CHALLENGES ENCOUNTERED BY ONE-YEAR DIPLOMA STUDENT MIDWIVES IN ACQUIRING CLINICAL SKILLS AT SELECTED HOSPITALS IN LIMPOPO PROVINCE

By

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MINI-DISSERTATION

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2016
DECLARATION

I, Joyce Maphuti Manthata, declare that the mini Dissertation on the “Challenges Encountered by One-Year Diploma Student Midwives in Acquiring Clinical Skills at Selected Hospitals in Limpopo Province” is my original work and that all the sources that I have used or quoted have been duly indicated and acknowledged by means of complete references, and that this work has not been submitted previously for a degree at any other institution of higher education.

....................................................  ....................................................

Manthata Maphuti Joyce  Date
DEDICATION

This dissertation is dedicated to:

My late father who took me by the hand for the first knock at a nursing school.

My mother, Raisibe Martha Morema, for bringing me up and guiding me towards my career choice.

My husband, Maselaolo Solomon Manthata, for his continuous support and patience.

My daughters, Tshipientsho, Pitsi and Molebohene, for encouraging me and helping with house chores when I was consumed in my studies.
ACKNOWLEDGEMENTS

- Firstly, I would like to thank Almighty God for sustaining me throughout this journey. His grace has been sufficient for me (2 Corinthians 12:9).

My sincere gratitude goes to the following people who have contributed to the successful completion of this study:

- My supervisor, Mrs MK Thopola, for continuous support and guidance, and for not giving up on me.

- My co-supervisor, Mr SF Matlala for the encouragement he gave me and his patience when things seemed not to be going well.

- The Limpopo Department of Health, for allowing me to conduct this study in various hospitals.

- The Chief Executive Officers and managers of the hospitals where I collected data.

- My statistician, Mrs R Olwagen, for analyzing and interpreting my data.

- My appreciation also goes to all the one-year diploma student midwives in the various hospitals for agreeing to fill in the questionnaire—the study would not have been completed without them.

- Professor DC Hiss, Department of Medical Biosciences, University of the Western Cape, for providing editorial assistance.
ABSTRACT

Introduction and purpose: Midwives are the backbone of maternal and child health—the output of their action affect quality of life of mother and child. The purpose of the study was to describe the challenges encountered by one-year diploma student midwives while acquiring clinical skills at selected hospitals in Limpopo Province.

Research design and method: A quantitative, descriptive cross-sectional research method was used in this study. The study population comprised all one-year diploma student midwives in selected hospitals in Limpopo Province, namely, Dilokong Hospital, Jane Furse Memorial Hospital, Mokopane Hospital, Philadelphia Hospital, Siloam Hospital and St Rita’s Hospital. The whole study population was used as the total population was small. Data were collected using a self-administered questionnaire. Informed consent was received from the participants as was ethical approval from the relevant authorities. Data were analyzed using SPSS version 22 with the aid of a statistician. Descriptive statistics were used to analyze and describe the data. Data were presented in tables and bar graphs.

Findings: Respondents in this study indicated that they encountered the following challenges during their acquisition of clinical skills at the selected hospitals in the Limpopo Province: inadequate resources; inadequate mentoring. Male participants reported feelings of being more competent than their female counterparts. There was no relationship between acquisition of skills and marital status, and no correlation between age and acquisition of skills.

Key concepts: challenges, encounter, one-year diploma, enrolled nurse, student midwives, acquiring clinical skills.
### DEFINITIONS OF CONCEPTS

**Acquiring**

Acquiring means to learn or develop a skill (The New Shorter Oxford English Dictionary, 1993). In this study, acquire refers to developing midwifery skills.

**Challenges**

Challenges refer to a difficult task, venture, hazard, risk, obstacle or a situation that stimulates interest or effort (Chambers English Dictionary, 2006). In this study, challenge refers to obstacles that student midwives come across in their clinical placement areas while executing midwifery care.

**Clinical Skills**

Clinical skills are techniques, methods, attitudes and behaviours necessary to execute nursing care according to the standards set by the South African Nursing Council (SANC, 2005). Clinical means founded on actual observation and treatment of midwifery clients or patients (Sweet, 1992). In this study, clinical skills refer to abilities and attitudes that student midwives acquire when in a clinical area that enable them to carry out midwifery care to mothers and their babies during antenatal, labour and postnatal events.

**Encounter**

Paperback Oxford English Dictionary (2012) defines encounter as to experience or deal with something or come upon something unexpectedly. In this study, encounter will refer to being faced with situations unexpectedly and experiences of dealing with such situations.
**Student Midwife**  
A student midwife is a person undergoing training under Regulation 254 of 1975 for registration as a midwife R254, 1975, Paragraph 1(2)(a). In the study, student midwives will refer to those students that are training for one-year diploma in midwifery and are placed for clinical exposure in the selected hospitals in Limpopo Province.
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<th>Description</th>
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<td>ANC</td>
<td>Antenatal Clinic</td>
</tr>
<tr>
<td>BP</td>
<td>Blood Pressure</td>
</tr>
<tr>
<td>CEO</td>
<td>Chief Executive Officer</td>
</tr>
<tr>
<td>CTG</td>
<td>Cardiotocography</td>
</tr>
<tr>
<td>EN</td>
<td>Enrolled Nurse</td>
</tr>
<tr>
<td>ENA</td>
<td>Enrolled Nursing Auxiliary</td>
</tr>
<tr>
<td>ICM</td>
<td>International Confederation of Midwives</td>
</tr>
<tr>
<td>MDG</td>
<td>Millennium Development Goal(s)</td>
</tr>
<tr>
<td>NA</td>
<td>Nursing Auxiliary</td>
</tr>
<tr>
<td>NMC</td>
<td>Nursing and Midwifery Council</td>
</tr>
<tr>
<td>NQM</td>
<td>Newly Qualified Midwife/Midwives</td>
</tr>
<tr>
<td>PN</td>
<td>Professional Nurse</td>
</tr>
<tr>
<td>R</td>
<td>Regulation</td>
</tr>
<tr>
<td>SANC</td>
<td>South African Nursing Council</td>
</tr>
<tr>
<td>UK</td>
<td>United Kingdom</td>
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CHAPTER 1

OVERVIEW OF THE STUDY

1.1 Introduction

Midwives are the backbone of maternal and child health care services. The output of their action affects the quality of life of the mother and child (Pattinson, 2007). Internationally, they are identified as the key health work force for the achievement of Millennium Development Goals (MDG) 4 and 5, namely, to reduce child mortality and improve maternal health, respectively (Muller, 2009; Dennis-Antwi, 2011). Countries should invest in retaining midwives so that these MDG can be met. As such, the training of midwives should be given first priority to maintain a constant supply of competent midwives.

One-year diploma student midwives are professional nurses who have undergone stages of training in their professional ladder. Their training has been in the form of upgrading from enrolled nursing auxiliary (ENA), enrolled nurse (EN) to a professional nurse (PN) through a bridging course. Experience and reflective learning has been their main tool for progression, that is, learning based on previous knowledge (Driscoll, 2007). During their training as student midwives, midwifery becomes a new experience to these students, with new terms that need practical exposure to be assimilated. During their learning exposure (experiential training), patients are used to acquire practical skills. Accompaniment, preceptorship, mentoring and supervision are all necessary for the acquisition of midwifery clinical skills.

There is a need for registered midwives to mentor these student midwives to be able to assess prior knowledge before delegating responsibilities to them. According to the International Confederation of Midwives (ICM), it is imperative that a high standard of practice is upheld so that the student can emulate how the qualified personnel are practising (ICM, 2010). Furthermore, the ICM maintains that midwifery programme planners should prioritize recruitment and development of sufficient midwives as
teachers and clinical preceptors to meet the learning needs of students—this will ensure that midwifery care by student midwives is always supervised by midwives or the person with specific midwifery skills like doctors. A number of variables either facilitate or hinder the mentoring process in the clinical settings if they are not taken into consideration. It is imperative that the supervisor identifies organizational and individual variables that jeopardize the process of mentoring (Harrison, Lyons & Fisher, 2009).

During their training, student midwives should attain competency in the examination of antenatal and postnatal women; performance of pelvic and vaginal examinations; performance and suturing of episiotomy; and conducting of normal deliveries in order to attain these competencies. Student midwives should spend 1000 hours in the clinical area (SANC, 2005). Resources necessary for attainment of these competencies seem to be scarce in hospitals in the Limpopo Province and this may jeopardize the quality of the student cadres. Students are always encouraged to be self-directed and lecturers are expected to be innovative in their teaching approach so that the products will be competent to provide quality care. Clinical areas for placement are inadequate and teaching materials in the clinical areas seem to be scarce.

This is in contrast with the South African Nursing Council (SANC) and ICM standards that require facilities for clinical practica to be satisfactory (SANC, 2005; ICM, 2010). Furthermore, the practice areas need to have access to contemporary learning resources such as current textbooks, journals and reference sources in printed and electronic form, communication technologies such as telephones, pagers, classroom space or distance learning options, access to laboratories to support basic sciences and practical skills development, and equipment and materials to support student practical learning such as mannequins, gloves and instruments (ICM, 2010).

Nursing schools may have a stipulated number of student midwives as accredited by the SANC. Nursing colleges and universities in the Limpopo Province also utilize the same clinical facilities for their students to gain the required clinical competency. It is
doubtful whether these conditions still comply with the accreditation criteria of the SANC on minimal requirements for facilities for clinical exposure of student midwives (SANC, 2005).

Student midwives may acquire sufficient theory in the classroom, which needs to be correlated with clinical practice. According to Gaberson, Gaberson and Oerman (2010), practice in the clinical area exposes students to the realities of professional practice that cannot be conveyed by either textbooks or simulation. Thus, nursing education institutions must ensure that the placement areas for students enhance learning. Clinical education and training must be provided in clinical facilities that are approved in terms of the accreditation of the programme by SANC (SANC, 2005). Preceptors and mentors are required for guidance and support at the clinical area for clinical teaching and must hold a current licence or registration to practise midwifery.

ICM has set the following criteria for selection of appropriate learning sites: High quality of care provided to mothers and babies, woman- and baby-friendly philosophy, accessibility and safety to student midwives, availability of learning opportunities, provision of equipment for required procedures, availability of midwife clinical preceptors and other health care professionals willing to facilitate one-year student midwives’ teaching, safe ratio of teacher to student midwives which is to be 1 preceptor to 2 students midwives (ICM, 2010). Supervision is mandatory in this regard for knowledge and skill development; professional development; and maintenance and safeguarding standards (SANC, 2005) as affirmed by Pillay and Mtshali (2008)—that supervision ensures safe practices and attainments of skills. A supervisor, who is actually a manager, ensures that relevant experience is provided for students and espouses the availability of resources and support systems for students to promote the attainment of learning outcomes. SANC requirements for one-year diploma student midwives are expected to acquire certain competencies in their clinical exposure period (Table 1.1)
**Table 1.1:** South African Nursing Council requirements for one-year diploma student midwives

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<thead>
<tr>
<th>Competency</th>
<th>Number of Cases Required</th>
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</thead>
<tbody>
<tr>
<td>Examination of antenatal cases</td>
<td>30</td>
</tr>
<tr>
<td>Perform vaginal examinations</td>
<td>15</td>
</tr>
<tr>
<td>Perform pelvic examinations</td>
<td>15</td>
</tr>
<tr>
<td>Conduct deliveries</td>
<td>15</td>
</tr>
<tr>
<td>Perform and suture episiotomy</td>
<td>10</td>
</tr>
<tr>
<td>Examination of postnatal women</td>
<td>30</td>
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Source: SANC, 2005

### 1.2 Problem Statement

One-year diploma student midwives (SANC, 2005) seem to be encountering challenges in acquiring skills in hospitals in which they are placed for purposes of gaining clinical experience. These student midwives are to be exposed to clinical areas as prescribed by the SANC which is in the following units—Labour ward, Antenatal, Postnatal, Neonatal and District (clinic), also to work on night duty. The total hours should be 1000 (SANC, 2005).

It is assumed that they are not obtaining adequate clinical teaching and supervision as reflected in one of the hospitals’ Student Satisfactory Survey which pointed out the concern that in some hospitals student midwives are often left to work alone—sometimes due to workload of the qualified staff members who are often short staffed. It has also been observed through antenatal cards audit that maternity patients are referred from Primary Health Care (PHC) services to hospitals with inaccurate records which means midwives go to the practice area inadequately prepared for the work they are to perform. Standard V.2 of ICM (2010) requires the midwifery programme to have sufficient teaching and learning resources to meet programme needs.
1.3 Aim of the Study

The aim of this study was to determine challenges encountered by one-year diploma student midwives in acquiring clinical skills at the selected hospitals in Limpopo Province.

1.4 Research Questions

This study was guided by the research question:

- What are the challenges encountered by one-year diploma student midwives in acquiring clinical skills at selected hospitals in the Limpopo Province?
- What guidelines can be developed to support one-year diploma student midwives at selected hospital in Limpopo Province?

1.5 Objectives of the Study

The objectives of this study were to:

- Describe the challenges encountered by one-year diploma student midwives in acquiring clinical skills at the selected hospitals in the Limpopo Province.
- Identify factors that affect student midwives’ acquisition of midwifery clinical skills.
- Identify if there is a relationship between the demographic factors and attainment of midwifery skills by one-year diploma student midwives.
- Develop guidelines to support one-year diploma student midwives at selected hospitals in Limpopo Province.
1.6 Research Methods and Design

A quantitative research method was used in this study because it focused on a relatively small number of concepts and it proceeded with preconceived ideas about how the concepts were interrelated. A descriptive cross-sectional research method was used in this study (Burns & Grove, 2005). In a descriptive cross-sectional design, the researcher does not manipulate any variables, and to determine the relationship between variables, the researcher searches for accurate information about the characteristics of a single subject (Brink, Van der Walt & Van Rensburg, 2012).

The target population of this study was 123 one-year diploma student midwives from selected hospitals in Limpopo Province. Data were collected using a self-administered questionnaire. The whole population was used as a sample as a portion would not have sufficed for quantitative analysis. Content validity was ensured by submitting the questionnaire to a content specialist who is an advanced midwife for critical appraisal. Reliability was ensured by conducting a pilot study. The Statistical Package for Social Sciences (SPSS) version 22 for windows was used to analyse quantitative data. Descriptive and inferential statistics were used to obtain frequencies, percentages, standard deviations and measures of central tendency such as means. A detailed discussion of the research methodology and design is provided in Chapter 3.

1.7 Significance of the Study

The proposed study sought to identify the challenges that one-year diploma student midwives encounter. Findings from this study might therefore help one-year diploma student midwives to acquire the necessary midwifery clinical skills, thus ensuring the production of competent midwives.
1.8 Outline of chapters.

Chapter 1: Overview of the Study

The chapter covers the introduction to the study, giving a brief description of the problem, statement, the purpose, objectives of the study and research methodology.

Chapter 2: Literature Review

Encompasses the literature review on variables that may influence acquisition of midwifery clinical skills by one-year diploma student midwives.

Chapter 3: Research Methodology

Deals with the research methodology, including study sites, research design, population and sampling, data collection methods, data analysis, reliability and validity, and ethical considerations.

Chapter 4: Results, Discussion and Guidelines

Gives a detailed account of the data analysis techniques used and reports on the research findings in the context of the objectives and purpose of the study and guidelines were formulated.

Chapter 5: Conclusions, Limitations and Recommendations

The final chapter places the study into its proper context, significance and limitations. Recommendations provided in this chapter are based on the findings of the study in relation to challenges encountered by one-year diploma student midwives in acquiring midwifery clinical skills.

1.9 Conclusion

In this chapter a brief overview of the study was presented. It included the overview of the study, background, problem statement, aim and objectives and a succinct exposition of the research methodology and study design. The next chapter will deal with literature review.
CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

A literature review relates to all that is written about the topic of interest (Brink, Van der Walt & Van Rensburg, 2012). Polit and Beck (2006) and Burns and Grove (2005) refer to it as a critical summary of existing knowledge on the topic of interest. The purpose of a literature review is to determine the extent to which the topic under study is covered in the existing body of knowledge (Mouton, 2012), and to compare the findings of the existing studies with those of the study at hand (Brink et al., 2012).

2.2 Scope of the Literature Review

In this study, the literature review will cover variables that may influence the acquisition of midwifery clinical skills, like clinical placement, preceptorship, mentoring, role played by educators, supervision, clinical accompaniment, interpersonal skills and other factors related skills acquisition.

2.2.1 Midwifery Clinical Skills

Midwifery clinical skills are techniques, methods, attitudes necessary to execute midwifery care according to the standards set by SANC (SANC, 2005). Midwifery clinical skills underpin midwives’ professional practice—therefore, student midwives need sufficient opportunity to learn, develop and master clinical skills. Facilitating clinical skills development is a key element of midwifery education. Midwifery educators’ role is thus to ensure that skills and knowledge are integrated into the midwifery clinical setting.
2.2.2 Clinical Placement

Clinical placement is the period spent by a learner in clinical and other experiential learning sites to ensure that the purpose of the programme is achieved (SANC, 2005). SANC has prescribed the clinical placement for student midwives as follows:

- 80 hours in antenatal unit
- 360 hours in labour unit
- 160 hours in postnatal unit
- 160 hours in neonatal unit
- 80 hours district (clinic)
- 160 hours night duty (ANC and labour ward)

Thus, a total of 1000 clinical hours should be completed by student midwives (SANC, 2005). Standard V.4 of ICM also requires that the midwifery programme has access to sufficient midwifery practical experiences in a variety of settings to meet the requisite learning needs (ICM, 2010). The period of clinical exposure has been identified by Lavette-Jones, Lathlean, Higgins and McMillan (2011) to impact on learning clinical skills: a shorter period has a negative impact on learning and welcome by clinical staff as it affects their orientation programme.

Clinical placement areas are to meet the learning objectives of the students and level of study and it should be established before the student can be placed (Thorogood & Halls, 2014). In South Africa the clinical area should be accredited for that specific clinical requirement of the student by (SANC, 2013). The first most important stipulation about clinical placement is being welcomed, inducted and orientated to the new practice environment, that is, being valued as a team member (Myall, Levett-Jones & Lathlean, 2008) as affirmed by Beskine (2009) who stated that orientation is the gateway to a successful placement.

Clinical placement is meant to afford students the opportunity to acquire and display the appropriate attitudes, values and moral integrity, to be able to think critically, creatively and make sound decisions and judgement to be regarded as being
Mueller and Billings (2009) referred to the practice exposure of nursing students for learning purposes as service learning. Service learning creates opportunities for students to connect academic learning with service, to learn new skills, think critically, test new roles in situations that encourage risk taking, and promote civic responsibility and personal and professional development as well as mastering learning outcomes (Mongwe, 2007). It is necessary for all employees to receive relevant education and support for effective job performance (Mboniswa, 2006). Therefore, educators should ensure that the area for placement of students to acquire skills meets all the standards as set by statutory bodies (Royal Nursing College, 2013).

Clinical areas in most hospitals pose a problem for acquisition of skills since resources are inadequate. To provide exposure to necessary procedures like monitoring contractions (foetal heartbeat and uterine contractions during pregnancy, typically in the third trimester) with cardiotocography (CTG) in some instances becomes a challenge, as equipment are constantly out of order (Rikhotso, 2010). Ndaba (2013) asserted that newly qualified midwives have sufficient theoretical knowledge, but lack competency in skills which emanates from many factors that impact negatively on their skills and these are related to clinical area during their training. Gcawu (2012) identified a lack of involvement among qualified staff and that procedures were not demonstrated to students according to standard procedure manuals and guidelines. Jokelainen, Turunen, Tossavainen, Jamookeeah and Coco (2010) affirmed this as a need for nurse educators to liaise with unit managers in order to create an environment that is conducive to clinical learning.

Miller (2012) identified enablers and barriers in clinical placement. Enablers are factors like a culture for quality, effective supervision, effective communication and collaboration between students, academic institutions, and placement sites to ensure adequate exposure to learning opportunities, as well as availability of resources and facilities necessary for attainment of learning outcomes. This view was sustained by Epoo, Stonier, Van Wagner and Harney (2012) who stated that collaboration between faculty and midwifery unit will lead to excellent educational and perinatal outcomes. The students themselves take the responsibility for moving forward in their education.
through regularly reviewing their learning portfolios and discussing their progress and learning needs with the mentors.

Organizational culture incorporates values, beliefs and assumptions about the appropriate ways to think and behave in an organization. Culture of quality in the clinical placement includes relationships and best practices in the placement area. A supportive relationship in the practice environment have been shown to improve learning outcomes as it increases learning opportunities, improve psychological safety necessary to encourage student midwives to ask questions and reduce anxiety, and therefore enhances cognitive functioning (Miller, 2012).

Barriers are factors known to reduce the quality of the clinical placement experience and include: occupational stress which induces states of anxiety that inhibit learning, impair performance, and compromise health and well-being, and workplace incivility and aggression which threatens the socio-emotional and physical safety of student midwives in the placement environment. Moreover, Miller (2013) postulates student midwives these days are less matured and have less life experience, lack drive or passion for learning midwifery, have an expectation that their education will be handed to them rather than having to take initiative and be resourceful, and they are less able to think critically.

**2.2.3 Preceptorship**

Preceptorship is a process that focuses on practical training of students and proper functioning of the health facility and hence a model for transmission of clinical knowledge in the profession of midwifery, geared to create an environment conducive for learning and clinical assessment of the learner (Harris, 2007). The Nursing and Midwifery Council (NMC) described preceptorship as a one-to-one relationship between a midwife mentor or preceptor and a midwifery student, an accepted and established model in the health care professions and is considered to be a highly effective method for teaching clinical skills (NMC, 2006). A preceptor is a qualified nurse/midwife who provides guidance and supervision to student midwives during their practice placement (ICM, 2010). The preceptor must be flexible to wear a cap of planner, coach, advocate and a role model for the student midwives. The
The role of preceptorship through clinical experience is foundational to the education of midwives around the globe. Preceptorship provides students with directed, supervised experience in the real world of midwifery. It is about providing support and guidance enabling students to make the transition from student to a responsible midwifery practitioner. This will enable them to practice in accordance with the code, standards and ethics of the statutory body (NMC, 2008). According to ICM (2010) and NMC (2006), a preceptor must demonstrate competency in midwifery practice and clinical education. S/he should have a formal preparation. The preceptor has the following responsibilities:

- Provides positive feedback to student midwives on those aspects of performance that are being undertaken well;
- Provides honest and objective feedback on those aspects of performance that are a cause for concern;
- Assists student midwives to develop a plan of action to remedy these;
- Facilitates student midwives to gain new knowledge and skills;
- Must be aware of the standards, competencies, or objectives set by the SANC that the student midwives are required to achieve, and supports them in achieving these;
- The American College of Nurse-Midwives (2012) prescribes the following criteria for the selection of preceptors;

- Three to five years of clinical experience (and currently practicing) as a midwife;
- Recognized proficiency in clinical and counselling skills;
- Recognized as having a consistent and professional approach to work and teaching student midwives;
- Demonstrate interest in being a preceptor (i.e., interest in understanding and supporting a student’s level of knowledge and willingness to assist each student in achieving mastery of all key skills in a safe and nurturing environment);
- Display understanding of the preceptor’s role and responsibilities;
- Show potential to serve as a strong role model for student midwives;
- Indicate willingness to participate in knowledge and skills updates and willingness to sign a letter of agreement with the midwifery school.

Adequate support from health care management and education institution is necessary to motivate preceptors to perform their roles effectively. Both health care management and faculty and personnel can prepare preceptors either individually or through collaboration. Preceptorship is optimal when its objectives, plans of action and evaluation are stated clearly in the midwifery education curriculum. For effective preceptor supervision, the preceptor/student ratio should be 1:1 (Asirifi, Mill, Myrick & Richardson, 2013).

Lincqurish and Seibold (2007) established that interactions between preceptors and student midwives impacted on student learning and expert clinical teaching was seen as vital for the development of skills and knowledge of student midwives. Helpful midwife preceptors are generally supportive, prepared to share their knowledge, facilitated hands-on practice, allowed mistakes, were positive role models, motivated teachers and encouraged increasing responsibility and decision making and knowledge.

Madisa (2012) suggested that there should be support with regard to improved communication between preceptor and faculty, improved support by the health facility manager and the need for strengthening preceptor training and orientation. Ehrenberg and Haggblom (2007) affirmed the above as they discovered that the limiting factor is that clinical midwives are unprepared for their clinical role while Monareng, Jooste and Dube (2009) identified lack of time and motivation, inability to identify learning opportunities and being inadequately prepared educationally for the role. It has been suggested that a basic degree should be a minimum qualification,
as should regular refresher courses and seminars on clinical teaching courses and educational principles for the preceptors be further requirements (Foster, Ooms & Marks-Maras, 2014).

In West England a program for preceptorship was put in place for newly qualified midwives (NQM). Positive impact of the programme was that there was opportunity for reflection within the programme. In addition, the formal onsite teaching sessions and simulations were valuable. Other NQMs reported that the programme enabled them to become more confident and competent practitioners (Mason & Davies, 2013). On the negative side, some NQMs reported that the degree of confidence they had in their preceptors affected their own self-confidence as practitioners; others expressed dissatisfaction with their preceptor as the NQM would want to do things right and the preceptor wanted to take a short cuts (Mason & Davies, 2013). Hunter, Diegmann, Dyer, Mettler and Ulrich (2007) postulated six areas that constitute negative experience of preceptorship:

- Number of assigned preceptors;
- Their teaching styles;
- Life stresses of preceptors;
- Lack of knowledge;
- Harsh clinical environment; and
- Worst of them all—the “do it my way style”.

They further identified four main weaknesses of preceptors, namely:

- Not providing constant feedback to students;
- Deficiency in addressing specific learning needs of students;
- Lack of skills; and
- Their practices not being evidence-based.

Robinson and Griffiths (2009) postulated the following factors that influence on effective preceptorship:
• The length of preceptorship period – where in those who had periods of four months or longer were more satisfied than those of shorter periods;
• The introduction of more formalized programmes of preceptorship led to an increase in confidence with specific clinical skills;
• Qualified preceptors with diploma were more satisfied with preceptorship than those with certificate trained preceptors and it was regarded as having a key role in newly qualified nurses gaining confidence.

Carlson et al. (2008) described the process that can be used by preceptors, which should be continuous. Steps in the process are adjusting the level of precepting; perform precepting strategy and evaluating the strategy. **First step,** — adjusting the level of precepting — which is getting the picture of where to start as precepting technique will not be the same for everyone. Finding out what student midwives’ expectations are in the relationship. **Second step,** — performing precepting technique, which will involve creating a feeling of security to encourage participation, students are allowed to ask any question. Then lastly evaluate precepting by reflecting on action and assessment of the precepting process.

### 2.2.4 Mentoring

Mentoring involves building a professional relationship between the mentor and the mentee; it consists of nurturing and includes educative and protective elements (NMC, 2008), it is a much broader concept than and includes supervision. NMC (2008) defined a mentor as a registrant who, following a successful completion of an approved mentor preparatory programme, has been accredited by an approved educational institution. A mentor is an experienced person who should guide the student midwives and protects them from controversial situations.

Beskine (2009) regarded a mentor as someone responsible for establishing an effective working relationship through orientation and induction of students and having listening skills. A mentor will further provide coaching as suggested by work strategies. Accordingly, mentors are central to the development of student midwives’ competence and confidence in practice and should not undermine student midwives (Grobler, Warnich, Carrell, Elbert & Hatfield, 2006; Hughes & Fraser, 2009).
Finnerty and Collington (2012) explored the specific strategies used by midwife mentors to mediate practice learning and discovered that there was disparity in techniques used by individual mentors to pass on skills to student midwives. They recommended the need to adopt and use a wider range of instruction techniques to ensure competence in the mentee. According to Bacon (2010), mentors are to be accountable for their decision on the fitness-for-practice that enables entry of students in to the register.

Mentoring facilitate learning by creating a supportive learning environment and enabling individual learning processes, strengthening student professionalism by developing professional attributes and lastly enhancing attainment of professional competence (Jokelainen et al., 2010). Tshabalala (2011) postulated that personnel in clinical areas have different roles in mentoring students, but if their responsibility is not clarified, it can lead to the recommendation that nursing service and nursing education directorates should jointly formulate guidelines for mentoring students in the clinical area. Casey and Clark (2011) and Jokelainen et al. (2010) described the following requirements for successful mentorship:

- Ensuring the applicability of placement;
- Planning and organizing learning opportunities;
- Naming a personal and a substitute mentor;
- Familiarising the student midwife with placement environment — the mentor to be on the same shift with the mentee;
- Accepting the student midwife as a team member; and
- Co-operating with other stake holders who participate in student midwives’ clinical training.

In the United Kingdom (UK) it is a requirement that midwifery students be supported and assessed by mentors in clinical placement. Clinical placements are audited to determine whether they are appropriate for learning. For a midwife to perform the role of mentor s/he must have undertaken an approved mentorship preparation programme or equivalent, have met the NMC defined standards and should attend and record attendance at an annual mentor update (NMC, 2008).
The NMC (2008) has prescribed the following roles for mentors:

- Organising and co-ordinating student learning activities in practice;
- Supervising students in learning situations and providing them with constructive feedback on their achievements;
- Setting and monitoring achievement of realistic learning objectives;
- Assessing total performance, including skills, attitudes and behaviours;
- Providing evidence as required by programme providers of student achievement or lack of achievement;
- Liaising with others, providing feedback, identifying any concerns about the student’s performance and agree action as appropriate.

To achieve these, Foster et al. (2014) recommended that mentors attend regular update courses, be given study days and also be assessed. Some mentors find it difficult to set time aside to meet students’ needs because of clinical workload which is their primary role and administrative responsibility (Papastavrou, Lambrinou, Tsangari & Saarkoski, 2009). There is also a challenge of professional nurses not having been adequately trained or prepared as mentors (Setati, 2013; Foster, Ooms & Marks-Maran, 2014). Sharif and Masoumi (2005) linked inadequate mentoring to mentors’ lack of skills and strategies necessary in clinical areas and unpreparedness of registered nurses to act as mentors.

Jones (2008) ascribed the inability to attain skills by student midwives to inadequate mentoring, whereas, according to Phiri (2011), students’ inability to acquire clinical competency was ascribed to the difference in the carrying out of procedures by the mentors as this was not on par with how it was demonstrated by the clinical instructors or simulated by the lecturers, as affirmed by NMC (2008), as it stresses that consistency is important in mentoring. Hess (2012) and Mntambo (2009) identified attitudes of staff members as the one that leads to students working alone without mentors as they only concentrated on tasks that need to be accomplished at the end of the day.
2.2.5 Supervision

Department of Health (DOH) Domain 2.3 of the national core standards for health establishments in South Africa emphasize clinical safety, clinical care and governance by making it mandatory that health professionals have a formal supervision programme to ensure patient safety (DOH, 2011). Supervision is described as a process of helping supervisees use their skills and knowledge to deliver effective service to the client, thus achieving organizational goals. SANC (2005) described supervision as assistance and support extended to the student midwife by the professional nurse or midwife in a clinical facility with the aim of developing a competent, independent practitioner. It is recognized as an essential component of workplace learning.

Supervision is further described by Nipper (2013) as a formal professional support which enables the practitioner to develop knowledge and clinical competence, assume responsibility for their own practice and enhancing consumer protection and safety of care in complex clinical situations. Supervision has primary components, which are formative, restorative and normative. The formative component focusses on issues of education and professional development of the supervisee; restorative focuses on issues of support with an aim of avoiding burn-out and loss of morale in the supervisee while normative focuses on issues of personal organization, ethics and quality in nursing care practiced by the supervisee (Nipper, 2013).

Foster, Ooms and Marks-Maran (2014) described supervision as a regular in-depth reflection on clinical practice aimed at helping the supervisee to develop high quality practice; it has far-reaching implications, including recruitment, retention and improvement of student morale. Its ultimate aim is to provide optimum service to the user (student midwives) thus also improving quality of care to patients. It should ensure patient safety and promote learner development. Rejon and Watts (2013) identified the following functions of supervision: creating learning relationship, teaching, counselling, consultation, evaluation, and monitoring professional and ethical behaviour of the supervisee. Good supervisory relationships maintain a balance between the challenges posed to the student and the support provided through constructive dialogue and feedback (Miller, 2012). Miller (2012) further
identified the following attributes for effective supervision: ability to form positive relationship and support for students, ability to demonstrate clinical competence, being organized, acting as a role model who display enthusiasm and passion.

According to Driscoll (2007) and Miller (2012), the goals of supervision are, namely: to safeguard standards of practice, to develop the individual, both professionally and personally, ensure support to the learner, promote accountability and excellence in health care. This is supported by Klerk (2010) who identified that programmes for clinical supervisors have to be put in place to close the educational gap between theory and practice in student midwives. This was validated by Sibiya (2012) as he discovered that some registered midwives were not committed to student supervision because of lack of time — though some of the participants in the study complained of not being given attention by qualified staff.

Embo (2014) stated that supervision is a developmental process in the workplace that can be hindered by lack of practitioners’ awareness or mastery of effective supervising strategies and lack of continuity of student-supervisor relationship. A positive experience was expressed by students due to the availability of supervision in a study by Caka as they were being afforded diverse clinical placement where they received good guidance and supervision from registered nurses in the wards of the public hospitals leading to their enjoyment in executing procedures. This created confidence and competency in implementing nursing procedures, as the supervisor was always around (Caka, 2010).

Power is said to be intrinsic in supervision, and this can sabotage the effectiveness of the process. Supervision can be influenced by the difference between the supervisor and supervisee in relation to age, gender, race, cultural background and occupational position (Rejon & Watts, 2013). This notion was also pronounced by Engelbrecht (2012), namely, that undergraduate nursing students often experience intra-professional violence in the clinical area—the most frequent perpetrator being the professional nurses who are their regular supervisors. This can be in the form of belittling, being yelled at or even withholding learning opportunity by not evaluating student or not even securing space for evaluation though students initiate it (Wiley,
Rejon and Watts (2013) postulated that this can be intrinsic in organizational culture, which can potentially produce a less desirable or non-normative professional culture, impacting negatively on quality of student midwives’ education and eventually affect safety of the patients.

### 2.2.6. Clinical Accompaniment

Clinical accompaniment is a structured process by nursing education institutions to facilitate assistance and support to the learner by the educator at the clinical facility to ensure the achievement of the programme outcomes (SANC, 2005). Ayo (2006) investigated the factors influencing clinical teaching of midwifery students. The research pointed out that tutors were rated low as role models in clinical accompaniment due to the fact that they were not taking full responsibility of clinical teaching activities. Accompaniment was also not done as prescribed by SANC. This was affirmed by Yanjanani (2007), Jones (2008) and Mahlasela (2011). Tutors, in turn, need to be approachable and proficient to create a favourable environment for students so that they are not afraid to voice their frustrations and problems as this will help in identifying problems related to skills acquisition (Lehasa, 2008).

Mogale (2011), in a dissertation on student nurses’ experience of their clinical accompaniment, recommended the development of a clinical placement model for bridging course students as the research revealed lack of support in terms of accompaniment. The above was reinforced by Molefe (2011) who suggested that tutors have to plan accompaniment as stipulated by SANC and no student midwife to be in clinical area without accompaniment so that learning opportunities could be created and also for advocacy to be treated more humanly by clinical staff.

### 2.2.7 Interpersonal Relationship

Interpersonal skills are essential precursors to an enriching teaching-learning relationship—the initiative for this relationship lies with educators and mentors. Good interpersonal skills, communication and support of staff create a conducive environment for learning. The mentors should have listening skills, respond appropriately in a caring manner, should be able to note non-verbal clues. This will
avoid conflicts that may hinder learning (Kaphagaweni & Useh, 2013). Makhate (2010) maintained that challenges encountered by diploma students are comparable to those experienced by comprehensive students even though they are perceived as being more proficient than one-year diploma student midwives. This makes one-year diploma student midwives feel discriminated.

Other student midwives’ concerns are that the qualified staff members shout at them instead of guiding them and supporting them (Makhate, 2010 & Janiere, 2010). The discrimination was affirmed by Caka (2010) in the study on the South African military nursing college pupil enrolled nurses’ experiences of the clinical learning environment which pointed out that the clinical environment did not enforce any sense of belonging in the student midwives and thus hindered learning of clinical skills. Furthermore, Engelbrecht (2012) stated that intra-professional violence existed amongst nursing personnel and hinders learning of clinical skills in some instances it can even lead to attrition.

Peter (2008) identified lack of communication between educational institutions and nursing services, clinical staff and clinical facilitators, and between student and clinical staff, as negatively influencing clinical learning. Another study reported that students described clinical staff as being rude and even degrading students in front of patients (Molefe, 2011; Bradbury-Jones, Sambrook & Irvine, 2010). Likewise, research showed that the majority of professional nurses had negative attitudes towards student nurses and were not willing to teach student as some professional nurses lacked confidence (Tshabalala, 2011).

Maintaining high quality standards in the working environment and sensitizing students to the importance thereof may be helpful for the production of competent and knowledgeable midwives (Volschenk, 2009). However, Mabuda (2008) indicated that registered midwives do not perform tasks according to set standards and hence the quality of the student midwife product was doubtful. Gcawu (2012) identified lack of involvement amongst qualified staff and that procedures were not demonstrated to students according to standard procedure manuals and guidelines. Volschenk (2009) corroborated the above assertions as one of the respondents
alluded to the fact that they were left struggling on their own with difficult and unfamiliar tasks, whereas another respondent indicated that staff’s attitude caused her to feel abused in a ward where she was placed as they were not only managing their task, but had also to cope with demands of the workplace environment. Correspondingly, Chabedi (2010) intimated that student midwives were no longer sensitive to clinical learning practice and did not make effort to achieve clinical learning outcomes.

2.2.8 Other Factors Related to Acquisition of Skills

A sense of belonging is an important feature of students’ experiences of ward teams. Students need to be welcomed into the clinical team and feel that they belong before effective learning can take place (Allan, 2010). Bradbury-Jones et al. (2010) indicated that a receptive welcome on placement appears to have an impact on students’ self-esteem and sense of belonging. The consequences of not feeling as though they belong included distress, detachment and disengagement (Allan, 2010). The amount of time students spent with the mentor influences the quality of student midwives placement experience. This was considered in relation to whether students were able to work with their mentor during the first week in a new placement, had regular time with them throughout the duration of the placement and were able to spend three or more shifts working with them, in addition to other protected time each week (Myall, Levett-Jones & Lathlean, 2008).

Mhlaba (2011) indicated that the amount of time a mentor can spend with a student is influenced by various factors, including workload, increased number of students in the ward in relation to the number of registered midwives, coupled with a shortage of resources. Chunyi, Zhang and Yan (2009) and Papastavrou et al. (2009) reported that workload and stressful work environment and lack of time contributed to lack of energy to engage in caring, which consequently affected student mentoring. Shortage of resources, policies related to off-duty wherein students were required to work a 12 hours straight shift and overcrowding of students hindered the mentoring process (Harrison, Lyons & Fisher, 2009).
The study by Longworth (2012) suggested that learning in a clinical skills laboratory is considered to hinder acquisition of clinical skills as it is regarded as unrealistic by the majority of students. Also, practising on a manikin was not the same as carrying out procedures on real women and babies. However, some student midwives believed that skills training in the skills laboratory increased their confidence for performing skills on women and babies in clinical practice. Thus, individual learning style has an effect on how skills are learnt. Furthermore, timelines between the demonstration of the procedure by a mentor and exposure to the real procedure in practice by the learner were also articulated by students to have a detrimental effect on transferability.

2.3 Conclusion

The researcher conducted a literature review on the factors that are generally assumed and demonstrated to be necessary to enhance clinical learning of midwifery students. These included clinical accompaniment, mentoring, preceptorship and supervision. The literature review will have brought out that if all these aspects were implemented in accordance with the prescribed and set criteria or standards, the student product would be more proficient in executing the required clinical procedures in practice settings. Good interpersonal relationship is also of paramount importance in enhancing the aforementioned aspects, as borne out by the literature review. The next chapter will discuss methodology.
CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the methodology and procedures applied to obtain the data required for the study. The research methodology includes the research design, study population, sampling techniques, data collection instrument, data analysis and ethical aspects of the research (Burns & Grove, 2009).

3.2 Research Methodology

A quantitative research method was used in this study. Quantitative research is a formal, objective, systematic process in which numerical data are used to obtain information about the world because it focuses on a relatively small number of concepts and begins with preconceived ideas about how concepts are interrelated. A descriptive, cross-sectional research method was used in this study (Burns & Grove, 2005). In a descriptive cross-sectional design, the researcher does not manipulate any variables—and to determine the relationship between variables, the researcher searches for accurate information about the characteristics of a single subject (Brink et al., 2012).

3.3 Study Sites

The hospitals that constituted study sites are situated in the following districts of Limpopo Province: Greater Sekhukhune, Waterberg and Vhembe. The hospitals are Dilokong, Jane Furse Memorial, Philadelphia and St. Rita’s in Greater Sekhukhune; Siloam hospital in Vhembe district, and Mokopane hospital in Waterberg district.
(Figure 3.1). These study sites are nursing schools which train one-year diploma student midwives.

![Map of Limpopo Province health facilities](source)


**Figure 3.1:** Map of Limpopo Province health facilities

### 3.4 Research Design

Research design is a blueprint for conducting a study that maximizes control over extraneous variables. It implies an explicit structure and systematic plan of how the research procedure will be carried out to answer the research question (Burns & Grove, 2009). In this study, a cross-sectional descriptive study was conducted using a self-administered questionnaire. According to Polit and Beck (2012), a randomized cross-sectional survey design is associated with descriptive studies that examine groups of people at one point in time. To determine the relationship between variables, the researcher will search for information about the characteristics of a single subject (Brink et al., 2012).
3.4.1 Descriptive Design

In this study, the researcher searched for accurate information about the characteristics in the respondents by analysis of the frequencies and percentages of respondents to the questions in the questionnaire (Brink et al., 2012).

3.4.2 Population and Sampling

3.4.2.1 Population

According to Brink et al. (2012), the study population is the entire group of persons or objects that is of interest to the researcher and that is those that meet the criteria that the researcher is interested in studying. In this study, the population comprised of all one-year diploma student midwives in Limpopo Province in the following hospitals: Dilokong: 15; Jane Furse Memorial: 20; Mokopane: 28; Philadelphia: 20; Siloam: 20 and St. Ritas’:20. Donald Fraser Hospital was replaced by Philadelphia Hospital as they are all midwifery nursing schools; they both had a population of 20 student midwives. Students from Donald Fraser Hospital were scattered and could not be reached due to SANC examinations which were written early in the month. Total population: 123 student midwives.

3.4.2.2 Sampling

Sampling is a process of drawing a number of cases from a population to represent the entire population (Adler & Clark, 2008). A sample comprises elements or a subset of the population considered for actual inclusion in the study. A representative sample matches the population in terms of its mix of features and relies on using a selection procedure that includes all relevant factors, variables, events and matches the proportion of the overall population (Denscombe, 2010). In this study, the researcher used the whole population as a sample due to the small size of the population, total participants were 104.

❖ Sample Size

In quantitative research, a larger simple is advocated, the larger the sample the more representative are the results and the smaller will be the sampling error. In this study,
the whole population was used as the population was small (Denscombe, 2010).

- **Inclusion Criteria**

  All the students doing one-year diploma in midwifery (R254), in selected hospitals in Limpopo Province.

- **Exclusion Criteria**

  One-year diploma student midwives who were on remedial programme due to extensive experience in the clinical area than those who were attempting midwifery for the first time, were excluded.

### 3.4.3 Data Collection

A self-administered questionnaire (Annexure VI) was formulated and encompassed the following sections: Section A: Demographic Data; Section B: Welcome and Orientation; Section C: Supervision; Section D: Knowledge and Practice; Section E: Competency; Section F: Evaluation and Monitoring; and Section G: Resources. The questionnaire also contained a portion for comments and suggestions. Data were collected through the self-administered questionnaire which was accompanied by a participant information (Annexure V) form which clearly explained that respondents could exercise a choice of opting out,

The questionnaire was delivered to the participants by the researcher to the following hospitals: 1 Dilokong, 2 Jane Furse Memorial, 3 Mokopane, 4 Philadelphia, 5 Siloam and 6 St. Rita’s. The researcher allowed respondents to complete the questionnaires without coercion in private rooms and collected questionnaires afterwards. Data were collected from Jane Furse Hospital and Dilokong Hospitals on 21 May 2014. At 09h00, the researcher reported at Jane Furse Hospital and was given a room where respondents assembled and filled the questionnaire in the presence of a registered nurse in charge to avoid coercion from the researcher.

The researcher then went to Dilokong where data were collected at 14h00. Data were collected from St. Ritas Hospital on 27 May 2014 and the process was repeated at
Philadelphia Hospital on 29 May 2014. Data from Siloam and Mokopane Hospitals were collected from June through to July 2014 as respondents were not available at the same location. At all the institutions, privacy was provided and respondents discouraged from discussing the questionnaire. The respondents took about 30-45 minutes to fill in the questionnaire.

3.4.4 Pilot Study

A pilot study is a smaller version of the proposed study conducted to refine the methodology and similar subjects with the same setting are used (Schneider, Whitehead, Elliott, LoBiondo-Wood & Haber, 2007; Polit & Beck, 2012). The questionnaire was pretested at Seshego Hospital to determine its clarity and validity. Out of 20 students, 19 managed to fill in the questionnaire. Some questions were restructured as the responses from the piloted site were not clear and revealed some ambiguities, as highlighted by Terreblanche, Durrheim and Painter (2008) that a pilot study helps in identifying potential problems with the design—particularly the instrument. The site was excluded from the main study.

❖ Pilot Study Results

Cronbach’s Alpha was used to check reliability of the data collection instruments. This statistical coefficient is used as a reliability index to estimate internal consistency or homogeneity of a measure composed of several constructs (Polit & Beck, 2006). A value of 0.90 indicates high reliability, a value of 0.80 indicates moderate reliability and a value of 0.70 indicates acceptable reliability. The Cronbach’s Alpha values of the data collection tool (questionnaire) for this research were as follows: Section B=0.836; Section C= 0.410 which indicated that there was no internal consistency and the instrument was adjusted for this section and as such was not included during analysis as it was not testing same thing as other factors; Section D= 0.867; Section E= 0.850; Section F= 0.924; Section G= 0.834. These values meant that instrument was reliable.
3.4.5 Data Analysis

The data collected was coded — this is a process by which raw data are given a standardized form. In quantitative research, coding involves assigning a number to each observation (Adler & Clark, 2008; Denscombe, 2010; Floyd & Fowler, 2009). The format of the questionnaire provided codes for probable answers to questions, and the codes did not overlap so that the responses fell into only one category. Data were captured on Microsoft Office Excel 2010 by the researcher and sent to the statistician for analysis. Data were analyzed on SPSS version 22 software. Cross-tabulation was used to examine whether the demographic factors had an influence on the attainment of skills acquired by the respondents.

Cronbach’s coefficient Alpha was used to test internal consistency of knowledge, practice, competency, supervision and resources. As mentioned, Cronbach’s coefficient Alpha is an estimate of consistency of data collection tool. A significance level of p< 0.05 was used. The Mann-Whitney U test was used to test the null hypothesis that the two independent sample groups have been drawn from populations possessing equal medians (Polit & Beck, 2012). The Kruskal–Wallis Test was used because the data analyzed were ordinal (Utts & Heckard, 2007).

3.4.6 Reliability and Validity

3.4.6.1 Reliability

Reliability relates to how we measure, a reliable instrument should yield the same result each time it is used (Moule & Goodman, 2009). According to Polit and Beck (2012), reliability has to do with accuracy and consistency of the information obtained in a study. The pilot study was conducted to ensure the reliability of the data collection tool as this would ensure that there is internal consistency in the questions asked.

3.4.6.2 Validity

Validity refers to the ability to produce findings that are in agreement with the theoretical or conceptual values. It refers to the extent to which we can draw sound inferences from the data; it is to ensure that none of the measures and scores used in
the research will introduce systematic bias into the data (Moule & Goodman, 2009). Simons (2009) substantiated that validity is concerned with how the merit of a study is established, whether it is sound, defensible, coherent, well-grounded, appropriate to the case and worthy of recognition. To ensure validity, the researcher conducted a pilot study to determine whether the data collection instrument measured what the researcher actually wanted to measure.

❖ **Content Validity**

Content validity refers to an assessment of how well the instrument represents all components of the variables to be measured (Brink et al., 2012). According to Polit and Beck (2012), content validity can measure both affective and cognitive domains—for cognitive domain, the question would be how representative are the test questions to the topic. In this study, content validity was ensured by composing a questionnaire with questions that addressed demographic information, orientation in various sections that the students were placed to acquire expected skills; knowledge and practice, competency, resource availability and suggestions for improvement because if these issues were well addressed, attainment of skills by students would be ensured.

❖ **Face Validity**

In face validity, the instrument appears to measure what it is supposed to measure based on intuitive judgement made by the experts in the field (Brink et al., 2012). An instrument that has face validity has an inclination to persuade people to participate (Polit & Beck, 2012). The instrument constructed for this study encompassed headings that guided what information was needed and the participants were requested to just tick the appropriate column so that, at a glance, the respondents could see what to fill in.

3.5 **Ethical Considerations**

3.5.1 **Permission to conduct the study**

The research proposal was submitted to the University of Limpopo - Medunsa Research and Ethics Committee and ethical clearance was granted (Annexure III).
The researcher submitted the proposal together with ethical clearance from the university to the Limpopo Province Department of Health, to request permission to collect data from different nursing education institutions (hospital study sites), it was granted (Annexures I, IIa-IIe). A consent form (Annexure IV) that had to be filled in before participating in the study was provided. Letters from selected hospitals were granted for the approval of the study to be undertaken (Annexures IIa-IIe).

3.5.2 Consent

Consent involves getting an informed permission from those respondents the researcher will interview, question, observe or take materials from. It involves reaching agreement about the uses of the collected data, and how their analysis will be reported and disseminated; and it is about keeping to such agreements when they have been reached. Respondents should decide to take part in the study on their own volition, without coercion or any undue influence (Burns & Grove, 2005; Blaxter, Hugles & Tight, 2008). In this study, consent (Annexure IV) was obtained from the participants after the researcher explained what the research entailed (Brink et al., 2012).

3.5.3 Anonymity

Anonymity refers to the principle of keeping the identity of participants in secret (Mouton, 2012). Anonymity exists if the subjects’ identity cannot be linked to the data, even by the researcher (Burns & Grove, 2009). During data collection participants’ names were not used. Consent forms (Annexure IV) were given to participants separately from the questionnaires so that the researcher could not trace the questionnaires to filled consent forms.

3.5.4 Confidentiality

Confidentiality refers to the act of keeping under lock-and-key any information that respondents may give to the researcher (Mouton, 2012). Codes were used instead of respondents’ names to avoid divulging information about respondents. Those who helped to interpret data could therefore not link the information to the respondents.
3.5.5 Non-coercive disclaimer

The respondents were informed that participation in the study was voluntary and refusal to participate would not involve any penalty.

3.5.6 Option to withdraw

The respondents were informed that they may discontinue participation in the study at any time without penalty or loss of benefit and that the researcher has the right to encourage the respondents if they felt they would not be able to complete the study so as to decrease the number of those who wanted to withdraw (Burns & Groove, 2009). This was clearly specified in the consent form (Annexure IV).

3.6 Conclusion

Chapter 3 outlined the research design and methodology for this study. The design of the study was explained and the measuring instrument or questionnaire is provided in Annexure VI. The data collection tool was described and how its validity and reliability was ensured. Furthermore, the researcher discussed the data collection process and how ethical principles were observed. The data interpretation and discussion are presented in the next chapter.
CHAPTER 4

RESULTS AND DISCUSSION

4.1 Introduction

In this chapter the analysis, interpretation of data and the results will be discussed. The aim of this study was to determine challenges encountered by one-year diploma student midwives in acquiring clinical skills at the selected hospitals in Limpopo Province. The objectives of this study were to:

- Describe the challenges encountered by one-year diploma student midwives in acquiring clinical skills at the selected hospitals in the Limpopo Province.

- Identify factors that affect student midwives’ acquisition of midwifery clinical skills.

- Identify if there is a relationship between the demographic factors and attainment of midwifery skills by one-year diploma student midwives.

Data were analysed using SPSS version 22 with the aid of a statistician. Descriptive statistics such as frequencies, percentages and cross-tabulations were used for closed-ended questions. Open-ended questions 8 and 9, which needed input from student midwives about improvement of midwifery training, the analysis was done manually. Parametric methods like ANOVA were not applicable in testing the hypothesis in this study, since the assumptions of normally distributed sample data were not met. Therefore, the Mann-Whitney U test and Kruskal-Wallis test were used to determine the relationship between knowledge and practice with demographic data and between competency and demographic data (Utter & Heckard, 2007). A significant level of 0.5 was used. The results are described in the sections that follow.
4.2 Presentation of Results

4.2.1 Response Rate

Response rate is the number of people who completed the survey divided by the number of eligible people sampled (Floyd & Fowler, 2009). The targeted population for the study was 123 and the number of responses counted was 104. The response rate was 84.6% which is representative of the whole population—used as the sample (Tredoux & Durrheim, 2006)

4.2.2 Section A: Demographic Data

4.2.2.1 Gender Distribution of the Respondents

![Gender distribution of the respondents](image)

**Figure 4.1:** Gender distribution of the respondents

Figure 4.1 illustrates the gender distribution of the sample. Respondents consisted of 89.4% females and 10.6% males which is representative as according to Nursing Education strategic plan, strategic objective 3 which states that every nursing
education institution should aim at 10% males in every programme per intake, this standard should be maintained (DOH, 2010).

4.2.2.2 Age Distribution of the Respondents

Figure 4.2: Age distribution of the respondents

Figure 4.2 indicates that most of the participants were between 40-49 and 50-60 years old, representing 41.4% and 36.6%, respectively. The age of these student midwives correspond with extensive period they have been in the nursing field. The fact that most started nursing as auxiliary nurses and upgraded to enrolled nursing and then to registered nurses, are presently training for midwifery.
4.2.2.3 Marital Status of the Respondents

Figure 4.3: Marital status of the respondents

Figure 4.3 shows marital status of the respondents as follows: 30.8% single, 59.6% married, 3.8% divorced and 5.8% widowed

4.2.2.4 Experiences of the Respondents as a Nurse

Table 4.1: Experiences of the respondents as a nurse

<table>
<thead>
<tr>
<th>Experience in Years</th>
<th>ENA</th>
<th></th>
<th>EN</th>
<th></th>
<th>PN</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
</tr>
<tr>
<td>0</td>
<td>27</td>
<td>26</td>
<td>6</td>
<td>5.8</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>&lt;5</td>
<td>29</td>
<td>27.9</td>
<td>35</td>
<td>33.7</td>
<td>62</td>
<td>59.6</td>
</tr>
<tr>
<td>5-10</td>
<td>37</td>
<td>35.6</td>
<td>40</td>
<td>38.5</td>
<td>32</td>
<td>30.8</td>
</tr>
<tr>
<td>11-15</td>
<td>7</td>
<td>6.7</td>
<td>12</td>
<td>11.5</td>
<td>4</td>
<td>3.8</td>
</tr>
<tr>
<td>&gt;15</td>
<td>4</td>
<td>3.8</td>
<td>11</td>
<td>10.5</td>
<td>6</td>
<td>5.8</td>
</tr>
</tbody>
</table>

ENA: Enrolled Nursing Auxiliary; EN: Enrolled Nurse; PN: Professional Nurse.
Table 4.1 shows that all respondents had some experience as a professional nurse (PN), as this is a criterion for training one-year diploma midwifery students. Of the respondents, 26% did not have experience as an enrolled auxiliary nurse (ENA) and 5.8% did not have experience as an enrolled nurse (EN). Most respondents had experience of 5-10 years as an ENA, EN and PN which rated 35.6% 38.5% and 30.8%, respectively.

**Table 4.2: Respondents’ reasons for enrolling for the course**

<table>
<thead>
<tr>
<th>Participants’ reasons for doing the course</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Like working with pregnant women</td>
<td>26</td>
<td>25%</td>
</tr>
<tr>
<td>Expand knowledge</td>
<td>40</td>
<td>38.5%</td>
</tr>
<tr>
<td>Pre-requisite for another course</td>
<td>30</td>
<td>28.8%</td>
</tr>
<tr>
<td>Supervisor said it is a requirement for the unit</td>
<td>8</td>
<td>7.7%</td>
</tr>
</tbody>
</table>

4.2.2.5 Respondents’ Reasons for Enrolling for the Course

Table 4.2 indicates that 28.8% of the respondents came for training as the course was a pre-requisite for the other courses they wanted to do and 7.7% did midwifery because supervisors said it is required. 38.5% respondents wanted to expand their knowledge while 25% liked working with pregnant women. Those who did midwifery as it was a pre-requisite and those who were required to do it as requirement by the supervisor for placement might not have the intrinsic motivation for the qualification which will have devastating effect on the quality of midwifery as indicated by Motlolometsi and Schoon (2012) who postulated that some student on integrated nursing program are compelled to do midwifery as it was incorporated in the curriculum whereas Rajan (2007) indicated that intrinsic motivation has a positive effect on learning outcomes.
### 4.2.3 Section B: Welcome and Orientation of Respondents in Different Sections of the Maternity Unit

**Table 4.3:** Welcome and orientation of respondents in different sections of the maternity unit

<table>
<thead>
<tr>
<th>Statements on welcome and orientation of respondents in different units</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
</tr>
<tr>
<td>Antenatal unit</td>
<td>48</td>
<td>46.2</td>
<td>33</td>
<td>31.7</td>
</tr>
<tr>
<td>Labour unit</td>
<td>57</td>
<td>54.8</td>
<td>34</td>
<td>32.7</td>
</tr>
<tr>
<td>Postnatal unit</td>
<td>44</td>
<td>42.3</td>
<td>44</td>
<td>42.3</td>
</tr>
<tr>
<td>Neonatal unit</td>
<td>54</td>
<td>51.9</td>
<td>31</td>
<td>29.8</td>
</tr>
<tr>
<td>At the clinic</td>
<td>62</td>
<td>59.7</td>
<td>28</td>
<td>26.9</td>
</tr>
</tbody>
</table>

Percentages were used and frequencies left out though initial interpretation had them both for the sake of minimizing data as percentages were derived from frequencies. Agree was added with strongly agree as they were positive responses and disagree and strongly disagree also added together to summarize the responses. Table 4.3 indicates that 77.9% of respondents agreed to have been orientated in antenatal clinic (ANC) and 22.1% disagreed. Of the respondents, 87.5% were orientated in the labour ward and 22.5% were not, whereas for the postnatal ward 84.6% agreed and 15.4% disagreed. In the neonatal unit, 81.7% of the respondents agreed and 18.3% disagreed whereas at clinic 86.6% were orientated and 13.4% disagreed that they were not.

Analysis of participant responses to this section of the questionnaire is summarized in Table 4.3 which implies an average mean score for orientation as 86.9% on the positive responses and 13.1% on the negative responses—thus, on average, orientation was perceived as valuable. Orientation is very important as it can serve as a good foundation for students’ performance as affirmed by Du Toit (2013), who
indicated that students who were not well orientated experienced negative clinical contact, supported by Quinn and Hughes (2007) who stated that the first step in induction is orientation in the department as it allays anxiety. Bradbury-Jones, Sambrook and Irvine (2010) alluded to the fact that a receptive welcome on placement appears to have an impact on student midwives’ self-esteem and sense of belonging thus establishing effective working relationship, Similarly Thopola, Kgole and Mamogobo (2013) affirmed the above matter as they indicated that lack of orientation hampered professional growth.

4.2.4 Section C: Supervision of Respondents in the Maternity Unit

Table 4.4 indicates that 90.5% of the respondents agreed that they were obliged to report when leaving the ward and 9.5% said they were not obliged to report which means they might have been away from work without their supervisor’s knowledge. Of the respondents, 88.5% agreed that they were delegated duties while 11.5% disagreed. This implies that the students were being engaged all the time, with 85.5% agreeing that, after completing the task given they had to sign whereas 14.5% disagreed, suggesting that there was re-enforcement of accountability.

Of the respondents, 71.2% agreed that the supervisor also signed for completion of task while 28.8 disagreed, though a high percentage agreed there seemed to be some laxity on the side of the supervisor. About 76% agreed that registered midwives supervised students when doing procedures and while 24% disagreed. Of the respondents, 64.5% agreed that shortage of staff hindered supervision of students while 35.5% did not agree this has a bad impact on student midwives’ learning. With regard to question whether the supervisor signed for students’ hours worked per day, 71.1% agreed, while 29.9% disagreed.

The average mean score for supervision obtained from analysis of respondents’ answers this section of the questionnaire was 78.8% (Table 4.4), suggesting that supervision of students was done, but standards could be improved upon as most of the time, especially in labour units, students midwives need to have an experienced midwife next to them. According to Driscoll (2007), the ultimate goals of supervision
are to safeguard standards of practice, develop the individual — both professionally and personally, ensure support to student midwives, promote accountability and excellence in health care. Miller (2012) postulates that ward leadership that demonstrates a positive attitude is critical in promoting learning culture, which is contrary to what is depicted by the above results as 21, 2% indicated lack of supervision likewise Thopola, et al., (2013) pointed out the problem of lack of supervision of community service personnel which is necessary to enhance their competency, this can hamper the health of recipient of care.
### Table 4.4: Supervision of respondents in the maternity unit

<table>
<thead>
<tr>
<th>Respondents’ statements on supervision</th>
<th>Always</th>
<th>Very Often</th>
<th>Sometimes</th>
<th>Hardly Ever</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
</tr>
<tr>
<td>I am obliged to report when leaving the ward for lunch, tea or anything</td>
<td>72</td>
<td>69.2</td>
<td>22</td>
<td>21.3</td>
<td>4</td>
</tr>
<tr>
<td>I was delegated duties to perform</td>
<td>57</td>
<td>54.8</td>
<td>35</td>
<td>33.7</td>
<td>5</td>
</tr>
<tr>
<td>I was required to sign for completing the delegated duties.</td>
<td>64</td>
<td>61.5</td>
<td>25</td>
<td>24.0</td>
<td>5</td>
</tr>
<tr>
<td>Supervisor signs for me after I carried out the given task.</td>
<td>45</td>
<td>43.3</td>
<td>29</td>
<td>27.9</td>
<td>20</td>
</tr>
<tr>
<td>Registered midwives supervise students when doing procedures</td>
<td>45</td>
<td>43.3</td>
<td>34</td>
<td>32.7</td>
<td>19</td>
</tr>
<tr>
<td>Shortage of staff hindered supervision of students.</td>
<td>34</td>
<td>32.7</td>
<td>33</td>
<td>31.8</td>
<td>25</td>
</tr>
<tr>
<td>The supervisor signs for students’ hours worked per day.</td>
<td>50</td>
<td>48.1</td>
<td>24</td>
<td>23.1</td>
<td>11</td>
</tr>
</tbody>
</table>
4.2.5 Section D: Respondents’ Knowledge and Practice of Midwifery

Table 4.5 is a summary of the responses on knowledge and actual practice of midwifery. Very often and always were regarded as positive responses. Of the respondents, 93.3% agreed that they were shown how to examine a pregnant woman, while 6.7% disagreed. The majority of respondents (94.2%) agreed to have been shown how to auscultate foetal heart with a foetal scope and 5.8% disagreed. Also, 92.3% were shown how to do per vaginal examination and 7.7% indicated they were not. 78.9% agreed they were shown how to do pelvic examination, 21.1% disagreed. 84.6% agreed that they were shown how to monitor contractions and 5.4% disagreed. 93.3% agreed that they were shown how to plot a partograph and 6.7% did not agree. 91.3% confirmed being shown how to cut an episiotomy, while 8.7% did not agree. 92.3% agreed that they were shown how to suture an episiotomy and 7.7% disagreed. 94.3% indicated they were shown how to conduct delivery and 5.7% disagreed. 88.4% were shown how to examine a postnatal woman, but 11.6% were not. 89.4% agreed that they were shown how to examine a newborn baby and 10.6% disagreed.

Of the respondents, 87.5% agreed that clinical skills were demonstrated according to a procedure manual while 12.5% disagreed. 61.5% have attended in-service on review of maternal death and 38.5% did not. 55.8% agreed that they have attended review of neonatal death and 44.2% never had. 45.2% were once engaged in compilation of statistics, whereas 54.8% indicated to the contrary. 85% agreed that they have attended morbidity and mortality reviews. 86.6% agreed that the clinical area enabled them to correlate theory with practice while 13.4% disagreed. 92.3% agreed that their maternity case register was reviewed whereas 7.7% disagreed. 95.2% felt competent to conduct normal vaginal deliveries whiles 4.8 disagreed. Participation in review of maternal and neonatal deaths exposed the student midwives to analysis of the causes of death of mothers and babies. Gaps were identified and remedial steps taken and student midwives were learning in the process. Responses on these factors indicated that students were not fully exposed to this exercise and thus gaps existed in their clinical exposure and practice of midwifery. To avoid the above happening Dartey (2012) advocated that issues of maternal death review methods and processes be included in training and education of midwives.
**Table 4.5: Respondents’ knowledge and practice of midwifery**

<table>
<thead>
<tr>
<th>Respondents’ statements on knowledge and practice of midwifery</th>
<th>Always</th>
<th></th>
<th>Very Often</th>
<th></th>
<th>Sometimes</th>
<th></th>
<th>Hardly Ever</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
</tr>
<tr>
<td>Shown examination of a pregnant woman</td>
<td>71</td>
<td>68.3</td>
<td>26</td>
<td>25.0</td>
<td>4</td>
<td>3.8</td>
<td>3</td>
<td>2.9</td>
</tr>
<tr>
<td>Shown auscultation of foetal heart with a foetal scope</td>
<td>67</td>
<td>64.4</td>
<td>31</td>
<td>29.8</td>
<td>5</td>
<td>4.8</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Shown per vaginal examination on a pregnant woman</td>
<td>66</td>
<td>63.5</td>
<td>30</td>
<td>28.8</td>
<td>6</td>
<td>5.8</td>
<td>2</td>
<td>1.9</td>
</tr>
<tr>
<td>Shown pelvic assessment</td>
<td>50</td>
<td>48.1</td>
<td>32</td>
<td>30.8</td>
<td>17</td>
<td>16.3</td>
<td>5</td>
<td>4.8</td>
</tr>
<tr>
<td>Shown monitoring of contractions</td>
<td>53</td>
<td>51.0</td>
<td>35</td>
<td>33.6</td>
<td>11</td>
<td>10.6</td>
<td>5</td>
<td>4.8</td>
</tr>
<tr>
<td>Shown plotting a partograph</td>
<td>66</td>
<td>63.5</td>
<td>31</td>
<td>29.8</td>
<td>5</td>
<td>4.8</td>
<td>2</td>
<td>1.9</td>
</tr>
<tr>
<td>Shown performance of episiotomy</td>
<td>62</td>
<td>59.6</td>
<td>33</td>
<td>31.7</td>
<td>7</td>
<td>6.8</td>
<td>2</td>
<td>1.9</td>
</tr>
<tr>
<td>Shown suturing an episiotomy</td>
<td>67</td>
<td>64.4</td>
<td>29</td>
<td>27.9</td>
<td>6</td>
<td>5.8</td>
<td>2</td>
<td>1.9</td>
</tr>
<tr>
<td>Shown conducting of normal vaginal delivery</td>
<td>69</td>
<td>66.4</td>
<td>29</td>
<td>27.9</td>
<td>4</td>
<td>3.8</td>
<td>2</td>
<td>1.9</td>
</tr>
<tr>
<td>Shown physical examination of a postnatal woman</td>
<td>67</td>
<td>64.4</td>
<td>25</td>
<td>24</td>
<td>9</td>
<td>8.7</td>
<td>3</td>
<td>2.9</td>
</tr>
</tbody>
</table>
Table 4.5: Respondents’ knowledge and practice of midwifery (continued)

<table>
<thead>
<tr>
<th>Respondents’ statements on knowledge and practice of midwifery</th>
<th>Always</th>
<th>Very Often</th>
<th>Sometimes</th>
<th>Hardly Ever</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
</tr>
<tr>
<td>Shown examination of a newborn baby</td>
<td>70</td>
<td>67.3</td>
<td>23</td>
<td>22.1</td>
</tr>
<tr>
<td>Clinical skills demonstrated according to procedure manual</td>
<td>57</td>
<td>54.8</td>
<td>33</td>
<td>32.7</td>
</tr>
<tr>
<td>Attended in-services on review of maternal death</td>
<td>28</td>
<td>26.9</td>
<td>26</td>
<td>34.6</td>
</tr>
<tr>
<td>Attended meeting on review of neonatal death</td>
<td>24</td>
<td>23.1</td>
<td>34</td>
<td>32.7</td>
</tr>
<tr>
<td>Was engaged in compilation of monthly statistics</td>
<td>20</td>
<td>19.2</td>
<td>27</td>
<td>26</td>
</tr>
<tr>
<td>Attended maternal morbidity and mortality reviews meetings</td>
<td>44</td>
<td>42.3</td>
<td>34</td>
<td>32.7</td>
</tr>
<tr>
<td>Correlated theory with practice</td>
<td>58</td>
<td>55.8</td>
<td>32</td>
<td>30.8</td>
</tr>
<tr>
<td>Maternity case register reviewed</td>
<td>51</td>
<td>49</td>
<td>45</td>
<td>43.3</td>
</tr>
<tr>
<td>Competency in conducting normal vaginal delivery</td>
<td>47</td>
<td>45.2</td>
<td>52</td>
<td>50</td>
</tr>
</tbody>
</table>
4.2.5.1 Non-Parametric Test for Gender with Knowledge and Practice

A non-parametric statistical method, namely the Mann-Whitney U test, was performed on the variables as indicated. A significance level of 0.05 was applied. Medians were used instead of the means as this is a non-parametric test. The findings indicated that there was no significant difference in knowledge and practice across gender of the respondents. The medians were 3.041 for males and 3.208 for females, though the large difference in sample sizes between males and females diminished the ability to detect the real difference (p=0.371).

4.2.5.2 Non-Parametric Test for Age Category with Knowledge and Practice

The Kruskal-Wallis test was used to test relationship between age and knowledge. No significant difference was found across all age categories as depicted in Table 4.5; the median is 3.041 for ≤39 years, 3.250 for 40-49 years and 3.270 for 50 years and above (p=0.234).

4.2.5.3 Non-Parametric Test for Marital Status with Knowledge and Practice

The Mann-Whitney U test was used on marital status and competence. No significant deference was found across marital status. Medians for single were 3.104, married 3.229, divorced 3.208 and widowed 3.229 (p=0.262). The Kruskal Wallis test was utilized to compare qualification with knowledge and practice. No significant difference was found across all categories of qualifications. Median for Grade 10 and Diploma in General Nursing (DGN) were 3.125 and for Grade 12 and DGN 3.208, respectively (p=0.948).

4.2.6 Section E: Respondents’ Competency in Midwifery Practice

Of the respondents 93.3% affirmed that they were competent in performing vaginal examination and 6.7% were not (Table 4.6). 75% could perform pelvic examination and 84.6% felt that they could monitor contractions. 91.3% were certain that they could plot a partograph and 8.7 were not. 92.3 thought they were able to interpret a partogram whereas 7.7% were not so confident. 84.6% would be able to cut an episiotomy while 15.4 were not confident. 92.3% believed they could suture an episiotomy while 7.7% were doubtful.
### Table 4.6: Respondents’ competency in midwifery practice

<table>
<thead>
<tr>
<th>Respondents’ statements on competency in midwifery practice</th>
<th>Excellent</th>
<th></th>
<th>Good</th>
<th></th>
<th>Less Competent</th>
<th></th>
<th>Incompetent</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
</tr>
<tr>
<td>Performing vaginal examination</td>
<td>43</td>
<td>41.3</td>
<td>54</td>
<td>52</td>
<td>7</td>
<td>6.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doing pelvic examination</td>
<td>33</td>
<td>31.7</td>
<td>45</td>
<td>43.3</td>
<td>21</td>
<td>20.2</td>
<td>5</td>
<td>4.8</td>
</tr>
<tr>
<td>Monitor uterine contractions</td>
<td>43</td>
<td>41.3</td>
<td>45</td>
<td>43.3</td>
<td>15</td>
<td>14.4</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Plotting a partograph</td>
<td>49</td>
<td>47.1</td>
<td>46</td>
<td>44.2</td>
<td>5</td>
<td>4.9</td>
<td>4</td>
<td>3.8</td>
</tr>
<tr>
<td>Interpreting a partograph</td>
<td>49</td>
<td>47.1</td>
<td>47</td>
<td>45.2</td>
<td>8</td>
<td>7.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cutting an episiotomy</td>
<td>41</td>
<td>39.4</td>
<td>47</td>
<td>45.2</td>
<td>12</td>
<td>11.6</td>
<td>4</td>
<td>3.8</td>
</tr>
<tr>
<td>Suturing an episiotomy</td>
<td>46</td>
<td>44.2</td>
<td>50</td>
<td>48.1</td>
<td>7</td>
<td>6.7</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Conducting delivery</td>
<td>48</td>
<td>46.2</td>
<td>49</td>
<td>47.1</td>
<td>7</td>
<td>6.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Examine a postnatal woman</td>
<td>53</td>
<td>51</td>
<td>45</td>
<td>43.3</td>
<td>4</td>
<td>3.8</td>
<td>2</td>
<td>1.9</td>
</tr>
<tr>
<td>Examine a newborn baby</td>
<td>53</td>
<td>51</td>
<td>43</td>
<td>41.3</td>
<td>8</td>
<td>7.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Care of a newborn baby</td>
<td>49</td>
<td>47.1</td>
<td>50</td>
<td>48.1</td>
<td>4</td>
<td>3.8</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
93.3% were confident that they would be able to conduct a delivery while 6.7% were less competent. 94.3% were able to examine a postnatal woman while 92.3% indicated that they could examine a newborn baby and 7.7% were not so competent. 95.2% were positive that they could care for a newborn baby and 4.8% felt less certain.

Analysis of student midwives’ responses gathered from Section E of the questionnaire is depicted in Figure 4.6 and yielded an average competency rating of 89.8% (positive side). However, the negative rating of 10.2% is worrying because competency is a core deliverable for decision making, that is, whether a midwife would be able to manage the women in labour alone or would need assistance from an advanced midwife or a doctor. If a midwife is not sure of the clinical presentation of the labouring woman, decision making would be difficult and this would invariably compromise the woman’s health. Those student midwives who rated themselves incompetent are also a cause for concern because they are expected to manage the women in labour alone after completion of training and, besides, the respondents had already written their final examination at the time study. This is par with findings of Zwane (2011) on Exploration of perceived clinical competences of newly qualified midwives working in hospitals at Ethekwini municipality as between 29.8 and 32.5% of newly qualified midwives rated themselves incompetent in some of the midwifery skills. This attributed to lack of preceptors as Carlson et al., (2008) postulates that it is the responsibility of the preceptor to provide individualised education and create learning opportunities where theoretical knowledge is linked to practical skills, Setumo (2013) concur with this as she indicated that working relationship with maternity staff was not allowing students to function effectively and was limiting their chances of exploring the learning outcomes.

4.2.6.1 Non-Parametric Test for Gender with Competency

The Mann-Whitney test which is a non-parametric test was done to determine the relationship between gender and competency. A significant level value of 0.05 used. The male respondents reported more competence than their female counterparts. Their median values were recorded as 2.000 for males and 1.636 for females
This is contrary to Meyer’s views as males in his study expressed the frustration and being lost when training midwifery and wished they had of option out but as it was integrated in their four year course they were obliged to do it (Meyer, 2012).

4.2.6.2 Non-Parametric Test for Age Category with Competency

Relationship between age and competency was determined using the Kruskal-Wallis test with a significance level set at 0.5. Their values were as follows: 1.818 for ≤ 39 years; 1.727 for ages between 50 years and above and 1.6364 for 40-49 years (p=0.470). Thus, there was no significant difference amongst age categories with competency. The results are supported by Rajan (2007) as there was no significant relationship between demographic variables and motivation in his study.

4.2.6.3 Non-Parametric Test for Marital Status with Competency

The Mann-Whitney test was used to test relationship between marital status and competency (significance level of 0.05). Values were as follows: married respondents more competent 1.727, followed by widowed at 1.681, single with 1.636 and divorced with 1.181, p-value is 0.408, indicating that there were no significant differences in competency across marital status.

4.2.7 Section F: Evaluation and Monitoring of student midwives in the Maternity Ward

Table 4.7 indicates that 72.1% of the respondents agreed that the schedule was drawn for student midwives’ evaluation in the ward while 27.9% disagreed. 68.3% agreed that the schedule for student midwives evaluation was adhered to and 31.7% disagreed. 78.8% stated that procedures were done according to the procedure manual while 21.2% disagreed, this is a remarkable number because if standards are not always adhered to, this can lead to compromised quality of the student midwives product as confirmed by Mabuda (2006) and Gcawu (2012) who identified lack of involvement amongst qualified staff and that procedures were not demonstrated to
students according to standard procedure manuals and guideline as required by SANC
Table 4.7: Respondents’ statements on evaluation and monitoring in the maternity ward

<table>
<thead>
<tr>
<th>Respondents’ statements on evaluation and monitoring</th>
<th>Always</th>
<th>Very Often</th>
<th>Sometimes</th>
<th>Hardly Ever</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
</tr>
<tr>
<td>Schedule is drawn for students’ evaluation in the ward</td>
<td>42</td>
<td>40.4</td>
<td>33</td>
<td>31.7</td>
<td>18</td>
</tr>
<tr>
<td>Schedule for students’ evaluation is adhered to</td>
<td>39</td>
<td>37.5</td>
<td>32</td>
<td>30.8</td>
<td>19</td>
</tr>
<tr>
<td>Procedures are done according to procedure manual</td>
<td>44</td>
<td>42.3</td>
<td>38</td>
<td>36.5</td>
<td>16</td>
</tr>
<tr>
<td>I demonstrated procedure before they were signed</td>
<td>48</td>
<td>46.1</td>
<td>42</td>
<td>40.4</td>
<td>9</td>
</tr>
<tr>
<td>My case register is signed after all the information regarding a specific case is filled in</td>
<td>68</td>
<td>65.4</td>
<td>27</td>
<td>26</td>
<td>5</td>
</tr>
</tbody>
</table>
86.5% declared that they demonstrated procedure before they were signed for while 8.6% disagreed. 91.3% stated that their case register was signed after all the information regarding a specific case was filled in.

**4.2.8 Section G: Resources in the Maternity Ward**

Table 4.8 depicts that 77.9% of the respondents agreed that blood pressure (BP) apparatuses were available while 22.1% disagreed. 69% confirmed that BP apparatuses were functioning well while 30.8% negated this. 65.4% of respondents agreed that the cardiotocography (CTG) machine was functioning well, while 34.6 disagreed. 66.3% indicated that CTG tracing paper were available whereas 33.7% disagreed. 44.3% pointed out that urine testing strips were available and 55.75 disagreed. 76% agreed that the suction machine was functioning well, but 24% disagreed. 82.7% were certain that an oxygen apparatus was available while 17.3% disagreed. 81.7% stated that the oxygen apparatus was always ready while 18.3% disagreed. 86% of the respondents indicated that delivery packs were available while 13.4% pointed towards the contrary. 77.9% stated that delivery packs were complete and 22.1% said they were not. Respondents affirmed the availability of the following: baby packs (63.5%), suturing materials (69.3%), intravenous solutions (61.6%), emergency drugs (85.6%), updated emergency trolley (84.6%) and 58.6% indicated that they improvised when performing procedures whereas 41.4% disagreed. Although the percentage of unavailability might appear small in comparison to availability of resources, it still has a negative effect on learning and provision of quality maternal and child health care. This scenario likely the reason for improvising which also affects the quality of the student midwives product as affirmed by Chunyi, Zheng and Yan (2009) who asserted that lack of resources hinders the process of mentoring.
Table 4.8: Respondents’ statements on resources in the maternity ward

<table>
<thead>
<tr>
<th>Respondents’ statements on resources in the maternity ward</th>
<th>Always</th>
<th>Very Often</th>
<th>Sometimes</th>
<th>Hardly Ever</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
</tr>
<tr>
<td>BP apparatuses available</td>
<td>58</td>
<td>55.8</td>
<td>23</td>
<td>22.1</td>
<td>16</td>
</tr>
<tr>
<td>BP apparatuses functioning</td>
<td>44</td>
<td>42.3</td>
<td>28</td>
<td>26.9</td>
<td>25</td>
</tr>
<tr>
<td>CTG machine functioning</td>
<td>40</td>
<td>38.5</td>
<td>28</td>
<td>26.9</td>
<td>30</td>
</tr>
<tr>
<td>CTG tracing paper available</td>
<td>44</td>
<td>42.3</td>
<td>25</td>
<td>24</td>
<td>22</td>
</tr>
<tr>
<td>Urine testing strips</td>
<td>25</td>
<td>24</td>
<td>21</td>
<td>20.3</td>
<td>33</td>
</tr>
<tr>
<td>Suction machine functioning</td>
<td>41</td>
<td>39.5</td>
<td>38</td>
<td>36.5</td>
<td>16</td>
</tr>
<tr>
<td>Oxygen apparatus available</td>
<td>47</td>
<td>45.2</td>
<td>39</td>
<td>37.5</td>
<td>10</td>
</tr>
<tr>
<td>Oxygen apparatus ready</td>
<td>47</td>
<td>45.2</td>
<td>38</td>
<td>36.5</td>
<td>10</td>
</tr>
<tr>
<td>Delivery packs available</td>
<td>72</td>
<td>69.2</td>
<td>18</td>
<td>17.4</td>
<td>7</td>
</tr>
<tr>
<td>Delivery packs complete</td>
<td>58</td>
<td>55.8</td>
<td>23</td>
<td>22.1</td>
<td>17</td>
</tr>
</tbody>
</table>

Continued...
### Table 4.8: Respondents’ statements on resources in the maternity ward (continued)

<table>
<thead>
<tr>
<th>Respondents’ statements on resources in the maternity ward</th>
<th>Always</th>
<th></th>
<th>Very Often</th>
<th></th>
<th>Sometimes</th>
<th></th>
<th>Hardly Ever</th>
<th></th>
<th>Never</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
</tr>
<tr>
<td>Baby packs available</td>
<td>40</td>
<td>38.5</td>
<td>26</td>
<td>25</td>
<td>19</td>
<td>18.3</td>
<td>4</td>
<td>3.8</td>
<td>15</td>
<td>14.4</td>
</tr>
<tr>
<td>Appropriate suturing material available</td>
<td>42</td>
<td>40.4</td>
<td>30</td>
<td>28.9</td>
<td>26</td>
<td>25</td>
<td>4</td>
<td>3.8</td>
<td>2</td>
<td>1.9</td>
</tr>
<tr>
<td>Intravenous solutions are all available</td>
<td>38</td>
<td>36.5</td>
<td>26</td>
<td>25.1</td>
<td>36</td>
<td>34.6</td>
<td>2</td>
<td>1.9</td>
<td>2</td>
<td>1.9</td>
</tr>
<tr>
<td>Emergency drugs available</td>
<td>48</td>
<td>46.2</td>
<td>41</td>
<td>39.4</td>
<td>10</td>
<td>9.6</td>
<td>3</td>
<td>2.9</td>
<td>2</td>
<td>1.9</td>
</tr>
<tr>
<td>Emergency trolley updated</td>
<td>57</td>
<td>54.8</td>
<td>31</td>
<td>29.8</td>
<td>12</td>
<td>11.5</td>
<td>1</td>
<td>1.0</td>
<td>3</td>
<td>2.9</td>
</tr>
<tr>
<td>Improvise when performing procedures</td>
<td>30</td>
<td>28.8</td>
<td>31</td>
<td>29.8</td>
<td>32</td>
<td>30.9</td>
<td>4</td>
<td>3.8</td>
<td>7</td>
<td>6.7</td>
</tr>
</tbody>
</table>
4.3 Factors Hindering Student Midwives’ Acquisition of Skills

These factors were summarised from responses on question 8 and 9 of the questionnaire on annexure VI which were summarised as human resource, shortage of material resources, registered midwives attitudes towards student midwives and managerial problems.

4.3.1 Human Resources

- Lack of clinical instructors
- Shortage of tutors for accompaniment of students
- Shortage of registered midwives to supervise and teach students, sometimes students work with one registered nurse.

Chunyi, Zheng and Yan (2009) and Papastavrou et al., (2009) postulated that workload, stressful work environment and lack of time contribute to lack of energy to engage even in caring, which consequently affects student mentoring.

4.3.2 Shortage of Material Resources

- No proper skills laboratories in most institutions;
- Shortage of delivery beds;
- No equipment like BP meters, CTG machines, saturation monitors;
- Surgical store resources like urinary catheters, syringes, tracing paper for CTG and many more which are critical for execution of midwifery duties.

Harrison, Lyons and Fisher (2009) alluded to the fact that shortage of resources and overcrowding of students hinder the mentoring process, renders nursing unsafe as leads to improvising (Thopola et al., 2013) affirmed, as one participant alluded to the fact of eventually conducting delivery with bare hands.
4.3.3 Registered Midwives’ Attitudes towards Student Midwives

Respondents identified the following attitudes from registered midwives:

- Old midwives were not willing to teach the students;
- Registered midwives were not friendly to student midwives and are bully;
- Midwives in the labour room did not have patience to teach students midwives;
- Student midwives were almost always blamed;
- Registered midwives did not want to help students and were not willing to supervise students;
- Registered midwives not approachable; and
- Discrimination of students, poor support, utterances like *we are not tutors and as such not teaching students*—registered midwives can make students hate midwifery.

Attitudes have been identified by many researchers as hindering learning. In 2010, Makhate discovered that diploma students experienced discrimination as qualified staff members shouted at them instead of guiding and supporting them (Makhate, 2010). Several studies have provided evidence that the majority of professional nurses have negative attitude towards student nurses, were not willing to teach student nurses and were rude and had unapproachable attitudes that can make you hate midwifery (Mntambo, 2009; Molefe, 2011; Tshabalala, 2011; Hess, 2012; Du-Toit, 2013). The aforementioned demeanours were corroborated in a recent study of the magnitude of intra-professional violence in which those who were exposed to it used alcohol, smoking and overeating and still others would fall ill and consult which might lead to being booked off sick and this is disruptive to learning (Engelbrecht, 2012).
4.3.4 Managerial Problems

Managerial problems that impact negatively on student midwives’ acquisition of skills include the following:

- Students being used to cover staff shortages rather than to learn;
- Long working hours like 07h00–19h00;
- Lack of supervision—working the whole day without learning anything;
- Lack of student accompaniment;
- Heavy load of emergencies, no time to teach students;
- Accommodation issues affecting student midwives attendance; and
- Disagreements between lecturers and ward supervisors.

The points of student midwives’ being used to cover staff shortages and the heavy load of emergencies are in line with a study of nursing students’ exposure to the clinical learning environment and its influence on their specialization zone, namely, that students experienced working in theatre as a form of nurse slavery and policies like those related to off-duty wherein a student will be required to work a 12 hours straight shift exposed student midwives to physical exhaustion which is not conducive to learning (Du Toit, 2013). Taherian and Shekarchian (2008) concur with the results as they postulate that when mentoring doctors there is a conflict of interest as training can be compromised for provision of service. Emslie (2012) is of the opinion that incongruence in performance of clinical role of clinical instructors is due to insufficient collaboration between clinical area and the university, workload and insufficient training of clinical facilitators.
4.4 Guidelines to address the challenges that are encountered by one-year diploma student midwives.

The methodology that was used to in the formulation of guidelines was described in details in chapter 3. The guidelines were derived from the numeric results of the study in order to support one-year diploma student midwives. These guidelines are based according to lack of proper equipments; shortage of clinical instructors; lack of skills laboratories; long working hours; inadequate accompaniment of students a maternity units, lack of supervision and mentors; and attitudes of midwives.

4.4.1 Lack of proper equipment in maternity units as indicated on responses on availability of resources (Table 4.8), important equipments like CTG machine BP machines, babies’ saturation monitors and nasal prongs for administering oxygen to babies,

**Guideline 1:** Re-inforce the implementation of policy on standard equipment to be purchased for all maternity units in Limpopo Province; to afford uniform exposure of one-year diploma student midwives and to improve their skills and ultimately safeguarding the health of mothers and babies.

4.4.2 Shortage of clinical instructors, lecturers and registered midwives which led to one-year diploma student midwives lacking supervision and working the whole day without learning anything as indicated on 4.3.4 under managerial problems.

- **Guideline 2:** Staffing norms to be implemented in both the nursing school and the maternity unit; to improve accompaniment and supervision of student midwives.
4.4.3 Disagreement between nursing schools and hospitals as some student midwives indicated that there was poor support by registered midwives while others would tell them that they are not tutors.

- **Guideline 3**: Registered midwives to be conscientized regarding their teaching role to students, in order to prevent medico legal hazards towards pregnant women. Harmonious collaboration to be fostered amongst multidisciplinary team, to encourage support of one-year diploma student midwives.

4.4.4 Long working hours like 07h00–19h00 for one-year diploma student midwives which is cited by students under managerial problems.

- **Guideline 4**: Ensure implementation of policy of hours to be worked per week by one-year diploma student midwives, and this is to comply with basic conditions of employment act to avoid exhaustion which can hinder experiential learning.

4.4.5 Inadequate accompaniment of one year diploma student midwives as reported under managerial problem.

- **Guideline 5**: Re-enforcement of accompaniment of student midwives and mechanism put in place to monitor compliance by all midwifery lectures in the in all nursing schools for support and teaching of one year diploma midwifery students.

4.4.6 Lack of supervision of one-year diploma student midwives by registered midwives as indicated on table 4.4 where average of 28.8% complained of lack of supervision.
• **Guideline 6:** Re-enforcement of supervision for one year diploma students by the nursing school and the maternity unit staff to fast track the learning of skills by the student midwives.

4.4.7 Lack of preceptors to mentor one-year diploma student midwives.

• **Guideline 7:** Restructuring of preceptors’ post in training hospitals by the department of health to mentor student midwives.

4.4.8 Registered midwives not friendly to student midwives, they are bully and some do not have patience to teach students midwives, discriminating students.

• **Guideline 8:** Workshops on professional conduct to re-inforce the understanding of ethical and professional obligations for managers and supervisors. To provide conducive learning environment for the one-year diploma student midwives including freedom from psychological harm in order to foster good working relationship.

4.4.9 Lack of proper skills laboratories in most nursing education institutions was cited by one -year diploma student midwives as a hindrance to acquisition of skills, as some of the psychomotor skills are better learnt if simulated first.

• **Guideline 9:** Review of skills laboratories in nursing education institutions; so that improvements can be made to counteract skill deficit in one – year diploma student midwives.
4.5 Conclusion

This chapter provided a detailed account of the data analysis techniques used and reports on the research findings against the background of the objectives and purpose of the study. This chapter highlighted the results of the research project in relation to the statistical analysis performed using SPSS version 22 with the aid of a statistician. Descriptive statistics such as percentages and cross-tabulation were used for closed-ended questions. Data were presented in tables and graphs and results were discussed. Guidelines were formulated. The next chapter places the study into its proper context, significance and limitations.
CHAPTER 5

CONCLUSIONS OF THE STUDY, LIMITATIONS AND RECOMMENDATIONS

5.1 Introduction

The chapter presents the conclusions, limitations and recommendations of the study. The objectives of the study were to (i) Identify challenges encountered by one-year diploma student midwives in acquiring skills; (ii) Identify factors that affect student midwives acquisition of clinical skills; (iii) Determine whether there was relationship between demographic factors and acquisition of skills and (iv) Develop guidelines to support one-year diploma student midwives at selected hospitals in Limpopo Province.

5.2 Conclusions of the study

Conclusion was made according set objectives as indicated by the responses of one year diploma student midwives.

5.2.1 Objective one: The following challenges were identified that were encountered by one-year diploma student midwives in acquiring clinical skills:

- Unavailability of important equipment as depicted by Table 4.8 and other factors mentioned by respondents on 8 and 9 of the that were not listed in section G of the questionnaire like babies’ saturation monitors and nasal prongs for administering oxygen to babies.
5.2.2 **Objective two**: To identify factors that hindered student midwives to acquire clinical skill.

Attitudes of qualified staff that made their training difficult and are as listed below:

- Registered midwives not willing to help, teach and supervise students;
- Registered midwives are not friendly to students and are bossy;
- Midwives in the labour room do not have patience to teach students, students always blamed;
- There is discrimination of students, poor support, utterances like “we are not tutors and as such not teaching students;”
- Students not treated with respect—they are treated like children; and
- Registered midwives can make you hate midwifery

Lack of resources like: CTG and BP machines which are extremely necessary when monitoring a woman in labour so that deviations from normal can be identified quickly. This is depicted in Table 4.8. CTG unavailability recorded 34.2%. Other resources like suturing material unavailability recorded 30%. Improvising when performing procedures recorded 58% and this is a great hindrance for learning.

5.2.3 **Objective three**: To determine whether there is a relationship between demographic factors and acquisition of skills. Findings were as follows:

- The males reported more competency than females (p=0.033). The median values were recorded as 2.000 for males and 1.636 for females.
- There was no significant difference in competency amongst age categories. Their values were 1.818 for ≤ 39 years, for ages of 50 years and above it was 1.727 and 1.6364 for 40-49 years (p=0.470).
• No significant difference was found amongst marital status—scores for married was 1.727, 1.681 for widowed, 1.636 for single and 1.181 for divorced (p=0.408).

5.2.4 Objective four: To develop guidelines to support one-year diploma student midwives at selected hospital in Limpopo Province

The study revealed the challenges that are encountered by one-year diploma student midwives in acquisition of clinical skills; as such the guidelines were formulated in the previous chapter to address those challenges.

5.3 Recommendations

5.3.1 Department of Health

• Staffing norms to be implemented in both the nursing school and the maternity unit; to improve accompaniment and supervision of student midwives.

• Improve skills laboratories in training institutions.

• Provide appropriate equipment in clinical placement areas and in nursing education institutions for simulation of procedures.

• Establish formal mentorship programs in training hospitals.

5.3.2 Training Hospitals

• Workers for change workshops to be arranged to address attitudes of professional nurses..

• Motivate for establishment of post for preceptors to mentor students.
• Re-enforce supervision in the maternity wards to monitor student midwives’ education to ensure off-duties are balanced so that students are never left alone.

5.3.3 Nursing Education Institutions and Training of One-Year Diploma Student Midwives

• Employment of preceptors in maternity wards in order to assist with mentoring and supervision of student midwives.

• In-service education for registered midwives for improvement of their knowledge and skills.

• Nursing managers and the principals of colleges should meet periodically and discuss student midwives training issues.

• Student midwives’ challenges to be addressed timeously by the relevant stakeholders.

• Skills laboratory to have adequate teaching material resources.

5.3.4 Midwifery Discipline

• Regular meetings of clinical and college staff to address problems.

• Re-enforce accompaniment of one-year diploma students midwives.

5.3.5 Policy

• Policy on working hours per shift for students to be addressed, as straight shift of 07/19—three days in a week is too tiresome for one-year diploma student midwives.

• Policy on one-year diploma student midwives accompaniment by lecturers.
Policy regarding collaboration between nursing schools and hospitals.

5.3.6 Research

It is recommended that research be continued on the same topic on registered midwives that mentor one-year diploma student midwives so that their views about one-year diploma student midwives’ product can be studied.

5.4 Limitations of the Study

The limitation of the study was that not all midwifery training institutions could be reached as planned due to time constraints and departure of some students from their training institutions. In Vhembe, data could not be collected from Donald Fraser Hospital as student midwives had already departed at the time of data collection and were scattered over the whole Limpopo Province.

5.5 Conclusion

This chapter embodied the conclusion made from findings of the research. Limitation of the study was acknowledged. Based on the responses from student midwives attached to the clinical sites, guidelines were formulated and the study also made several recommendations for further research and to different departments, stakeholders and policymakers to be sensitive and responsive to the challenges encountered by one-year diploma student midwives in acquiring clinical skills at selected hospitals in the Limpopo Province. These recommendations may as well have practice implications and useful applications at other similar nursing education institutions across South Africa.
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ANNEXURE I

REQUEST FOR PERMISSION TO CONDUCT THE STUDY (FORM LETTER)

P.O. Box 5202
Polokwane North
0750
20/05/2014

Re: Research in your Hospital

Dear Sir/Madam

I am hereby requesting permission to undertake a research study in your hospital in the labour units.

I am a student at the University of Limpopo Turfloop Campus and a study project is required from me for the completion of my Master’s degree in Public Health. I have since chosen a topic for my research project, namely: “Challenges Encountered by One-year Diploma Student Midwives Placed Level one Hospitals, Limpopo Province”. Hence your permission will grant me access to the research participants.

Much discretion and sensitivity will be exercised in this regard given that I am a lecturer at Seshego Hospital Nursing School, teaching one-year diploma student midwives (R.254, 1975, paragraph 2).
Attached please find my research proposal, clearance letter from the university and approval from the Limpopo Department of Health

Yours truly

Manthata M J

Contact numbers: Cell: 072 078 2161, Email: manthataj@gmail.com
PERMISSION TO CONDUCT THE STUDY: LIMPOPO PROVINCE DEPARTMENT OF HEALTH

Enquiries: Lalit Shamia

Ref: 4/2/2

Menthata JM
University of Limpopo
Sowenga
0727

Greetings,
Re: Challenges encountered by one-year diploma student midwives in acquiring clinical skills at hospitals in Limpopo Province.

1. The above matter refers.
2. Permission to conduct the above mentioned study is hereby granted.
3. Kindly be informed that:
   • 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 wherever possible.

Your cooperation will be highly appreciated.

[Signature]
Head of Department

[Signature]
Date

18 College Street, Polokwane, 0700, Private Bag, 4502, POLOKWANE, 0700
Tel: (015) 253 8000, Fax: (015) 253 8211/2/Website: http://www.limpopo.gov.za

The heartland of Southern Africa – development is about people
ANNEXURE IIb

PERMISSION TO CONDUCT THE STUDY: ST. RITA’S HOSPITAL

Enq: M. T. Nkoana
Date: 24.05.2014
To: To whom it may concern
From: St. Ritas Hospital,

Subject: Permission to conduct situational analysis

We acknowledge receipt of your application letter to conduct a research at our institution.

Kindly be informed that permission has been granted. You are scheduled for the 28th 05 2014 to conduct the research.

We wish you luck in the research

Kind Regards,

[Signature]

DR. K.E MANAMELA (CHIEF EXECUTIVE OFFICER)
ANNEXURE IIc

PERMISSION TO CONDUCT THE STUDY: PHILADELPHIA HOSPITAL

TO: MJ MANTHATA
FROM: OFFICE OF THE CHIEF EXECUTIVE OFFICER
DATE: 27 MAY 2014
RE: APPLICATION TO CONDUCT A RESEARCH

I am pleased to inform you that permission to conduct Research has been granted.

Please take note that the Research will be conducted in your own spare time and at your own cost. You are also expected to make necessary arrangements with Maternity Unit.

Wishing you all the best in your studies.

[Signature]
Chief Executive Officer

PHILADELPHIA HOSPITAL
PO. BOX 1, DENNITON, 1030
2014 -05- 27
CHIEF EXECUTIVE OFFICER
LIMPOPO PROVINCE

CONFIDENTIAL

[Handwritten note]
ANNEXURE IId

PERMISSION TO CONDUCT THE STUDY: JANE FURSE MEMORIAL HOSPITAL

DEPARTMENT OF HEALTH AND SOCIAL DEVELOPMENT
JANEFURSE MEMORIAL HOSPITAL

Enquiry: Tshega M.R
Tel : 013 265 9400
Fax : 013 265 9647

Private bag X429
JANE FURSE
1085

Mamotja M.J
P.O BOX 5202
Polokwane North
0750

Madam

REQUEST TO CONDUCT RESEARCH : YOURSELF

The above matters:

1. You are welcome to collect data from our midwifery students on 21 May 2014 at 10:00 in maternity ward.

2. You are further requested to bring along an approval letter from the office of the HOD Limpopo Department of Health.

3. Students will be available at maternity at the above mentioned time.

Hoping to have been helpful to you

Thanks

Chief Executive Officer

Date

21/05/2014
Ref: 4/2/2
Eng.: Shai L S
Date: 03/07/2014
To: M.J Manthata
Seshego Hospital
Private Bag X 4016
Seshego
0742

SUBJECT: RESEARCH ON CHALLENGES ENCOUNTERED BY ONE YEAR DIPLOMA STUDENT MIDWIVES IN ACQUIRING CLINICAL SKILLS AT HOSPITALS IN LIMPOPO PROVINCE.

Dear Madam

1. The above matter refer
2. Kindly note that your request to conduct the study in Seshego Hospital has been granted

Thanking you

[Signature]

CHIEF EXECUTIVE OFFICER

DATE

03/07/2014
ANNEXURE III

UNIVERSITY OF LIMPOPO-MEDUNSA CAMPUS RESEARCH AND ETHICS COMMITTEE CLEARANCE CERTIFICATE
STATEMENT CONCERNING PARTICIPATION IN A RESEARCH PROJECT

NAME OF THE STUDY: CHALLENGES ENCOUNTERED BY ONE-YEAR DIPLOMA STUDENTS MIDWIVES PLACED AT SELECTED HOSPITALS IN 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 aims 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 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 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 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.

………………………………………  ……………………………………………
Name of volunteer  Signature

………………………………………  ……………………………………………
Place  Date
Statement by the Researcher

1. I provided verbal and written information regarding this Study.
2. I agree to answer any future questions concerning the Study as best as I am able.
3. I will adhere to the approved protocol.

Manthata J M …………………  ……………  ……………..  …………

Name of t Researcher Signature Date Place
I, Mrs Manthata MJ, am undertaking a research study on one-year diploma student midwives.

The aim is to determine the challenges encountered by these students’ midwives in the selected hospitals that they are placed in Limpopo.

Objectives of the study are to:

- Explore and describe the challenges encountered by one-year diploma student midwives in acquiring clinical skills selected hospitals in Limpopo Province;
- Identify factors that affect students’ acquisition of clinical skills; and
- Determine if there is a relationship between demographic data and acquisition of clinical skills

The project will help improve the standard of midwifery education and improve the quality of the student product.

You are therefore requested to complete the attached questionnaire by ticking on the description that best describe your views and hand in your respond into the provided box.

The questionnaire may take about 30 to 40min to complete.

The information given will be kept confidential, as such; you are not required to fill in your name.

Researcher’s contact details are as follows:

Cell phones: 0720782161/0780581608

Email address: manthataj@gmail.com.
ANNEXURE VI

QUESTIONNAIRE

SECTION A: DEMOGRAPHIC DATA
Please tick in the correct box

1. Age

<table>
<thead>
<tr>
<th>Age</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-29 years</td>
<td>1</td>
</tr>
<tr>
<td>30-39 years</td>
<td>2</td>
</tr>
<tr>
<td>40-49 years</td>
<td>3</td>
</tr>
<tr>
<td>50-59 years</td>
<td>4</td>
</tr>
<tr>
<td>Older than 60</td>
<td>5</td>
</tr>
</tbody>
</table>

2. Gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>1</td>
</tr>
<tr>
<td>Female</td>
<td>0</td>
</tr>
</tbody>
</table>

3. Marital Status

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>1</td>
</tr>
<tr>
<td>Married</td>
<td>2</td>
</tr>
<tr>
<td>Divorced</td>
<td>3</td>
</tr>
<tr>
<td>Widowed</td>
<td>4</td>
</tr>
</tbody>
</table>

4. Qualifications

<table>
<thead>
<tr>
<th>Qualifications</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 10 + Diploma in General Nursing</td>
<td>1</td>
</tr>
<tr>
<td>Grade 12+ Diploma in General Nursing</td>
<td>2</td>
</tr>
</tbody>
</table>

5. Experience as an Enrolled Auxiliary Nurse

<table>
<thead>
<tr>
<th>Experience</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;5 years</td>
<td>1</td>
</tr>
</tbody>
</table>
6. Experience as an Enrolled Nurse

<table>
<thead>
<tr>
<th>Experience Level</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;5 years</td>
<td>1</td>
</tr>
<tr>
<td>5–10 years</td>
<td>2</td>
</tr>
<tr>
<td>11-15 years</td>
<td>3</td>
</tr>
<tr>
<td>&gt;15 years</td>
<td>4</td>
</tr>
</tbody>
</table>

7. Experience as a Professional Nurse

<table>
<thead>
<tr>
<th>Experience Level</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;5 years</td>
<td>1</td>
</tr>
<tr>
<td>5–10 years</td>
<td>2</td>
</tr>
<tr>
<td>11-15 years</td>
<td>3</td>
</tr>
<tr>
<td>&gt;15 years</td>
<td>4</td>
</tr>
</tbody>
</table>

8. Institution in which you are training presently as a midwife.

<table>
<thead>
<tr>
<th>Institution</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dilokong</td>
<td>1</td>
</tr>
<tr>
<td>Donald Fraser</td>
<td>2</td>
</tr>
<tr>
<td>Jane Furse</td>
<td>3</td>
</tr>
<tr>
<td>Mokopane</td>
<td>4</td>
</tr>
<tr>
<td>Siloam</td>
<td>5</td>
</tr>
<tr>
<td>St Ritas</td>
<td>6</td>
</tr>
<tr>
<td>Seshego</td>
<td>7</td>
</tr>
</tbody>
</table>

9. What was your preferred training institution?

<table>
<thead>
<tr>
<th>Institution</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dilokong</td>
<td>1</td>
</tr>
<tr>
<td>Donald Fraser</td>
<td>2</td>
</tr>
<tr>
<td>Jane Furse</td>
<td>3</td>
</tr>
</tbody>
</table>
10. What is your reason for doing midwifery?

<table>
<thead>
<tr>
<th>Reason</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>I like working with pregnant woman.</td>
<td>1</td>
</tr>
<tr>
<td>I want to expand my knowledge.</td>
<td>2</td>
</tr>
<tr>
<td>It is a pre-requisite for the post basic course I want to do.</td>
<td>3</td>
</tr>
<tr>
<td>My supervisor said it is a requirement for the unit I am working in.</td>
<td>4</td>
</tr>
<tr>
<td>Other reasons, please specify.</td>
<td>5</td>
</tr>
</tbody>
</table>

SECTION B: WELCOME AND ORIENTATION

Please tick the statement that best suits how you feel about the matter

Strongly Agree (SA)=1, Agree (A)=2, Disagree (D)=3, Strongly Disagree (SD)=4

<table>
<thead>
<tr>
<th>Statement</th>
<th>SA</th>
<th>A</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I was well orientated in antenatal unit on arrival</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. I was well orientated in labour unit</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. I was well orientated in postnatal unit</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. I was well orientated in neonatal unit</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. I was well orientated at the clinic</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
SECTION C: SUPERVISION

Very Often= 1, Often=2, Sometimes=3, Hardly Ever=4, Never=5

<table>
<thead>
<tr>
<th>Statement</th>
<th>Very Often</th>
<th>Often</th>
<th>Sometimes</th>
<th>Hardly Ever</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I am obliged to report when leaving the ward for lunch, tea or anything.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. I am sent to do things not related to work.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. I was delegated duties to perform.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. I was required to sign for completing the delegated duties.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. Supervisor signs for me after I carried out the given task.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6. Registered midwives supervise students when doing procedures.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7. Shortage of staff hindered supervision of students.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8. The supervisor signs for students’ hours worked per day.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

SECTION D: KNOWLEDGE AND PRACTICE

Very Good (VG)=1, Good (G)=2, Poor (P)=3, Very Poor (VP)=4

<table>
<thead>
<tr>
<th>Description of knowledge or practice</th>
<th>VG</th>
<th>G</th>
<th>P</th>
<th>VP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I was shown how to examine a pregnant woman.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. I was shown auscultate foetal heart with a foetal scope.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. I was shown do per vaginal examination.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. I was shown to do pelvic examination.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. I was shown how to monitor contractions.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6. I was shown how to plot a partograph.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
7. I was shown to perform an episiotomy.  
8. I was shown how to suture an episiotomy.  
9. I was shown how to conduct a normal vaginal delivery.  
10. I was shown how to examine a postnatal woman.  
11. I was shown how to examine a newborn baby.  
12. Clinical skills are demonstrated according to procedure manual.  
13. I attended in-service education on review of maternal death.  
15. I was engaged in compilation of statistics.  
16. I attended morbidity and mortality review meetings.  
17. The clinical area enables me to correlate theory with practice.  
18. My maternity case register was reviewed.  
19. Competency conducting a normal vaginal delivery.

SECTION E: COMPETENCY

How do you rate your competency in doing the following procedures?
Excellent= 1, Good=2, Less Competent=3, Incompetent=4

<table>
<thead>
<tr>
<th>Competency</th>
<th>Excellent</th>
<th>Good</th>
<th>Less Competent</th>
<th>Incompetent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Performing vaginal examination.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. Doing pelvic examination</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. Monitor contractions</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. Plotting a partograph</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. Interpreting a partograph</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
6. Cutting an episiotomy  
7. Suturing an episiotomy  
8. Conducting delivery  
9. Examine a postnatal woman  
10. Examine a newborn baby  
11. Care of a newborn baby

SECTION F: EVALUATION AND MONITORING

<table>
<thead>
<tr>
<th>Statement</th>
<th>Very often</th>
<th>Often</th>
<th>Sometimes</th>
<th>Hardly Ever</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Schedule is drawn for students’ evaluation in the ward</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. Schedule for students’ evaluation is adhered to</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. Procedures are done according to procedure manual.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. I demonstrated procedure before they were signed for</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. My case register is signed after all the information regarding a specific case is filled in.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

SECTION G: RESOURCES

How do you rate availability of the following resources?

<table>
<thead>
<tr>
<th>Resource Description</th>
<th>Very Often</th>
<th>Often</th>
<th>Sometimes</th>
<th>Hardly Ever</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. BP apparatuses available</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. BP apparatuses functioning</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. CTG Machine functioning</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td></td>
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<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>4. CTG tracing paper available</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. Urine testing strips</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6. Suction machine functioning</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7. Oxygen apparatus available</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8. Oxygen apparatus always ready</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9. Delivery packs available</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10. Delivery packs complete</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11. Baby packs available</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12. Appropriate suturing material available</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13. Intravenous solutions are all available</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>14. Emergency drugs available</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>15. Emergency trolley updated</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>16. We improvise when performing procedures</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

8. Which other factors not mentioned above do you consider to be hindering student education?

_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________

9. Please give inputs on what can be done to improve so as to facilitate students learning and give any other commend that you regard as valuable in improving learning

_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
ANNEXURE VII
CONFIRMATION BY STATISTICIAN

The Chairperson,
Medunsa Campus Research and Ethics Committee (MCREC),
UNIVERSITY OF LIMPOPO
Medunsa Campus

Dear Sir/Madam

STATISTICAL ANALYSES

I have studied the research protocol of Manthata MJ (200969787)

Titled: CHALLENGES ENCOUNTERED BY 1 YEAR DIPLOMA STUDENTS MIDWIVES
PLACED IN MATERNITY UNIT AT SELECTED HOSPITALS IN LIMPOPO PROVINCE

and I agree/disagree * to assist with the statistical analyses.

Yours sincerely,

Signature: Statistician

Nome in block letters

Date

Please delete which is not applicable. If you do not agree to assist with the statistical analyses, please provide reasons on a separate sheet.
To Whom it May Concern

This serves to confirm that I have edited the language, spelling, grammar and style of the MPH thesis by Joyce Maphuti Manthata, titled: “Challenges Encountered by One-Year Diploma Student Midwives in Acquiring Clinical Skills at Selected Hospitals in Limpopo Province.” The manuscript was also professionally typeset by me.

Sincerely Yours

Dip. Freelance Journalism, Dip. Creative Writing, MSc (Medicine), PhD