks (NDoH, 2011).

5.3.2.3 Sub-Theme 2.3: Failure of Midwifery Practitioners to Respond Timeously When Called by Pregnant Women

Midwifery practitioners are obliged not to leave pregnant women during labour and should respond timeously when the pregnant women need them. The learner midwives narrated that midwifery practitioners did not respond when needed by the pregnant women. Six participants stated that:

“When pregnant women who are in labour are calling midwifery practitioners they do not come and see why are they called, they ignore them. When they ultimately come the pregnant women have already delivered unassisted.”

If a pregnant woman is neglected, it is an unacceptable behaviour since midwifery practitioners once made a vow. Ignoring and not responding to the pregnant woman in labour when she shouts for help is a grievous act which is not condoned by the SANC. According to the NDoH (2011), the domain of patient rights set out what the hospital must do to make sure patients are respected and rights upheld, including getting access to needed care and to respectful, informed and dignified attention in an acceptable and hygienic environment seen from the point of view of the patient with accordance to Batho Pele Principles and the Patient Rights Charter.

5.3.3 Theme 3: Implementation of Sub-Optimal Midwifery Care to Pregnant Women

The implementation of sub-standard midwifery care is uncalled for. Midwifery practitioners have a special responsibility to be sensitive to the way in which the power conferred on them by their professional standing is used. Professional codes of ethics are largely designed to protect pregnant women and to ensure that the inherent inequality in the client caregiver is not abused.

5.3.3.1 Sub-Theme 3.1: Failure to Mobilize Labouring Pregnant Women

Mobilization of pregnant women when in labour aid in the descent of the presenting part. However, some learner midwives experienced problems when monitoring the pregnant women in labour. This was evident from the learner midwives who stated that:

“Most of the time the midwifery practitioners does not permit us to mobilize the pregnant women in labour stating that they need close observation since they might deliver on the floor. Therefore since patients are many we should not mobilize them.”

Pregnant women in labour need to be given opportunity of moving up and down when they are less than 7 cm dilated. This is supported by DoH (2008) and Better Birth Initiatives, namely that pregnant women in labour must be mobilized as long as they are still less than 7 cm dilated in order to increase descent of the presenting part and thus to speed up labour.

5.3.3.2 Sub-Theme 3.2: Failure to Localize Labouring Pregnant Women

Learner midwives experiences some challenges in terms of localizing the perineum of the pregnant labouring women. Some participants were dissatisfied and stated that:

“When we are conducting a delivery, after noticing that the perineum needs to be localized and episiotomy to be performed, the midwifery practitioner will refuse us to localize, and state that you need to perform episiotomy at the height of the contractions.”

The SANC (1993) stated that prior to cutting episiotomy the midwife needs to localize the perineum of the woman; episiotomy should only be performed for a valid reason like thick or rigid perineum; foetal distress and prolonged second stage; and maternal conditions where rapid delivery is needed.

5.3.3.3 Sub-Theme 3.3: Cutting of Episiotomy with a Blade

Cutting of episiotomy assist in shortening of the second stage of labour and should not just be done routinely. Despite the fact that there are standards that are to be maintained during the performance of episiotomy, learner midwives still verbalized their concerns regarding cutting of episiotomies with a blade and without localizing the perineum. This practice might put the life of mother and newborn in danger. This was evident from the following statements by almost all participants:

“Midwifery practitioners are performing episiotomies with a blade and without localizing the perineum of the pregnant women. When we find out why we were told that the episiotomy scissors are blunt and not in good working order that is why we use the blade to prevent the woman from sustaining a third-degree tear. Pregnant women in labour do not feel pains in the perineum so you are to cut episiotomy at the height of the contraction. It is a waste to localize them prior cutting episiotomy you rather localize them when you repair it.”

Davidson et al. (2014) defined episiotomy as a surgical incision of the perineal body. They further stated that traditionally, some obstetricians and certified midwives performed episiotomies to prevent damage to the peri-urethra,

perineum, and anal sphincter, rectum from lacerations during the birth; to prevent damage to the posterior wall of the introitus; to prevent jagged tears from lacerations; to reduce mechanical and metabolic risk to the foetus/newborn; to protect the maternal bladder; to prevent future perineal relaxation.

Episiotomy is performed with sharp rounded points just before birth when approximately 3-4 cm of foetal head is visible during a contraction. The perineum of the pregnant woman should be localized with 10 ml of 1% lignocaine to prevent the woman from experiencing pain during the cutting of the episiotomy. The most preferable episiotomy is medio-lateral since it provides more room and decreases the possibility of a traumatic extension into the rectum (Davidson et al., 2014). If not adhered to it gives a picture of sub-optimal MPs who do not even care about the welfare of the pregnant women in labour.

According to PMTCT principles, episiotomies are not to be performed routinely in order to avoid transmission transmission (DoH, 2015). However, Frankman, Wang, Bunker and Lowder (2009) research indicated that routine episiotomy use is driven by local professional norms, experience in training, individual MP preference rather than the need of the individual pregnant woman at the time of delivery.

5.3.4 Theme 4: Acknowledgements of Learner Midwives' Professional Growth

Learner midwives are taught, facilitated, accompanied and coached responsibility and accountability in the provision of midwifery care. Midwifery practitioners should be approachable, kind and compassionate by being there for learner midwives to provide dimension of being good and supportive (Byrom & Downe, 2010). Learner midwives evidence in terms of their professional growth due to their exposure in midwifery experiential learning environment were good. This was confidence, competence, ability to guide junior learner midwives and independency.

5.3.4.1 Sub-Theme 4.1: Gained Confidence, Competence and Independence

The teaching of psychomotor midwifery skills, assessment of a high risk pregnant women, abdominal examination, performance and repairing of episiotomy, delivery of a breech and basic resuscitation of an asphyxiated infant requires initial demonstration followed by practice, with feedback under supervision. Although most of the learner midwives did not appear to have received initial demonstration, supervision with feedback, there were some who attested to have received all the support. When shedding light, some learner midwives stated that they gained confidence, competence and independency regarding their midwifery experiential learning environment. The participants stated that:

“We were taught, demonstrations done for us, instructed to practice and given opportunity to practice prior demonstrating back to the midwifery practitioners who at the end of the procedure gave us feedback in terms of our performance. This made us to develop some degree of confidence and with repetition of the skill we became competent”.

“I was able to interpret a non-reactive Non-Stress Test strips, intervened and saved the life of pregnant woman and their foetuses when the midwifery practitioner was attending the meeting and gave her the report on her return”.

“I am very happy because there are still good midwives who are passionate about midwifery and they taught us without giving excuses.”

Other participants also stated:

“We found some few midwifery practitioners friendly, approachable and ready to teach. Thus it was easy for us to form a rapport with them. They orientated us, gave us report,

checked on us if we were progressing pregnant women, supervised us, mentored us and countersigned our maternity case registers and workbooks after they have assessed us.”

Carter, Wilkes, Gamble, Sidebotham and Creedy (2015) affirmed that most learner midwives in the study they conducted reported that it was straightforward to achieve clinical requirements. New graduate midwives did gain confidence, competence and independency if given opportunity to practice under the conducive conditions and were supported in one way or the other to work autonomously (Cummins, Denny-Wilson & Homer, 2015). Furthermore, Sweet and Glover (2013) confirmed the importance of the supervisor's formative feedback to improve and support learning.

5.3.4.2 Sub-Theme 4.2: Ability to Guide Junior Learner Midwives

Learner midwives, who have just started with midwifery need some guidance for them to adjust and be able to learn since is their first exposure to assess, monitor and deliver pregnant women. Learner midwives experienced satisfaction and were excited that they were able to guide their juniors since they have gained knowledge and skills during their midwifery experiential learning exposure. This was evident based on the statement:

“We're really satisfied and excited because we are able to guide the junior learner midwives, demonstrate to them and teach them midwifery so that they are able to cope with the normal midwifery skills.”

Thunes and Sekse (2015), Levette-Jones, Pitt, Courtney-Pratt, Harbrow and Rossiter (2015) and Levette-Jones et al. (2014) stated that midwifery students during their first encounter with maternity ward need guidance so that they can develop skills through a close cooperation and collaboration with their senior students and mentors support this.

5.3.4.3 Sub-Theme 4.3: Independence Role Sharpened

All LMs need to develop the independence role for their capability' sake and be in the position of making decision for patients when the need arise.

Some participants said:

“The midwifery practitioners that we were working with were excited to find out that we managed the cubicles and delivered pregnant women, performed and sutured episiotomies without any problems as seniors without their continuous supervision. They praised us and told us to keep up the good work”.

“I am settled because the midwifery practitioners could leave me and attend a meeting whilst I was left alone in the 2 cubicles, monitoring and delivering the pregnant women. Due to the good theoretical midwifery knowledge I was able to participate in the discussions of pregnant women and gave my individual opinions during the grand ward rounds with the obstetricians.”

Learner midwives gain confidence, competence and independency if given opportunity to practice under the conducive conditions and support (Hassan-Bitar & Narrainen, 2009).

5.4 Results of Focus Groups of Puerperal Mothers

Focus Groups Discussions of Puerperal Mothers

The emerged evidence of puerperal mothers from their verbatim transcripts presented in the form of themes and sub-themes. Furthermore, other participants explained that some determined midwifery practitioners taught them midwifery skills, facilitating the fusion of theory to practice, act as role

models to and engaged in critical reflection with learner midwives.

Table 5.3: Themes and sub-themes related to puerperal mothers' perceptions regarding the midwifery care and delivery of their babies by midwifery practitioners

Themes		Sub-Themes	
1.	Sub-optimal midwifery interventions proffered to pregnant women in labour	1.1	Pregnant women delivering without any use of pain relief
		1.2	Pregnant women delivering without assistance of midwifery practitioners
		1.3	No explanations given to pregnant women in labour
2.	Negative attitudes of midwifery practitioners towards pregnant women in labour	2.1	Verbal abuse of pregnant women in labour
		2.2	Physical abuse of pregnant women in labour
3.	Poor emergency medical services (EMS)	3.1	EMS not answering telephone calls made by pregnant women
		3.2	Failure of EMS to collect pregnant women from their homes
		3.3	Problems encountered due to EMS not taking pregnant women to the respective clinics they booked
4.	Absence of material resources	4.1	No toilet paper to use in ladies room
		4.2	No soap and paper towels to wash and dry hands after use of ladies room
		4.3	No sanitary pads to use following parturition
		4.4	Absence of linen, night dresses and gowns
		4.5	Bathing with cold water in winter

5.4.1 Theme 1: Sub-Optimal Midwifery Interventions Proffered to Pregnant Women in Labour

The sub-optimal midwifery interventions proffered to pregnant women in labour were, pregnant women delivering without any use of pain relief; pregnant women delivering without assistance of midwifery practitioners; and no explanations given to pregnant women in labour. Pregnant women need to be encouraged during labour. However, puerperal mothers received sub-optimal

midwifery interventions which were tactlessness and the insensitiveness displayed by midwifery practitioners are elements of sub-optimal midwifery.

Gerova et al. (2008) stated that puerperal mothers are in need of quality midwifery care and are not to be left to languish; they need midwifery care right away. The findings of this study indicated that puerperal mothers' satisfaction was affected by their relationship and connectedness with midwifery practitioners which was found missing.

5.4.1.1 Sub-Theme 1.1: Pregnant Women Delivering Without Any Use of Pain Relief

Pregnant women are human-beings and all of them experience labour pains under normal circumstances and their pain thresholds differ.

One participant stated: *"I could not tolerate the labour pains that I experienced. There was nobody to talk to and give me something that could at least help me to tolerate the pains. When the pain came I would cry and scream trying not to listen to the pain."*

Other participants said:

"Are we not supposed to get some pain relief when we are in labour? Midwifery practitioners told us that we do not have good uterine contractions and labour pains are natural. Midwifery practitioners did not care about us. We were crying due to pain we felt. They all avoided us."

Larkin, Begley and Devane (2007) reported that if pregnant women in labour are not given pain relief it could cause them to develop anxiety, depression and post-traumatic stress. Management of labour pains encompasses pharmacological, non-pharmacological and other approaches such as the woman's relationship with midwives and obstetricians (Klomp et al., 2014). In order to assist women in labour to tolerate the pains, non-pharmacological interventions could be used. Non-pharmacological pain relief might be safe and

effective (Amedee-Perret, 2013; Hutton, Kasperink, Rutten, Reitsma & Wainman, 2009). Some alternatives for pain reduction such as touch, massage and methods of relaxation should be used during first stage of labour (Vivilaki & Antoniou, 2009).

Gibbs, Karlan, Haney and Nygaard (2008) agreed that a woman's request for pain medication is ample reason to administer them. Labouring women in general should receive pain relief when they are uncomfortable and are in a well-established labour pattern with contractions occurring regularly and of significant duration with moderate to strong intensity. Stark, Rudell and Haus (2008) affirmed that to promote maternal relaxation and pain management and decrease the length of labour, women can be encouraged to use hydrotherapy with upright positioning.

5.4.1.2 Sub-Theme 1.2: Pregnant Women Delivering Without Assistance of Midwifery Practitioners

Participants' narratives served as an example of how their feelings of anxiety were generated by midwifery practitioners leaving pregnant women in labour alone to deliver without their assistance. Participants explained that they experienced very strong pains:

"The contractions last longer in the fundus, but reached its peak simultaneously over the whole abdomen. This made me feel strong uterine contractions and I felt like expelling the foetus. Nobody could come and assist me."

"Midwifery practitioners were in the next room, eating and talking. I called and they never came to my assistance. I delivered alone and after some few minutes they came and found that I have delivered alone."

Pregnant women in labour should not be left alone without the necessary support. This is supported by the National Health and Medical Research

Council (NHMRC, 2011) consultations who stated that abandonments of women without care should be prevented by maternity care professionals. Otherwise they will be held accountable and responsible if something goes wrong (Yates, Wells & Carnell, 2007). According to SANC (1993), Regulation R2598 Scope of Practice, a registered midwife shall not leave the woman in labour alone. If a pregnant woman in labour is left alone unaided it is negligence in the midwifery practitioner's part that warrant disciplinary action.

Middleton (2005) affirmed that patient satisfaction, clinical quality measures, costs in service delivery and provision of indigent patient safety must be checked. Furthermore, Bord Altranais Agus (2013) and Nursing and Midwifery Board of Ireland (2013) emphasized the importance of the obligations of midwives in recognizing and responding to the needs of service users and families.

5.4.1.3 Sub-Theme 1.3: No Explanations Given to Pregnant Women in Labour

Explanations and communication are psychological support that every pregnant women must receive when in labour. Thus, it is ideal that every pregnant woman should have the opportunity to form a relationship with one particular midwifery practitioner for advice to be given consistently. The pregnant woman will become relaxed and feel free to ask for information. In this way every pregnant woman will be able to obtain as much information as she wishes.

Participants stated:

“No explanations were given to us when we were in labour. So we never knew what they expected from us since it was our first time being in labour.”

The study conducted by Foster et al., (2010) evaluated the experiences of

midwives during the antenatal and the intrapartum periods illustrated poor-quality maternal health services that left pregnant women in labour and their families feeling impotent, disrespected and afraid. Findings suggest that puerperal mothers received appalling midwifery care. According to Pitchforth, van Teijlingen, Graham, Dixon- Wood and Chowdhury (2006), there is growing evidence that the avoidable factors of sub-standard care contributes to deaths.

Women want caregivers who provide them with consistent information, who respect their autonomy, show concern for their well-being and are non-judgemental (Becker, Klassen, Koenig, LaVeist, Sonenstein, & Tsui, 2009). Making the patient more informed, providing reassurance, support, comfort, acceptance, legitimacy and confidence are the basic functions of optimal midwifery practice environment. The impact of the goals of optimal midwifery practice environment has a direct logical link with enhancing quality midwifery interventions and reduction of injury and suffering.

Schofield, Fuller, Wagner, Friis and Tyrell (2009) affirmed that communication and listening skills require greater focus in promoting woman-centred care. The authors also highlighted that is crucial to provide a service to each individual woman that is suited to her emotional, social, cultural, psychological, spiritual and physical needs. Midwifery practitioners and puerperal mothers need to communicate and collaborate in team approaches to ensure that women receive safe, quality care throughout the continuum of maternity care (New Zealand Ministry of Health, 2008).

Consistency of information is very important, even if provided by different professionals (Price, Howard, Shaw, Zazulak, Waters & Chan 2005). This is supported by Pelzang (2010) who stated that patients need to be more informed, reassured, comforting accepting them as they are, and support them emotionally, physically and psychologically.

5.4.2 Theme 2: Negative Attitudes of Midwifery Practitioners Towards Pregnant Women in Labour

Attitudes of midwifery practitioners towards pregnant women in labour were somewhat negative because of the following: verbal abuse of labouring women and physical abuse of labouring pregnant women. However, it was astonishing to learn from this study that midwifery practitioners seemed not to have interest in the well-being and welfare of their patients despite the oath and pledge they took on completion of the learning programmes. Despite the increasing activities of midwifery practitioners in improving the quality of midwifery care, it was revealed that puerperal mothers still complain of midwifery practitioners' negative attitudes. There are many studies on attitudes, practices and knowledge of midwifery practitioners towards pregnant women during delivery and parturition, but none have given information to reveal if midwifery practitioners' current attitudes and practices are still the same or there is a better progressive modification. The results of this study revealed the current negative attitudes of midwifery practitioners and sub-optimal midwifery care which is worsening. However, the research study was aimed at developing an evidence-based optimal midwifery practice environment that could enhance quality midwifery practice. Irrespective of pregnant women's socio-economic status, their creed, colour and culture, there is a need for ethical orientation emphasizing the need to render quality midwifery care. These patients are vulnerable.

5.4.2.1 Sub-Theme 2.1: Verbal Abuse of Pregnant Women in Labour

Verbal abuses are insults and shouting done by midwifery practitioners to labouring pregnant women. Vulnerable pregnant women were not supposed to be insulted by midwifery practitioners who are their providers of midwifery care.

Some midwifery practitioners acted inappropriately to pregnant women in labour which raised the question of what obligations of midwifery practitioners are to women in labour. Some participants stated:

"Midwifery practitioners shouted at us and released vulgar words to us after

realising that we delivered alone without their assistance, despite the fact that I have been calling them.”

Findings suggest that puerperal mothers received appalling midwifery care. Pitchforth et al. (2006) reported growing evidence that the avoidable factors of sub-standard care contributed to deaths. The SANC (2013) as a statutory body regulating the midwifery profession stated that midwives must at all times expected to observe and apply fundamental ethical principles in their interaction with health care users. These midwives should refrain from doing harm of any nature whatsoever to health care users, individuals, groups and communities. Bord Altranais Agus (2013) the Nursing and Midwifery Board of Ireland stipulated that midwives must respect each person as a unique individual.

5.4.2.2 Sub-Theme 2.2: Physical Abuse of Pregnant Women in Labour

Physical abuse which includes beating of labouring pregnant women is uncalled for. The labour unit is a health centre where patients receive care not where they are to be maltreated and beaten up.

Participants stated:

“Midwifery practitioners when they came to me, my baby was already half born and they beat me.”

Non-maleficence should be omitted and beneficence implemented at all times by midwives acting with kindness at all times. This means that midwifery practitioners are required to consciously refrain from doing harm of any nature to pregnant women and are required also to act with kindness all the time (SANC, 2013). Physical abuse should not be practiced. Fries et al. (2008) stated that physical abuse is an unprofessional practice and midwifery practitioners should be charged. Anyone found practicing it, SANC will take disciplinary steps against that registered midwifery practitioner or learner midwife and should be arrested in terms of Rule 387 (SANC, 1985b).

5.4.3 Theme 3: Poor Emergency Medical Services

Emergency medical services (EMS) must always be fully functional—if not, it will impact negatively on the lives of mothers and their unborn babies. Unavailability of EMS contributes to poor transportation, which will cause patients not to reach the maternity unit timeously. Transport must always be available for transporting of pregnant women to the hospital or clinic on time in order to prevent any complications that can arise. According to the Saving Mothers Report of 2008-2010, the EMS must always be available so that the pregnant women can reach the hospital timeously and receive immediate midwifery care (DoH, 2008). The quality of the referral system is crucial to preventing maternal deaths.

5.4.3.1 Sub-Theme 3.1: EMS Not Answering Telephone Calls Made by Pregnant Women

Participants encountered problems when making calls to EMS for them to be collected. Despite them making several calls, nobody answered their calls.

Participants stated:

“When my water broke I made several calls to the number of EMS that I was given at clinic, unfortunately, no one answered. This frustrated me since I needed transport urgently. I had to resort to a taxi.”

A functioning referral system is a necessity for a successful and safe motherhood. Murray and Pearson (2006) affirmed that formalized communication and transport arrangements based on agreed setting-specific protocols for referrer and receiver are requisites for a successful maternity referral system. Absence of functioning and reliable communication system to enable pregnant women to communicate with EMS will impact negatively on the health and life of pregnant women (Hulton et al., 2007).

5.4.3.2 Sub-Theme 3.2: Failure of EMS to Collect Pregnant Women from Their Homes

Problems that puerperal mothers encountered in terms of poor transportation were evident, based on the narratives of participants. Participants indicated that when they fell into labour they called the EMS which did not come to collect them from their homes until they decided to use public transport to reach the clinic they booked at. Participants stated:

“When we called the EMS it never came therefore we used taxi because we don’t have cars. It took me 2 hours before arriving at the clinic.”

Some participants indicated that they called for the EMS and it never came. They waited more than 2 hours. One participant said:

“I then called my husband at work to come and take me to the hospital but unfortunately I could not get hold of him. I had to use taxi to the hospital and the water broke whilst I was in the taxi. When I reached the hospital the pains were too much and when I entered labour unit I was feeling to push.”

Pattinson et al. (2012) stated that the Limpopo Province should change the paradigm which the EMS should work and have separate interfacility transfers and increase the number of ambulances to dedicated obstetric ambulances to reduce the delay of pregnant women reaching the clinic timeously to receive midwifery care, thus, reduce maternal morbidity and maternal deaths. This indicates a dire need for a reliable transport available on a 24-hour basis (DoH, 2015).

5.4.3.3 Sub-Theme 3.3: Problems Encountered Due to EMS Not Taking Pregnant Women to the Respective Clinics They Booked

Participants encountered problems when transported by EMS. Instead of them being taken to their respective clinics where the pregnant women booked, the EMS escorted them straight to the hospital.

This was supported by most participants who stated:

“We were surprised to notice that the EMS took us to the nearby hospital not to the clinic that we booked at. When we enquired the EMS personnel informed us that if they take us to the clinic we booked, after few minutes the clinic will call and inform them to come and take us to the hospital. Therefore, it is better if they escort us to the hospital and prevent making too many trips.”

Another participant indicated:

“When labour pains started to be strong I called the EMS and it took time before it could come, but it took me to nearest clinic which I never attended. On arrival the midwife chased me away, told me to go to the hospital since I was not attending clinic there.”

Pregnant women in labour encountered problems of transportation to the public hospitals for delivery. According to Hulton et al. (2007), health care systems are failing to optimize women’s rapid access to emergency obstetric care. Therefore, poor referral procedures are a significant constraint to accessing the midwifery care. Murray and Pearson (2006) reported that active collaboration between referral levels and across sectors to prevent tossing of pregnant women around.

5.4.4 Theme 4: Absence of Material Resources

Puerperal mothers reported that material resources were inevitably limited or absent. These participants as consumers of midwifery care were all negatively affected by these constraints since they were informed to buy toilet paper for their usage.

5.4.4.1 Sub-Theme 4.1: No Toilet Paper to Use in Ladies Room

The availability of toilet paper is of prime importance as human beings, for the purpose of hygiene and comfort.

A participant stated: *“Since I was admitted in the maternity unit there are no toilet papers in the ladies room. I had to call my family to buy toilet paper for me.”*

The majority of women giving birth experienced maternity units of public hospitals care that did not reflect the best evidence for practice nor for women’s preferences. A difference in the quality midwifery care between the rural and urban still exists (Sakala & Corry, 2007).

5.4.4.2 Sub-Theme 4.2: No Soap and Paper Towels to Wash and Dry Hands After Use of Ladies Room

There were a number of material resources that the puerperal mothers were unable to be provided with, including soap and paper towels to dry hands after use of ladies room. Thus, this gave an unfavourable picture of care they received postpartum. It implied sub-optimal midwifery care.

Most of puerperal mothers expressed:

“There were no soap and paper towels to wash and dry hands properly after visiting ladies room and I was overwhelmed. Therefore, our family members bought soap for our usage.”

According to WHO (2009), proper hand washing requires the use of soap and water after the use of toilet to remove dirt and organisms. Paper towels can be used or even a warm air dryer to dry washed hands to avoid the risk of cross-infection. However, Thopola and Lekhuleni (2015b) highlighted that puerperal mothers experienced absence of soap and paper towels for washing of their hands after visiting ladies room.

5.4.4.3 Sub-Theme 4.3: No Sanitary Pads to Use Following Parturition

Evidence suggests that participants had no pads to use following parturition:

“Prior using ladies room when enquiring about clean sterile pads for changing you were told that there are no pads and you rather call your family to bring some pads.”

Tazeen, Neelofar and Khuwaja (2007) stated that use of unhygienic material to absorb lochia in the absence of sanitary pads predisposed the puerperal women to infection. Puerperal mothers experienced problems of nonavailability of pads and were made to buy for themselves (Thopola & Lekhuleni, 2015b).

5.4.4.4 Sub-Theme 4.4: Absence of Linen, Night Dresses and Gowns

Participants indicated:

“Night dresses and gowns are not available, midwives instructed us to call our families so that they bring along nighty and gown for me. When our nighties are soiled, we do not have clean night dresses and gowns to change because there is no linen.”

“There was no linen at the clinic and I was instructed to sleep on top of a plastic so that the mattress is not soiled”

This is supported by Hassan-Bitar and Narrainen (2009) who asserted that women were seen giving birth on plastic bags when sheets were not available in the delivery rooms. These predispose the women and newborn babies to infection.

5.4.4.5 Sub-Theme 4.5: Bathing with Cold Water in Winter

Participants highlighted that they experienced bathing with cold water during winter season. They explained that they were not keen to have bath due to the fact that it was cold.

“Nowadays we do not have warm water to bath and because of that we just do not wash thoroughly in the bath or shower, we use basin.”

Problems with the provision of continuous supply of power to keep water warm will deprive pregnant women from accessing warm water for bathing (Hulton et al., 2007).

5.5 Interpretative integration, Compilation and Comparison of Results

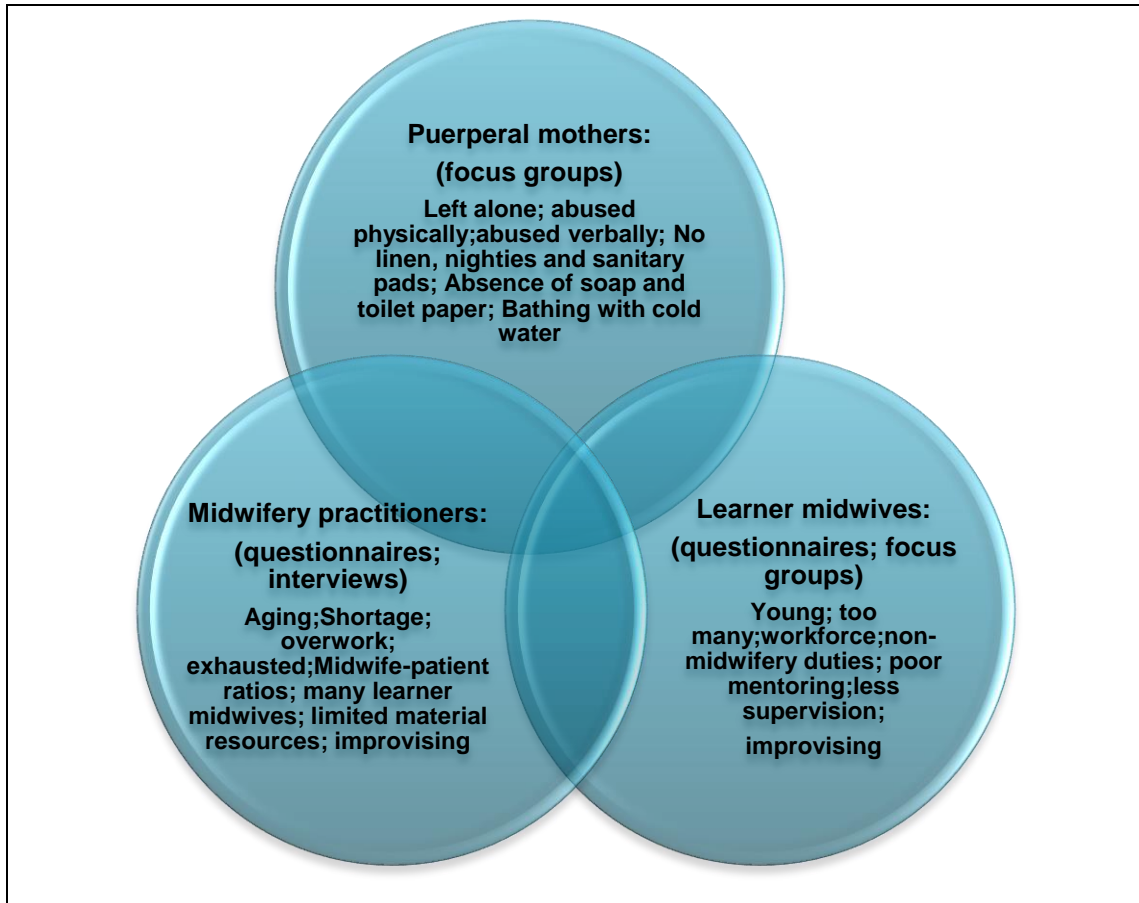


Figure 5.1: Interpretive integration of results

The numeric and narrative results of midwifery practitioners, learner midwives and puerperal mothers are presented in figure 5.1. The quantitative results that emerged from the questionnaires were used to design the qualitative interviews and focus group discussions. These methods complemented each other based on the findings since more information and support of findings emerged.

Quantitative results revealed that learner midwives were still young and energetic in comparison to the midwifery practitioners who were ageing and not energetic. Thus, most of the time they would send learner midwives for their personal errands taking them away from their midwifery experiential learning environment. The qualitative results revealed that learner midwives were not

supervised and mentored well since there was a shortage of midwifery practitioners. Midwifery practitioners were overworked since there were more patients they monitored despite the staff shortage. This could also be the reason for them not being able to supervise or mentor learner midwives who were many. Increased numbers of learner midwives could also influence them to be delegated non-midwifery duties, errands and also be taken as workforce.

The negative attitudes of midwifery practitioners towards labouring pregnant women could emanate from the fact that they are burnout due to increased workloads. However, these should not be the causes of the poor midwifery care provision. The focus groups of learner midwives and focus groups of puerperal mothers revealed the same results of verbal and physical abuse towards puerperal mothers, which is an unaccepted behavior. The puerperal mothers instead preferred to be delivered by learner midwives who did not abuse them verbally or physically.

The expectations of the puerperal mothers in terms of the right midwifery practitioner, assisting, caring, explaining, empathizing, responding to puerperal mothers call need at the right time was somehow shattered based on the emerged evidence of the focus group discussions. This was evidence of provision of sub-optimal midwifery care to puerperal mothers, which is a misdemeanor.

Limited material resources and limited equipment exacerbated the competency acquisition of midwifery practitioners and learner midwives and caused them to improvise when caring for pregnant women, which also had a negative impact on the health of mother, foetus and the infant. By improvising the use of blades for cutting episiotomies; multiple injections through use of 2-ml syringes when injecting magnesium sulphate; use of unsterile gloves when delivering the pregnant women was an evidence of sub-optimal midwifery care that could lead to medico-legal hazards.

Puerperal mothers were faced with challenges of not having toilet paper, hand washing materials, sanitary pads and nighties. Their family members were

informed to intervene and assist whilst they were still admitted in the maternity unit. Learner midwives could grow and develop professionally due to limited resources which impeded them to practice with the relevant equipment and appropriate material resources. Thus, the midwifery experiential learning environment was not conducive for learning.

5.6 Conclusion

The research revealed problems of the shortage of human and material resources, increased workload and limited essential equipment as well as provision of sub-optimal midwifery interventions to individual pregnant woman. Furthermore, these problems impeded the use of adequate human and material resources and equipment which were beyond the individual midwifery practitioner's and individual learner midwife's control.

Shortage of human resources; constraints of material resources, lack of essential equipment, negative attitudes of midwifery practitioners, medico-legal hazards and sub-optimal midwifery interventions were the factors that impeded the provision of optimal midwifery practice in maternity units of public hospitals of Limpopo Province, South Africa.

Despite the relative strong support for the benefits of the optimal midwifery practice environment by the participants in most of the maternity units of the public hospitals in Limpopo Province, participants freely expressed problems associated with enhancing optimal midwifery interventions. Shortage of midwifery practitioners and absence of equipment were the most common contextual problems which inhibited the proffering of optimal midwifery care, reported by 100% of participants from all 15 maternity units of public hospitals. Another problem that was cited by most of the midwifery practitioners in the midwifery practice environment of public hospitals was that of material resources, equipment, treatment that was lacking to an extent that no meaningful plan of improvising of midwifery care could be devised.

Learner midwives' narratives revealed the factors that impeded them from

acquiring critical midwifery skills. These factors were lack of mentoring, poor supervision and lack of support. Participants' accounts were that they were regarded as workforce and were delegated to do non-midwifery duties. Participants also highlighted the negative attitudes of midwifery practitioners and medico-legal hazards performed. The optimal midwifery practice environment is needed to enforce the conducive midwifery experiential learning environment of the learner midwives to acquire competence, skills and professional development and growth in terms of midwifery care which must be carried out beyond their graduation.

Puerperal mothers' evidence were the appalling care they received from midwifery practitioners who were tasked with the midwifery care they were supposed to give to them as professionals. Participants were still left alone unattended and this caused them to deliver on their own, unassisted. In some instances they were abused verbally and physically. Chapter 6 will describe the development and validation of an evidence-based model for enhancing optimal midwifery practice environment.

CHAPTER 6

AN EVIDENCE-BASED MODEL FOR ENHANCING OPTIMAL MIDWIFERY PRACTICE ENVIRONMENT

6.1 Introduction

The focus of this chapter is on the description of an evidence-based model for enhancing optimal midwifery practice environment. The chapter will also discuss the procedure followed for identification of the central concept and the steps adopted during model development. Furthermore, the validation of the model is also discussed in this chapter.

6.2 Purpose of the Evidence-Based Model

The purpose of the evidence-based model is to provide a rationale for the outcomes of the development of its structure and to contextualize it.

6.3 Objective of the Model

The objective of the evidence-based model is to enhance optimal midwifery practice environment in maternity units of public hospitals in Limpopo Province.

6.4 Process Adopted for Identification of Central Concept

The steps adopted for identification of the central concept are shown in Figure 6.1 as deductive and inductive reasoning, analysis, synthesis and concept identification.

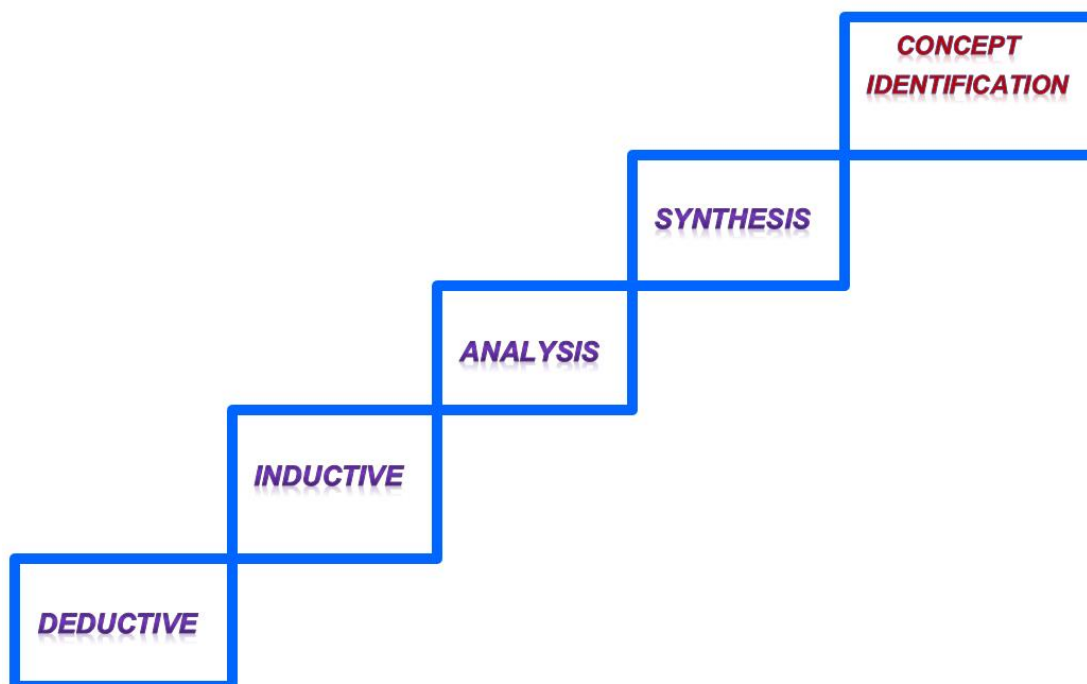


Figure 6.1: Steps adopted for central concept identification

6.4.1 Deductive Reasoning

Polit and Beck (2012) define deductive reasoning as the process of developing specific predictions from general principles. Deductive reasoning was based on the findings from the quantitative phase. In this study deductive reasoning was done to deduce, analyze and synthesize information gathered from all questionnaires completed by 148 learner midwives and 100 midwifery practitioners. Based on the results from the questionnaires, the qualitative phase was conducted. The deductive analysis was used during conceptualization to facilitate formulation of relational statements, model description and description of guidelines for operationalization of the evidence-based model for enhancing optimal midwifery practice environment.

6.4.2 Inductive Reasoning

Inductive reasoning refers to the process of developing generalizations from specific observations (Poli & Beck, 2012). Inductive reasoning was based on findings the qualitative phase. In this study inductive reasoning was conducted

using the semi-structured interviews and focus group discussions to strengthen arguments that might alter conclusions until saturation of data was reached. The data that was collected was analysed and interpreted through inductive generalization. Furthermore, based on findings from the interviews of 20 midwifery practitioners, focus groups discussions of 3 groups of learner midwives and 3 focus groups discussions of 18 puerperal mothers, the identification of the central concept was strengthened. The findings were also used to generate relational statements for an evidence-based model for enhancing optimal midwifery practice environment.

6.4.3 Analysis

Analysis clarifies, refines or sharpens concepts, statements and theories and examining the relationship of each of the parts to each other and to the whole (Walker & Avant, 2005). In this study the the strategy of analysis used in quantitative and qualitative data analysis aiming at identification of coconcepts, relationship between statements which formed basis for the development of an evidence-based model for enhancing optimal midwifery practice environment in maternity units of public hospital, Limpopo province. The study revealed inadequate material resources and insufficient midwifery practitioners. After identification and classification of the concepts literature review and support were done.

6.4.4 Synthesis

According to Walker and Avant (2005) concept synthesis is a strategy used for developing concepts based on observation or other forms of empirical evidence. Concepts synthesis focus on ordered information about attributes of one or more things that enables differentiation of things. In this study concept synthesis is based on the analysis in order to formulate conclusions and recommendations based on the findings, exploration and description of

relevant concepts to development of an evidence-based model for enhancing optimal midwifery practice environment. Findings revealed the existence of sub-optimal midwifery practice environment in maternity units of public hospitals in Limpopo Province.

- **Concept Derivation**

According to Walker and Avant (2005) concept derivation is generation of new ways of thinking about and looking at some phenomenon. It provides a new vocabulary for studying an area of interest by relying on an analogous or metaphorical relationship between the two phenomena, one defined and known, one undefined and unknown. Concept derivation is useful in fields or areas in which no concept development has yet occurred and in fields in which extant concepts have been available for some time but have contributed little to practical or theoretical growth in the field. In this study concept derivation was useful in concept development of an evidence-based model for enhancing optimal midwifery practice environment which is a new contribution to the knowledge of nursing and midwifery.

6.4.5 Concept identification

Based on the deductive, inductive, analysis and synthesis steps, the optimal midwifery practice environment was identified as a central concept.

6.5 Model Development

The model development method adopted used 5 steps namely, concept analysis, related concepts, critical attributes, antecedents and consequences, theoretical relationship.

6.5.1 Concept Analysis

According to Walker and Avant (2005), concept analysis is defined as a process that allows the examination of attributes or characteristics of a

concept. Concept analysis involves the identification, definition and clarification of the variables and concepts around which the model will be developed as well as the clarification of statements and their organization. The researcher, during concept analysis, should become conversant with the basic tools of thinking and understanding, namely, language, terms, ideas and concepts. Decision can be taken about which concepts are central to theory through identifying concepts and deriving interrelationships.

After identifying concepts, the researcher should establish the nature of the concepts, their organization; whether there are central concepts with sub-concepts organized under it or several central concepts with sub-concepts organized under them. Analysis of concepts brings to light related and contrasting concepts and these relations are important to fully appreciate the richness of the central concept. The concept should be clearly delineated and sharply defined so that the researcher can make unambiguous and meaningful distinctions in using the concept.

The concept might be singular entities or there could be relationships and interrelationships between and among them. Occasionally, some concepts mentioned may not seem to fit the emerging structure. The researcher should describe concepts by listing key ideas and tentatively identifying how they seem to relate to one another. As the researcher begins to discern relationships, the perceptions of the key concept are identified and their organization addressed, the relationships and structures will begin to merge. The analysis of relationships involves the identification of the connections among the concepts and enhances the comprehension of the interrelationships among concepts and proposition of the model.

The aim of the definition, description and analysis of the concept of midwifery practice environment and evidence based is to formulate a definition of optimal midwifery practice environment. The description of concepts is crucial because their quantity and character facilitate understanding of the purpose of the theory, structure and nature of theoretic relationships, the definitions and

assumptions. Therefore, the purposes of concept analysis are to clarify the meaning of the midwifery practice environment by gaining insight into the concepts.

The central concept identified in this study is optimal midwifery practice environment as shown in Table 6.1. This concept serves as the major construct identified by the researcher. The identified central concept will undergo a concept analysis.

Table 6.1: Definitions of central concept

<p>Optimal Midwifery Practice Environment</p>	<ul style="list-style-type: none"> • Midwifery practice environment is a clinical setting that caters for pregnant women during antepartum, intrapartum and postpartum; midwifery practitioners are employed; learner midwives are placed for midwifery exposure. • Midwifery practice environment is important for the practice of midwives; provision of quality midwifery care and for the experiential learning of learner midwives. • Midwifery practice environment refers to the practice or service where the midwifery practitioners as a sensitive professional will facilitate the implementation of standard midwifery interventions through mobilization unto the individual pregnant woman family, community (WHO, 2010a).
<p>Midwifery</p>	<ul style="list-style-type: none"> • Midwifery refers to the practice that is underpinned by values that guide the way in which the midwifery practitioners deliver midwifery care (Nolte, 2008).
<p>Practice</p>	<ul style="list-style-type: none"> • Practice means to do an activity often regularly in order to improve your skill. It is a standard, accepted way of doing something.
<p>Environment</p>	<ul style="list-style-type: none"> • The environment comprises societal structures whereby men co-exist as a physical, psychological and spiritual being with other living elements (ICN, 2007). The environment in this study comprised of elements in the setting of the midwifery practice environment that impacted on the work of midwifery practitioners, experiential learning of learner midwives and recipient of midwifery care by puerperal mothers. The multidisciplinary team has indirect influence on this environment.

6.5.2 Related Concepts to Optimal Midwifery Practice Environment

According to Walker and Avant (2005), related concepts are ideas that are similar to the concept being analyzed, but have subtle differences when examined closely. The concepts related to the optimal midwifery practice environment are: quality midwifery practice setting, expert midwifery practitioners, midwifery teaching and learning environment, High standard midwifery care. The concepts will be discussed as follows:

- **Quality midwifery practice setting**

Quality midwifery practice setting entails adequate and relevant human and material resources. The availability of these resources will contribute to the quality clinical utility of the midwifery practice setting. The learner midwives will be able to learn midwifery skills leading to competence and professional development. This will result in safe and humane midwifery care for the pregnant women and puerperal mothers.

- **Expert midwifery practitioners**

The expert midwifery practitioners are employed in the midwifery practice setting. These expert midwifery practitioners act as role models to the learner midwives through mentoring, supervision and coaching. The learner midwives are assisted, facilitated, guided and given opportunity to learn the art and science of midwifery and to emulate the expert midwifery practitioners. At the end of their learning experience they will be able to apply the acquired midwifery knowledge, skills and attitudes to pregnant women and puerperal mothers.

- **Midwifery teaching and learning environment**

In a midwifery teaching and learning environment, dedicated and committed midwifery practitioners ensure availability of adequate material resources in order to create quality midwifery teaching and

learning environment. Midwifery practitioners are expected by the SANC and DoH to establish and sustain best and conducive teaching and learning environment where learner midwives will learn without impediments.

The professional socialization of the learner midwives takes place adequately in an optimal midwifery practice environment. Bruce, Klopper and Mellish (2011) indicated that students become experts after attaining professional adulthood. Supporting learner midwives will lead to improved midwifery teaching practice. This will encourage the learner midwives to participate in a meaningful way to provide optimal midwifery care

- **High standard midwifery care**

The midwifery practitioners and learner midwives should strive for excellence in the provision of high standard midwifery care to all pregnant women and puerperal mothers. They are expected to respect the patients' rights and needs as well as those of their families. The premise for high standard midwifery care is that it should significantly contribute to safer maternal and foetal outcomes.

6.5.3 Critical Attributes

Walker and Avant (2005) referred to critical attributes as characteristics that are common to all instances of the concept being analyzed, differentiating it from similar or related concepts. In this study the critical of optimal midwifery practice environment are caring, communication, mutual trust, respect, and team work.

6.5.4 Antecedents and Consequences

6.5.4.1 Antecedents

Antecedents are incidentals that are always present if the concept itself is to occur (Walker & Avant, 2005; Ridley, 2007). The antecedents for optimal midwifery practice environment include adequate supply of human and material resources, dedicated and compassionate midwifery practitioners. There should good interpersonal relationships amongst the midwifery practitioners, puerperal mothers and learner midwives.

6.5.4.2 Consequences

The consequences of the model are the events that occur as a result of concept. The consequences also include the advantages and benefits of the optimal midwifery practice environment. The consequences of optimal midwifery practice environment include a conducive midwifery practice environment and provision of quality midwifery interventions. Evidence and availability of adequate, appropriate, essential and relevant resources and essential equipment could uplift the provision of ethical, individualized, respectful and safe care. Furthermore, there could be application in other disciplines in order to enhance optimal improvement in practice of a specific discipline. Examples of consequences could be: new perspective on existing evidence and knowledge, transformation of frame of reference and positive response to the practice environment.

6.6 Theoretical Relationships

The structure of the model depends on the nature of the conceptual relationship (Chinn & Kramer, 2008). Lekhuleni et al. (2012) indicated that the nature of the relationships should be examined to determine if they are descriptive, explanatory or predictive. In this study, the relational concepts of the model were derived from the empirical sequential mixed methods research, conceptual framework and deductive and inductive reasoning. There should

be a relationship between the midwifery practitioners and learner midwives; midwifery practitioners and puerperal mothers, and midwifery practitioners and interdisciplinary team. As a team there must be a two-way communication that exists between members; an element of trust that each one is committed to ensuring optimal midwifery practice; supporting each other to develop confidence and providing guidance to other members of the team by mentoring them.

6.7 Structure of the Model

The structure of the model is shown as figure 6.2.

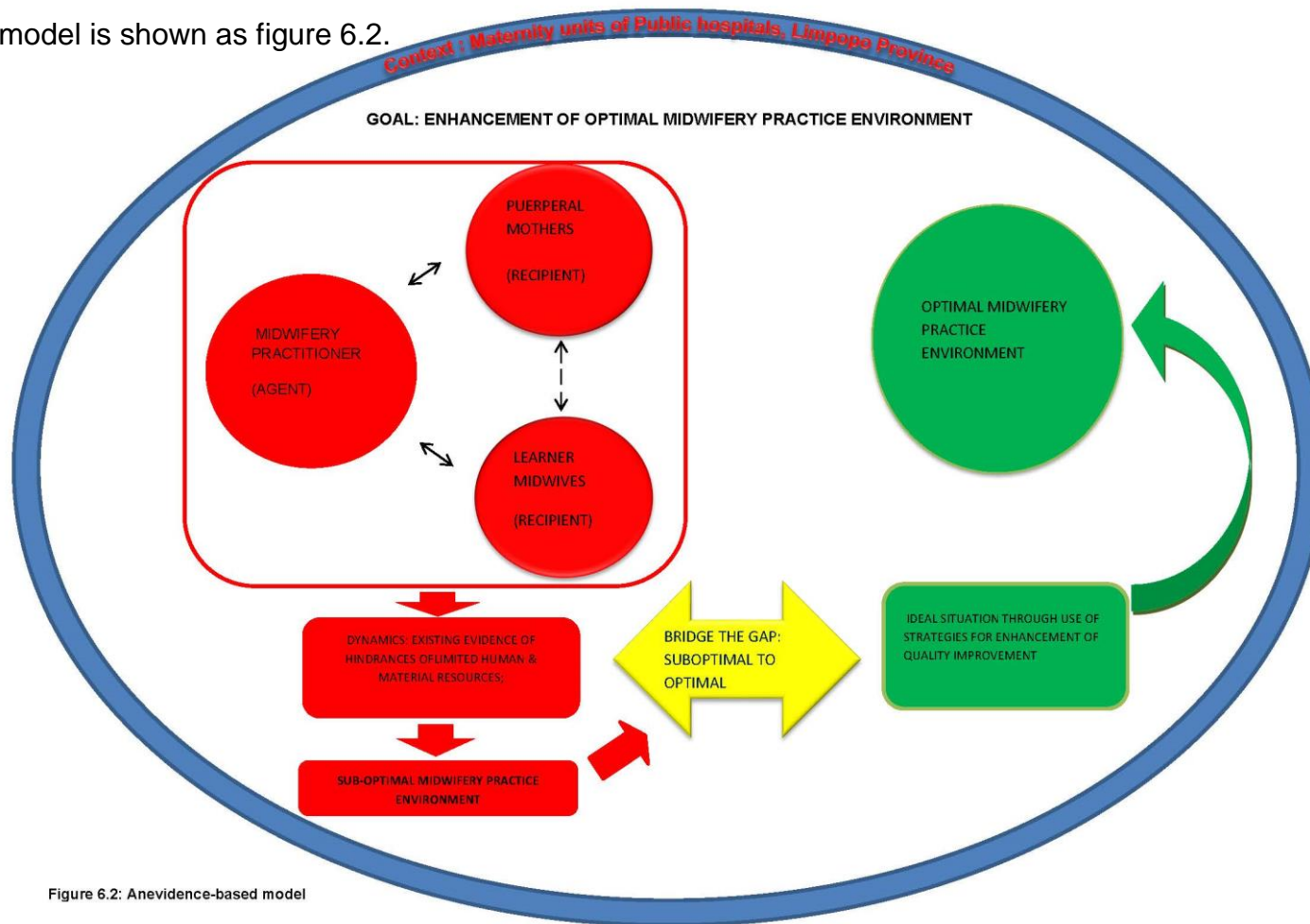


Figure 6.2: Anevidence-based model

The structure of the evidence-based model is described in 10 components as follows:

- *Context:* Maternity units of Public hospitals, Limpopo Province
- *Goal:* Enhancement of optimal midwifery practice environment
- *Existing Environment:* based on evidence from puerperal mothers (recipient); midwifery practitioners (agent) and learner midwives (recipient / agent).
- *Dynamics:* Existing evidence of hindrances of limited human and material resources.
- *Sub-optimal midwifery practice environment*
- *Arrows and circles*
- *Bridge the gap from sub-optimal to optimal*
- *Ideal situation through facilitation of strategies for quality improvement (Protocols/ Procedure)*
- **Optimal practice environment**

The structure of the model includes context, goal, existing environment (agent, recipients), dynamics, sub-optimal practice environment, bridge the gap, protocols/procedure and outcome/ terminus. The structure is shown in figure 6.2.

Figure 6.2 depicts the structure of evidence-based Practice Environment Model; evidence from subset population of respondents and participants which revealed sub-optimal practice midwifery practice environment; bridge the gap that influence the ideal situation to be formulated in order to enhance optimal practice environment.

6.7.1 Context

The context is the situation in which the study took place and it refers to a natural setting of maternity units of public hospitals in Limpopo Province, South Africa. The context of the optimal midwifery practice environment is the maternity units of the public hospitals in Limpopo province. This context consists of midwifery practitioners, puerperal mothers and learner midwives and it is governed by the policies from the DoH and the rules and regulations of the South African Nursing Council. The CEOs manage the public hospitals to ensure optimal midwifery practice. The nursing education institutions place the learner

midwives for experiential learning in the maternity units.

The outer-circle indicates the continuous and changing circumstances of the maternity units of the public hospitals in Limpopo Province, South Africa. The public hospital is found to be overburdened and resource-limited based on the existing evidence. However, it must be ideal in provision of quality midwifery care to all low and high risk pregnant women. Lived experiences of midwifery practitioners as the providers of midwifery care within their specific midwifery practice environment's context had a negative impact on the optimal midwifery care. The context that the puerperal women experienced in midwifery practice environment as consumers of midwifery care was sub-optimal based on their emic views. Learner midwives' emic views pertaining to the experiential learning environment were found to be influenced negatively by challenges they encountered. Numeric data with particular meaning known by respondents in their specific environment had an impact on the optimal midwifery care. However, maternity units are expected to achieve within constrained resources, significant improvements in the quality and continuity of care as required by government policy. The midwifery practice environment was found to be detrimental to the provision of quality midwifery care. Therefore, based on the existing evidence, the nature of the midwifery practice environment was found to be sub-optimal as show in Figure 6.7.

The context consist of 11 selected maternity units of public hospitals in which learner midwives were placed for experiential learning purposes, where midwifery practitioners executed their duties and puerperal mothers received midwifery care. Furthermore, out of these 11 public hospitals 9 are level 1 hospitals and 2 are level 2 hospitals in Limpopo Province. These cater for low, intermediate and high risk pregnant women in 24-hour delivery services. Therefore, level 1 hospitals are obliged to provide quality midwifery services within their limited resources, thus performing a pivotal role in reducing maternal and perinatal mortality rates as targeted by the MDGs.

Furthermore, the context of the model includes the guidelines, laws, policies, principles, protocols, regulations and standards formulated by the governance nationally and internationally which the midwifery practitioners have to abide by. The WHO, government of South Africa and SANC control the practice environment.

There are also Patients' Rights Charters, Bathopele Principles, National Core Standards and Millennium Developmental Goals (MDGs) that the midwifery practitioners must adhere to. Also, the scope of practice guides the quality of midwifery care that should be provide to all pregnant women. Despite all these in place, there is evidence of sub-optimal midwifery care given to consumers of care. It is therefore incumbent upon midwifery practitioners that in the performance of their professional duties they should bear in mind that as persons tasked with rendering of midwifery interventions to pregnant women, developing foetuses and neonates; they are at the same time accountable, responsible and answerable for their own acts and omissions in accordance to Rule R387 of the SANC's code of conduct (SANC, 1985a).

6.7.2 Goal: Enhancement of Optimal Midwifery Practice Environment

Goal refers to something you hope to achieve in future (Longman Dictionary of Contemporary English, 2003). The target sample to be engaged in ascertaining the availability of resources needed to formulate and implement changes that will improve the practice environment is particularly diagnostic.

The goal of Evidence-Based Practice Environment Model is to provide a framework of reference for midwifery, nursing and other disciplines to promote optimal midwifery environment and care. The existing environment of the evidence-based midwifery practice environment model as shown in Figure 6.3 shows the challenges encountered and problems experienced by the puerperal mothers, midwifery practitioners and learner midwives. These findings give a picture of sub-optimal midwifery practice environment based on the numeric data and narrated information. The circles on an evidence based model shown in Figure 6.3 indicate continuous and synergistic interactions among all components of the framework.

6.7.3 Existing Environment

The existing environment is based on evidence from puerperal mothers (recipients); midwifery practitioners (agent) and learner midwives (recipient/agent) as illustrated in Figure 6.3.

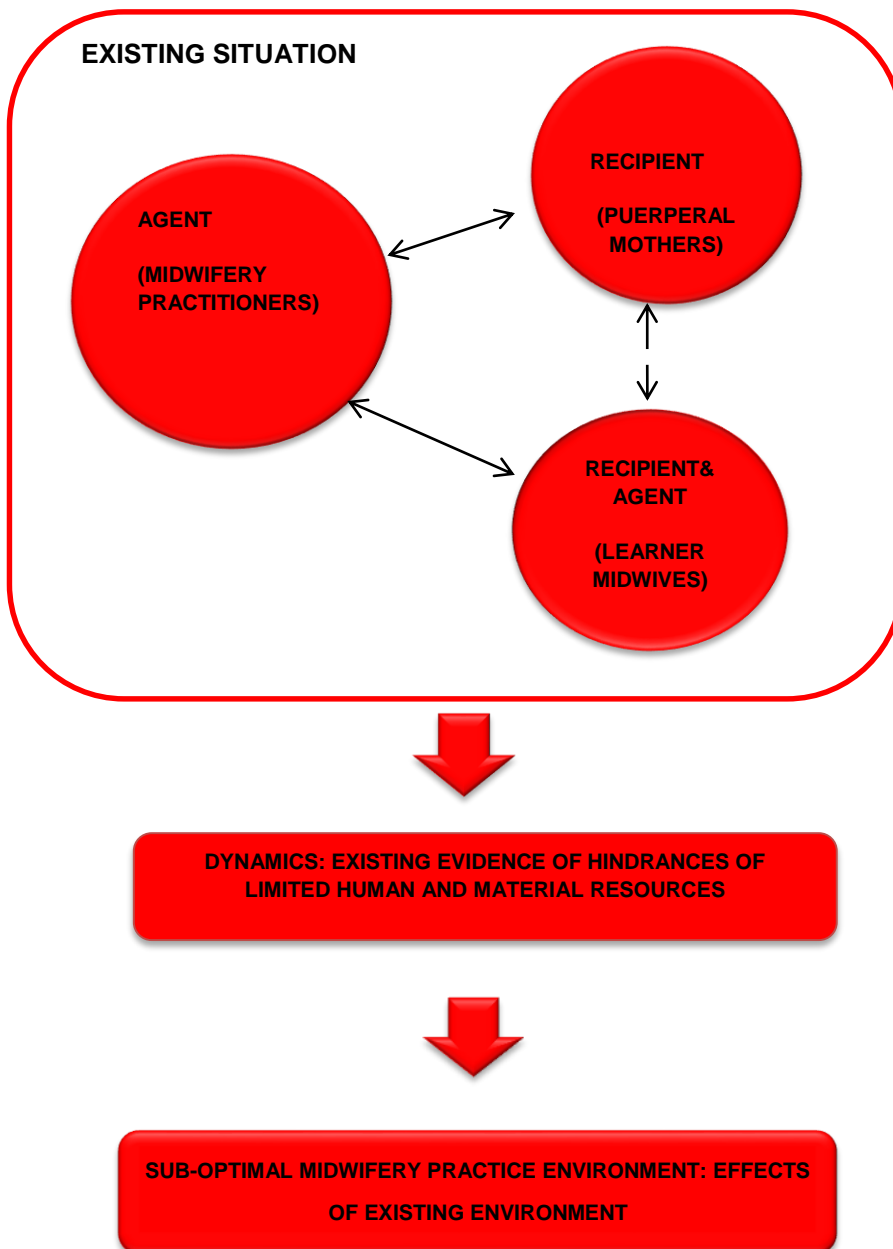


Figure 6.3: The structure of the existing environment

Figure 6.3 shows the existing evidence that is prevailing in the maternity units of public hospitals in Limpopo Province based on the findings from the numeric data and narrated information from participants. The situation is sub-optimal as deduced and induced from the numeric and narrated information because of limited and insufficient human and material resources, limited equipment, and absence of medication, negative attitudes and poor midwifery care. These data attest to the reality of the existing evidence that the nature of the midwifery practice environment does not consistently provide optimal midwifery care. This type of environment means there is a dangerous situation prevailing, impacting negatively on the lives of pregnant women.

6.7.3.1 Agent

Agent refers to a person that represents another person, especially in business or someone or something that affects or changes a situation or company (Longman Dictionary of Contemporary English, 2003). The agent in this study refers to midwifery practitioners who are clinicians, competent, experts in midwifery and neonatal care, knowledgeable and skillful. Also, these midwifery practitioners have a teaching function, supervisory and mentoring the learner midwives in order to facilitate their learning and becoming accountable, responsible, competent, skillful future midwives. Furthermore, these midwifery practitioners are obliged to give quality midwifery care that is free from harm and jeopardizing the health of the pregnant women, fetuses, newborn babies and puerperal mothers. A learner midwife is also an agent who takes care of pregnant women. Therefore, it is important that the learner midwives should render safe, ethical, individualized care to each pregnant woman.

6.7.3.2 Recipient

The Longman Dictionary of Contemporary English (2003) defines recipient as someone who receives something. The recipients in this study are puerperal mothers and learner midwives. Puerperal mothers receive care from midwifery practitioners and learner midwives. All the agents should make sure that the lives of the pregnant women are not put into danger through their actions and omissions. Puerperal mothers have a right of a safe, sound and respectful care that they should receive without some compromising from the midwifery practitioners and learner midwives. The learner midwives, since they are still at some degree stage, are dependent on the midwifery practitioners' supervisory role. Midwifery practitioners

also have to be independent and supervise their subordinates whilst developing and growing professionally themselves.

6.7.4 Dynamics: Existing Evidence of Hindrances of Limited Human and Material Resources

Dynamic is defined as the way in which things or people behave, react and affect each other (Coventry & Nixon, 2010). In this study, the evidenced-based information from the numerical data and the narrated data by participants were dynamics of this study. Evidence from the recipients and agents showed limited human and material resources that led to provision of sub-optimal midwifery care to puerperal mothers.

- **Evidence of Puerperal Mothers**

The puerperal mothers were the centre of the focus, as the consumers of midwifery care. The provision of the sub-optimal midwifery care was done by midwifery practitioners and learner midwives. The midwifery care provided to these participants seemed to be inadequate, ineffective and compromised based on the limited resources, negative attitudes of midwifery practitioners. Thus, these puerperal mothers' experiences revealed sub-optimal midwifery care during their delivery of their babies in maternity units of public hospitals.

- **Evidence of Midwifery Practitioners**

The midwifery practitioner is a professional who is skillful, knowledgeable and competent with midwifery services, functions independently, dependently and interdependently, mentors and supervise learner midwives. Learner midwives are in the process of becoming professionals through the guidance of midwifery practitioners. The evidence-based situation is that the midwifery practitioners' functions are unmanageable workloads, shortage of material resources and limited equipment enforcing them to improvise.

- **Evidence of Learner Midwives**

The learner midwives are the finalists of the R425 programme registered with SANC, placed in the 11 selected accredited maternity units of public hospitals for experiential learning. These learner midwives carry a student status though they function under the direct and indirect supervision of the midwifery practitioners and facilitators. Learner midwives correlate theory to practice and acquire midwifery skills in experiential learning environment. During their exposure they develop, grow professionally and become accountable, competent and skillful cadres passionate about their chosen profession. It seemed difficult for learner midwives during the period of experiential learning based on the existing evidence.

The unavailability of equipment and material resources prohibited them from practicing procedures as required, most of the time they had to improvise.

Mentoring and supervision was done by insufficient number of midwifery practitioners due to the problem of staff shortages. Furthermore, they were expected to do non-nursing duties such as damp-dusting and therefore could not concentrate on the monitoring of pregnant women. Hence, they were not considered as students on training, but as the workforce. Learner midwives should bear in mind that as persons tasked with the rendering of quality midwifery care, they are simultaneously responsible and accountable for their actions and omissions in accordance with the SANC scope of practice, R2598 (SANC, 1993).

6.7.5 Sub-Optimal Practice Environment

The practice environment is affected by the existing issues of weaknesses and strengths. Therefore, if evidence gave the picture of a weak setting, such a sub-optimal nature will affect the environment negatively. Thus, assessment of the effects of the existing situation will be based on the findings of the conducted situational analysis. The sub-optimal practice environment will emerged based on the existed evidence from the recipients and from the agents.

The sub-optimal midwifery practice environment is due to the insufficient and limited human and material resources. These affected the midwifery practitioners negatively in their daily practice. The learner midwives are faced with challenges of acquiring learning in the

environment that is not conducive, since there is no equipment to use when practicing clinical skills as required. The pregnant women as the consumers of midwifery care are not safe; their lives are at stake due to the fact that prevention of infection is not maintained. Limited resources cause the providers of midwifery care to improvise when caring for them. During the process of improvising these providers of midwifery care end up perpetrating medico-legal hazards thus putting their practice and learning in disrepute.

6.7.6 Arrows

The arrows on the schematic presentation of the model in Figure 6.2 indicate synergistic interactions among all components of the framework. The interrupted arrows in the existing environment indicate that the learner midwives depend on the midwifery practitioners' supervisory role since they were not actually fully responsible and accountable for their actions and omissions due to their student status. Therefore, every task that the learner midwives perform during experiential learning should be during the presence of the midwifery practitioners who assess and confirm before the puerperal mothers are involved as evidence of optimal practice.

The arrow between the ideal and optimal midwifery practice indicates the connection and the flow of information from one point to the other point.

6.7.7 Bridge the Gap: Sub-Optimal to Optimal

The strategies were formulated in order to facilitate optimal midwifery practice environment.



Figure 6.4: Bridge the gap from sub-optimal to optimal

Figure 6.4 shows that there is a gap between existing evidence of sub-optimal midwifery practice environment and the ideal situation of optimal midwifery practice environment. The double-pointed arrow of “bridge the gap” as in figure Figure 6.4 indicates that there is an unacceptable situation that is prevailing and needs corrective measures. The two-way arrow is also a sign of caution to midwifery practitioners, learner midwives, management and other stakeholders. It warns and advises them that a plan has to be made to correct the existing situation. Therefore, intervention strategies have to be formulated to correct the existing situation thus avoiding possible problems and dangers that might occur. The safety of pregnant women is threatened. Bridging the gap will lead and hold the midwifery practitioners, learner midwives and the stakeholders responsible to provide optimal midwifery practice environment. It will be achieved through implementing guidelines addressing the issues of sub-optimal practice and thus contribute to quality improvement pertaining to midwifery experiential learning environment, midwifery practice environment and midwifery care.

6.7.8 Ideal Situation through Facilitation of Protocols for Quality Improvement

The right side of the evidence-based model shows the ideal situation that must be achieved for enhancement of optimal midwifery care. This will initiate the development of an evidence-based model for enhancement of optimal midwifery practice, optimal experiential learning and optimal midwifery care.

- side of the structure of the model

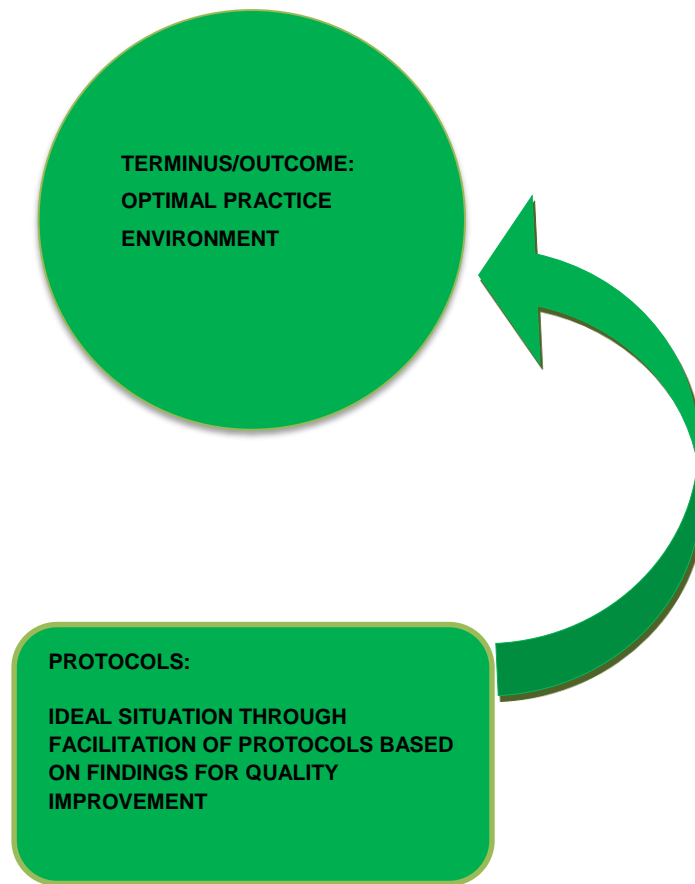


Figure 6.5: The right side of the structure of evidence-based model

Figure 6.5 shows the right side of the structure of the evidence-based model that depicts the ideal situation with protocols based on the dynamics encountered by the puerperal mothers, midwifery practitioners and learner midwives. These protocols will address the sub-optimal midwifery practice environment. If protocols are implemented as designed, the outcomes will be positive. The outcome will be optimal midwifery practice environment that will be ideal for provision of optimal midwifery care and optimal experiential learning environment.

- **Protocols for quality improvement**

Protocol is the technique of the activity and forms the guidelines for a theory and indicates the protocol of the activities to be followed in the theory (Kgole, 2009).

6.7.8.1 Protocols Formulated for Quality Improvement

Formulation of protocols for quality improvement was based on existing evidence. The following are the core competency and optimal midwifery practice protocols formulated for enhancing optimal midwifery care:

Availability of human resources

- With regard to availability of human resources the institutional leadership must ensure that the working conditions, equipment, supplies, personnel and area of jurisdiction are such that the workload is manageable and standards can be maintained (Searle, 1987).
- There should be establishment of comprehensive programmes for the development of human resources which support recruitment and retention of adequate number of midwifery practitioners through:
 - Employment of confident, compassion, competent, dedicated and motivated midwifery practitioners who are accountable and responsible towards pregnant women.
 - The existing vacant posts should be filled in order to address the shortage problems experienced by midwifery practitioners.
 - Urgent address of midwife-pregnant woman-ratio in South Africa, to reduce maternal and perinatal morbidity and mortality rates in order to embrace achievement of MDGs 4 and 5.
 - Experienced midwifery practitioners to be used in assisting of younger midwife practitioners for support basis.
 - Allocation of young midwifery practitioners to be paired with experienced ones for internalization of the midwifery care.
 - Model a way to equip young midwives with skills proficiency and professional growth through staff performance regularly reviewed against job descriptions and performance plans

- Recognition and rewards for clinical midwifery excellence introduced to promote the sharing of expertise and pregnant women-centred care by:
- Encouraging the heart of other midwifery practitioners in order to boost their morale.

Availability of appropriate and relevant material resources

- Improving working conditions, standards of midwifery practice and quality midwifery care. These will be achieved by making sure that resources, equipment and supplies are available and midwifery practitioners are able to monitor pregnant women without running into circles. If equipment and material resources are available midwifery practitioners will not be forced to improvise when monitoring pregnant.
- Replacing blunt episiotomy scissors with new episiotomy scissors to enhance optimal midwifery interventions.
- Purchasing of adequate number of blood pressure machines, Non-Stress Test machines, Cardiotocograph machines for the smooth monitoring purposes.
- Ordering of hand washing materials, sterile gloves, sanitary pads and linen for prevention of infection.

Budget

Material resources and equipment is an obligation of the institutional leadership therefore:

- Budget available to cater for all the needs of the institution in terms of supplies, material resources, equipment and for repairing of non-functioning equipment.
- Expenditure should be managed and monitored to ensure efficiency within applicable legal frameworks.
- All tendering and purchasing must be transparent, fair and reflect planned needs and budgets.

- Reliable suppliers on database for consulting when purchasing.
- Time span before delivery to be explained for the possibility of re-planning.
- Orientation regarding the use of the equipment in order to be able to handle and use the equipment properly.
- Guarantee conditions explained for noting the possibility of issuing of new equipment.
- Ordering relevant material resources are available and accessible at all times for effective midwifery care.
- Purchasing of essential equipment for the purpose of smooth and adequate monitoring of pregnant women and the identification of risks timeously.

New National Innovative developmental strategies to be embraced

New National Innovations will influence midwifery practitioners to change their negative attitudes towards pregnant women, keeping them in toes.

- The new strategy called “MomConnect Project” free service designed by national government, launched by Minister of Health Dr Aaron Motsoaledi on 21 August 2014, at KT Motubatse Clinic, Soshanguve, Tshwane. The aim of “MomConnect” is to resolve any problems the pregnant women encountered over time. These pregnant women will receive information about their pregnancy, clinical messages based on mother and baby care they are scheduled to receive and follow-ups sms’s of imminent or missed appointments. The pregnant women are given contact a number to connect with the Minister of Health’s office and report whatever challenges and problems they encountered or experienced.
- Dissatisfied pregnant women about the poor midwifery care they received are to be helped to express their complaints or concerns for proper handling by relevant stakeholders.
- Innovative approaches should be identified, disseminated and implemented to bridge

the gaps between the midwifery practice and needs of pregnant women and communities so that people consume the midwifery care they require throughout their life course (WHO, 2010a).

- Midwifery care to be implemented should tally with the needs of people and the social determinants of health. Evidence based midwifery care provision impact on health of pregnant women and health related MDGs.
- Midwifery practitioners to be conscientize so that they become committed in monitoring and assessing pregnant women's conditions always without any failure.
- Empowerment of midwifery practitioners on interpersonal skills and ethics in order to develop a positive and sensitive attitude towards the pregnant women during labour.
- Support midwifery practitioners to provide a high standard of midwifery care to pregnant women through the continue review of midwifery services.

Emergency care and transportation of pregnant women

Pregnant women who need emergency midwifery care and transportation should always access them. These pregnant women must be assessed and stabilized appropriately prior to being transferred or referred if need arose.

- Prioritization and triage could assist in assessment of seriousness and advanced progress of labour, to decide the order in which pregnant women should be attended.
- Clear referral criteria agreed upon by all stakeholders between the clinics and maternity units.
- Improve effective and reliable communication system among the stakeholders prior referral of the patient.
- Enough reliable transporting vehicles on a 24-hour basis to meet the needs of the community at large.
- Orientations in terms of accessing transport to the midwifery and obstetric health

services timeously to prevent complications that might arise due to delay in accessing the transport timeously;

- Interactive communications that allows for the opportunity for questioning between the provider of midwifery care and the consumer of midwifery care.
- Pregnant women empowerment for creating awareness among them about their pregnancy, labour and puerperium through health education based on individual problems.
- Orchestration of apparent midwifery practitioner of optimal midwifery care in which the pregnant women desires are met. This type of orchestrated environment will make possible for pregnant women not to be left alone during delivery of their babies without any assistance.
- Reducing delays in midwifery care by managing time and the number of pregnant women to be seen so as to improve patient satisfaction pertaining to midwifery care they received. Furthermore, pregnant women should be given explanation if the midwifery practitioner cannot attend to her timeously to avoid the disgruntlement.

Midwifery Professional Practice

Ensuring evidence-based midwifery care and ethical practice to reduce unintended harm to the consumer of midwifery care thus promote patient safety.

- Patient safety incidents are to be promptly identified and managed to minimize patient harm and suffering.
- Advocacy encouraged and strengthened
- Midwifery protocols to be implemented

Continuous Career development

Midwifery practice institutional capacity should be enhanced through midwifery education, training and career development by:

- Creating opportunities for midwifery practitioners to further their studies in order to prepare them to become professionally competent, confident and compassionate to maintain high standards of midwifery clinical expertise (WHO, 2010a).
- Institutional leadership to support midwifery practitioners in terms of building their qualifications, experience and become effective, visionary leaders and managers of tomorrow.
- Programmes for continuous professional development which include leadership training, midwifery clinical expertise and mentoring of learner midwives, should be institutionalized.
- These are to be disseminated through scheduled compulsory attendance of in-service education, workshops and midwifery seminars for ensuring the achievement of the objective of keeping all staff abreast.
- Encourage further development of skills and knowledge for development of individual midwifery practitioner.

National and international Interprofessional networking and collaborations

The national and international networking and collaborations should be initiated and sustained through a sound stewardship in order to:

- Maximise the contributions of multidisciplinary and Interprofessional teams.
- Maintain ongoing competence and promote sharing of ideas
- Ensuring of a safe midwifery practice environment for both mother and baby.

- Inter-professional collaboration promoted in midwifery and research for continuing education and to build evidence-based midwifery practice through research and to ensure utilization of innovated midwifery care based on findings of the researches conducted

Innovative midwifery facilitation strategies designed to improve throughput

Innovative midwifery facilitation strategies designed for midwifery education and training in order to improve through put:

- Scaling up the production of midwives by through enrolment of sufficient number of suitable candidates. Their Grade twelve subjects should be from level 4 achievements on Mathematics; English; Physical Science and Life Sciences.
- Accompaniment programme should be planned and implemented for facilitation and assessment basis for midwifery knowledge and skills.
- Critical skills in midwifery will be taught, demonstrated to learner midwives who in turn should feedback. Prior assessments, time is for practicing the skills is given to the learner midwives as individual and as a group.
- Adequate teaching resources should be available for enhancement of facilitation of the midwifery course and learning.
- Midwifery seminars and workshops to be organized by learner midwives through support of midwifery facilitators in order to strengthen the sharing of information and expertise of midwifery.
- Department of Health to grant learner midwives to conduct and collect data for midwifery quality improvement projects for their learning purposes.
- Innovative assessment strategy, for instance peer assessment could be introduced to learner midwives for professional competency, team work, support and growth.
- Increase the number of competent future midwives.

- Mentoring learner midwives for implementation of optimal midwifery practices for prevention of sub-optimal performance.
- Supporting and empowering learner midwives to enable them to acquire midwifery skill and instil confidence in provision of midwifery care. Learner midwives should be adequately mentored and supervised.
- Ensuring learner midwives are complying with midwifery regulations and rules stipulated by SANC, thus fulfilling their statutory responsibilities.
- Ensuring adequate and good supervision of learner midwives by making sure that the ratio between the midwifery practitioner and learner midwife is not more than 1:15.
- Development of innovative approaches of assessment. Thereafter, evaluate and disseminate to measure the performance, productivity.

6.7.9 Optimal Practice Environment

The optimal midwifery practice environment enhancing quality midwifery practice. This will lead to implementation of optimal and safe patient care and acquiring competency, and midwifery skills in an optimal experiential learning environment. No sub-standard care or sub-standard training is envisaged.

Optimal Practice Environment will be the desired outcome achieved (Figure 6.5). This is an optimal midwifery practice environment enhancing quality midwifery practice. This will lead to implementation of optimal and safe patient care and acquiring competency, and midwifery skills in an optimal experiential learning environment. No sub-standard care or sub-standard training is envisaged.

- **Outcome/Terminus**

Outcome/Terminus refers to a stop or station at the end (Conventry & Nixon, 2010). It refers to the situation to be produced at the end of the process, activity which brings about a feeling of satisfaction. In this study, terminus is the achieved outcome for enhancement of optimal midwifery practice environment in maternity units of public hospitals, Limpopo Province.

6.8 Guidelines for utilizing Evidence-Based Model

The following are guidelines that were formulated for the utilization of the Evidence-based Model for enhancement of optimal practice environment as in figure 6.6.

1. Analysis of the context that should to be investigated.

- Examine in detail the circumstances that occur in the setting. Investigate the elements, structure and its component parts in order to have contextual knowledge of what is prevailing.

2. Set a goal to achieve a desired outcome

- Establish an aim with determination based on the prevailing circumstances in order to reach the desired result.

3. Identify the impact of the existing evidence

- Identify reliable participants that can give informed consent prior collection of data. Based on the evidence collected, interpret the noticeable influence. The description of the existing evidence should specify the targeted population; cite the impact of evidence-based information.

4. Diagnose the effects of the existing situation

- Assess the nature of the noticeable changes on the existing evidence. Elaborate on the effects of the constraints to health care. Reflect care processes or health outcomes that can be directly affected.

5. Bridge the gap by identifying the expected outcomes

- Bridge the gap represents a discrete identifiable positive change in the existing evidence with an identifiable starting point. Selection of specific intervention will assist in addressing the existing situation. Improved interventions should be based on available evidence, meet the targeted population needs and yield positive outcomes.

6. Formulate guidelines for quality improvement

- Formulation of guidelines for quality improvement should be based on existing evidence.
- Draw a programme of action based on identified needs.
- Have a consensus with regard to time line.
- Schedule meetings for progress report
- Reflective dialogue
- Feed- back on whether expected outcomes were achieved

Figure 6.6: Guidelines for utilizing Evidence-Based Model

Figure 6.6 shows six (6) steps of the guidelines for using the evidence-based model. These six steps were developed such that its pragmatic elements become implemental guidelines that would assist institutions to cope and deliver interventions that are of high quality and standard. These six steps if implemented as determined could be indicators of the feasibility and success of the model within a broader context.

6.9 Model Validation

Validation of the evidence-based model involves selection of the setting, determining and selecting variables that are not directly studied. Also, it includes the selection and implementation of a systematic method of validation. Testing of theoretical relationships of the concepts related to the model and its validation will be discussed in detail in Chapter 6 of this study. Validation design was deductive and inductive as it was conducted after development of the evidence-based model.

Validation and replication interact to provide a means of forming clear and accurate understanding of empirical knowledge (Chinn & Kramer, 2005; 2008; 2011; 2013). Lekhuleni, Khoza and Amusa (2013) indicated that the validation of a model includes a process of conceptualization that arises from empiric knowledge in nursing which focuses on the accuracy of conceptual meanings in terms of empirical evidence.

6.9.1 Purposes of Validation of an Evidence-Based Model

The purposes of deductively and inductively testing any relationship statement are to provide empiric evidence that the relationships proposed in the theory are adequate when presented in a specific situation. The purpose of validation of an evidence-based model for enhancing optimal midwifery practice environment in maternity units of public hospitals was to determine the worth of the model and the evidence that could support or refute its relevance.

6.9.2 Objective of Model Validation

The objective of this phase was to:

- Validate the evidence-based model for optimal midwifery practice environment for its effectiveness and relevancy to midwifery practice environment.

The validation of the model required that all variables relevant to the model be evaluated. This was validated by the experts who evaluated the following:

- Clarity of concepts
- Scope of model applied
- Extent of model used
- Logical development of model

In view of the national and the international challenges continuing creating or improving an optimal midwifery practice environment, the quality and efficient midwifery care as well as health, safety and security of pregnant women are of paramount importance. This was achieved by generating, evaluating, disseminating and incorporating evidence-based midwifery practice (WHO, 2010b). Furthermore, Lekhuleni et al. (2012) reported that concept analysis involves identification of variables and concepts around which the model was developed, clarification of statements and their organization.

Validation of the evidence-based model involves selecting the setting and determining variables that are not directly studied. Also, it includes the selection and implementation of a systematic method of validation. Validation design was deductive and inductive as it was conducted after development of evidence based model. The purposes of deductively and inductively testing any relationship statement are to provide empiric evidence that the relationships proposed in the theory are adequate when presented in a specific situation. The purpose of validation of an evidence-based model for enhancing optimal midwifery practice environment in maternity units of public hospitals was to determine the worth of the model and the evidence that could support or refute its relevance.

6.9.3 Evaluation Criteria

The validation of the model required that all variables relevant to the model be evaluated. This was validated by experts who evaluated the following:

- Simplicity of the model
- Clarity of concepts
- How general is the model
- Accessibility of the model
- Scope of model applied
- Extent of the model use
- Importance of the model
- Logical development of model

Each question is accompanied by a response that was used as criteria that can be used for model evaluation.

6.10 Validation methodology

A quantitative and descriptive validation design was adopted in order to collect data from the midwifery experts with regard to evidence-based optimal midwifery practice model for enhancing optimal midwifery practice environment.

6.10.1 Population and Sample

The population comprised all midwifery practitioners who are experts in the field of study of Midwifery, employed in maternity units of public hospitals, Limpopo Province. Purposive sampling was used to select experts in the field of study of Midwifery who participated in the validation of the evidence-based optimal midwifery practice environment model. The sample consisted of 20 midwifery practitioners who had extensive experience and hold advanced

postgraduate midwifery qualifications and could therefore provide relevant information pertaining to validation of interpretation of the content validity and effectiveness of the evidence-based model.

6.10.2 Data Collection

Data were collected using a 28-item questionnaire that was completed by 21 midwifery experts at maternity units of public hospitals in Limpopo Province. The questionnaire consisted of a 3-point Likert scale with 3 sections, namely:

Section A: (12 items) clarity of the structure of the evidence-based model; and

Section B: (9 items) on a critical reflection of the evidence-based model.

Section C: (7 items) generality and importance of evidence based model and comment: open ended question where the respondents had to give remarks based on the evidence model.

The three point Likert-style answer options were: Agree, considered affirmative responses. Disagree were negative responses. Responses were analyzed by number and percentage of respondents answering affirmative, negative or unsure.

6.10.3 Data Analysis

The IBM Statistical Package for Social Sciences (SPSS) version 22 for Windows was used for data analysis. Descriptive and inferential statistics were used to describe the synthesis of data. Numeric data collected from experts in the study field of Midwifery was displayed and analyzed scientifically, and from which logical decisions and recommendations were made. Data from the 3 sections were presented in percentages of respondents who agreed on the statements on the critical reflections, importance and clarity of the structure of the evidence-based model. Bar graphs and tables were drawn to present the numeric data.

6.10.4 Reliability and Validity

Reliability and validity were ensured by giving the questionnaires to 2 experts in quantitative and qualitative research, who hold PhD qualifications and are knowledgeable in development and validation of models. The evidence-based model was submitted to the experts for review. As indicated in Chapter 3, the research experts were assigned to conduct a thorough evaluation of this evidence-based model based on the criteria for model evaluation according to Chinn & Kramer (2005; 2008; 2011; 2013). These experts were to validate evidence-based optimal midwifery practice environment model for its effectiveness and relevancy to maternity units. Content validity revealed that the questions tested what they were supposed to test.

The statistician was consulted in the construction of the questionnaire. The experts in quantitative research reviewed the questionnaire for content and face validity. The evaluative feedback from the experts directed the researcher to adapt minor corrections based on the evidence model. The questionnaire was improved with regard to modification of concepts for clarity and in view of the national and international challenges that continue to create and improve the quality of the midwifery practice environment and thus, efficient midwifery care. Validation of the model contributed to the improvement of the model, refinement of data collection and the validation process.

6.11 Discussion of the Results of Validation of the Evidence-Based Model

Twenty-one midwifery practitioners who are experts in the field of the study of Midwifery, participated in the validation of the evidence-based model. The results of the model validation are shown in Table 6.4 and Figures 6.8 to 6.10 and discussed according to sub-section.

6.11.1. Section A: Clarity of the structure of evidence-based model

This Section A-C comprised 28-item questions based on the clarity, simple, meaningful visual representation of the model.

Table 6.2: The extent of utilizing an Evidence-Based Model

Item	N	Minimum	Maximum	Mean	Standard Deviation
1. Title concise	21	1	1	0	0.00
2. Introduction	21	1	1	0	0.00
3. Serve purpose	21	1	1	1	0.00
4. Meaningful	21	1	1	1	0.00
5.1 Context	21	1	1	1	0.00
5.2 Goal clear	21	1	1	1	0.00
5.3 Clarity	21	0	1	0.95	0.218
5.4 Consistency	21	0	1	0.95	0.218
5.5 Visual presentation	21	1	1	1	0.00
6.1 Interconnection	21	1	1	1	0.00
6.2 Interrelationship	21	1	1	1	0.00
7. Logical coherence	21	1	1	1	0.00
8. Clear reading	21	1	1	1	0.00
9. Understandable	21	1	1	1	0.00
10. Semantic clarity	21	1	1	1	0.00
11. Consistency	21	1	1	1	0.00
12. Empirical meaning	21	1	1	1	0.00
13. Operational adequacy	21	1	1	1	0.00
14. Outcome achieved	20	0	1	0.95	0.224
15. Guidelines formulation	20	1	1	1	0.00
16. Simplicity	19	1	1	1	0.00
17. Applicable	18	1	1	1	0.00
18. Midwifery practice	21	1	1	1	0.00
19. Nursing Education	21	1	1	1	0.00
20. Research	21	1	1	1	0.00
21. Other disciplines	20	1	1	1	0.00
22. Practice oriented	21	1	1	1	0.00
23. Addressing realities	21	1	1	1	0.00

Table 6.2 shows the mean scores and standard deviations on the extent of utilizing the evidence-based model. The highest mean score was 1.00 and the lowest mean was 0. This was based on the fact that the main and related concepts were clear and operational descriptions were reported to be adequate. The majority of respondents were able to identify the semantic clarity, semantic consistency, structural clarity and structural consistency of the evidence-based model. However, 5% of the respondents disagreed that the outcome of the evidence-based model was simple, clear, empirically meaningful and achieved.

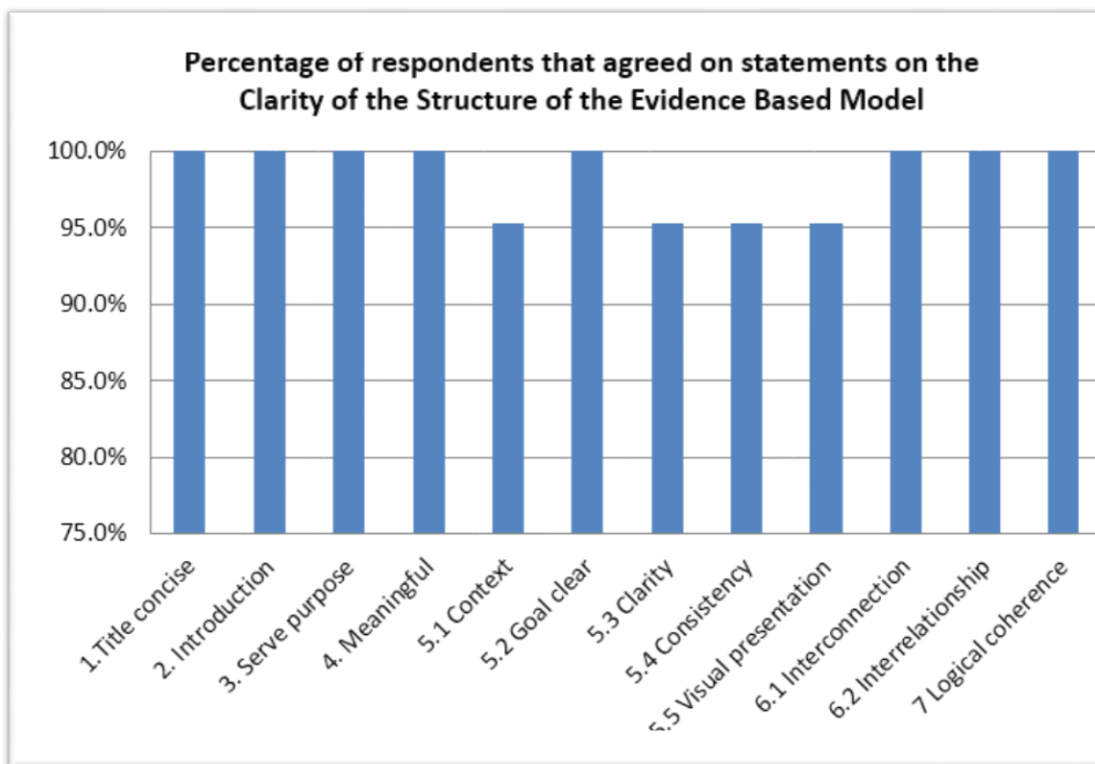


Figure 6.7: Percentage of respondents who agreed on the statements on the clarity of the structure of the Evidence-Based Model

It was evident from Figure 6.7 that the majority of respondents 19 (95%) confirmed the structural interconnection between concepts. The goal of the model was consistent with all other components. Consistency throughout the model concerning structure was reflected in the relationship. However, 5% of respondents did not agree about the clear context of the evidence-based model. Furthermore, 5% respondents were also unsure if the evidence-based model graphically portrayed well in the form of visual presentation. Based on the

findings, the high percentage indicated that the evidence-based model was clear, consistent, contextual and good with regard to visual presentation.

6.11.2 Section B: A Critical Reflection of the Evidence-Based Model

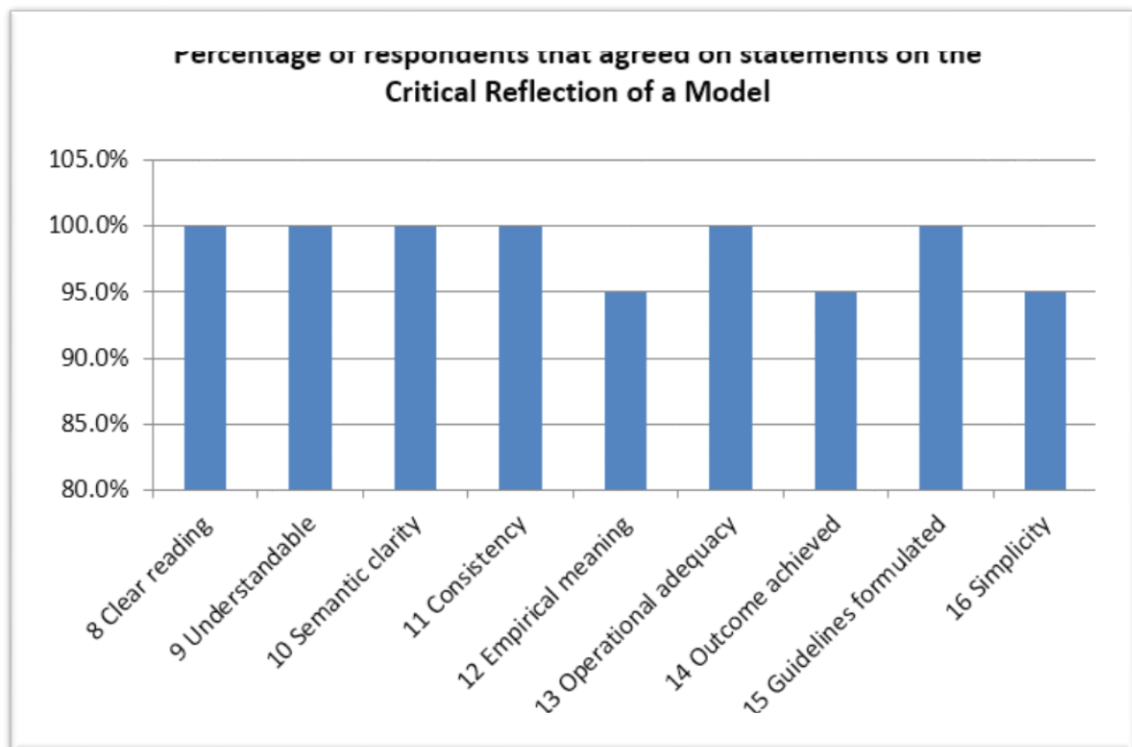


Figure 6.8: Percentage of respondents who agreed on the statements on the critical reflection of the Evidence Based Model

With regard to a critical reflection of an evidence-based model, Figure 6.8 revealed that majority of the respondents 19 (95%) agreed and reported that the evidence-based model was simple, clear for reading and understandable.

6.11.3 Section C: Generality and Importance of the Evidence-Based Model

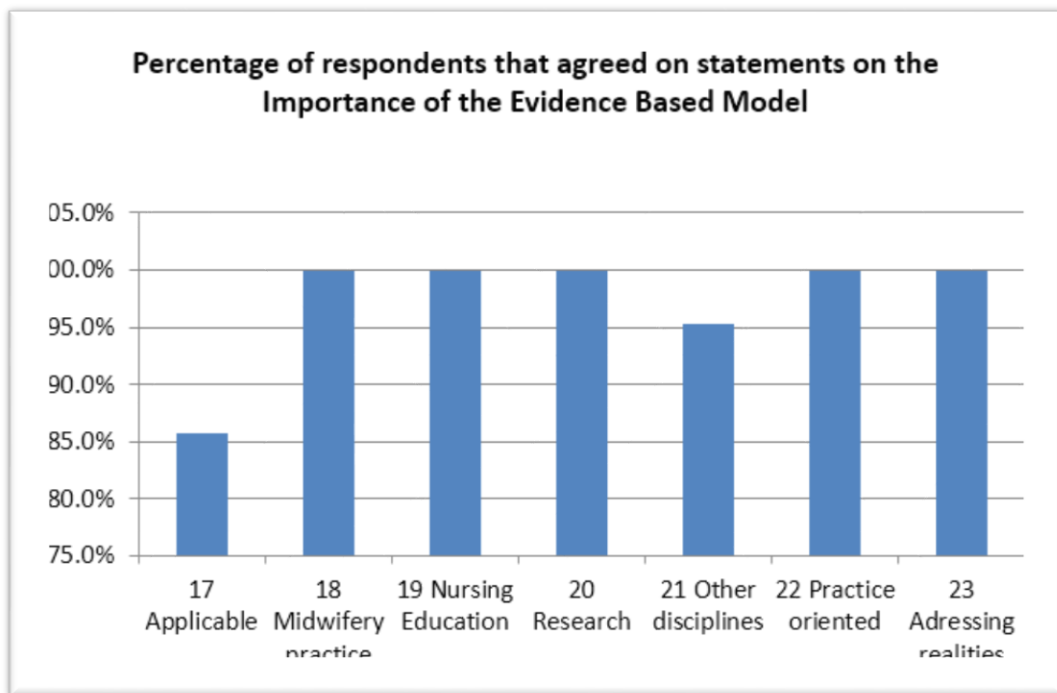


Figure 6.9: Percentage of respondents who agreed on the statements on the importance of the Evidence Based Model

According to Figure 6.9, about 85-100% of respondents confirmed the generalizability of the evidence-based model. Furthermore, the evidence-based model was reported to be important and could be utilized in midwifery practice, nursing education and research. The scope of the concepts and purposes within this model provided clues to its generalizability. The transferability of the evidence-based model could also be enhanced, thus other disciplines or organizations could adapt it and use it in future.

Also, the evidence-based model addressed the realities of the existing situation based on the evidence from participants and this was confirmed by the majority of respondents. Only 5% of respondents disagreed that the evidence-based model was designed with broad implications in mind to make it applicable in different disciplines and did not agree that it could be applied to other disciplines.

6.12 Conclusion

An evidence-based model as a graphic portrayal of the structure and the relational meaning within the model was designed. Chapter 5 dealt with a description of the structure and the use of the evidence-based model for enhancement of optimal midwifery practice environment. Each component of the structure of the evidence-based model was described individually, in detail, in the sequence of context, goal, evidences of puerperal mothers, midwifery practitioners and learner midwives, dynamics and procedures. After submitting the model for critique by two experts, the model was refined based on the views of the experts. Guidelines for their operationalizations were formulated. Findings from the validation of the evidence-based model elicited evidence of the usefulness of the optimal midwifery practice environment model for enhancement of optimal midwifery care. Using the evidence-based model, organizations could examine changes in their operational environment over time. Situational analysis could identify specific areas where the organization performs well and those areas in need of improvement. The clinical relevance of the evidence-based model has been implicated as a variable that impacts on the experiential learning environment, professional development, growth and good patient outcomes.

CHAPTER 7

SUMMARY, CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

7.1 Introduction

This chapter focuses on the summary of the study conducted, conclusions drawn from the study, limitations of the study identified and recommendations cited for the utilization of an evidence-based model for enhancing optimal midwifery practice environment. The recommendations were formulated based on the findings of the study in relation to research, midwifery training and midwifery practice. The aim of the study was to develop an evidence-based model for enhancing Optimal Midwifery Practice Environment.

7.2 Summary

The researcher adopted the sequential mixed method research design which allowed one strand (quantitative) to occur prior to and informing the second strand (qualitative). In such well-conceived sequential designs the analysis and the interpretations in one phase informed the collection and analysis in the second phase. The goal of this design was to converge on the truth about a phenomenon by allowing limitation of one approach to be offset by the strength of the other (Polit & Beck, 2014).

Furthermore, it was to develop an evidence based midwifery practice environment model for enhancing optimal midwifery practice environment. Nesting as a common sampling approach in which a sub-sample of respondents in the quantitative strand also participated in the qualitative component (Polit & Beck, 2014). In this study, the researcher utilized the nesting sampling approach since some respondents who participated and completed questionnaires also agreed to participate in focus group discussions.

7.2.1 Phase 1: Quantitative

The overview of the achievement of the quantitative phase objectives will be discussed as follows:

- Identify the factors that influence the existing midwifery practice environment for enhancement of optimal midwifery provision in maternity units of public hospitals of Limpopo Province.

The study revealed that there was limited human and material resources and these influenced the sub-optimal midwifery practice environment.

- Establish relations among factors that influence the existing midwifery practice environment for enhancement of optimal midwifery provision in maternity units of public hospitals of Limpopo Province.

Based on limited material resources, learner midwives and midwifery practitioners improvised, and this put the lives of pregnant mothers and their foetuses in danger. Learner midwives were unable to practice appropriately the midwifery skills due to lack of equipment.

- Determine the nature of the midwifery practice environment in maternity units of public hospitals in the context of quality midwifery provision.

The nature of the midwifery practice environment was found to be sub-optimal as evidenced by lack of gloves, urine catheters, urine dipsticks, limited essential equipment such as episiotomy scissors, doptones, BP apparatus, Non-Stress Tests, Cardiotocograph machines and tracing papers. Therefore, this is the evidence that there is scarcity of material resources in the maternity units of public hospitals in Limpopo Province.

In summary the objectives were achieved as follows:

- One hundred self-developed questionnaires were completed and returned. Based on data analysis the factors that influenced the existing midwifery practice environment were identified from the numeric data.
- Relations among factors that influenced the existing midwifery practice was ascertained through the findings based on quantitative data analysis. These relations were between the midwifery practitioners and learner midwives; between midwifery

practitioners and puerperal mothers; relations between the learner midwives and midwifery practitioners as well as learner midwives and puerperal mothers.

- The nature of the midwifery practice environment and midwifery experiential learning environment were identified as sub-optimal due to shortage of human resources; constrained material resources, limited equipment, negative attitudes of midwifery practice, overwork, burnout, poor supervision and poor mentoring.

The sampling strategy that was used was simple random sampling which means that each element of the population had an equal and independent chance of being included in the sample. The Likert type scale reflected the measurement of the variables. Validity and reliability of the questionnaire scale items were established based on pilot data, frequencies and percentages as well as input by a panel of experts in research methodology to secure the content validity.

Learner midwives were either degree or diploma R425 finalists, who have more knowledge of normal and high risk midwifery, acquired some midwifery skills. Midwifery practitioners should be employed in maternity units of public hospitals which were accredited by SANC as teaching hospitals. A sample of 148 LMs completed questionnaires. The response rate was 99% which is seen as a very good response rate. Out of the two universities and the three nursing college campuses included in the research study, the University of Venda had a respondent rate of 44; followed by Sovenga Campus (35); Giyani and Thohoyandou (35) and the University of Limpopo (34). A sample of 100 midwifery practitioners completed questionnaires. For data analysis purposes, respondents were organized into 4 groups, namely: University of Limpopo; University of Venda, Sovenga; Thohoyandou and Giyani based on their similarity of years of midwifery exposure. Quantitative data analysis was done using IBM Statistical Package for Social Sciences version 22 for Windows. Descriptive statistics was used for mean, median, frequency and standard deviations. The Kruskal-Wallis Test and Mann-Whitney U test were used to compare more than 2 groups. Therefore, the groups of learner midwives were 5. The respondents were between 22 and 63 years of age, employed on a full time basis. The descriptive analysis showed that majority of the respondents experienced limited human and material resources, shortage of essential and delivery equipment, increased workloads and criteria for granting of study leave not

understood. Findings from this quantitative data analysis provide evidence that the midwifery service has more ageing midwifery practitioners, fewer young midwifery practitioners and younger learner midwives.

The results revealed that R425 learner midwives were mostly females (75.7%) and fewer males (22.3%), possibly because females were more likely to choose nursing as their profession. However, males are increasingly opting for nursing as a profession. In terms of the midwifery experiential learning environment, the results revealed that most R425 learner midwives were placed in intrapartum (55; 37.2%), puerperium (42; 28.4%), antenatal (39; 26.4 %) and high care (11; 7.4%) units during the data collection period. However, all the R425 learner midwives should have equal exposure in all maternity units for professional development and growth, skills development and competency acquisition. The numeric data were collected using a self-developed questionnaire and a pilot study tested the instrument.

The availability of basic material resources indicated the lowest lack of sanitary pads, linen, gloves and soap according to learner midwives. Midwifery practitioners also indicated limited sanitary pads and soap. The results revealed that learner midwives and midwifery practitioners were experiencing lack of gloves, urine catheters and urine dipsticks. Based on limited material resources, learner midwives and midwifery practitioners improvised, and this put the lives of pregnant mothers and their foetuses in danger. Learner midwives were unable to practice appropriately the midwifery skills due to lack of equipment.

Midwifery practitioners also experienced a challenge of limited essential equipment such as doptones, BP apparatus, Non-Stress Tests and tracing papers. This supported the narrated data that revealed limited essential equipment that made participants unable to diagnose timeously and prevent complications. Therefore, this is the evidence that there is scarcity of material resources in the maternity units of public hospitals in Limpopo Province. Episiotomy scissors according to 117 (79.6%) learner midwives and 62 (62%) midwifery practitioners were limited. The results also revealed that the competency of the respondents ranged between good and very good. Respondents rated themselves very high which is unlikely in all the questions on their knowledge and skills. The respondents were given opportunities to upgrade themselves thus keeping themselves abreast in terms of knowledge and midwifery skills.

7.2.2 Phase 2: Qualitative

The objectives of the qualitative phase 2 were achieved as follows:

- Explore the lived experiences of midwifery practitioners within their specific midwifery practice environment that influence optimal midwifery execution.

Due to limited human resources expressed that they were overworked and exhausted.

- Describe the experiences of learner midwives regarding experiential placements.

The learner midwives' experiences were poor mentoring and inadequate supervision due to limited number of midwifery practitioners.

- Explore the perceptions of puerperal mothers regarding the midwifery care and delivery of their babies by midwifery practitioners.

Puerperal mothers narrated that they were left alone during delivery. These mothers were physically and emotionally abused by midwifery practitioners.

This study explored the experiences of midwifery practitioners within their specific midwifery practice environment which is a maternity unit of a public hospital in Limpopo Province. The quality of midwifery practice environment in Limpopo Province varies across maternity units of public hospitals. Findings from the 20 semi-structured face-to-face interviews of midwifery practitioners provided evidence that some shortcomings in quality midwifery care existed in midwifery practice environment of maternity units of public hospitals, Limpopo Province. These findings supported the existence of sub-optimal midwifery provision based on negative attitudes, puerperal mothers being left alone unsupported, evidence of verbal and physical abuse. Shortage of midwifery practitioners in maternity units created a problem of sub-optimal midwifery care implemented by overworked midwifery practitioners. Thus, they were unable to provide support and comfort to women in labour. These overworked midwifery practitioners became emotionally drained, tended to ill-treat pregnant women in labour as impersonal objects.

Limited human resources, overwork, exhaustion, limited material resources, inadequate relevant functioning equipment, improvising, no medication and too many learner midwives also affected the provision of quality midwifery practice. Thus, enhancement of optimal midwifery care was not achieved suggesting that many puerperal mothers might be at significant risk for preventable adverse outcomes. The findings showed that maternity units of public hospitals in Limpopo Province, with favourable midwifery practice environment and adequate human and material resources have a lower likelihood of having lower midwifery-assessed quality of care (Nantsupawat, Srisuphan, Kunnaviktikul, Wichaikhum, Aunguroch & Aiken, 2011).

Findings from the 3 focus groups of learner midwives provided evidence that some shortcomings in quality midwifery care existed in maternity units of public hospitals, Limpopo Province. These findings supported the existence of sub-optimal midwifery provision and sub-optimal midwifery experiential learning environment due to limited essential medication, puerperal mothers being left alone and unsupported, evidence of verbal and physical abuse. Learner midwives narrated that they were regarded as workforce and not learners and they were instructed to perform non-midwifery duties which might be a barrier to learning. These learner midwives recounted their emic perceptions regarding their midwifery experiential learning environment. The study also found that there were significant differences between learner midwives' emic views of the actual midwifery experiential learning environment with their preferred one.

The summary of phase 2 objectives achievement are discussed as follows:

Puerperal mothers were also allowed to articulate how they experienced the antepartum care and delivery of their babies by midwives. The sub-optimal midwifery interventions proffered to pregnant women in labour were, pregnant women delivering without any use of pain relief; pregnant women delivering without assistance of midwifery practitioners; and no explanations given to them when in labour. Pregnant women need to be encouraged during labour. However, puerperal mothers received sub-optimal midwifery interventions which were tactlessness and the insensitiveness displayed by midwifery practitioners which are elements of sub-optimal midwifery practice. Gerova et al. (2008) stated that puerperal mothers are in need of quality midwifery care and are not to be left to languish; they need

midwifery care right away. The findings of this study indicated that puerperal mothers' satisfaction was affected by their relationship and connectedness with midwifery practitioners which was found missing.

Qualitative data analysis results for semi-structured interviews of midwifery practitioners, focus groups of learner midwives and focus groups of puerperal mothers revealed some themes which were related, namely:

Evidence revealed that sub-optimal midwifery practice environment deterred the enhancement of optimal midwifery care, optimal midwifery practice environment and optimal midwifery learning environment. However, the development of an optimal midwifery practice environment model would assist in bridging the gap by addressing the existing situation based on the revealed evidence. The results further indicated that substantial progress can be made towards the goal of the evidence-based model in decreasing impediments to optimal midwifery environment. Some experts' preferences for interactions with nurse managers regarding the findings of research appeared to endorse the assertion made by Bannan-Ritland (2003), namely, that people require time to discuss innovations with others to make decisions and adopt the evidence.

The researcher volunteered immediately upon being asked to present and expressed interest in disseminating the study findings to the stakeholders. In support, Adams and Barron (2009) stated that one of the major issues in research utilization is dissemination from the researchers to end-users. Schmidt and Brown (2007) indicated diffusion of evidence occurred confirming that such an approach helps connect research-based innovations in knowledge utilization processes.

7.2.3 Phase 3: Development of the Evidence-Based Model

The objective of phase 3 was to develop an evidence-based model for enhancing optimal midwifery practice environment. Model development was based on the findings of the quantitative and qualitative phases. The numeric and narrated data were analyzed quantitatively and qualitatively. The evidence gave the picture of the existing situation that needed to be addressed. The gap was identified and the ideal situation formulated in order to develop an evidence-based model for enhancing optimal midwifery practice environment.

7.2.4 Phase 4: Validation of the Evidence-Based Model

The objective of this phase 4 was to validate the evidence-based model for enhancing optimal midwifery practice environment, for its effectiveness and relevance to maternity units. The validation of the evidence-based model was done by experts who evaluated the clarity of concepts, scope of the model applied, extent of the model used and the logical development of the model. Development and validation of the evidence-based model was achieved. The researcher focused primarily on generalized effectiveness and evidence about the validation of the model. Validation was done in order answer a variety of questions based on the clarity, simplicity and applicability to serve the purpose. The model was described and it would be implemented in future.

7.3 Conclusions

The first research phase was the collection of quantitative data through which the respondents were given questionnaires to complete. These respondents were midwifery practitioners and learner midwives. The second research phase was the collection of qualitative data through which the experiences of midwifery practitioners within their specific practice environment was sought; the experiences of learner midwives explored and described and the perceptions of the puerperal mothers were described. Findings from quantitative numeric data and qualitative narratives revealed an evidence-based midwifery practice that is sub-optimal. This existing situation called for formulation of midwifery interventions that could bridge the gap.

The ideal situation contributed to development of an optimal midwifery practice environment which was the third phase of the study. The fourth phase of the research was the validation of the evidence-based model by experts in quantitative and qualitative research and model development and validation. Other participants who were used for validation purposes were midwifery experts. For the achievement of the desired outcomes of the optimal midwifery practice environment, emerging midwifery interventions and actions were enhanced. The major impact of this research was that the evidence-based model has been validated and operationalized in midwifery practice, midwifery education, training and research. Recommendations were formulated. Based on the critical reflections, the evidence-based model could benefit other disciplines. These recommendations could reflect the need to

increase awareness of evidence-based optimal midwifery practice environment to support and develop performance indicators and measures that promote evidence-based midwifery provision.

7.4 Limitations

A limitation of this study was that the research excluded the one year diploma midwifery students who shared the midwifery experiential learning environment with the level 4 R425 learner midwives. These one year diploma midwifery students were only doing midwifery for 1 year whereas the R425 learner midwives were in their second year of midwifery learning. Therefore, the R425 learner midwives were likely to share more experience than the one year midwifery students.

7.5 Recommendations

Recommendations for the operationalization of the model were for midwifery training, midwifery practice and research.

7.5.1 Recommendations for Midwifery Training, Teaching and Learning

- Learner midwives should be supported academically and in midwifery experiential learning environments by midwifery facilitators and midwifery mentors.
- Midwifery facilitators should support midwifery mentor development and updating.
- Learner midwives' learning should be supported by midwifery facilitator and should represent some 10-20 hour complement of their normal facilitation.
- Regular audits of midwifery experiential learning environments that learner midwives are placed in should be performed.
- Accompaniment programmes should be strengthened to ensure continuous support of learner midwives.

- Remedial demonstrations of critical midwifery skills are critical to ensure upgrading of the affected learner midwives' skills.
- Balance between clinical practice and theory should be emphasized and implemented.
- Direct supervision should be mandatory whereby the midwifery practitioners would be in a close proximity to learner midwives to directly monitor their activities and offer counselling services.
- Indirect supervision should be obligatory to enable the senior learner midwives to develop and grow professionally, and become confidence and independent.
- The scope of practice experience should allow learner midwives to perform midwifery-led care.
- On-going records of continuous assessment and practical attendance should be set.
- Peer assessments among learner midwives should be initiated and implement to enhance their learning experience and reflection.
- Cascade life-long learning.

7.5.2 Recommendations for Midwifery Practice

Midwifery practitioners as advocates for evidence-based midwifery practice should:

- Comply competently and skillfully in accordance with legislation, standards and professional practice by being informed by applicable laws to the profession and practice of midwifery.
- Conduct themselves in a courteous, non-judgemental, non-discriminatory and culturally appropriate manner.

- Respect individuals' cultures and customs despite their status, ethnic origin and religion.
- Function collaboratively within the multi-professionals, inter-professionals, inter-disciplinary and trans-professionals
- Proffer within a woman-centred framework by focusing on an individual woman's midwifery needs, her expectations, aspirations and supporting her informed decision making.
- Act consistently in accordance with professional ethics and human rights and reflectively by ensuring that knowledge and understanding of professional conduct are acceptable.
- Midwifery practitioners are accountable for their actions and omissions to the woman and neonates; their employer and their profession for the provision of optimal midwifery care.
- Utilize communication and listening skills across all domains of competency.
- Maintain and sustain lifelong ongoing professional development and growth to keep abreast with knowledge, skills and attitudes relevant to optimal midwifery practice environment.
- Recognize a pregnant woman's right to receive accurate information, protected against foreseeable risks.
- Assemble, use and maintain equipment and supplies

7.5.3 Recommendations for Research

- Intervention research for operationalization of evidence-based model for enhancing optimal midwifery practice environment in maternity units of public hospitals.

- Evidence based research by midwifery practitioners and learner midwives on a broader scale.

7.6 Conclusion

This chapter concludes the research. The quantitative and qualitative research objectives have been achieved in that an evidence-based model for optimal midwifery practice environment for enhancement of optimal midwifery care in maternity units of public hospital in Limpopo Province was developed. A critical reflection of the research was done based on validation of the model.

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APPENDIX 1

MEDUNSA ETHICS CLEARANCE CERTIFICATE

UNIVERSITY OF LIMPOPO
Medunsa Campus



MEDUNSA RESEARCH & ETHICS COMMITTEE

CLEARANCE CERTIFICATE

MEETING: 08/2013
PROJECT NUMBER: MREC/HS/289/2013: PG
PROJECT:
Title: An evidence-based model for enhancing Optimal Midwifery Practice Environment in Maternity units of Public hospitals, Limpopo Province
Researcher: Mrs MK Thopola
Supervisor: Prof ME Lekhuleni
Co-supervisor: Prof YM Dambisya
Department: Nursing & Human Nutrition
School: Health Sciences
Degree: PhD

DECISION OF THE COMMITTEE:

MREC approved the project.

DATE: 03 October 2013

PROF N EBRAHIM
DEPUTY CHAIRPERSON MREC



The Medunsa Research Ethics Committee (MREC) for Health Research is registered with the US Department of Health and Human Services as an International Organisation (IORG0004319), as an Institutional Review Board (IRB00005122), and functions under a Federal Wide Assurance (FWA00009419)
Expiry date: 11 October 2016

Note:

- i) Should any departure be contemplated from the research procedure as approved, the researcher(s) must re-submit the protocol to the committee.
- ii) The budget for the research will be considered separately from the protocol. PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES.

Finding Solutions for Africa



APPENDIX 2

DEPARTMENT OF HEALTH ETHICS CLEARANCE LETTER



LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH

Enquiries: Stols M.L.

Ref:4/2/2

Thopola MK
University of Limpopo
Turfloop Campus
Private Bag X 1106
Sovenga
0727

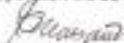
Greetings,


RE: An evidence-based model for enhancing optimal midwifery practice environment in maternity units of public hospitals, Limpopo Province.

The above matter refers.

1. Permission to conduct the above mentioned study is hereby granted.
2. Kindly be informed that:-
 - Research must be loaded on the NHRD site (<http://nhrd.hst.org.za>) by the researcher.
 - Further arrangement should be made with the targeted institutions.
 - In the course of your study there should be no action that disrupts the services.
 - After completion of the study, a copy should be submitted to the Department to serve as a resource.
 - The researcher should be prepared to assist in the interpretation and implementation of the study recommendation where possible.
 - The above approval is valid for a 3 year period.
 - If the proposal has been amended, a new approval should be sought from the Department of Health.

Your cooperation will be highly appreciated.


Head of Department


Date

APPENDIX 3

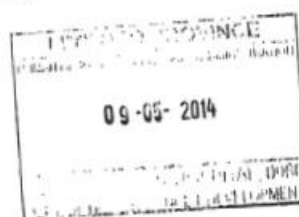
HOSPITALS' PERMISSION LETTERS TO COLLECT DATA



LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH
ELIM HOSPITAL

Ref: S5/1/2/1
Enq: Fungeni N.P.
Date: 2014.05.09.



Mrs Thopola M.K.
Nursing Department
Private Bag x 1106
SOVENGA
0727

Dear Madam

RE: PERMISSION TO CONDUCT RESEARCH PROJECT: YOURSELF.

1. The above matter refers.
2. Receipt of your faxed letter dated 2014.05.09 with the attached documents is hereby acknowledged with thanks.
3. Kindly be informed that the office of the Chief Executive Officer has granted permission on your request for the 21st May 2014.
4. In the spirit of Batho-Pele, your co-operation is thanked in advance.


CHIEF EXECUTIVE OFFICER

09.05.2014
DATE

P/Box X312, Elim Hospital, 0960
Tel (015)556 3201/2/3/4/5, Fax (015)556 3160.
The heartland of Southern Africa - development is about people
RESTRICTED



DEPARTMENT OF HEALTH
ELIM HOSPITAL

Ref: S5/2/5/1
Enq: Muthambi SN
Date: 2014.01.28

To: Thopola MK
University of Limpopo
School of Health Sciences
Nursing Department
Private Bag X1106
SOVENIA

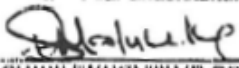
Tel: (015) 268 2384/2383
Fax (015) 268 3080

CC: Clinical Services
CC: Nursing Services
CC: Quality Assurance

From: Human Resources Management and Development

RE: PERMISSION TO CONDUCT RESEARCH PROJECT: AN EVIDENCE-BASED MODEL FOR ENHANCING OPTIMAL MIDWIFERY PRACTICE ENVIRONMENTAL IN MATERNITY UNITS OF PUBLIC HOSPITALS: LIMPOPO: (INCLUDING ELIM HOSPITAL); PHD: UNIVERSITY OF LIMPOPO (TURFLOOP CAMPUS) YOURSELF;

1. The above matter refers.
2. Receipt of your request dated 23 January 2014 for permission to conduct the above indicated research on the 29th January 2013 is hereby acknowledged with thanks.
3. Kindly be advised that there is no objection as the Head of the Department has granted you the opportunity to conduct your study at the Institution.
4. Your understanding will be appreciated.



CHIEF EXECUTIVE OFFICER

2014/01/28

DATE



LIMPOPO

PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA
HEALTH & SOCIAL DEVELOPMENT
KGAPANE HOSPITAL

Private Bag X 742
Ga-Kgapane
0838
Tel: 015 328 7874
Fax: 015 328 4244

REF. : S4/2/2
ENQ : MATLOU MP
DATE: 2014/05/02

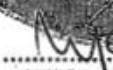
FROM: OFFICE OF THE CEO

TO: MRS MK THOPOLA

RE: **PERMISSION TO CONDUCT RESEARCH PROJECT**

1. Your letter hand-delivered on 30/04/2014 is hereby acknowledged.
2. Permission is hereby granted to conduct a research titled "An evidence-based model for enhancing Optimal Midwifery Practice Environment in Maternity units of Public Hospitals, Limpopo Province through institution".
3. After completion of the study, a copy should be submitted to our institution to serve as a resource to our clinical (audit) committees.
4. For appointment please contact Mrs Moseal M (or Maloko MB in our Nursing Section).

Kind regards


ACTING CHIEF EXECUTIVE OFFICER


DATE



DEPARTMENT OF HEALTH
MALAMULELE HOSPITAL

Ref: 4/2/2
Fnc: Malamulele HIP
Date: 30 May 2014

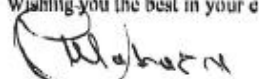
Mrs. MK Thopola

RE: PERMISSION TO CONDUCT RESEARCH PROJECT.

1. The above matter refers.
2. Approval for your application dated 9 May 2014 is hereby confirmed, please note that all terms and conditions as stipulated in the Provincial Department letter and Hospital internal control measures will apply. You are also advised to communicate with the unit concerned for further arrangements.

Thank you.

Wishing you the best in your endeavor.


Chief Executive Officer

30/05/2014
Date

APPENDIX 4

CONSENT FORMS

UNIVERSITY OF LIMPOPO (Medunsa Campus) ENGLISH CONSENT FORM

Statement concerning participation in a Clinical Trial/Research Project*.

Name of Project / Study: An evidence-based model for enhancing Optimal Midwifery Practice Environment in Maternity units of Public hospitals, Limpopo Province.

I have read the information and heard the aims and objectives of the proposed study and was provided the opportunity to ask questions and given adequate time to rethink the issue. The aim and objectives of the study are sufficiently clear to me. I have not been pressurized to participate in any way.

I know that sound recordings will be taken of me. I am aware that this material may be used in scientific publications which will be electronically available throughout the world. I consent to this provided that my name and hospital number are not revealed.

I understand that participation in this Study / Project is completely voluntary and that I may withdraw from it at any time and without supplying reasons. This will have no influence on the regular treatment that holds for my condition neither will it influence the care that I receive from my regular doctor.

I know that this Study / Project has been approved by the Medunsa Research Ethics Committee (MREC), University of Limpopo (Medunsa Campus). I am fully aware that the results of this Study / Project* will be used for scientific purposes and may be published. I agree to this, provided my privacy is guaranteed.

I hereby give consent to participate in this Study / Project.

.....
Name of patient/volunteer

.....
Signature of patient or guardian.

.....
Place.

.....
Date.

.....
Witness

Statement by the Researcher

I provided verbal and/or written* information regarding this Trial / Study / Project*
I agree to answer any future questions concerning the Trial / Study / Project* as best as I am able.
I will adhere to the approved protocol.

.....
Name of Researcher

.....
Signature

.....
Date

.....
Place

UNIVERSITY OF LIMPOPO (Medunsa Campus) SEPEDI CONSENT FORM

Setatamente mabapi le go tšea karolo ka go Protšeke ya Dinyakišišo tša Teko ya Klinikhale *.

Leina la Protšeke / Dinyakišišo / Teko*

Bohlatse bo bo itsego bja go tswelletsa ditirelo tse hlwahlwa tsa go belegisa mafapheng a go belegisa a maokelo a mmuso ,
provincing ya Limpopo.

Ke badile/ke kwele ka ga tshedimošo mabapi le *maikemišetšo le morero wa* dinyakišišo tšeo di šišintšwego gomme ke ile
ka fiwa monyetla wa go botšiša dipotšišo gomme ka fiwa nako yeo e lekanego gore ke naganišiše ka ga taba ye. Ke tloga
ke kwešiša maikemišetšo le morero wa dinyakišišo tše gabotse. Ga se ka gapeletšwa go kgatha tema ka tsela efe goba
efe.

Ke a kwešiša gore go kgatha tema Protšekeng/Dinyakišišong tše tša Teko ya Klinikhale* ke ga boithaopo gomme nka
tlogela go kgatha tema nakong efe goba efe ntle le gore ke fe mabaka. Se se ka se be le khuetšo efe goba efe go kalafo
yaka ya ka mehla ya maemo a ka gape e ka se huetše le ge e ka ba tlhokomelo yeo ke e humanago go ngaka yaka ya ka
mehla.

Ke a tseba gore Teko/Protšeke/Dinyakišišo tše* di dumeletšwe ke Medunsa Research Ethics Committee (MREC),
Yunibesithi ya Limpopo (Khamphase ya Medunsa) / Dr George Mukhari Hospital.Ke tseba gabotse gore dipelo tša
Teko/Dinyakišišo/ Protšeke tše * di tla dirišetšwa merero ya saense gomme di ka phatlalatšwa. Ke dumelelana le se, ge
fela bosephiri bja ka bo ka tiišetšwa.

Mo ke fa tumelelo ya go kgatha tema Tekong/Dinyakišišong/ Protšekeng *.

.....

Leina la molwetši/ moithaopi

.....
Mosaeno wa molwetši goba mohlokamedi.

.....
Lefelo.

.....
Tlhatse

.....
Letšatšikgwedi.

Setatamente ka Monyakišiši

Ke fana ka tshedimošo ka molomo le/goba yeo e ngwadilwego * mabapi le Teko/Dinyakišišo/ Protšeke ye . *
Ke dumela go araba dipotšišo dife goba dife tša ka moso mabapi le Teko/Dinyakišišo / Protšeke ka bokgoni ka moo nka
kgonago ka gona.
Ke tla latela melao yeo e dumeletšwego.

.....
Leina la Monyakišiši

.....
Mosaeno

.....
Letšatšikgwedi

.....
Lefelo

*Phumola tšeo di sego maleba.

APPENDIX 5

STATISTICIAN'S REPORT

P.O.Box 2812,
Polokwane, 0700
July 6, 2015.

To whom it may concern,

I herewith confirm that I analysed the quantitative data for the PhD thesis of
Ms Magdeline K Thopola, titled:

AN EVIDENCE-BASED MODEL FOR ENHANCING OPTIMAL MIDWIFERY
PRACTICE ENVIRONMENT IN MATERNITY UNITS OF LIMPOPO
PROVINCE, SOUTH AFRICA.

Kind regards,



Ms Rita Olwage

BSc Honours (Statistics) and former Research Statistician, University of Limpopo.

APPENDIX 6

INDEPENDENT CODER'S REPORT

INDEPENDENT CODER

QUALITATIVE ANALYSIS

THOPOLA M.K.

DOCTOR OF PHILOSOPHY IN NURSING

THIS IS TO CERTIFY THAT

Professor M.N. Jali has coded qualitative data and field notes from the following participants:

- Semi-structured interviews of 20 midwifery practitioners
- Focus group discussions of 18 learner midwives
- Focus group discussions of 18 puerperal mothers

Title of the study:

An evidence-based model for enhancing optimal midwifery practice environment in maternity units of public hospitals, Limpopo province

I declare that the candidate and I have reached consensus about the major themes reflected by the data during consensus discussion. I further declare that adequate data saturation was reached as evidenced by repeating themes.



PROF M.N. JALI

APPENDIX 7

QUESTIONNAIRES FOR LEARNER MIDWIVES

QUESTIONNAIRES FOR R425 STUDENTS

SECTION A: DEMOGRAPHIC INFORMATION

Please complete all the sections of the questionnaires by ticking the most appropriate column. Use a black pen to indicate your response by marking an "X" in the box corresponding to your response in the requested information.

1. Age.

Less than < 22 years.	1
23 – 25 years	2
26 -28 years	3
29-30 years	4
More than > 31 years.	5

2. The qualification I have registered.

Diploma in (General Nursing, Community, Psychiatry) Midwifery	1
Degree in (General Nursing, Community, Psychiatry) Midwifery	2

3. Gender

Female	1
Male	2

4. The Clinical experiential learning environment you are now placed at.

Antenatal unit	1
High Care Area	2
Intrapartum unit	3
Puerperium unit	4

5. Indicate the number of beds in the unit mentioned in question 4.

Less than < 9 beds.	1
10 – 15 beds.	2
16- 20 beds.	3
21 – 25 beds.	4
More than >26 beds.	5

6. Indicate the number of midwifery practitioners during day duty?

2-3	1
4-5	2
6-7	3
More than > 8.	4

SECTION B: MIDWIFERY EXPERIENTIAL LEARNING ENVIRONMENT

Please indicate your opinion on the following statements, using the given keys:

1 = Strongly Agree

2 = Agree

3 = Disagree

4 = Strongly Disagree

		SA	A	D	SD
7.	I like being placed in maternity unit.	1	2	3	4
8.	The number of the patients that I delivery per day is too many.	1	2	3	4
9.	The number of patient against the number of midwifery practitioners is good.	1	2	3	4
10.	The number of midwifery practitioners on day duty is adequate for delivery of pregnant women.	1	2	3	4
11.	The number of learner midwives allocated during the day is too many for delivering of babies.	1	2	3	4
12.	The unit where I am placed now is under staffed.	1	2	3	4
13.	The number of midwifery practitioners on duty is adequate for the supervision of learner midwives.	1	2	3	4
14.	As a learner midwife I was oriented thoroughly when I was first placed in maternity unit.	1	2	3	4
15.	I received supervision by the midwifery practitioners during my stay.	1	2	3	4
16.	I was mentored during my learning exposure in maternity unit.	1	2	3	4
17.	Lecturers accompanied me in maternity unit.	1	2	3	4
18.	Demonstrations of the procedures were done before I could perform them.	1	2	3	4
19.	I was treated like a learner midwife in the unit I was placed.	1	2	3	4
20.	I was always treated like a working force.	1	2	3	4
21.	I was seldom given opportunity to address learning objectives.	1	2	3	4

SECTION C: MATERIAL RESOURCES

Please indicate the availability of the following using the key below:

0 = Never 1 = Hardly Ever 2 = Sometimes 3 = Often 4 = Always

		N	HE	S	O	A
1.	Bed linen	0	1	2	3	4
2.	Night gowns	0	1	2	3	4
3.	Pillows	0	1	2	3	4
4.	Gloves	0	1	2	3	4
5.	Sanitary pads	0	1	2	3	4
6.	Paper towels	0	1	2	3	4
7.	Soap	0	1	2	3	4
8.	Suturing materials	0	1	2	3	4
9.	Urine dipsticks	0	1	2	3	4
10.	Suctioning catheters	0	1	2	3	4
11.	Administration sets	0	1	2	3	4
12.	Urine catheters.	0	1	2	3	4
13.	Endo-tracheal tubes	0	1	2	3	4
14.	Urine bags	0	1	2	3	4

SECTION D: EQUIPMENT

Please indicate the availability of the following equipment in good working order, using the key below:

0 = Never 1 = Hardly Ever 2 = Sometimes 3 = Often 4 = Always

		N	HE	S	O	A
1.	Blood pressure apparatus	0	1	2	3	4
2.	Stethoscopes	0	1	2	3	4
3.	Foetoscope	0	1	2	3	4
4.	Doptone	0	1	2	3	4
5.	Non Stress Test machine	0	1	2	3	4

6.	Cardiotocograph machines	0	1	2	3	4
7.	Suction apparatus	0	1	2	3	4
8.	Oxygen cylinders	0	1	2	3	4
9.	Cribs	0	1	2	3	4
10.	Delivery packs	0	1	2	3	4
11.	Episiotomy scissors	0	1	2	3	4
12.	Vaginal examination packs	0	1	2	3	4
13.	Paper for cardiotocograph machine	0	1	2	3	4

SECTION E: COMPETENCY

Please indicate your response to the following statements on your competency:

0 = Not at all 1 = Somewhat 2 = Fairly 3 = Good 4= Very good

		N	S	F	G	VG
1.	I am able as a learner midwife to utilize the Non Stress Test machine.	0	1	2	3	4
2.	I am knowledgeable regarding the use of cardiotocograph machine.	0	1	2	3	4
3.	I am able to utilize ward Haemoglobin equipment.	0	1	2	3	4
4.	I am able to measure the Mid Upper Arm Circumference with every patient that I assess to monitor her nourishment.	0	1	2	3	4
5.	I utilize Basic Antenatal Care (BANC) strategy with each every pregnant woman.	0	1	2	3	4
6.	I am able as a learner midwife to analyze the Non Stress Test (NST) strip.	0	1	2	3	4
7.	I am able as a learner midwife to interpret the NST strip.	0	1	2	3	4
8.	I am capable in implementing the Prevention of Maternal to Child Transmission (PMTCT) strategy appropriately and timeously.	0	1	2	3	4
9.	I am able as a learner midwife to analyze the cardiotocograph (CTG) strip.	0	1	2	3	4
10.	I am able as a learner midwife to interpret the CTG strip accurately.	0	1	2	3	4
11.	I am able to do intrapartum resuscitation of the foetus appropriately and timeously based on interpretations CTG.	0	1	2	3	4

12	I able to plot foetal heart rate correctly on the Partograph with each pregnant woman that I assess.	0	1	2	3	4
13.	I am able to plot the station of the foetal head on the Partograph.	0	1	2	3	4
14.	I am skilful in plotting the cervical dilatation on the Partograph.	0	1	2	3	4
15.	I am able to analyze the findings plotted on the Partograph.	0	1	2	3	4
16.	I am able to interpret the findings foetal status and maternal status findings plotted on the Partograph.	0	1	2	3	4
17.	I am able to interpret the progress of labour plotted on the Partograph.	0	1	2	3	4
18.	I am able to give patient oxygen when in labour having foetal distress.	0	1	2	3	4
19.	I often resuscitate the newborn babies effectively without complications.	0	1	2	3	4
20.	I am able to implement let the baby breathe strategy.	0	1	2	3	4
21.	I can insert a drip to patients without fail.	0	1	2	3	4

SECTION F: ASSESSMENT

Please indicate your response to the following statements:

0 = Never 1 = Hardly Ever 2 = Sometimes 3 = Often 4 = Always

		N	HE	S	O	A
22.	I know when to consult my seniors.	0	1	2	3	4
23.	I seek for senior opinion when I meet challenging situations in the antepartum unit.	0	1	2	3	4
24.	Senior personnel respond timeously when I seek for their assistance.	0	1	2	3	4
25	I know when to refer the patient to a doctor.	0	1	2	3	4
26.	I know the protocols and guidelines that I should follow when rendering midwifery care to patients.	0	1	2	3	4
27.	Protocols and guidelines are always applied when caring for high risk patients.	0	1	2	3	4

		N	HE	S	O	A
1.	I was assessed continuously through my stay in the unit I was placed	0	1	2	3	4
2.	My workbook was checked.	0	1	2	3	4
3.	My workbook was signed every time after the assessment by midwifery practitioner in the unit I was placed.	0	1	2	3	4
4.	My midwifery case register was evaluated according to requirements of SANC.	0	1	2	3	4
5.	I was given opportunity to do peer assessments.	0	1	2	3	4
6.	I was given chance to develop and grow professionally.	0	1	2	3	4

APPENDIX 8

QUESTIONNAIRES FOR MIDWIFERY PRACTITIONERS

QUESTIONNAIRE FOR MIDWIFERY PRACTITIONERS

SECTION A: DEMOGRAPHIC PROFILE

Please complete all the sections of the questionnaires by ticking the most appropriate column. Use a black pen to indicate your response by marking an "X" in the box corresponding to your response in the requested information.

1. My age is between:

20 – 29 years	1
30 – 39 years	2
40 – 49 years	3
50 - 59 years	4
60 + years	5

2. My qualification is:

Diploma in Midwifery	1
Diploma in (General Nursing, Community, Psychiatry) Midwifery	2
B cur (Degree in General Nursing, Community, Psychiatry) Midwifery	3
Advanced Midwifery and Neonatal Nursing Science	4
M cur Advanced Midwifery and Neonatal Nursing Science	5

3. Indicate your state of employment as midwifery practitioner.

Full time	1
Part time	2

4. My years of experience as a practicing midwife.

Less than 1 year	1
1 – 2 years	2
3 – 4 years	3
5-6 years	4
More than 7 years	5

5. In which area are you working now?

Ante-partum unit	1
High Care Unit	2
Intra-partum unit	3
Post-partum Unit	4

6. Indicate the number of beds in the Unit mentioned in question 5.

Less than 9 beds.	1
10-15 beds.	2
16 - 20 beds	3
More than 21 beds	4

7. Indicate the number of years you worked in Antepartum unit.

Less than 1 year	1
1-2 years	2
3-4 years	3
5-6 years	4
More than 7 years	5
Never	0

8. Indicate the number of years you worked in High Care unit.

Less than 1 year	1
1-2 years.	2
3-4 years.	3
5-6 years.	4
More than 7 years	5
Never	0

9. Indicate the number of years you worked in Intrapartum unit.

Less than 1 year	1
1-2 years.	2
3-4 years.	3
5-6 years.	4
More than 7 yrs.	5
Never.	0

10. Indicate the average number of midwifery practitioners during day duty?

2-3	1
4-5	2
6-7	3
More than 8.	4

11. Indicate the average number of midwifery practitioners during night duty?

2-3	1
4-5	2
6-7	3
More than 8	4

12. What is your function at the unit you are working now?

Functional	1
Team leader	2
Nurse manager	3

SECTION B: STAFFING AND WORKLOAD

Please indicate your opinion on the following statements, using the given keys:

0 = Never 1 = Hardly Ever 2 = Sometimes 3 = Often 4 = Always

		N	HE	S	O	A
1.	Absenteeism was a big problem in my unit the past 6 months.	0	1	2	3	4
2.	Resignation of midwives in my unit was high in the past 6 months.	0	1	2	3	4
3.	Adequate staff was available to do the work in the past 6 months.	0	1	2	3	4

Please indicate your opinion on the following statements, using the given keys:

1 = Strongly Agree 2 = Agree 3 = Disagree 4 = Strongly Disagree

		SA	A	D	SD
4.	Working conditions in the maternity unit is pleasant.	1	2	3	4
5.	I am able to manage the workload in the unit that I am working now.	1	2	3	4
6.	The ratio of midwifery practitioners to the number of patients is good.	1	2	3	4
7.	Midwifery practitioners on duty are always able to cover all the work during day duty.	1	2	3	4
8.	The number of midwifery practitioners on night duty is enough for efficient midwifery care.	1	2	3	4
9.	The unit where I am working now is understaffed.	1	2	3	4
10.	I cannot cope with the workload.	1	2	3	4

SECTION C: MATERIAL RESOURCES

Please indicate the availability of the following using the key below:

0 = Never 1 = Hardly Ever 2 = Sometimes 3 = Often 4 = Always

		N	HE	S	O	A
1.	Bed linen	0	1	2	3	4
2.	Night gowns	0	1	2	3	4
3.	Pillows	0	1	2	3	4
4.	Gloves	0	1	2	3	4
5.	Sanitary pads	0	1	2	3	4
6.	Paper towels	0	1	2	3	4
7.	Soap	0	1	2	3	4
8.	Suturing materials	0	1	2	3	4
9.	Urine dipsticks	0	1	2	3	4
10.	Suctioning catheters	0	1	2	3	4
11.	Administration sets	0	1	2	3	4
12.	Urine catheters	0	1	2	3	4
13.	Endo-tracheal tubes	0	1	2	3	4
14.	Urine bags	0	1	2	3	4

SECTION D: EQUIPMENT

Please indicate the availability of the following equipment in good working order, using the key below:

0 = Never 1 = Hardly Ever 2 = Sometimes 3 = Often 4 = Always

		N	HE	S	O	A
1.	Blood pressure apparatus	0	1	2	3	4
2.	Stethoscopes	0	1	2	3	4
3.	Foetoscope	0	1	2	3	4
4.	Doptone	0	1	2	3	4
5.	Non Stress Test machine	0	1	2	3	4

6.	Cardiotocograph machines	0	1	2	3	4
7.	Suction apparatus	0	1	2	3	4
8.	Oxygen cylinders	0	1	2	3	4
9.	Cribs	0	1	2	3	4
10.	Delivery packs	0	1	2	3	4
11.	Episiotomy scissors	0	1	2	3	4
12.	Vaginal examination packs	0	1	2	3	4
13.	Paper for cardiotocograph machine	0	1	2	3	4

SECTION E: REMUNERATION

Please indicate your opinion on the following statements, using the given keys:

1 = Strongly Agree 2 = Agree 3 = Disagree 4 = Strongly Disagree

		SA	A	D	SD
1.	I feel that I am remunerated according to my qualifications.	1	2	3	4
2.	I feel that I am remunerated according to my experience	1	2	3	4
3.	I believe that I am paid adequately.	1	2	3	4
4.	I feel that I am remunerated according to my seniority.	1	2	3	4

SECTION F: COMPETENCY

Please indicate your response to the following statements on your competency:

0 = Not at all 1 = Somewhat 2 = Fairly 3 = Good 4 = Very good

		N	S	F	G	VG
1.	I am able as a midwifery practitioner to utilize the Non Stress Test machine.	0	1	2	3	4
2.	I am knowledgeable regarding the use of cardiotocograph machine.	0	1	2	3	4
3.	I am able to utilize ward Haemoglobin equipment.	0	1	2	3	4
4.	I am able to measure the Mid Upper Arm Circumference with every patient that I assess to monitor her nourishment.	0	1	2	3	4
5.	I utilize Basic Antenatal Care (BANC) strategy with each every pregnant woman.	0	1	2	3	4
6.	I am able as a midwifery practitioner to analyze the Non Stress Test (NST) strip.	0	1	2	3	4

7.	I am able as a midwifery practitioner to interpret the NST strip.	0	1	2	3	4
8.	I am capable in implementing the Prevention of Maternal to Child Transmission (PMTCT) strategy appropriately and timeously.	0	1	2	3	4
9.	I am able as a midwifery practitioner to analyze the cardiotocograph (CTG) strip.	0	1	2	3	4
10.	I am able as a midwifery practitioner to interpret the CTG strip accurately.	0	1	2	3	4
11.	I am able to do intrapartum resuscitation of the foetus appropriately and timeously based on interpretations CTG.	0	1	2	3	4
12.	I able to plot foetal heart rate correctly on the partograph with each pregnant woman that I assess.	0	1	2	3	4
13.	I am able to plot the station of the foetal head on the partograph.	0	1	2	3	4
14.	I am skilful in plotting the cervical dilatation on the partograph.	0	1	2	3	4
15.	I am able to analyze the findings plotted on the Partograph.	0	1	2	3	4
16.	I am able to interpret the findings foetal status and maternal status findings plotted on the Partograph.	0	1	2	3	4
17.	I am able to interpret the progress of labour plotted on the partograph.	0	1	2	3	4
18.	I am able to give patient oxygen when in labour having foetal distress.	0	1	2	3	4
19.	I often resuscitate the newborn babies effectively without complications.	0	1	2	3	4
20.	I am able to implement let the baby breathe strategy.	0	1	2	3	4

Please indicate your response to the following statements on your competency:

0 = Never 1 = Hardly Ever 2 = Sometimes 3 = Often 4 = Always

		N	HE	S	O	A
21.	I can insert a drip to patients without fail.	0	1	2	3	4
22.	I know when to consult my seniors.	0	1	2	3	4
23.	I seek for senior opinion when I meet challenging situations in the antepartum unit.	0	1	2	3	4
24.	Senior personnel respond timeously when I seek for their assistance.	0	1	2	3	4
25.	I know when to refer the patient to a doctor.	0	1	2	3	4
26.	I know the protocols and guidelines that I should follow when rendering midwifery care to patients.	0	1	2	3	4
27.	Protocols and guidelines are always applied when caring for high risk patients	0	1	2	3	4

SECTION G: STAFF DEVELOPMENT

How often have you attended the following in the past 3 years?

		Never	Once	Twice	More	Always
1.	International conferences	0	1	2	3	4
2.	National conferences	0	1	2	3	4
3.	Midwifery and Neonatology Symposia	0	1	2	3	4
4.	Midwifery seminars	0	1	2	3	4
5.	Perinatal mortality rates meetings in Limpopo Province	0	1	2	3	4
6.	Maternal Mortality meetings of Midwifery and Obstetric cases	0	1	2	3	4
7.	Workshops related to Midwifery practice	0	1	2	3	4
8.	In-service education in the unit you are working now	0	1	2	3	4
9.	Permission was granted for furthering my education	0	1	2	3	4

APPENDIX 9

INTERVIEW GUIDE: MIDWIFERY PRACTITIONERS

1. Welcoming and acknowledging of the presence of the participant.
2. Explain the purpose and objectives of the research to the participant.
3. Explain how the findings of the research will be utilized.
4. Explain the process of informed consent.
5. Explain how the interview will be conducted
6. Explain the role of the respondent of telling the story and describing the lived experiences.
7. Highlight the role of the researcher of interpreting all information given.

CENTRAL RESEARCH QUESTION

You are working in maternity unit “Please tell me about your practice environment.”

PROBING RESEARCH QUESTIONS.

1. Tell me about the nature of the current practice environment you are working at.
2. Explain to me what optimal practice environment should entail.
3. Tell me what the elements of the optimal practice environment.
4. Is there anything else that you think I should know pertaining to optimal practice environment?
5. What is it that you want to enquire from me?

APPENDIX 10

INTERVIEW GUIDE: FOCUS GROUP DISCUSSIONS OF LEARNER MIDWIVES

1. Welcoming and acknowledging of the presence of the participants.
2. Explain the purpose and objectives of the research to the participant.
3. Explain how the findings of the research will be utilized.
4. Explain the process of informed consent.
5. Explain how the interview will be conducted
6. Explain the role of the respondent of telling the story and describing the lived experiences.
7. Highlight the role of the researcher of interpreting all information given.

CENTRAL RESEARCH QUESTION

You are placed in the experiential learning environment in maternity unit "Please tell me about your experiences regarding your exposure at clinical placement area for midwifery."

PROBING RESEARCH QUESTIONS.

1. Tell me about the nature of the experiential learning environment you are placed at.
2. Explain to me what optimal experiential learning environment should entail.
3. Tell me what the elements of the experiential learning environment.
4. Is there anything else that you think I should know pertaining to optimal practice environment?
5. What is it that you want to enquire from me?

APPENDIX 11

INTERVIEW GUIDE: FOCUS GROUP DISCUSSIONS OF THE PUERPERAL MOTHERS.

1. Welcoming and acknowledging of the presence of the participants.
2. Explain the purpose and objectives of the research to the participants.
3. Explain how the findings of the research will be utilized.
4. Explain the process of informed consent.
5. Explain how the interview will be conducted
6. Explain the role of the respondent of telling the story and describing the lived experiences.
7. Highlight the role of the researcher of interpreting all information given.

CENTRAL RESEARCH QUESTION

Please tell me about your perceptions during the antenatal and the delivery of your babies by a midwife?

PROBING RESEARCH QUESTIONS

1. Were you involved in the care that you received from midwives?
2. Tell me if you were given information regarding your progress of labour?
3. Explain to me if the condition of your babies were highlighted to you during intrapartum?
4. Tell me what is a desired practice should be when delivering pregnant women?
5. Ask me what you want to know from me.

APPENDIX 12

INTERVIEW GUIDE: NORTHERN SOTHO

1. Go amogela le go leboga batsea karolo.
2. Hlalosa mohola le maikemisetso a monyakisisi
3. Hlalosa gore ditlamorago tsa monyakisisi di tla somiswa bjang
4. Hlalosa ka ga tsibiso ya tumelelo go tsea karolo
5. Hlalosa gore diputiso di tla botsiswa ka tsela mang.
6. Hlalosa bohlokwa bja mosadi ka go bolela ka ga maitemogelo a gagwe mabapi le botswadi.
7. Bontshisisa karolo ya monyakisisi mabape le tshedimoso yeo e filwego.

Potsiso ya magareng ya go nyakisisa

1. Ka kgopelo re botse ka ga maitemogelo a gago ka boimana le ka go belega ga ngwana wa gago mabape le mmelegi.
2. O tseeri karolo mo go hlokomelo yeo o ihlweditse go tswa go ba belegisi?
3. Re botse gore o ile wa hwetsa tsibiso ya tswelopele ya go belega naa?
4. Re hlalotse gore o boditswe ka seemo sa bana ba gago ka nako yeo o be o belega ka yona?
5. Re botse gore tseo o nagang gore mmelegisi ga a swanela go di dira ka nako ya go belegisa baimana ke di fe?
6. Botsisa ka tseo o nyakang go ditseba go tswa go nna.

APPENDIX 13

INTERVIEW GUIDE: VENDA

Tsumba mushumu: Ndavhelelo ya tshigwada tsha vhafumakadzi vho bebaho.

1. U tangedza na u pfesesa u vha hone ha vhatu vho kwameaho.
2. U talutshedza vhuthogwa na zwine zwa khou toda u swikelelwa kha vhatu a vhane vha
3. Khou vha tshipida tsha u todisisa.
4. U talutshedza uri zwine zwado wanwa khau todisisa zwido shumiswa hani.
5. U talutshedza u tevhekana ha u toda thendelo.
6. U talutshedza uri dzimbudziso dzi do vhudziswa hani.
7. U talutshedza mushumo wa muaravhi ngau muvhudza tshitori na u amba nga vhudalo
8. Ndivho ine vha vhanayo ya kale.
9. U vhonisa mishumo ya mutodisisi khau talutshedza ndivhadzo dzothe dzo fhiwaho.

Mbudziso Ya Utodisisa Ya Vhukati

1. Ri khou humbela uri vha ri vhudze nga ha tshenzhemo nga tshifhinga tsha musi vha sa a thu u beba na u bebiswa nwana wavho nga mubebisi?
2. Vho jia tshipida kha thogomelo yevhaiwa kha mubebisi?
3. Khavharivhudze uri vho vhuya vhawana ndivhadzo uyelana na mvela phanda ya ubeba?
4. Avhatalutshedze kha nne arali mutakalo wavhana vhavho wovha wo divhadziwa khavho ngatshifhinga tshaubeba.
5. Khavharivhudze zwine vhahumbula uri mubebisi avhongotea uzwiita musi vhatshikhou bebisa vhaimana.
6. Avhavhudzise zwine vhakhou toda udivha kha nne.

APPENDIX 14

TRANSCRIPT OF MIDWIFERY PRACTITIONER

INTERVIEW 1: MIDWIFERY PRACTITIONER

Interviewer: You are working in maternity unit “Please tell me about your practice environment, your experiences”

Interviewee: My practice environment, not much conducive, Maternity labour, Antenatal unit and high risk patients. We have 18 midwives excluding operational manager and com serves. 6 MP allocated night duty; 3 MP in each group. 12 MP day duty; some on leave and some knock off at 13h00.

Interviewee: Problems encountered are:

- Problems of equipment. We have 1 CTG machine, not functioning well , not having a tracer thus functions as doptone.
- Catering for a lot of patients. We are trying to provide quality care to mothers but is not possible with 1 CTG machine.
- NST not functional, Non stress test not functional.

Interviewer: Tell me about the nature of the practice environment you are working at.

Interviewee: We are having students from Sovenga nursing college, University of Limpopo and Seshego hospital nursing school, each bring about 20 or more not the same time. A lot of students, few students get the opportunity to look after the patients, is not conducive for students. It is difficult to supervise them as they are many.

Interviewer: Explain to me what Optimal practice environment should entail.

- Staff for ANC ward to run it
- Staff to run high risk admissions for a day
- Staff for labour unit, some to do admissions.
- Labour room to have 4 midwives per day.
- BP and CTG machines in every cubicle will be ok.

- Each cubicle to have its own equipment: warmers, CTG machine and BP machine available to monitor PET patients.
- Students are allocated in cubicles and if they are not there it is difficult to manage patients alone.
- Labour ward has 8 cubicles, High care cubicles are 2 only from the eight cubicles (1 and 8).
- In each warmer we are supposed to have resuscitation – ambu-bag.

Drugs/ Medications

- Medications for pregnant women folic acid is available but no Maxalon, no antibiotics.
- RVD Positive patients' treatment is available.
- No material resources: no urine bags, no urinary catheters, no syringes, no gloves
- No linen: no sheets, no nighties
- We struggle with everything and over the weekend is worse. We keep on borrowing.
- Short staffed: 2 midwives in labour unit, if there is a case for caesarean section 1 midwife will escort the patient to theatre to receive the baby whilst the other midwife will remain in labour unit delivering the mothers.
- Cardiac patients are transferred immediately to Polokwane hospital whereas the preterm babies are transferred to Mankweng hospital. Is not always that Mankweng agrees to take preterms. If Mankweng refuses we need to put them somewhere.
- Nursery is utilized for the asphyxiated babies, MAS, Preterms.
- Nurse Manager does give support normally. We complain to her sometimes and she tries to asks for equipment from other hospitals.
- Doctors-good relationship with them able to discuss our patients and plan the way forward.
- Students are difficult, they need someone who will put her feet down, delegate and supervise them.

Interviewer: What is it that you want to enquire from me?

Interviewee: How will this report help us?

Interviewer: Recommendations based on findings to DoH and NEI

APPENDIX 15

FOCUS GROUP DISCUSSIONS OF LEARNER MIDWIVES

FOCUS GROUP 1

Interviewer: You are placed in the experiential learning environment in maternity unit, "Please tell me about your experiential learning environment."

Participant: Challenges we are faced with the damp dusting that we are to do.

Participant: After delivery you will find that other nurses do not wash the bed and remove the blood on the mattress. So we are then to wash the beds even if it was not us who left the beds not washed after delivery. Other nurses clean the top part of the bed not underneath the bed. So this causes the failure of adhering to infection control principles. However immediately after delivery we are supposed to wash the mattress thoroughly and remove the blood, then put clean linen for the next patient to use.

Participant: MP stated that we are many in the unit, and some disappears.

Participant: Lack of MP, only 3 on duty with many patients to be managed and students to be supervised. Thus you will find learner midwives end up progressing and delivering the patient alone. When you need confirmation from the MP by the time she comes you have already delivered the patients.

Participant: Other MP when we seek their senior opinion she will ask you what level are you and when you say you are the finalist she will tell you that you are experienced. Because she will not confirm you, you then lose that case since she is not willing to countersign you.

Interviewer: Please be informed that you are still students on training. So at the end of the day you lose the case because you delivered the patient alone. According to the SANC no learner midwife or MP is allowed to take up a delivery being alone. If you have delivered alone to MP work is done but to you as learner midwife the case is lost. Bear in mind that you are not working force but learner midwife on training.

Participant: We are told to use two cord clamps since babies do bleed if 1 is used. In the same vein we are told to use 1 cord clamp because we need to save material resources. These different messages make as if you students are obstinate.

Participant: ROM is currently done through use of the artery forceps taken from the delivery pack. The delivery pack will run short of the artery forceps. So when delivering the pregnant woman using the same delivery pack you will have problem. We are even told that we are not at school but in practice and thus we do things differently.

Participant: After delivering the baby, the woman was injected Oxytocin 5 units imi. I was waiting for the signs of placental separation. Then the doctor attempted to deliver the placenta and membranes without waiting for signs of placental separations. It was not easy because he had to fidget with it despite it has not yet contracted. Then at the end he was able to deliver it. After 1 hour, the patient started bleeding profusely, lost 700mls blood loss, had PPH. Dr did digital exam, uterus not well contracted. MP instructed me to write notes for the doctor. I refused because the doctor is supposed to write his own notes with his own writing not me.

Participant: CTG not working, women given oxytocin for augmentation of labour. Patients are even given Pitocin without monitoring them, is a problem because you can end up having a ruptured uterus or foetal demise.

Participant: Patients are sharing the beds, others are managed on benches. You are to assess these women interchangeably on the same bed. Even those on benches need a bed to be assessed upon.

Participant: 1 BP machine for high risk ANC and deliveries. It became cumbersome to monitor PIH patients without BP machine. If the woman is having elevated BP it won't be easy to know thus patient might complicate to Eclamptic fit since emergency treatment was not commenced.

Participant: Pain management is not done in other institutions and patients in labour they stand on top of the bed, screaming since the labour pains are unbearable thus they cannot tolerate the pain threshold. These patients are at risk of falling from the bed and injure herself and foetus. Those institutions which practice non pharmacological and pharmacological pain relief do not experience funny responses of patients. In terms of non-pharmacological measures the other institution employ the doulas to do massages of the back, giving of warm bedpans, talking to patient to distract her from pain, patient encouraged to watch TV and patient allowed to walk as long as she is less than 7cm dilated to encourage descent. The above stated can be even done by learner midwives and MP.

Participant: Some MP are giving un-prescribed bolus of oxytocin 5-10 units to pregnant women intravenously or intramuscularly, and do not record it. They say they want women to deliver fast.

Interviewer: This is a medico-legal hazard since the woman can rupture the uterus and foetus can demise. This is a malpractice. The oxytocin should be given through a 1000 mls vacoliter for augmentation of labour when contractions are not good to influence dilatation of the cervix.

Participant: Most of the time MP send us on errands as if we are messengers. Instead of progressing women we are sent around by even doctors.

Participant: Doctors do not respond immediately when called for emergency, they take a long time to an extent that patient complicates.

Participant: Incorrect disposal of gloves and sharps in the correct containers by doctors the blame is shifted to us students. Even when the doctor has just inserted a drip, he leaves the needle on the bed of the patient not disposing it to the correct container; we are instructed to dispose it for them, why can't they dispose it?

Participant: MP instructs us to cut episiotomy at height of a contraction/ under nyamazela. They say pain of the episiotomy is not like pain of the contractions. Patient does not feel pain when you cut her episiotomy without localizing her perineum.

Interviewer: Episiotomy should be done due to some reasons since we are to implement PMTCT and adhere to R2488. The perineum is sensitive and there is nowhere that the patient would not feel any pain whilst you cut her without localizing. That is a myth.

Interviewer: Please tell me what you think an optimal experiential learning environment should entail?

Participant: Adequate number of MP for easy supervision of students;

- Enough equipment which are in good working order;
- Enough material resources;
- Adequate number of doctors;
- Students to be delegated according to their learning objectives;
- Enough messengers to be sent for errands so that we students are able to concentrate on patient care;
- Good communication-2 way (student, lecturer/ tutor and MP);

- A stop to undermining of students;
- MP to supervise and counter students not students to buy signatures by performing some tasks for them;
- Not to do non-nurses duties of damp dusting, packing stock
- Same practice of record keeping across the board in all institutions not to doing different record keeping in some institution for the whole day without doing midwifery care to patients;
- Localizing of perineum prior cutting of episiotomy and to stop cutting episiotomy at height of contraction or nyamezela.

Interviewer: What is it that you want to enquire from me?

Participant: The research study how will it benefit us?

Interviewer: Based on findings the model will be developed and guidelines or recommendations developed for nursing education institutions and maternity units.

APPENDIX 16

FOCUS GROUP FOR PUERPERAL MOTHERS

FOCUS GROUP 1

Moderator: Please tell me about your perceptions /experiences during antepartum and the delivery of your babies by midwifery practitioners.

Participant: I did book and attended ANC clinic. I delivered well with no problems. However, this hospital has no warm water that we can use for bathing. We use cold water for bathing and hand wash and because is winter and it is not pleasant to wash with cold water. You can even decide not to bathe.

Moderator: Do you cope using cold water? Since it is winter I agree with you that you can end up not bathing and this can cause you having bad odour.

Participant: I did not see many problems. I attended clinic in Gauteng province where I was working. Now I am home for maternity leave. When I became in labour I went to one of the clinic and midwifery practitioner told me that I was not supposed to come to their clinic. They told that I make them not to work well due to unnecessary referrals. They then called the ambulance and I was transferred to the hospital without any valid reason. The ambulance came soon and I was taken very son to the hospital.

Participant: With me there was no ambulance and I was advised to look for a car. And I called my husband who came and took me to the nearest clinic.

Moderator: Tell me are you not using EMS-Emergency Medical Service for transportation to the hospital.

Participant: We never knew about the availability of the ambulance for taking us to the hospital. . I did not experience any problems. I attended clinic at Johannesburg and I came home for delivery.

Participant: I came to hospital using a quantum taxi because there was no transport to take me to hospital.

Participant: I attended clinic well

Moderator: Was episiotomy performed on you? Did midwives tell you when to breathe? When they were supposed to assess you did they inform you about what you were supposed to do?

Participant: No, they were not available to help me. I called and nobody answered and came to my rescue.

Moderator: Where were they, could you locate their voices? Are you saying they midwives take care of you?

Participant: They came after I delivered unattended and they should and slapped me saying do you want to kill your baby. Please if so, do not include us. The problems we encountered are there are no sanitary pads, no toilet paper to use in toilet, no soap to washing of hands after using toilet.

Participant: Other things which we do not have are night dresses. We are told to call home to inform them to bring night dresses for ourselves, we are told to buy our own pads

Moderator: Do you have medications, or because is a free service now you are told to buy your own.

Participant: Medication is available.

Moderator: Is there any question you want to enquire from me?

Participant: Is this study going to be able to help us?

Moderator: Yes, because from what you said it will assist me in identify what are problems. Meaning the findings revealed will be used in order to address problems and solve them with respective people and institution. Thank you for participating, look after your children, give them names and breast feed them.

APPENDIX 17

VALIDATION OF AN EVIDENCE–BASED MODEL

QUESTIONNAIRE FOR VALIDATION OF EVIDENCE BASED MODEL

SECTION A: CLARITY OF THE STRUCTURE OF EVIDENCE BASED MOEL

Please indicate your responses to the following questions:

	CRITERIA	Agree	Disagree	Other
1.	Is the title concise and describe the evidence based model?			
2.	Does the introduction introduce the use of the evidence based model clearly?			
3.	Is the evidence based model simple to serve its purpose?			
4.	Is the evidence based meaningful to serve its purpose?			
5.	STRUCTURE			
5.1	Is the context of the evidence based model clearly described			
5.2	Is the goal of the evidence based model clearly set?			
5.3	Structural clarity in terms of understanding the connections within the structure of the model?			
5.4	Are structural consistency related to the use of different structural forms within the model?			
5.5	Is the model graphically portrayed well in the form of visual presentation?			
6.	CONTEXT RELATIONSHIP			
6.1	Is there any interconnection between concepts used in the model?			
6.2	Were related attributes guiding the interrelationships between concepts and components?			
7.	LOGICAL COHERENCE			
7.1	Is there any evidence of logical coherence on the frame of reference of the model?			

SECTION B: A CRITICAL REFLECTION OF A MODEL

Please indicate your responses to the following questions:

	CRITERIA	Agree	Disagree	Other
8.	Is the evidence based model clear for easy reading?			
9.	Is the evidence based model understandable?			
10.	Semantic clarity of concept			
11.	Semantic consistency: Were components of this model used in ways that were consistent with their descriptions?			
12.	Did the description of concepts in this model help establish its empirical meanings?			
13.	Were operational descriptions done to promote operational adequacy of evidence based model			
14.	Is the outcome of the evidence model achieved?			
15.	Are guidelines formulated for the operationalization of evidence based model relevant?			
16.	SIMPLICITY OF THE EVIDENCE BASED MODEL			
16.1	Is there any degree of simplicity in this model?			

SECTION C: GENERALITY AND IMPORTANCE OF EVIDENCE BASED MODEL

Please indicate your response to the following questions:

	CRITERIA	Agree	Disagree	Other
17.	Is the evidence based model designed in a broad implications to make it applicable in different disciplines?			
18.	The importance of the model to midwifery practice			
19.	The importance of model to nursing education			
20.	The importance of model to research			
21.	Can the model be applied to other disciplines?			
22.	Is the evidence based model practice-oriented?			
23.	Is the evidence based model addressing the realities of the situation?			

COMMENTS:

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THANK YOU FOR YOUR TIME IN COMPLETING THE MODEL VALIDATION REPORT.

APPENDIX 18

CONFIRMATION BY LANGUAGE EDITOR



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7 October 2015

To Whom it May Concern

This serves to confirm that I have edited the language, spelling, grammar and style of the PhD thesis by **Magdeline Kefilwe Thopola**, titled: “**An Evidence-Based Model for Enhancing Optimal Midwifery Practice Environment in Maternity Units of Public Hospitals, Limpopo Province.**”

Sincerely Yours

A handwritten signature in black ink, appearing to be 'D. Hiss'.

Dip. Freelance Journalism, Dip. Creative Writing, MSc (Medicine), PhD