Perceptions of Midwives Regarding Factors Contributing to Neonatal Mortality in Jubilee Hospital, Hammanskraal

M. CUR (NURSING SCIENCES)

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PERCEPTIONS OF MIDWIVES REGARDING FACTORS CONTRIBUTING TO NEONATAL MORTALITY IN JUBILEE HOSPITAL, HAMMANSKRAAL

by

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CO-SUPERVISOR: Mrs Y. Uys

2014
DECLARATION

I, Mmapuso Evah Mothokoa, hereby declare that this dissertation submitted to the University of Limpopo (Medunsa Campus) is my original work and has not been submitted beforehand for any degree at this or any other institution. All sources that have been used or quoted are acknowledged through complete references in the text and list of sources.

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Initials & Surname                Date
Student Number: 201117630
DEDICATION

I dedicate this study to:

The Almighty God who paved the way for me to complete this study, and my late mother, Mmamonkwe Seepe, for the support she offered me during the study.
ACKNOWLEDGEMENTS

I would like to extend my gratitude to the following important people for their selfless support and contributions:

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- My co-supervisor, Mrs Y. Uys, for taking the extra time to supervise me. Your contribution meant a lot to me. Thank you.
- The University-based Nursing Education South Africa (UNEDSA) committee, for financial support throughout my study. I could not have managed without your support. I really appreciate it.
- The MEDUNSA library staff, for their continuous assistance with regard to my needs, thank you so much.
- The management of Jubilee Hospital for giving me permission to conduct the study.
- The midwives of Labour and Neonatal Units at Jubilee Hospital, for your willingness and participating in this study. Your participation made this study possible and thus your efforts are highly appreciated. Thank you so much colleagues.
- My friends and study mates, Angy and Germina for the encouragement and support.
- My daughter and son, Karabo and Keoikantse respectively, for the continuous support they gave me during the difficult time. Karabo thank you so much for your continuous assistance. I appreciated all your efforts.
- Above all I would like to acknowledge the Almighty Lord for the strength, protection, health and blessing He gave me throughout this study.
ABSTRACT

Objectives

The researcher had the following objectives:

- To explore and describe the perceptions of midwives regarding factors contributing to neonatal mortality at Jubilee Hospital.
- To make recommendations to reduce neonatal mortality.

Method

The researcher selected the qualitative approach to research and descriptive, explorative and contextual designs were used to explore and describe the perceptions of midwives regarding factors contributing to neonatal mortality. The purposive sampling method was used to intentionally select participants in the Labour and Neonatal Units of Jubilee Hospital where semi-structured interviews were conducted. Data collection was done until saturation was reached at the tenth participant. Data was analysed qualitatively using the eight steps of the Tesch method of data analysis. The theme, categories and sub-categories were identified during data analysis.

Findings

Firstly, the following sub-categories emerged during data analysis: lack of general knowledge about pregnancy, lack of adherence to Ante Natal Care (ANC) services, late reporting to hospital when in labour, premature birth, birth-asphyxia and meconium aspiration1, hypertensive disorders, malnutrition and anaemia, HIV and AIDS, inadequate number of skilled and experienced midwives and doctors, lack of cardiotocography (CTG) machines, lack of Kangaroo Mother Care (KMC) units, lack of admission beds at referral hospital, delayed transport for referral of neonates, poor support and supervision. Secondly, the recommendations of participants were explored and described. The following were recommended by participants: in-service training for midwives and doctors, community awareness about adhering to ANC services, provision of adequate number of skilled and experienced midwives and doctors, KMC units must be made available and improvement of emergency transport systems for newborns.

Recommendations

- Continued Professional Development for both midwives and doctors should become a norm.
- Emergency transport for newborn babies and referral systems should be improved.
Community participation must be encouraged so women, their families and communities are empowered with regard to health related issues so that they can actively contribute to the improvement of maternal and neonatal health.

Conclusion

There are many factors associated with neonatal mortality, these include factors related to patients and the inappropriate management of obstetric problems during pregnancy and delivery. Community awareness and participation that may contribute to improving the health of mothers and their children, remains a priority strategy that will help reduce neonatal mortality.

Key words

Perceptions, midwives, neonatal mortality and community participation.
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LIST OF ABBREVIATIONS

AIDS: Acquired Immuno-Deficiency Syndrome
ANC: Antenatal Care
CTG: Cardiotocography
FANC: Focused Antenatal Care
HIV: Human Immune Virus
KMC: Kangaroo Mother Care
MDG: Millennium Development Goal
MREC: Medunsa Research and Ethics Committee
NM: Neonatal Mortality
NMRs: Neonatal Mortality Rates
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>SA</td>
<td>South Africa</td>
</tr>
<tr>
<td>SANC</td>
<td>South African Nursing Council</td>
</tr>
<tr>
<td>SREC</td>
<td>School of Health Care Science Research and Ethics Committee</td>
</tr>
<tr>
<td>UK</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>USA</td>
<td>United States of America</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
</tr>
<tr>
<td>PMTCT</td>
<td>Prevention of mother to child transmission</td>
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CHAPTER 1: ORIENTATION OF THE STUDY

1.1 INTRODUCTION

The death of a new-born child is tragic to the mother, his or her family as well as health care professionals. Every four seconds a new-born baby dies from preventable causes, yet this is not reflected in health statistics (Black, Cousens, Johnson, Lawn, Rudan & Bassani, 2010: 1969). The Neonatal Mortality (NM) of a region or a country is an indicator of the socio-economic conditions of the population, the quality of antenatal, intrapartum and postpartum health care as well as the extent to which the community utilises the health care services (Fraser, Cooper & Nolte, 2006: 970).

The neonatal period has one of the highest mortality rates of any period in life. Globally, over four million neonates die every year in the first four weeks of life and about 70% of all NM occurs in the developing and undeveloped countries (World Health Organization (WHO), 2011: 1). According to Storey and Russel (2010: 190), the leading causes of NM globally; were congenital abnormalities, preterm births and birth asphyxia. Other factors that contributed to NM were inadequate care during pregnancy as well as during intrapartum and postpartum periods. (Black et al., 2010: 1969).

Nurses are in close contact with mothers during pregnancy, both in the intrapartum and postpartum stages; hence their perceptions regarding factors contributing to these Neonatal Mortality Rates (NMRs) are significant. There are very few studies on the perceptions of midwives regarding factors contributing to NM. Therefore the researcher decided to conduct this study in Jubilee Hospital, Hammanskraal, in order to describe and explore the perceptions of midwives regarding factors contributing to NM. The purpose of the study is to explore and describe the perceptions of midwives in order to contextualise the findings.

1.2 BACKGROUND OF THE STUDY

NMRs and their causes differ from country to country. Globally, NM has essentially remained unchanged, especially in low and middle income countries (Lawoyin, Onadeko & Asekun-Olarinmoye, 2010: 20). Nordquist (2006: 1) indicates that in developed countries like Italy, Germany, France and Australia, NMRs were 3 in 1000.
Slive births. NMRs in some developed countries were decreasing, e.g. in the United Kingdom (UK), the NM was 3.3 per 1000 live births even though there was a high rate of premature births (Centre for Maternal & Child Enquiries, 2009: 1). According to Nordquist (2006: 1), NMRs in Greece, Ireland and the Netherlands were 4 in 1000 live births and the most common causes of NM in developed countries were identified as congenital abnormalities (21%) and premature births (16%). In another study conducted in Bangladesh by Khatun, Thassri and Kritcharoen (2010: 1), the provision of quality antenatal care was perceived as an important factor in reducing neonatal deaths.

Tyler and Odetayo (2005: 23) in their study, which was conducted in England, identified the following as the most common perceptions of nurses regarding factors contributing to NM: **consanguinity** which is the union between close relatives and may results in congenital abnormalities. The second factor perceived by nurses as having a negative impact on the wellbeing of pregnant mothers and their neonates was **cultural influences**. It was also found that pregnant mothers and their families believed that attending antenatal follow-up visits was not important. Pregnant mothers were discouraged from attending antenatal follow-up visits by their families and were given information that differed from the information given to them by nurses about the importance of attending antenatal visits. Nurses thought that most of the pregnant mothers under their care did not view antenatal follow-up visits as important. As such, pregnant mothers did not adhere to the follow-up visits and this led to inadequate care during pregnancy. **Social deprivation** was also perceived as another factor contributing to NM. Social deprivation, due to low socio-economic circumstances, might result in poor diet leading to maternal malnutrition and anaemia, which in turn might cause prematurity or low birth mass, both of which were perceived as contributing to NM. Women from poor communities might have difficulty in accessing health facilities resulting in inadequate care and inappropriate management of complications during pregnancy and delivery. **Lack of knowledge** regarding maternal care was also viewed as a barrier to providing appropriate care for pregnant mothers. Knowledge included information about the correct diet during pregnancy and the importance of antenatal follow-up visits.
In his study conducted in Sub-Saharan Africa, Engmann (2011: 745) found that more than 98% of NM occurs in low and middle income countries. In 2009, the mean mortality rates around the world were as follows: Sub-Saharan Africa – 37 deaths per 1000 live births, South Asia – 35 deaths per 1000 live births, and East and North Africa – 19 deaths per 1000 live births (Lawoyin et al., 2010:1). The most common causes of NM identified in this study were: low birth weight (25%), sepsis/fever (12.5%), birth asphyxia (9.4%), failure to thrive/maternal death (9.4), congenital abnormality (3.1), neonatal tetanus (3.1) and diarrhoea (3.1). The other 34.4% of neonatal deaths were recorded as unknown.

In another study conducted in Dar es Salaam, Tanzania; Yengo (2009: 78) found that nurses perceived one of the factors contributing to NM to be the lack of implementation of focused antenatal care (FANC). In this study, the components of antenatal care were thoroughly explained. FANC entails the implementation of maternity guidelines by midwives as well as comprehensive health education of pregnant women. The implementation package of FANC includes the tests to be conducted during pregnancy, treatment to be given during pregnancy, information about the risks of alcohol and tobacco use during pregnancy, the prevention of infection before, during and after giving birth, the importance of good nutrition and breastfeeding, being prepared for birth and being ready for complications. Almost all the nurses who participated in this study thought that if FANC is implemented properly, neonatal deaths could be reduced (Yengo, 2009: 78).

Being a developing country, South Africa (SA) has as many as 21300 neonates dying per year in the first month of their life due to premature births, congenital abnormalities, infections and birth asphyxia, all of which can be prevented through equitable resource allocation (Black et al., 2010: 1971). The study further identified that nursing care factors are associated with NM, such as inadequate care and the inappropriate management of complications during pregnancy and delivery; these complications include maternal hypertensive disorders, maternal HIV/AIDS and Diabetes Mellitus. In addition, it was also found that health care workers at the primary and secondary levels of care are often not competent to meet the needs of a neonate. The experience and
training of these health care workers are limited, because developing countries have only just started realising the importance of and need for further professional skills development. In a study conducted by Nannan, Dorrington, Laubsher, Zinyakatira, Prinsloo, Darikwa, Matzopoulos and Bradshaw (2012: 41), NM in SA was found to be 12 per 1000 live births in 2007. The same source further identified the following as the most common causes of neonatal deaths: prematurity and low birth weight (23.6%), respiratory distress syndrome (21%), birth asphyxia (20.9%), unspecified conditions (9.28%), neonatal aspiration (8.9%), bacterial sepsis (8.6%), and congenital abnormalities (7.7%).

Due to the high NM rate, the South African government put guidelines and protocols in place to help reduce NM, e.g. Guidelines for Maternity Care in SA (2007) and Guidelines for Neonatal Care (2008). These guidelines are available in Jubilee Hospital and the Moretele sub-district; however, like in the rest of SA, NM remains high in Jubilee Hospital. The perceptions of midwives regarding factors contributing to NM in Jubilee Hospital have not yet been investigated. Therefore, the researcher intended to explore and describe the perceptions of midwives regarding these factors.

1.3 PROBLEM STATEMENT

Preventing deaths of neonates has not been a focus of child survival or safe motherhood programmes globally; therefore interventions to reduce NM are largely unaddressed (Lawoyin et al., 2010: 20). Neonates are the most vulnerable and voiceless citizens of our nations. In SA, NM remains high and accounts for an increasing proportion of all childhood deaths. Due to the high rates of NM, SA has committed itself to the Millennium Development Goal (MDG 4) which calls for a two-third reduction in mortality amongst children under five years, this includes NM (South African Department of Health, 2005: 25). NM accounts for 41% of deaths in children under the age of five (WHO, 2011: 1). In order for SA to achieve the MDG 4, NM needs to be reduced and this is the reason why the researcher investigated perceptions of midwives regarding factors contributing to NM in Jubilee Hospital. It is known that most neonatal deaths are avoidable; hence the South African Department of Health has
prioritised the neonatal and maternal services in order to reduce NM and optimize the health of mothers and their neonates (South African Department of Health, 2005: 26).

Table 1.1 below illustrates neonatal deaths versus live births that occurred between July and December 2011 in Jubilee Hospital.

Table 1.1

<table>
<thead>
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<tbody>
<tr>
<td>Total deliveries</td>
<td>432</td>
<td>410</td>
<td>442</td>
<td>443</td>
<td>438</td>
<td>446</td>
</tr>
<tr>
<td>Neonatal deaths</td>
<td>06</td>
<td>05</td>
<td>09</td>
<td>08</td>
<td>07</td>
<td>11</td>
</tr>
</tbody>
</table>

Based on these numbers, the researcher was prompted to explore and describe what the perceptions of midwives were with regard to factors that may contribute to NM in Jubilee Hospital.

1.4 RESEARCH QUESTIONS

From the abovementioned problem the following research questions arose:

- What are the perceptions of midwives regarding factors contributing to neonatal mortality in labour/neonatal units of Jubilee Hospital?
- What recommendations can be made to reduce neonatal mortality in labour/neonatal units of Jubilee Hospital?

1.5 SIGNIFICANCE OF THE STUDY

The study was aimed at exploring and describing the perceptions of midwives regarding factors contributing to NM and can therefore make informed recommendations that will assist in the reduction of NM. The findings of this study will assist the managers of Jubilee Hospital in their planning of neonatal care and will facilitate their commitment towards the reduction of NM. The findings of the study will serve to improve the quality
of care provided during pregnancy, intrapartum and postpartum, to both the mother and the neonate.

1.6 PURPOSE OF THE STUDY
The purpose of this study was to explore and describe perceptions of midwives regarding factors contributing to neonatal mortality in Jubilee Hospital.

1.7 RESEARCH OBJECTIVES
- To explore and describe the perceptions of midwives regarding factors contributing to NM in labour/neonatal units of Jubilee Hospital.
- To make recommendations that will assist in the reduction of NM.

1.8 THEORETICAL FRAMEWORK
The theoretical framework used in this study is the Pender’s Health Promotion Model (Maville & Huerta, 2008: 3). The purpose of the model is to inform and assist both individuals and communities to accept responsibility for and become more active in managing matters affecting their physical and mental health (Pender, Murdaugh & Parsons, 2006: 371).

According to the Ottawa Charter for Health Promotion of 1986, health promotion is the process of enabling people to have more control over their bodies and improve their health status (WHO, 2015: 1). Furthermore, health promotion can be defined as a strategy that aims at informing, influencing and assisting both individuals and communities to accept responsibility and become more active in managing matters affecting their physical and mental health (Pender et al., 2006: 371). Health promotion is therefore a philosophy, a process, a multi-sectoral and socio-cultural approach that aims at enhancing the health and wellbeing of individuals and communities through policy formation, a supportive environment and health education (Maville & Huerta, 2008:3).
For the purpose of the study, Pender’s Health Promotion Model is used as the theoretical framework and it is described with reference to the conceptual definitions and the assumptions as applied in this study.

1.8.1 Conceptual definitions of the Pender’s Health Promotion Model
There are three main concepts in the Pender’s Health Promotion Model: individual characteristics and experience, behaviour-specific cognition and affect, and behavioural outcomes (Marville & Huerta, 2008: 259).

1.8.1.1 Individual characteristics and experience
Individual characteristics and experience include prior related factors and personal factors. Prior related factors are factors such as earlier health promotion strategies implemented by midwives and individuals to reduce NM. Personal factors relate to biological, psychological and socio-cultural factors that influence midwives’ perceptions regarding factors contributing to NM.

1.8.1.2 Behaviour-Specific Cognitions and Affect
Behaviour-specific cognition and affect in the Pender’s Health Promotion Model include: perceived benefit to action, perceived barriers to action, perceived self-efficacy, activity related affect, interpersonal influence and situational influence.

Perceived benefit of action includes all those activities perceived by midwives as beneficial to the reduction of NM. Perceived barriers to action are situations that midwives perceive as challenges in reducing neonatal deaths, e.g. the cultural beliefs of pregnant mothers, families and communities as well as a lack of human and material resources. Perceived self-efficacy relates to midwives’ perceptions about the knowledge and skills that they need to decrease NM. Activity-related affect is the manner in which midwives perceive, understand and accept the prescribed strategies for reducing NM. Interpersonal influences involve the interaction of midwives with other multidisciplinary teams, such as medical doctors, in the provision of quality health care to mothers and their babies to reduce NM. The concept also involves the influence of societal norms and other applicable models in the reduction of NM. Situational influences are personal perceptions and they comprise perceptions of available options, demand characteristics and aesthetic features of the environment. Situational
influences include positive and negative influences that can facilitate or impede actions taken to reduce newborn deaths. These influences may precipitate the occurrence of neonatal deaths and they include midwives’ and hospital management’s commitment towards health promotion activities.

1.8.1.3 Behavioural Outcome
The behavioural outcome of the Pender’s Health Promotion Model entails immediate competing demands and commitment to a plan. Immediate competing demands are situations perceived by midwives as obstacles to the daily activities they perform to attempt to reduce NM. Commitment to a plan of action involves the perceived commitment of midwives to providing quality care in maternal and child health to reduce NM.

1.8.2 Assumptions of the model
The following assumptions are evident within the framework of the Pender’s Health Promotion Model (Marville & Huerta, 2008: 50) and are thus applied in this study:

- Midwives are regarded as experienced individuals with prior related and personal factors influencing their perception of factors affecting NM. Prior related factors are factors such as earlier health promotion strategies implemented to reduce NM. Personal factors include the biological, psychological and socio-cultural factors influencing midwives’ perceptions of factors affecting NM.
- Health promotion is regarded as an active process that influences midwives’ behaviour specific cognition and affect in terms of their perceptions of factors that affect NM. Behaviour specific cognition and affect include the following aspects: perceived benefits of action; perceived barriers to action; perceived self-efficacy; activity-related affect; interpersonal influences, norms and models; and situational influence, which entail available options, demand characteristics and aesthetic features of the environment. All these aspects shape midwives’ perceptions of the factors influencing NM.
- The behavioural outcome of the model, for the purposes of this study, entails the midwives’ perceived commitment to recognizing immediate competing demands,
such as their daily work routine and scarce resources that act as barriers to health promotion activities that will assist in the reduction of NM.

1.9 OPERATIONAL DEFINITIONS

The following key concepts used throughout the study need to be defined:

- **Neonatal Mortality**

Neonatal mortality is the number of deaths that occur during the first twenty-eight completed days of life per 1000 live births in a given year. Neonatal mortality may be sub-divided into: early neonatal death, which occurs during the first seven days of life and late neonatal death, which occurs after seven days of life, but within the completed twenty-eight days of life (WHO, 2006: 12).

- **Neonatal period**

The neonatal period is a period from birth up to twenty-eight completed days of life (WHO, 2006: 6). A live birth refers to the complete expulsion of a live baby from its mother (irrespective of the duration of the pregnancy), which, after such separation, shows signs of life, e.g. breathing, movements of voluntary muscles etc. (WHO, 2006: 6).

- **Midwife**

According to the Nursing Act (33 of 2005), a midwife is a person who is qualified and capable enough to independently practice midwifery in the manner and on the level prescribed, and who is capable of assuming responsibility and accountability for such practice. Dippenaar and da Serra (2012: 12) define a midwife as a person who has successfully completed the prescribed course in midwifery and has acquired the required qualification to be registered and licensed to practice midwifery.

- **Perception**

Goldstein (2009: 3) defines perception as the organisation, identification and interpretation of sensory information in order to represent and understand the
environment. Perception is a process in which data is obtained through senses and memory. This data is then organised, interpreted and transformed into a reality according to each person’s worldview. According to King (1981) cited in George (2010: 245) perception is a process of acquiring, interpreting, selecting and organising sensory information in such a way that it influences all behaviour of humankind. It is a vital part of one’s personal system and resembles each person’s representation of reality.

In this study, midwives’ perceptions are those selected perceptions specifically related to factors contributing to NM.

1.10 RESEARCH DESIGN, METHOD AND TRUSTWORTHINESS

In this study, a qualitative, explorative, descriptive and contextual research design (Polit & Beck, 2012: 21) was used to explore and describe the perceptions of midwives regarding factors contributing to neonatal mortality in labour/neonatal units of Jubilee Hospital, Hammanskraal. The midwives were purposively selected by the researcher as they provided health care services to pregnant mothers and children. Semi-structured interviews were used to collect data.

Data analysis was done qualitatively following the eight steps by Tesch (Creswell 2009: 186). The assistance of the independent coder was enlisted. To ensure trustworthiness in this study, the researcher used the criteria of credibility, authenticity, confirmability, dependability and transferability (Polit & Beck, 2012: 175).

The details of the research design, method and trustworthiness are discussed in the following chapter.

1.11 ETHICAL CONSIDERATIONS

Since the research involved human beings as participants, the researcher ensured that they were protected through ethical conduct (Grove, Burns & Gray, 2013: 162). Permission to conduct the study was requested from:

- The School of Health Care Science Research and Ethics committee of the University of Limpopo (Medunsa campus) (SREC)
• The Medunsa Research and Ethics Committee (MREC)

• The Chief Executive Officer of Jubilee Hospital

• The Research Ethics Committee of the Tshwane Metsweding District

• Registered midwives who were willing to participate in the study, they completed a written consent form.

The following ethical principles, stipulated in the Belmont Report (Grove et al., 2013: 162; Polit & Beck, 2012: 152), were applied in the study:

• **The principle of respect for persons**: The principle holds that persons are autonomous agents who are capable of controlling their own destinies (Grove et al., 2013: 169). The researcher informed the selected participants about the proposed study, its purpose and gave them time to voluntarily decide whether they wanted to participate or not. The participants were also informed that they had the right to refuse to give information, to ask questions or to withdraw from the study at any time as they so wished, without any form of coercion (Polit & Beck, 2012: 154). This principle also includes the right participants have to **privacy**. The researcher maintained privacy by respecting the participants’ rights to determine the time, extent and general circumstances under which their personal information will be shared or withheld from others (Grove et al., 2013: 169).

• **The principle of beneficence**: The researcher protected participants from harm and discomfort by carefully structuring the questions to avoid unnecessarily sensitive issues. The duration of the interview time was kept to a minimum, while still ensuring that all data was collected from the participants (Grove et al., 2013 162). Data collected from the study was handled with strict **confidence** to avoid psychological harm to participants and only the researcher, supervisors and independent coder had access to data (Grove et al., 2013: 172). During the
publication of articles in journals the participants’ **anonymity** will be maintained (Grove *et al.*, 2013: 172).

- **The principle of justice:** The principle holds that each participant should be treated fairly and should receive what is due to him/her (Grove *et al.*, 2013: 173; Holloway & Wheeler, 2010: 55). Participants who met the inclusion criteria were randomly selected (Burns & Grove, 2009: 198). Participation in the study was voluntary and no one was forced to participate (Rubin & Babbie, 2005: 17 cited in de Vos, Strydom, Fourche & Delpot, 2011: 116). Informed consent was obtained from all the participants before the data collection process commenced (de Vos *et al.*, 2011: 117; Creswell, 2009: 89). The researcher adhered to appointments and the scheduled duration of data collection, but also ensured that all the required information was obtained (Brink, 2009: 33).

1.12 LAYOUT OF THE STUDY

**Chapter 1: Orientation of the study**

An introduction of the topic and the background to the factors contributing to neonatal mortality, were discussed in this chapter. In addition, an overview of the following was given: the research problem, purpose, the significance of the study, objectives, the research questions, theoretical framework, definitions of concepts and the ethical considerations. The chapter also introduced the methodology of trustworthiness that pertains to the study.

**Chapter 2: Research methodology**

In the second chapter the research methodology and design are discussed. The chapter also deals with the population, sampling process, data collection methods as well as the methods of data analysis applied in the study. Lastly, the strategies used to ensure trustworthiness of the study are discussed.
Chapter 3: Presentation and discussion of findings

This chapter deals with the research findings and a literature control, which compares the findings of this study with other relevant literature.

Chapter 4: Conclusion, implications, recommendations and limitations

Finally, in the last chapter the conclusions, implications, recommendations and limitations of the study are discussed.

1.13 CONCLUSION

A brief outline of the study was presented in this chapter. The introduction and background of the study highlighted the perceptions of midwives regarding factors contributing to neonatal mortality globally. The research problem in relation to the national and global problem of high rates of neonatal deaths was presented. The significance of the study was explained. The research purpose, its objectives, definitions of key concepts, the theoretical framework of the study and the ethical considerations were also discussed. The research design and methods are discussed in the next chapter.
CHAPTER 2: RESEARCH METHODOLOGY

2.1 INTRODUCTION

Research methodology used in this study is qualitative. According to Polit and Beck (2012: 12), research methodology is the techniques used by a researcher to gather and analyse information in the study. The research design in this qualitative study seeks to explore and describe the perceptions of midwives regarding factors contributing to neonatal mortality.

A qualitative research design was used in this study. Polit and Beck (2012: 15) define qualitative research as the investigation of the phenomenon, which is in-depth and holistic, using the collection of rich narrative materials. Qualitative research refers to research that elicits participants’ accounts of meaning, experience or perceptions. In this study qualitative research produced descriptive data in the midwives’ own spoken or written words and identified the midwives’ beliefs and values about factors contributing to NM (de Vos et al., 2011: 65). According to Polit and Beck (2012: 86), clinical experiences and critical analysis are very important in qualitative research. This is the reason why the researcher chose those midwives who have experience in Labour and Neonatal Units.

The following are advantages of qualitative research according to Polit and Beck (2012: 487):

- Qualitative research is flexible and capable of adjusting to new information that may be gleaned during the course of data collection. Its flexibility makes a number of upfront decisions about data collection possible.
- It often involves merging together various data collection strategies or methods and as such, provides an opportunity for the evaluation of the extent to which a consistent and coherent picture of the phenomenon emerges.
- It tends to be holistic, striving for an understanding of the whole.
- Qualitative studies yield rich, in-depth information that can simplify the complicated dimensions of a phenomenon.
However, qualitative studies also have disadvantages. Polit and Beck (2012: 556) regard the following as disadvantages of qualitative studies:

- It is sometimes difficult to analyse data in qualitative studies as there are no universal rules for analysing qualitative data.
- A huge amount of work is required to analyse qualitative data.
- Problematic situations may arise in the field and this requires creativity to find the best solutions and new strategies.
- Human beings are used directly as instruments through which information is gathered and even though they are intelligent and sensitive, they are also prone to make mistakes.
- The subjectivity that enriches the analytic insight of skilful researchers can produce only small value and obvious findings among less competent ones.

The researcher of this study tried to overcome the disadvantages of qualitative studies by collecting rich and in-depth data to describe and explore the perceptions of midwives regarding factors contributing to NM. The data was collected by the researcher, who is an advanced midwife, using her interpersonal skills to probe, paraphrase, reflect and check if the information given correlated with the participants' body language (Grove et al., 2013: 110). The researcher also underwent qualitative interview training, which was presented by the University of Limpopo (Medunsa campus) in May 2011. The supervisor and co-supervisor provided as much support as was needed throughout their supervision. An independent coder was also utilized.

2.2 RESEARCH DESIGN

According to Polit and Beck (2012: 58), research design is the overall plan to address research questions or solve problems, as well as specifications for enhancing the study’s integrity. Grove et al. (2013: 692) define research design as the blueprint for conducting a study that maximizes control over factors that could interfere with the validity of the findings. The researcher used qualitative, explorative, descriptive and contextual research designs to explore and describe the perceptions of midwives regarding factors contributing to neonatal mortality (Polit & Beck, 2012: 21).
2.2.1 Explorative design
Polit and Beck (2012: 727) define exploratory research design as a study that explores the dimensions of a phenomenon, that increases the knowledge of a field of study and that is not intended for generalization to large populations. In this study, the explorative design was used to gain insight into the situation and the perceptions of midwives regarding factors contributing to NM (Blaikie, 2000 as quoted in de Vos et al., 2011: 95).

Although the most common shortcoming of the explorative research design is that it seldom provides satisfactory answers to research questions, it can hint at the answers and can suggest which research methods can provide definite answers (Babbie & Mouton, 2011: 93). The explorative research design is appropriate for investigating more persistent phenomena, such as NM in this study (Mounton, 2001 as quoted in de Vos et al., 2011: 95).

2.2.2 Descriptive design
The descriptive research design, according to Polit and Beck (2012: 226), aims at observing, describing and documenting the aspects of a situation as it occurs naturally. Descriptive research provides an accurate account or portrayal of the characteristics of a particular individual, event or group in real-life situations in order to discover new meanings by describing what exists, determining the frequency with which something occurs and categorising information (Grove et al., 2013: 692). In this study, the descriptive research design was used to identify and categorise the perceptions of midwives regarding factors contributing to NM.

2.2.3 Contextual research
Burns and Grove (2009: 693) define the contextual research design as the world and the individual concerns that can be used to understand a person. The purpose of the contextual research design is to examine the concerns of a single individual or a number of individuals or situations. Qualitative researchers usually engage in the fieldwork of participants or in a natural setting often over an extended period of time (Polit & Beck, 2012: 49). In this study, therefore, in-depth interviews were conducted with experienced midwives in their field of work. These midwives were selected
because they witnessed the deaths of babies as they occurred within the natural setting of their working environment.

The participants were familiar with the setting of the interviews as it was prepared in their workplace. The setting was convenient and comfortable to the participants. The context was a quiet room free from distractions, well ventilated and with proper lighting. The recommendations made were based on the findings of the study and the level of the hospital (level one). The recommendations are aimed at improving the situation in two units, namely the Labour and Neonatal Units in Jubilee Hospital, to reduce NM.

2.3 THE RESEARCH METHOD

The research methods are discussed with reference to the following: the setting, population, sampling, data collection and data analysis.

2.3.1 The setting

The research setting refers to the physical location where research is conducted (Grove et al., 2013: 373 and Polit & Beck, 2012: 743). Descriptive studies are conducted in a natural setting where the researcher does not change the environment for the purposes of his or her studies. This study was conducted in Jubilee Hospital, in the Labour and Neonatal Units. Jubilee Hospital is situated in Hammanskraal, north of Pretoria in the Gauteng Province. It is a district hospital that serves as a referral site for thirty-two clinics. The setting was chosen for its characteristics of providing labour services and caring for new-born children. Patients, who have complications during pregnancy, during labour and/or after labour in the clinics, are referred to Jubilee Hospital.

- Labour Unit

The Labour Unit is the ward where pregnant women in labour and those who need specialized care are admitted for delivery and continued care. There are eleven beds, nine of which are used for delivery, while the other two are used for patients with obstetric complications, e.g. severe elevated blood pressure, antepartum haemorrhage and other complications of labour that are referred from the clinics. The average number of patients who are nursed in the Labour Unit per day is four hundred and thirty four deliveries per month. Patients who delivered their babies in this unit are discharged and
referred to the Postnatal Unit an hour after delivery if no complications are observed. Patients with complications are referred to the nearby academic hospital. The staff members working in the Labour Unit are as follows: one senior medical doctor who is not an obstetrician, but has experience in obstetrics, four medical doctors who are general practitioners, an operational manager and fifteen midwives of which six have post-basic qualifications in advanced midwifery, six enrolled nurses and five assistant nurses.

- **Neonatal Unit**
High risk babies with conditions like being born prematurely and birth asphyxia are admitted to the Neonatal Unit. There are thirty-five beds in the unit. The premature babies are admitted and monitored in the Neonatal Unit until they have reached satisfactory developmental stages, such as the ability to suck, gaining weight, etc. A daily average of thirty neonates is admitted to the Neonatal Unit. They are then discharged according to the progress observed. Babies with complicated problems are referred to the nearby academic hospital. The staff members working in the Neonatal Unit consists of: two medical doctors who are general practitioners without specialty, an operational manager with a post-basic qualification in advanced midwifery, eight midwives, two of which have post-basic qualification in child nursing science, five enrolled nurses and six enrolled assistant nurses.

2.3.2 **Population**
Polit and Beck (2012: 738) define the population as the entire set of individuals or objects possessing some common characteristics. The population also entails all elements that meet the sampling criteria for inclusion in the study (Grove *et al.*, 2013: 315). For this study the population consisted of ten midwives, five from the Labour Unit and five from the Neonatal Unit. These midwives were chosen as they have specific knowledge and experience regarding the factors contributing to NM.

- **Inclusion criteria**
Inclusion criteria can be defined as the criteria that characterise an individual subject or element to be eligible to become part of the population (Polit & Beck, 2012: 274).
Registered nurses with midwifery qualifications (midwives) and at least six months of experience working in the Labour and Neonatal Units in Jubilee Hospital were included in the study.

- **Exclusion criteria**

All other midwives were excluded.

### 2.3.3 Sampling

Sampling is the process of selecting a part of the population to represent the entire population in a study (Polit & Beck, 2012: 742). Grove *et al.* (2013: 351) define sampling as the selection of certain people, events, behaviours or elements for conducting a study. In this study, the researcher used a purposive sampling method to intentionally select the participants. The midwives who had been working in the Labour and Neonatal Units for more than 6 months were deliberately selected to be part of the sample for the study. The participants were chosen for their personal information or knowledge of the phenomenon under investigation, namely NM (Polit & Beck, 2012: 739).

Permission to conduct the study at Jubilee Hospital was granted by the appropriate officials (refer to Annexure C). The managers of the Labour and Neonatal Units assisted the researcher in the selection of those midwives who met the inclusion criteria. A minimum of ten participants, which included six midwives from the Labour and six from the Neonatal Units were selected. These midwives were included in the sample as they have observed neonatal deaths in their units for the entire period of their time working there. As such, their perceptions regarding factors contributing to NM were more valuable than any of the other midwives or nurses.

### 2.3.4 Data collection

Data collection is the process of gathering methodical and exact information that is relevant to the research purpose, specific objectives or questions (Grove *et al.*, 2013: 507). Semi-structured interviews were used to collect data from participants (de Vos *et al.*, 2011: 35). Data was collected from ten midwives working in the Labour and Neonatal Units in Jubilee Hospital. Data saturation was reached at the tenth participant as repeating information became evident (Polit & Beck, 2012: 521).
2.3.4.1 Preparatory phase  
During this phase, the focus is on the information session and pilot study.

- **Information session**

  The researcher made an arrangement for the first contact session to be with the management of the maternity section at Jubilee Hospital. The purpose of the meeting was to introduce the research topic and to explain the nature of the study. The researcher and the management of the Labour and Neonatal Units agreed upon suitable participants for the study. During that meeting the participants who met the sampling criteria were purposively selected. The days that would be convenient to conduct interviews were also agreed upon. Before the actual data collection process took place, the researcher prepared the procedure for the data collection and interviewing process, this included the data collecting instruments. The procedure was then presented to the researcher’s supervisors for evaluation and approval. The interview guide (refer to Annexure F) for data collection was discussed by the researcher and her supervisors, some corrections were made and later approved.

  The researcher and the Jubilee Hospital management team made arrangements for a suitable environment, which was free from any distraction, with sufficient lighting, well ventilated, free from unpleasant odours and with suitable furniture. The researcher prepared suitable equipment to be used during the interviews, this included: note pads, pens, and an audio tape recorder (de Vos et al., 2011: 359). A pilot study was arranged and conducted with four midwives who met the sampling criteria, but were not part of the sample study. The aim of the pilot study was to test the methods and questions to be used in the larger sample (Polit & Beck, 2012: 194).

- **Pilot study**

  Barker (2003: 327) cited in de Vos et al. (2011: 237) defines a pilot study as a method for testing and validating data collecting instruments by administering it to a small number of participants. According to Bless, Higson-Smith and Kagee (2006: 184) cited in de Vos et al. (2011: 237), a pilot study is a small study conducted prior to a large study to determine whether the methodology, sampling, instruments and method of
analysis are adequate and appropriate. Consent was requested before the pilot study was conducted. The researcher used four participants (two midwives from the Labour and two midwives from the Neonatal Unit) who were not included in the final sample, but possessed the same characteristics as those participants who were included in the main study. The researcher conducted the pilot study to improve the success and effectiveness of the final study by testing the appropriateness and the quality of instruments and making the necessary alterations. The pilot study was also conducted to determine the time that had to be spent with each participant and to help the researcher gain experience in interviewing skills (de Vos et al., 2011: 341; Polit & Beck, 2012: 195).

The pilot study was conducted in the same manner as was planned for the main study. During the pilot study the following research questions were asked:

i. What are the perceptions of midwives regarding factors contributing to neonatal mortality in labour/neonatal units of Jubilee Hospital?

ii. What recommendations can be made to reduce neonatal mortality in labour/neonatal units of Jubilee Hospital?

- Findings of pilot study

Two categories emerged during data analysis of pilot study:

- Lack of resources with two sub-categories; human and material resources: shortage of adequate number of experienced and competent midwives and doctors and lack of Cardiotogogram machines
- Patient factors with two sub-categories: lack of adherence to scheduled ANC services and late reporting to hospital when in labour

2.3.4.2 Interview phase

An interview is a social relationship designed to exchange information between participants and the researcher (de Vos et al., 2011: 342). The researcher welcomed and thanked each participant for agreeing to participate in the study. The researcher introduced herself to each participant and allowed participants to introduce themselves as well. The researcher introduced all the equipment that would be used during the
interview and explained their importance, emphasizing the audio tape recorder. The audio tape recorder was placed in such a way that it would not cause a distraction during the interview process.

The researcher used semi-structured interviews during data collection. A semi-structured interview is a method of interviewing that the researcher uses when he or she knows what they want to ask, but do not know what the answers of the participants will be. This means that the role of the researcher is somehow structured, whereas the participants’ is not (Polit & Beck, 2012: 537). This type of an interview is used to gain a detailed picture of the participants’ beliefs, perceptions of a particular topic and it gives both the researcher and the participants much more flexibility (de Vos et al., 2011: 35). The following are advantages of semi-structured interviews, according to de Vos et al. (2011: 351):

- It allows the researcher and the participant much more flexibility.
- A large amount and in-depth, quality data is obtained.
- The researcher is able to establish a rapport with the participants and as such, the participants are able to give detailed and needed information and to some extent introduce new information that the researcher may not have thought of.

Polit and Beck (2012: 543) identified the following as disadvantages of semi-structured interviews:

- It is costly and time consuming. It usually lasts for a considerable amount of time as participants are allowed an opportunity to tell their story because they are perceived as experts on the subject.
- This type of interview needs a highly skilled researcher to be able to ask questions that elicit the desired responses from participants.
- The physical appearance of the interviewer or participants may influence the interview process and therefore co-operation is needed.

To overcome these disadvantages in this study, the researcher adhered to the ethical considerations, such as ensuring that participation was voluntary and that the interview time was kept to a minimum where possible. The researcher underwent qualitative
interviewing training in May 2011 and the researcher used the skills she acquired during her training to interview the participants. The researcher used the following communication techniques during the interviews to try and elicit as much information as possible from participants: probing, paraphrasing, reflection and the use of silence.

- **Probing**

According to Polit and Beck (2012: 738), probing is a method used by qualitative researchers in an interview to elicit more useful and detailed information from the participants. The researcher used probing in order to obtain useful information, which the respondents may have been withholding. Non-verbal communication skills were also used by the researcher to allow the participants to give as much information as possible. Some of the probing questions that were asked during the interview were: **I hear you mentioned …, could you explain what you mean by that? Please tell me more.** The researcher continued with probing until no new information was obtained.

- **Paraphrasing**

Paraphrasing is when the researcher clearly expresses the participants' ideas in her own words (Grove *et al.*, 2013: 702). This is done to obtain the correct meaning of words and also to ensure that the research questions are well understood by participants. The researcher repeated what the participants said, but in her own words, and then asked the participants if that was what they meant e.g. **I hear you say … did I understand you correctly?**

- **Reflection**

Reflection is the evaluation of thoughts and facts. It includes everything that was discussed during the process of interviewing (Holloway & Wheeler, 2010: 8). This initiative helped the researcher to examine the meaning of the aspects that were discussed. The researcher looked at and carefully read the collected data to ascertain whether all the necessary data was obtained. The researcher also reflected on any possible challenges that could have had a negative impact during data collection and derived some strategies to overcome those challenges.
• **Use of silence**

The researcher used non-verbal communication skills as a strategy to encourage participants to give as much information as possible. The researcher did not interrupt the participants while they were talking to give them enough time to communicate whatever they felt like sharing. The researcher allowed the verbal conversation to stop so as to provide time for quiet contemplation of what was said, for the formulation of thoughts about how to proceed, or for tension reduction. The researcher also used silence to observe participants’ behaviour to glean what they did not express verbally (Maville & Huerta, 2008: 89).

### 2.3.5 Data analysis

Data analysis is done in order to organise, reduce and derive meaning from the data (Grove *et al.*, 2013: 46). Data analysis was done qualitatively, following the eight steps by Tesch as outlined in Creswell (2009: 186):

- Firstly, the researcher read all the transcripts carefully and wrote down some ideas.
- The researcher then picked one document from the most interesting interview and analysed it to find its meaning. The researcher wrote her thoughts in the margin.
- In the next step, the researcher completed the same task with all the documents from all participants and made a list of all the topics. Similar topics were clustered together into columns: the major, unique and left-over topics.
- The abovementioned list of topics was taken from the researcher’s own data. Topics were then abbreviated as codes, which were written next to the appropriate segment of the text. The scheme was organised in such a way that the researcher was able to see if new categories and codes emerged.
- In the following step, the researcher found the most descriptive wording for the topics and changed them into categories. Topics that related to each other were grouped together to reduce the number of categories. The researcher drew lines between categories to show their interrelationship.
- In the sixth step, the researcher made a final decision on abbreviations to be used for each category and made an alphabet for the codes.
• Following the above step, the researcher assembled data belonging to each category in one place and performed a preliminary analysis.
• Finally, the researcher recorded the existing data.

The initial analysis was done by the researcher and then the assistance of the independent coder was enlisted. A consensus meeting was held between the researcher and independent coder to agree on the categories, sub-categories and themes.

2.4 TRUSTWORTHINESS

Trustworthiness is the degree of confidence that qualitative researchers have in their data and it is assessed using the criteria of credibility, dependability, authenticity, transferability and confirmability (Polit & Beck, 2012: 745).

2.4.1 Credibility

Credibility refers to a criterion for evaluating integrity and quality in qualitative studies (Polit & Beck, 2012: 724). The criteria used to ensure credibility were: prolonged engagement, triangulation, persistent observations and member checking.

2.4.1.1 Prolonged engagement

Prolonged engagement in qualitative studies is when the researcher spends sufficient time with participants during data collection and therefore has an in-depth understanding of the participants or phenomenon under investigation; this improves credibility (Polit & Beck, 2012: 739). In this study, the researcher built rapport and trust with participants before the actual interview, during which she spent enough time with each participant (Creswell, 2009: 192). This made participants feel more comfortable, at ease and willing to give more and accurate information (Brink, 2009: 118). The researcher spent sufficient time (40-60 minutes) with each participant during the interview session.

2.4.1.2 Triangulation

Bryman (2012: 392) defines triangulation as a strategy to evaluate the consistent and coherent picture of the phenomenon under investigation by using more than one source of data. According to Polit and Beck (2012: 590), there are two types of triangulation: data and method triangulations. Data triangulation encompasses the use of different
sources to validate the conclusions. In this study, multiple data sources, such as literature relevant to the research topic, were used in this study to validate the findings.

2.4.1.3 Persistent observations
Here the researcher focused on the characteristics or aspects of the situation that were relevant to the phenomenon (Polit & Beck, 2012: 589). Besides the audio tape that was used for data collection, the researcher took field notes of the spoken words of the body language and gestures that were observed from the participants during the interview in order to establish credibility of the data.

2.4.1.4 Member checking
Polit and Beck (2012: 733) define member checking as a method of validating the credibility of qualitative data through debriefings and discussions with participants. The researcher provided feedback to the participants about emerging interpretations in order to obtain participants’ responses (Polit & Beck, 2012: 591). During the interview process the researcher deliberately probed the participants to understand their responses (e.g. you said…, did I understand you well?). Member checking was also done a week after data collection was completed for the confirmation and validation of the data. The researcher went back to the participants and the same questions were asked to verify the accuracy of data, and to determine whether there was new information that needed to be recorded (Babbie & Mouton, 2011: 277).

2.4.2 Dependability
Polit and Beck (2012: 725) refer to dependability as the stability of data over time and in different conditions. For this criterion to be met, the researcher developed an audit trial by carefully documenting data, which included field notes, interview transcripts as well as reflective notes (Polit & Beck, 2012: 591). The supervisor looked at the field notes as well as the transcribed interviews from the audio tape for the verification of the data. The supervisor and the researcher reached a consensus on the findings.

2.4.3 Authenticity
Authenticity refers to the extent to which qualitative researchers fairly and faithfully show a range of different realities in the collection, analysis and interpretation of data (Polit & Beck, 2012: 720). This criterion was met through doing member checking. The
researcher went back to the participants and asked the same questions as in the interviews to check the accuracy of the data and to determine whether there was new information that needed to be recorded (Babbie & Mouton, 2011: 277).

2.4.4 Transferability
Polit and Beck (2012: 525) define transferability as the extent to which qualitative research findings can be transferred to other settings or groups. According to de Vos et al. (2011: 420), transferability refers to the generalization of the findings: to check whether the findings of the study can be transferred from one setting to another. Contextual research findings cannot be transferred, but the researcher ensured the transferability of her research methods through the use of comprehensive descriptive and sampling methods so that someone else can determine whether the methods used in the study are applicable in another setting (Brink, 2009: 119).

2.4.5 Confirmability
Confirmability is the objectivity of the data and interpretations in the study. It is the extent to which the data represented participants’ information and the interpretation of the data reflected the participants’ views and not the researcher’s biases (Polit & Beck, 2012: 585). In this study, the researcher used field notes, audio tapes and the interview report to establish confirmability. The involvement of supervisors ensured objectivity in the study.

2.5 FIELD NOTES
Fields notes are defined as written notes of the events the researcher sees, hears and experiences during the process of data collection (Bogdan & Biklen, 2007, as cited in de Vos, 2011: 406) Field notes are broader, more analytic and more interpretive. They contain narrative accounts of what was happening in the field (Polit & Beck, 2012: 548). The researcher took field notes as another method of data collection, besides the interviews. Transcribed audio tape recordings were also used to validate data. The purpose of field notes, according to Holloway and Wheeler (2010: 185), is to remind the researcher of events, actions and interactions that took place during data collection as well as evaluating the consistency and validity of information given by participants. Field notes were made up of descriptive or observational and reflective noteS.
2.5.1 Observational notes
Observational notes are in-depth descriptions of events and conversations that were observed during interviews (Polit & Beck, 2012: 736). The researcher recorded all the information about participants’ actions, the dialogue between the researcher and the participants as well as the context. The information was recorded as objectively and completely as possible (Polit & Beck, 2012: 548). In this study, the researcher took notice of the actions of the participants, experiences observed and what the participants said. The infrastructure and layout of the Labour and Neonatal Units were observed. The conditions of the units, including the cleanliness and infection control strategies, were also observed.

2.5.2 Reflective notes
Burns and Grove (2009: 545) define reflective notes as the process during which the researcher explores personal feelings and experiences that may influence the study and the integration of the researcher’s own understanding into the study. Reflective notes are notes about the researcher’s personal experiences, reflections and progress made in the field (Polit & Beck, 2012: 549). Reflective notes are made of methodological, theoretical and personal notes.

2.5.2.1 Methodological notes
Methodological notes serve as documented thoughts about new approaches or why a certain strategy was more effective than another and it reminds the researcher of how to do subsequent interviews (Polit & Beck, 2012: 548). New approaches and strategies for interviewing were developed for this study after the researcher repeatedly paraphrased the research questions and participants’ responses in researcher’s own words (refer to 2.3.4, Data Collection). During the subsequent interviews the researcher improved her qualitative interviewing skills. Probing strategies were appropriately used and the participants responded well to questions and were able to give as much information as was needed.

2.5.2.2 Theoretical notes
Theoretical notes are also called analytical notes and are used to document the researcher’s thoughts about how to make sense of what she observes during data collection (Polit & Beck, 2012: 549). The researcher listened to the recorded interviews
for any part that needed improvement. The physical actions and spoken words of participants were also observed. The educational background and experience of each participant were utilised as a context for interpreting the data.

2.5.2.3 Personal notes
Personal notes are the researcher’s own feelings, i.e. how one experienced, reflected or reacted to participants’ responses in the field (Polit & Beck, 2012: 549). Personal notes help the researcher to cope with the stress she may encounter. In this study, the researcher made personal notes as a reaction to a situation where the participant refused to be tape recorded. The researcher put herself in the participant’s situation. This ethical dilemma was always in the back of the researcher’s mind when conducting interviews. Ultimately, the principle of the participant’s right to self-determination was applied by the researcher and hence the interview continued without using the tape recorder. It was the right of the participant to refuse to be tape recorded and the researcher respected that (Grove et al., 2013: 164).

2.6 CONCLUSION
This study followed a qualitative research approach as it was most appropriate for the research title, its objectives, purposes and research questions. A purposive sampling method was used to purposively select relevant midwives. Explorative, descriptive and contextual research designs were used for the study and were discussed in this chapter. One-on-one semi-structured interviews were used to elicit comprehensive and in-depth information from participants. Data analysis was done using Tesch’s eight steps. Lastly, how the trustworthiness of the study was ensured, was thoroughly discussed. The findings and literature control are discussed in the next chapter.
CHAPTER 3: PRESENTATION AND DISCUSSION OF FINDINGS

3.1 INTRODUCTION
In this chapter, the findings of the semi-structured interviews will be conveyed. The collected data provided evidence for the researcher’s interpretation of the participants’ spoken words (de Vos et al., 2011: 65). Data collected from the participants about their perceptions regarding factors contributing to NM, provided rich narrative data that was analysed using the eight steps of data analysis by Tesch (Creswell, 2009: 186). During data analysis, data was coded into categories and subcategories. To ensure trustworthiness, a literature control was performed as a measure to validate data and compare the findings with those of similar studies. However, few studies have examined the perceptions of midwives regarding factors contributing to NM. In this chapter, the researcher discusses the findings that emerged from her data analysis in terms of the relevant findings from the literature review. Field notes collected during the process of data collection are also presented.

3.2 OPERATIONALISATION OF THE STUDY
Individual one-on-one semi-structured interviews were used to collect data from ten participants. Purposive sampling was used to select registered nurses with midwifery qualifications and more than six months experience of working in the Labour and Neonatal Units of Jubilee Hospital. All participants were selected for their experience working with neonates in the said units, where the majority of NM occurs. The researcher collected data from participants using semi-structured questions as a guide during interviews. During the interviews, participants were audio recorded after the researcher obtained permission to record the interviews (Grove et al., 2013: 424) Data was collected until saturation was reached at the tenth participant.

Data obtained from participants were transcribed verbatim and any pauses or change of tone and/or emotion were marked as such. Participants’ tone of voice was considered in order to ensure an accurate description of any changes in emotions, which is significant for the understanding of the participants’ perceptions. To correlate the information for accuracy, the tape was replayed and reread. The participants’ perceptions that arose
during transcriptions/data analysis were written in the margin. Perceptions with similar meanings were grouped together as one theme and then the meanings that were related to a theme were clustered together to form categories and subcategories. The theme, categories and subcategories were confirmed in a consensus discussion with the independent/external coder, supervisor and co-supervisor.

A description of participants’ biographic data follows below.

### 3.3 BIOGRAPHIC DATA

A total of ten participants were interviewed. The biographic data collected related to qualifications, working experiences and participants’ ages. Participants’ ages ranged from twenty-nine to fifty-nine years, two participants were younger than forty years and eight participants were older than forty years. Five participants had six months to three years working experience and the other five participants had more than three years working experience in the Labour and Neonatal Units. Five of the ten participants had post-basic qualifications.

Table 3.1 illustrates participants’ biographical data.

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Characteristics</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Below 40 years</td>
<td>02</td>
</tr>
<tr>
<td></td>
<td>Above 40 years</td>
<td>08</td>
</tr>
<tr>
<td>Experience</td>
<td>6 months – 3 years</td>
<td>05</td>
</tr>
<tr>
<td></td>
<td>3 years and above</td>
<td>05</td>
</tr>
<tr>
<td>Qualifications</td>
<td>Post-basic qualification (midwifery and neonatal care)</td>
<td>05</td>
</tr>
<tr>
<td></td>
<td>No post-basic qualification</td>
<td>05</td>
</tr>
</tbody>
</table>

- **Ages**: Eight of participants were older than forty years and two of participants were younger than forty years. The South African Nursing Council Statistic (2013: 1) indicates that the highest percentage of midwives (31%), who are functional, are nearing their retirement age of between fifty and fifty-nine years.
and midwives who are below thirty years of age constitute the very low percentage of 4%. This implicates the challenge we are facing in SA about shortage of midwives. As such South African government needs to come up with strategies of resolving the challenge.

- **Qualifications**: Five of participants had no post-basic qualifications in midwifery and neonatal care, whereas five of participants had post-basic qualifications. It may look like the qualification percentages are comparative, but the reality of the shortage of competent midwives in neonatal care is well known. Storey and Russell (2010: 193) stated that the shortage of both neonatal nurses and competent midwives was found to be the factor that contributes most to NM. In this study it was also indicated that some of the NM that occurred in labour and neonatal units of were due to midwives who were unable to perform neonatal resuscitation.

- **Experience**: Five of participants that were interviewed had more than three years’ experience and five of participants had less than three years’ experience working in the Labour and Neonatal Units. In this study the participants alluded a need for more experienced midwives with competent skills in obstetrics who will be able to manage neonates appropriately and reduce NM.

### 3.4 DISCUSSION OF FINDINGS AND LITERATURE CONTROL

In this study, five categories and fourteen sub-categories emerged during data analysis. Under the recommendations by midwives five sub-categories emerged. The categories and sub-categories helped the researcher in exploring and describing the perceptions of midwives regarding factors contributing to NM. Table 3.2 illustrates the categories and sub-categories.

**Table 3.2**

<table>
<thead>
<tr>
<th>Categories</th>
<th>Sub-Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.4.1 Patient factors</td>
<td>• Lack of knowledge about preventive measures to reduce NM</td>
</tr>
<tr>
<td></td>
<td>• Lack of adherence to scheduled ANC services</td>
</tr>
</tbody>
</table>
| 3.4.2 Obstetric complications | • Late reporting to hospital when in labour  
• Prematurity  
• Birth-asphyxia with meconium aspiration syndrome |
|---|---|
| 3.4.3 Mother’s condition in relation to pregnancy | • Hypertensive disorders  
• Malnutrition and anaemia  
• HIV and AIDS |
| 3.4.4 Lack of resources |  |
| 3.4.4.1 Lack of human resources | • Shortage of adequate number of competent and experienced midwives and doctors |
| 3.4.4.2 Lack of material resources | • Lack of Cardiotocography machines  
• Lack of Kangaroo Mother Care unit  
• Lack of admission beds at referral hospital |
| 3.4.5 Organisational factors | • Poor support and supervision for midwives  
• Delayed transport for referred neonates |
| 3.4.6 Recommendations by midwives | • In-service training for midwives  
• Community awareness about the importance of attending to ANC services  
• Provision of adequate number of competent and experienced midwives and doctors  
• Availability of Kangaroo Mother Care unit  
• Improvement of emergency transport system for referred neonates |
3.4.1 Category 1: Patient Factors

Patient factors emerged as the first category during data analysis. Three sub-categories were identified under the first category: lack of knowledge about preventive measures to reduce NM, lack of adherence to scheduled ANC services and late reporting to hospital when in labour.

- **Lack of knowledge about preventive measures to reduce NM**

Participants also felt that mothers lacked knowledge about affordable, preventive measures to reduce NM, such as the importance of breast feeding and Kangaroo Mother Care, because the mothers did not attend ANC services and thus these mothers did not know when to report to health care facilities.

The following were some of the quotes:

“*Pregnant mothers lack some information regarding obstetric problems and as such they do not report promptly to health facilities when experiencing problems.*” [Participant: 3]

“*Mothers who did not book during ANC had no knowledge about what was happening about their babies. They do not know the importance of breastfeeding or Kangaroo Mother Care.*” [Participant: 6]

A study conducted in Ghana, Kenya and Malawi supports the findings of this study about the lack of knowledge of pregnant women. The study indicated that the preventive measures that were performed at health facilities to prevent NM were not understood by pregnant women. The preventive measures included screening for hypertension and HIV which are identified as contributory factors to NM. (Pell, Menaca, Were, Afrah, Chatio, Manda-Taylor, Hamel, Hodgson, Tagbor, Kalilani, Ouma & Pool, 2013: 6).

Lawoyin *et al.* (2010: 22) found that pregnant women and the community’s lack of knowledge about preventive measures to reduce NM contributed to NM as most of the neonatal deaths that occurred in Nigeria were from mothers did not use health facilities during labour and delivered at home. A study conducted in South Africa revealed that seeking medical help too late during labour was due to a lack of awareness as to how
and when to use health care facilities (Pattinson, Woods, Greenfield & Velaphi, 2005: 2).

The implication is that babies will continue to die among other women as long as these women do not attend ANC and lack knowledge about measures that prevents new-born deaths.

- **Lack of adherence to scheduled ANC services**

In regard to this sub-category, participants contended that most of the babies who end up dying in the Neonatal Unit are babies whose mothers did not attend ANC services appropriately and missed some of the appointments. Other participants felt that late booking by pregnant women contributed to neonatal deaths as some of the babies that died resulted from mothers who booked late during pregnancy. As such, obstetric problems, like pregnancy induced hypertension, were not promptly identified and properly managed.

The following were some of the quotes:

“Some of the pregnant mothers do not adhere to ANC appointments as some would be having only two ANC visits and the last visit was two months back.” [Participant: 6]

“There is a problem with late booking by pregnant women and as such these mothers deliver premature or small for gestational age babies, because they did not practice healthy lifestyles during pregnancy.” [Participant: 10]

‘Some pregnant mothers are admitted with very high blood pressure. When you look in the patient’s ANC card, there is only one ANC visit.” [Participant: 1]

In their study, Massey, Rising and Ickovics (2006: 286) concur with the findings of this study regarding the importance of attending ANC appointments, conferring that most mothers who attended ANC appointments reach term pregnancies and obstetric problems, such as preterm labour and hypertensive disorders in pregnancy that are associated with NM are identified early and preventive measures are promptly taken. Mothers with knowledge about pregnancy are more likely to make proper use of the
available options. They will be more prone to take heed of advises and they will book early in pregnancy and adhere to ANC follow ups during pregnancy (Hoa, Nga, Malqvist & Persson, 2007: 169). Burns (2005: 2) identified that infant mortality rates, including neonatal and perinatal mortality rates, were greater among women who received no ANC services.

If the community at large understand the importance of ANC services and pregnant mothers utilises the services, neonatal deaths can be reduced.

- **Late reporting to hospital when in labour**

In regard to this sub-category, participants’ perceptions were that some of the neonatal deaths that occurred in the Labour Unit are due to pregnant mothers reporting late to the hospital when they are in labour. The participants expressed their concerns that some women arrive in the Labour Unit when they are already in the advanced stage of labour and some even present with obstetric problems, such as intrapartum vaginal bleeding and fetal distress.

The following were some of the participants’ quotes:

“Most of the HIV positive mothers who deliver these severe premature babies, who end up dying in this unit, are not booked and reported late in Labour Unit when in labour.” [Participant: 7]

“Other pregnant mothers report late in the hospital when in labour. At times they come when already in the advanced stage of labour and some deliver babies with low Apgar score as they come already having some obstetric problems.” [Participant: 3]

Waiswa, Kallander, Peterson, Tomson and Pariyo (2010: 969) conducted their study in Sweden and found that pregnant mothers who delayed in recognizing the need to seek medical care during labour or when having obstetric problems such as preterm labour, was the major cause of neonatal deaths. Many perinatal deaths that occurred in the Harare Maternity Hospital were due to seeking medical assistance too late during labour (Feresu, Harlow, Welch & Gillespie, 2005: 1).
Lloyd and de Witt (2013: 1) in South African study supports the findings regarding delay in seeking medical attention during labour is one of the common patient-related factors contributing to neonatal deaths probable because reporting early in the early stages of labour, facilitates early recognition of obstetric problems and measures taken to prevent obstetric complications.

3.4.2 Category 2: Obstetric Complications
The second category to emerge during data analysis was obstetric complications, with two subcategories namely: prematurity and birth-asphyxia with meconium aspiration syndrome.

- Prematurity

In this sub-category, participants’ perceptions were that some of the neonatal deaths that occurred in the Neonatal Unit were due to prematurity. Participants expressed that they admitted premature babies of less than 1000 grams in the Neonatal Unit, these babies needed to be nursed in ventilators for survival. Some of these premature babies ended up dying in the unit because of their conditions. The premature babies are prone to die due to respiratory problems and hypothermia because their organs, such as lungs, are underdeveloped and brown fat, that generates heat, has not yet formed (Sheoran, Babu, Mandal & Rai, 2011: 161).

The following were some of the quotes:

“Most of the deaths occurring in this unit are from premature. Premature babies mostly lack brown fat that generates heat to prevent hypothermia and as such they die.” [Participant: 7]

“I think prematurity is the most cause of new-born deaths in this unit as we mostly admit preterm babies weighing less than 1000 grams who need to be referred to tertiary hospital. Some of these babies die in the unit while awaiting transfer or transport to tertiary hospital.” [Participant: 9]

Dippenaar and da Serra (2012: 754) define brown fat as a source of energy for heat production which is unique to the neonate, but reduced or absent in the premature
baby. Sheoran et al. (2011: 161) conducted their study in India and their findings are in agreement with these findings regarding obstetric complications causing neonatal deaths. They identified that premature babies are at risk of developing asphyxia, sepsis, hypothermia and feeding problems. In addition, a study conducted in America supports the findings of this study as they indicated that preterm births are associated with a significant number of new-born deaths which accounted for 45% of NM. In their study, respiratory distress was found to be the most common cause of morbidity and mortality in to preterm births (McIntire & Leveno, 2008: 35).

Velaphi and Rhoda (2012: 69) identified that prematurity is the leading cause of NM as premature babies have a high risk of developing hypothermia due to insufficient energy stores and brown fat, which produces heat. Prematurity was identified as the leading cause of NM where neonatal deaths accounted for 38.7% of all new-born deaths (Lloyd & de Witt, 2013: 1).

- **Birth-asphyxia and meconium aspiration syndrome**

Participants perceived that birth asphyxia contributed to NM as fetal distress was not promptly managed due to the fact that there was only one medical doctor in the Labour Unit during weekends and at night. Participants were of the opinion that even when obstetric problems were identified in time, they felt powerless to prevent obstetric problems becoming complications as the only doctor was busy in obstetric theatre and some midwives lacked neonatal resuscitation skills. Meconium aspiration syndrome was identified by participants as contributing to birth asphyxia.

The following were some of the participants’ quotes:

“I think one of the factors contributing to NM is intra-uterine asphyxia. There is one doctor in this unit and at times there is a delay in the management of some clients with obstetric problems needing caesarean section due to obstetric problems identified.” [Participant: 8]

“Some mothers who crossed alert and action lines of partograms with the presence of fetal distress are not promptly done caesarean section due to the fact that the only
doctor in the unit would be busy doing another caesarean section or obstetric related procedures.” [Participant: 4]

“Other mothers report late at the hospital and when you examine them they are draining meconium-stained liquor and at the end the baby has aspirated meconium.” [Participant: 8]

Asphyxia occurs when the placental or pulmonary gas exchange is compromised during pregnancy, intrapartum or immediately after birth (Velaphi & Pattinson, 2006: 99). Meconium Aspiration Syndrome occurs as a result of the inhalation of meconium stained amniotic fluid resulting in asphyxia-hypoxia with difficulty in breathing (Olds, London, Ladewig & Davidson, 2004: 142). Bhutta, Darmstadt, Haws, Yakoob and Lawn (2009: 3) concluded in their study, that it is vitally important to perform amnio-infusion during labour, where necessary, to reduce the risk of the new-born suffering from birth asphyxia.

Olds et al. (2004: 752) define amnio-infusion as a technique by which Sodium Chloride or Ringer’s Lactate is introduced into the uterus through an intra-uterine pressure catheter to dilute heavy meconium stained fluid to prevent the possibility of the new-born baby aspirating meconium that may result in birth-asphyxia. Birth asphyxia was identified as one of the causes of NM and accounted for 30% of all NM. It was found that neonatal deaths due to birth asphyxia were due to poor intrapartum quality care and birth asphyxia was identified as the most contributory factor to new-born deaths (Waiswa et al., 2010: 969 and Neogi, Malhotra, Zodpey & Mohan, 2011: 1).

3.4.3 Category 3: Mother’s condition in relation to pregnancy
The three sub-categories that fell under this category were: hypertensive disorders, malnutrition and anaemia, and HIV and AIDS.

- **Hypertensive disorders**

Participants expressed that hypertensive disorder, such as pre-eclampsia and chronic hypertension, contributed to NM. Participants felt that some pregnant women came to hospital with elevated blood pressure and sometimes when the fetal condition was
assessed, there was already fetal distress. Neonatal resuscitation was not always successful in women who reported to the hospital already in the advanced stage of labour, the participants indicated.

The following were some of the quotes:

“When you attend to the woman, you find that she is previous caesarian section twice and with pre-eclampsia.” [Participant: 1]

“Other pregnant mothers are admitted with elevated blood pressure and some are not booked to ANC services. When fetal condition is assessed there is fetal bradycardia.” [Participant: 10]

Pregnancy-induced hypertension contributes to neonatal deaths, premature deliveries and is associated with morbidity and mortality due to the generalized vaso-constriction of blood vessels. Both prematurity and intra-uterine growth restriction are associated with increased morbidity and mortality. In addition, various studies identified pregnancy-related hypertension as one of the factors causing NM (Sheoran et al., 2011: 162; Bill & Melinda Gates foundation, 2009: 2; McIntire & Leveno, 2008: 39; Hermes, Ket, van Pampus, Franx, Veenendaal, Kolster, Tamsma, Bloemenkamp, Ponjee, van der Hout, ten Horn, Loix, Mol & de Groot, 2012: 807).

Booking early and attending ANC services would enable the women to receive prophylaxis Calcium Gluconate which is believed to reduce the likelihood of Pre-eclampsia.

- **Malnutrition and anaemia**

Participants viewed malnutrition and anaemia as factors associated with prematurity or babies with low birth weight and thus it contributed to neonatal deaths. They indicated that some women, who reported to the Labour Unit while in labour, were malnourished or anaemic and some delivered premature and low birth weight babies.
The following were some of the quotes:

“Mothers who did not attend ANC services have no knowledge about the importance of correct diet during pregnancy which will reduce preterm deliveries or giving birth to small for gestational babies.” [Participant: 7]

“Some mothers who are malnourished are more likely to have preterm labour.” [Participant: 3]

Bhutta et al. (2009: 2) argues that if pregnant women attended ANC services during pregnancy, malnutrition could be detected early and corrected so as to decrease obstetric complications associated with malnutrition. Sheoran et al. (2011: 162) reiterates the fact that mother’s malnutrition and anaemia are the major factors responsible for low birth weight babies, which in turn contributed to NM in most developing countries. Maternal malnutrition and anaemia were found to be associated with babies that are small for their gestational age as well as premature births with all its complications, such as hypothermia, hypoglycaemia and necrotizing enterocolitis, which all contribute to NM (Mahajan, Singh, Shah, Gupta & Kochupillai, 2004: 190).

A lack of knowledge regarding nutrition, which causes malnutrition, was among the factors identified by Hoque, Haaq and Islam (2011: 28) as contributing to NM because malnutrition mostly results in low birth weight.

The implication is that maternal malnutrition and anaemia can be prevented or corrected during pregnancy if the mother attends ANC services.

- **HIV and AIDS**

Participants perceived that HIV and AIDS contributed to NM as most of the neonatal deaths that occurred in the Neonatal Unit were from HIV positive mothers. Participants further identified that during a discussion of the monthly statistics, they found that 90% of the NM in the Neonatal Unit was from mothers who were HIV positive and most of these mothers did not attend ANC services.
The following were some of the quotes:

“When we do monthly statistics on NM, we find that about 90% of NM is from mothers who are HIV positive and did not attend ANC services.” [Participant: 7]

“Most HIV positive who did not attend ANC services deliver gross-premature babies and most deaths occurring in this unit are due to prematurity.” [Participant: 6]

According to the National HIV and Syphilis Prevalence Survey of 2008, cited by the South African Department of Health (2010: 1), HIV prevalence among pregnant women is estimated at 29.3%. In his study, Evian (2011: 307) detected that Prevention of mother to child transmission (PMTCT) is a well-established mode of HIV transmission and it may occur during pregnancy, labour and breastfeeding. Approximately 10% of HIV transmission takes place during pregnancy, 60% during labour, and 30% during breastfeeding. Furthermore, one out of five babies exposed to HIV will contract it from their HIV positive mothers if no steps are taken for the prevention of mother to child transmission (Evian 2011: 307).

About 89% of the children who died at Witbank hospital, South Africa, were either exposed to HIV or HIV infected, with 40% of all deaths resulting from pneumocystis jiroveci pneumonia. The HIV testing rate was very low (at 15%) due to mothers and counsellors' lack of knowledge regarding HIV (Patrick & Stephen, 2005: 13).

Above statements implicate the importance of early booking, HIV counselling and testing during pregnancy, and adhering to ANC appointments. Emphasis on the importance of PMTCT awareness prior and during pregnancy could assist to reduce or eliminate Mother to ChildTransmission.

3.4.4 Category 4: Lack of Resources
This category has two sub-categories that are: lack of human resources and lack of material resources.
3.4.4.1 Lack of human resources
The lack of human resources was perceived by participants as a factor contributing to NM. Under this sub-category, another distinction emerged, namely shortage of adequate number of competent and experienced midwives and doctors.

- Shortage of adequate number of competent and experienced midwives and doctors

Participants perceived that shortage of competent and experienced midwives and doctors contributed to neonatal deaths that occurred in Jubilee Hospital. Participants further expressed that, above and beyond the staff shortages, some of the midwives and doctors working in the Labour and Neonatal Units lacked the necessary obstetric skills to care for mothers and their babies. Participants were of the opinion that inexperienced midwives contributed to NM, because sometimes they were unable to detect obstetric abnormalities in time. Furthermore, participants felt that even when the experienced midwives detected some abnormalities in pregnant women promptly, the part-time doctors would sometimes take too much time before intervening as they lacked knowledge about some obstetric conditions.

The following were some of the quotes:

“Firstly the midwives working in this unit are understaffed. You may find that one midwife is nursing four patients. It becomes very difficult for one midwife to monitor all these patients.” [Participant: 1]

“At times when a baby needs to be resuscitation, we need a medical doctor to help us, but most of the time you find that the doctor is busy in other wards. By the time the doctor reaches the unit, the baby is already dead.” [Participant: 7]

“At times the inexperienced midwives are not competent and as such are unable to detect any abnormalities and continue to monitor these women without reporting abnormalities to senior midwives.” [Participant: 1]
“The fact that the part-time doctors are not well orientated, even when an obstetric problem is detected in time by midwives, the doctor will take time to intervene.” [Participant: 10]

A study conducted in America supports the findings regarding the shortage of midwives. The study indicated that nurses are experiencing a higher workload than ever due to an increased demand for nurses and an insufficient supply of nurses to meet the current demand. The heavy workload of nurses, as a result of reduced staffing, may result in sub-optimal patient care as nurses may have insufficient time to make decisions to perform important procedures so patients can have positive outcomes (Carayon & Gurses, 2008: 203). A shortage of doctors is experienced world-wide, but the problem is appalling in the developing countries. According to Neogi et al. (2011: 3), there was less than the recommended number of doctors and nurses in three Special Care New-born Units and despite the shortage of doctors in these Indian Hospitals, doctors had to manage outpatients, inpatients as well as attend to paediatric emergencies.

A study conducted in Malawi by Kambala, Morse, Masangwi and Mitunda (2011: 2), supports the findings of this study regarding the lack of midwives and doctors at health care facilities. In Botswana, Mogobe, Tshiamo and Bowelo (2007: 169) found that neonatal and maternal deaths were due to a shortage of doctors. Blank, Prytherch, Kaltschmidt, Krings, Sukums, Mensah, Zakane, Loukanova, Gustafsson, Sauerborn and Haefeli (2013: 2) in their study conducted in rural Sub-Saharan Africa revealed that midwives and doctors were unable to monitor high risk patients as closely as they were supposed to and that even if the appropriate actions were promptly taken, the trained staff frequently did not perform certain duties to the best of their abilities. This is because other countries shortened their midwifery courses with the aim of producing more midwives, but ultimately, poor quality midwives were produced

3.4.4.2 Lack of material resources
The second sub-category identified under a lack of resources, was a lack of material resources with another three distinctions which are: a lack of Cardiotocography machines, lack of admission beds at the referral hospital, lack of Kangaroo Mother Care units.
Lack of Cardiotocography machines

The Cardiotocography (CTG) is a machine used to record the fetal heart rate and uterine contractions during labour (Fraser, Cooper & Nolte, 2006: 977). The machine is able to detect an abnormal fetal heart rate during maternal contractions. According to participants, there were one to three functional CTG machines in the unit, but usually there were about five to six women needing continuous monitoring with the machine until they gave birth. Participants perceived that a lack of CTG machines contributed to NM, because it was difficult to constantly monitor some women in labour, who needed continuous monitoring, and therefore obstetric problems, such as fetal distress, were not promptly detected. Participants felt that if there were enough CTG machines to monitor the fetal conditions, some of the obstetric problems could have been identified earlier and the appropriate actions to prevent unnecessary neonatal deaths would have been taken.

The following were some of the quotes:

“The ‘prevalence’ of mortality of new-borns is because of mothers who are on induction of labour by Cytotec are not closely monitored because of lack of Cardiotocography machines.” [Participant: 1]

“Most of the time we would be having one functional Cardiotocography machine and with 6 mothers on induction of labour by Cytotec. All these mothers on Cytotec must be on continuous Cardiotocography monitoring.” [Participant: 1]

“Three available Cardiotocography cannot constantly monitor all these mothers and as such some fetal problems are not detected early. At times fetal distress will be observed during or immediately after delivery.” [Participant: 10]

A study conducted in the United States supports the findings of this study regarding the use of electronic fetal monitoring during labour and how it is related to a substantial reduction of early neonatal morbidity and mortality. The study also found that electronic fetal monitoring can decrease deaths among preterm fetuses by detecting premature related complications, such as hypoxia and acidosis, early. Electronic fetal monitoring
also assists in the reduction of NM in all gestational ages through detecting fetal hypoxia in time (Chen, Chauhan, Ananth, Vintzileos, & Abuhamad, 2011: 1).

Chauhan, Chen, Ananth, Vintzileos and Abuhamad (2012: 19) found that electronic fetal heart rate monitoring greatly decreases early neonatal deaths and morbidity by detecting fetal problems early so interventions can be performed promptly.

- **Lack of Kangaroo Mother Care unit**

Participants stated that a lack of Kangaroo Mother Care (KMC) units contributed to some deaths due to prematurity. They felt that if KMC unit was available, some of the new-born deaths could have been prevented.

The following were some of the quotes:

“We also lack facility or space for nursing stable premature babies in Kangaroo Mother Care. We nurse both sick and babies who need Kangaroo Mother Care together.” [Participant: 5]

“I think lack of Kangaroo Mother Care unit contributed to some of neonatal deaths that occurred because we nurse all babies who are sick or stable in this unit. Some deaths could have been prevented with the practice of Kangaroo Mother Care.” [Participant: 6]

In Ghana, a study found that there was a significant reduction in premature related deaths after the introduction of KMC units and therefore KMC was regarded as a solutions to the problem of reducing neonatal deaths caused by prematurity (Bergh, Manu, Davy, van Rooyen, Asare, Williams, Dedzo, Twumasi & Nong-beifubha, 2012: 1).

In their study conducted in Cape Town, South Africa, Lawn, Mwansa-Kambafwile, Horta, Barros and Cousens (2010: 1144) found that KMC effectively reduces NM among babies with a birth weight of less than 2000 grams and that KMC is effective in reducing morbidity among premature babies. If KMC was available and practised in Neonatal Unit of Jubilee Hospital, some of the neonatal deaths due to complications of prematurity such as hypothermia could have been prevented.
• **Lack of admission beds at referral hospital**

Participants perceived that a lack of admission beds at the referral hospital contributed to NM. They felt that if some of the neonates who needed management at the tertiary hospital were not denied access to the referral hospital, due to the unavailability of beds, some of the neonatal deaths could have been prevented.

The following were some of the participants’ quotes:

“At times the doctor would transfer the neonate to tertiary hospital and doctors at tertiary hospital would refuse the neonate saying that they do not have admission beds.” [Participant: 9]

“Lack of admission beds at tertiary hospital increases our burden of neonatal deaths as at times we are stuck with a sick neonate whom we are unable to manage.” [Participants: 9]

Neogi *et al.* (2011: 3) supports the findings of this study regarding the lack of admission beds. The study indicated that in the Special Care New-born Units in level two hospitals in India, available beds were less than the required number and as a result some of the neonates who still needed specialized care were discharged early to accommodate other sick babies.

In South Africa, McKerrow and Mulaudzi (2010: 67) and Lloyd and de Witt (2013: 2) identified a lack of access to high care beds with ventilators as another factor that contributed to neonatal deaths. Lack of beds in tertiary hospital results in sick neonates nursed in level one Hospital like Jubilee, where necessary resources are unavailable leading to the demise of these babies.

**3.4.5 Category 5: Organisational Factors**

The fifth category that emerged was organisational factors. Two sub-categories emerged from organisational factors and it is poor support and supervision for midwives and delayed transport for referral of neonates.
**Poor support and supervision for midwives**

Participants perceived that management was not supporting them in their working environment and, as such, they felt that they were alone and without essential equipment. Participants also noticed that newly qualified midwives were not adequately supervised and therefore there was a delay in making proper decisions regarding the management of obstetric problems. They expressed that the inexperienced midwives sometimes failed to identify obstetric problems in time and continued to monitor those women as if they were low risks.

The following were some of the participants’ quotes:

“The management is not supporting us in our needs such as in-service training and advocating for human and material resource improvement.” [Participant: 1]

“Another challenge is poor supervision on new staff. Newly qualified staff members are allowed to work alone without supervision and new midwives are unable to interpret their findings on partogram. As such they will continue to monitor women with obstetric problems without intervention.” [Participant: 10]

Blank *et al.* (2013: 13) supports the findings of this study regarding organisational challenges by indicating that some health care providers failed to recognize obstetric problems, such as elevated blood pressure or poor progress of labour, in time due to low staff morale, which resulted from poor support and supervision by management. Managerial or electronic support for maternal and child care could improve the poor quality of care, thus reducing maternal and neonatal deaths.

In America, Giri, Frankel, Tulenko, Puckett, Bailey and Ross (2012: 4) concur with the findings of this study and indicated that insufficient support or supervision lead to health workers being unable to apply theory to practice. Two-way communication between training facilitators and health learners/workers is necessary for effective learning (Khan & Coomarasamy, as cited in Giri *et al.*, 2012: 4).
• **Delayed transport for referral of neonates**

The second category to emerge under organisational factors was delayed transport for referred neonates. Participants stated that delayed transport for referred neonates to the tertiary hospital contributed to NM. They felt that the turnaround time for emergency transport for referred babies was too long, as sometimes they waited for more than four hours for transport to arrive and at other times, babies died whilst waiting for transport.

The following were some of the quotes:

“There is a delay in transportation of referred babies from this unit to tertiary hospital by paramedics. At times the babies die while waiting for transport.” [Participant: 6]

“Another problem is the transportation of babies to tertiary hospital where we wait for a long time, usually three to four hours. At times when the transport arrives, the baby is already dead.” [Participant: 6]

Storey and Russell (2010: 193); Lloyd and de Witt (2013: 2) and McKerrow and Mulaudzi (2010: 67) concur with the findings of this study regarding delayed transport, they contended that the transport of mothers and babies within the health facilities was one of the factors that contributed to NM. The authors concluded that inter-facility transport was amongst the key areas that needed urgent attention in order to reduce neonatal deaths at low level of care facilities such as Jubilee Hospital.

**3.4.6 Category 6: Recommendations by Midwives**
The category recommendations by midwives had five sub-categories which are: in-service training for midwives and doctors, community awareness about the importance of attending ANC services, provision of an adequate number of skilled and experienced midwives and doctors, availability of KMC and improvement of the emergency transport system for the referred of neonates.
In-service training for midwives and doctors

Participants recommended that in order to reduce NM in Jubilee Hospital midwives and doctors need to be developed in obstetric skills. Essential steps in managing Obstetric Emergencies were recommended by participants for midwives and doctors, especially the newly qualified staff members.

The following were some of the participants’ quotes:

“We need to have regular in-services or workshops for both midwives and doctors, especially on essential steps in the management of obstetric emergencies.” [Participant: 3]

“Study leaves should be granted to midwives for Advanced Midwifery and Paediatric Nursing.” [Participant: 5]

Improved midwifery skills in procedures like obstetric drills, which include the management of obstetric complications such as birth asphyxia and delivering a baby with shoulder dystocia, can improve the management of obstetric conditions and reduce the associated new-born deaths (Bhutta et al., 2009: 15). The findings of Giri et al. (2012: 5) are in line with the recommendations of this study, as it is stated that continued professional development plays a vital role in the success of health care systems and it is recommended that ongoing professional development should keep health care providers up to date, which in turn will leads to improved health care experiences and positive health outcomes.

Lloyd and de Witt (2013: 2) corroborate the recommendations, indicating that health care providers need to be regularly trained in neonatal resuscitation. The provision of sufficient midwives and medical doctors, with the appropriate training and competency in obstetric skills in the Labour and Neonatal Units, should be the first priority for improving neonatal survival before considering the utilisation of expensive specialised equipment (Velaphi & Rhoda, 2012: 70).
• Community awareness about the importance of attending ANC services

Participants stated that there is a need for community awareness about the importance of attending ANC services, since they perceived that most of the neonatal deaths were from mothers who did not attend or adhere to ANC services. Participants felt that the community and pregnant mothers should understand pregnancy and the danger signs or complications to pregnancy. If they attend ANC services, pregnant mothers will be knowledgeable and will promptly seek medical assistance should they notice these danger signs.

The following were some of the quotes:

“There is a need for community awareness on the importance of attending ANC when pregnant.” [Participant: 6]

“Health education needs to be stressed during ANC about the danger signs of pregnancy and to report early when observing problems to the nearest health facility.” [Participant: 2]

Early booking during pregnancy and adhering to ANC services can possibly serve as a platform for the necessary interventions that will help reduce neonatal deaths as it may increase the likelihood that the women will promptly seek emergency obstetric care (Bhutta et al., 2009: 2; Feresu et al., 2005: 1). Massey et al. (2006: 293) reiterates this recommendation indicating that perinatal education results in improved birth weight, gestational age, patient satisfaction, ANC attendance, early breastfeeding initiation and many more positive outcomes that lead to mother and child survival.

Sheoran et al. (2011: 162) supported the recommendations of participants regarding the importance of health education and indicated that women who are well informed about good practices in pregnancy are more likely to reach full term with their pregnancies, thus reducing the chances of premature births, which contribute to NM. In order to reduce neonatal deaths, neonatal and maternal survival should be integrated into the ANC services at the primary health care level (Lawoyin et al., 2010: 23).
Provision of an adequate number of competent and experienced midwives and doctors

Participants recommended that an adequate number of competent midwives and doctors could help to reduce NM as skilled doctors and midwives will be able to handle the delicate babies with specialised knowledge so as to prevent unnecessary deaths. Participants were of the opinion that if there were more doctors in the units, decisions will be made and actions will be taken promptly to reduce obstetric problems that may become complications leading to NM.

The following were some of the quotes:

“If they can hire more staff with neonatal care skills, we could be able to handle these babies with special knowledge and NM can be reduced.” [Participant: 5]

“Hiring more midwives, mostly with neonatal skills, could help reduce NM.” [Participant: 8]

“We need more doctors and midwives in the unit. There is only one doctor on call for the whole hospital at night and at times when we need doctor’s assistance he may be busy in other wards or in theatre.” [Participant: 3]

Carayon and Gurses (2008: 208) recommended using the proposed human factors engineering approach that is aimed at workload reduction to improve patient care. Addressing the shortage of neonatal midwives and medical doctors could assist in the reduction of new born deaths (Storey & Russell, 2010: 193).

Mogobe et al. (2007: 169) corroborated this by suggesting that the staffing norm should be established and should mostly involve doctors, dealing with maternity services, on all levels of care. In a study conducted in Malawi by Katulafula, Hami and Chodzaza (2005: 126), it was suggested that improving the working environment, salary and career prospects for midwives could help in retaining midwives and that training more midwives, through an increasing number of existing training institutions, could assist in reducing NM.
The provision of an adequate number of staff, including midwives, paediatricians and obstetricians that care for neonates and pregnant women, is a priority in SA that could reduce NM (Lloyd & de Witt, 2013: 2; Baleta, 2011: 1304). Shortage of midwives should be promptly addressed in order to reduce neonatal deaths.

- **Availability of Kangaroo Mother Care unit**

Participants recommended that KMC units must be made available as it could reduce premature related deaths and other problems, like hypothermia.

The following were some of the quotes:

“There should be Kangaroo mother care unit for stable premature neonates.” [Participant: 5]

“Maybe if there was Kangaroo Mother Care unit in this hospital, some of the new-born deaths could have been prevented.” [Participant: 6]

Lawn *et al.* (2010: 1152) are in line with the recommendations in this study indicating that the effectiveness of KMC units in the reduction of NM provides sufficient cause to recommend the routine use of KMC units in health facilities for all stable premature babies who weigh less than 2000 grams at birth. It was also found that KMC can have positive outcomes if practiced in low-income countries where there are challenges such as understaffing, a lack of essential equipment and distant referral hospitals. McKerrow and Mulaudzi (2010: 70) and Velaphi and Rhoda (2012: 69) concur with the recommendations of this study indicating that Kangaroo Mother Care is the solution to the problems of caring for premature neonates.

- **Improvement of emergency transport system for referred neonates**

Participants recommended implementing an improved emergency transport system for the referral of new-borns as it could save lives; they witnessed many neonates dying whilst awaiting transport to the referral tertiary hospital. They further recommended that the emergency personnel of local ambulances need to be trained in neonatal resuscitation and that local ambulances should be equipped with essential neonatal
equipment, such as ventilators, so that they are able to transport sick babies to the tertiary hospital. Ultimately the goal is to reduce the turnaround time of the emergency transport of neonates.

The following were some of the quotes:

“Turnaround time of ambulances that transfer sick babies to tertiary hospital should be improved.” [Participant: 7]

“Improving transport for sick babies whereby local ambulances are installed with necessary neonatal equipment and ambulance drivers are in-serviced on neonatal resuscitation could reduce new born deaths.” [Participant: 9]

Gadziriniowski (2008: 317) and Fere su et al. (2005: 12) suggested a need to improve the referral system, standardizing referral transport and emergency care services in order to decrease the number of new born deaths.

Lloyd and de Witt (2013: 2), Baleta (2011: 1304) supported the recommendations of this study, indicating that mother and child services need to be improved in order to reduce the existing problem of NM. They recommend that referral routes and emergency transport for new-borns need to be improved. Pattinson et al. (2005: 3) identified a need for the adequate provision of health infrastructures, such as transport for referred mothers and neonates who need more specialized care, so that maternal and new born deaths can be decreased.

3.5 APPLICATION OF PENDER’S HEALTH PROMOTION MODEL

Wolcott (1990), as cited in Silverman (2013: 348), argued that it is no longer mandatory to support qualitative studies using a literature review. On the contrary, Creswell (2009: 27) purported that using a literature review in qualitative studies, where categories and sub-categories have been identified, will assist in the validation of the findings. The researcher therefore applied Pender’s Health Promotion Model to the perceived factors that contribute to NM so as to further strengthen and validate the findings of the study.
The three main concepts of the Pender’s Health Promotion Model are: individual characteristics and experience, behaviour-specific cognition and affect, and behavioural outcome (Maville & Huerta, 2008: 259).

3.5.1 Individual characteristics and experience
Individual characteristics and experience include prior related factors and individual factors.

Midwives, who are experienced professionals, must focus on modifying the behaviour of pregnant women to reduce NM. Prior related factors, such as earlier health promotion strategies implemented by midwives and individuals to reduce NM, can still be applied in addition to the new guidelines for maternity care in SA (2007). Personal factors, which relate to biological, psychological and socio-cultural factors, that influence midwives’ perceptions regarding factors contributing to NM have to be attended to as well. Community awareness about the importance of attending ANC services, as recommended in this study (refer to Category 6), can be implemented as a strategy to change the socio-cultural factors that influence NM. If the community is made aware then complications such as premature births and birth asphyxia can be detected earlier and be managed appropriately. General maternal conditions, like hypertensive disorders and HIV and AIDS, can also be identified earlier and be managed accordingly. If pregnant women book early and adhere to ANC appointments, other conditions, like malnutrition and anaemia, can be prevented through health promotion strategies, like health education on proper nutrition and provision of iron supplements. Therefore, more of the neonatal deaths, related to these conditions, can be reduced.

The support and supervision for midwives and doctors is an important positive psychological influence that can positively influence their perceptions of caring for the pregnant women and their newborn babies. This will ultimately help reduce NM.

3.5.2 Behaviour-Specific Cognition and Affect
Behaviour-specific cognition and affect in the Pender’s Health Promotion Model include: perceived benefit of action, perceived barriers to action, perceived self-efficacy, activity related affect, interpersonal influence and situational influence.
Perceived benefit of action includes all those activities perceived by midwives as beneficial to the reduction of NM, e.g. the provision of an adequate number of competent and experienced midwives and doctors, the improvement of the emergency transport system for referred new-borns, the availability of a KMC unit and in-service training for midwives and doctors, and should be considered by the management of the hospital to improve service delivery. The improvement of service delivery was perceived by participated midwives as imperative for reducing NM (refer to Category 6).

Perceived barriers to action include the lack of human and material resources, such as the shortage of competent professionals, the lack of cardiotogogram machines, the lack of a KMC unit, a lack of admission beds at the referral hospital and delayed transport for referred neonates, all these were perceived as barriers to efficient care for mothers and new born babies and it results in NM (refer to Category 4).

Perceived self-efficacy refers to midwives' perceptions about the knowledge and skills that they need to apply in order to decrease NM and it comprises the need for in-service education as well as support and supervision for midwives and doctors, as alluded to by midwives who participated in this study (refer to Category 5). Policy makers need to review the midwife/doctor: patient ratio and come up with a better staffing norm (Mogobe et al., 2007: 169). Solving the problem of inadequate human and material resources was recommended as a way to reduce unnecessary neonatal deaths (Kafulafula et al., 2005: 125). Monitoring and supervision in all health care facilities for the management of resources was also recommended. Baleta (2011: 1304) identified that an adequate number of competent staff, adequate equipment and adequate transport for sick mothers and their babies as priorities to improve mother and child health in order to reduce NM. Continued professional development was identified as an essential component of successful health care systems in delivering quality care (Giri et al., 2012: 5).

Activity related affect refers to the manner in which midwives perceive, understand and accept the prescribed strategies to reduce NM; therefore it includes the new guidelines for neonatal care (2008), service education and all improvements implemented by the hospital to develop quality patient care, which will lead to a reduction in NM.
Interpersonal influences, norms and models involve the interaction of midwives with other multidisciplinary teams, such as medical doctors, in the provision of quality health care to mothers and their babies in order to reduce NM. The improvement of transport for referred neonates to the academic hospital and the availability of admission beds in the academic hospital are perceived by midwives as interpersonal influences that may have an effect on the reduction of NM (refer to Category 4). Situational influences are personal perceptions regarding available options, demands characteristics and aesthetic features of the environment and refer to the positive and negative influences that encourage action that will reduce new born deaths. These influences, which may precipitate the occurrence of neonatal deaths, demand the hospital management and government to take heed of the recommendations made by the midwives who participated in this study, which explores ways to reduce NM.

3.5.3 Behavioural Outcome
The behavioural outcome of the Pender’s Health Promotion Model entails immediate competing demands and the commitment to a plan. Immediate competing demands relate to the situations perceived by midwives as obstacles to achieve their aim of reducing NM in their daily activities. Commitment to a plan of action involves the commitment by midwives to striving towards quality care in maternal and child health to reduce NM. These two opposing factors entail the continued attempts by midwives to provide quality care to pregnant mothers and their neonates, despite the shortcomings as alluded to in the findings of this study. The health promoting outcome in this study is the midwives’ perception of the reduction of NM. Giri et al. (2012: 5) indicated that continuous improvement of professional knowledge, skills and attitudes can lead to healthy outcomes, one of which is the reduction in NM as discussed in this study. A well informed and knowledgeable midwife will be able to give proper health education to individuals, their family members and the community. As a result the community will engage in health promoting strategies with positive health behavioural outcomes (Giri et al., 2012).
3.6 CONCLUSION

The study has shown that there are many challenges in the health system as well as in the community that hinder the achievement of MDG 4. There is a need for a multi-sectoral approach to resolve the current challenge of high rates of preventable NM. At this stage, attaining MDG 4 by 2015 is no longer possible in SA; therefore the focus should be on the implementation of sustainable strategies to reduce NM. The Health Promotion Model could serve as the platform for improving the health status of pregnant women in the communities in order to reduce NM.
CHAPTER 4: CONCLUSION, RECOMMENDATIONS, IMPLICATION AND LIMITATIONS OF THE STUDY

4.1 INTRODUCTION

The categories, sub-categories and the literature from similar studies on the perceptions of midwives regarding NM were discussed in the previous chapter. In this chapter the conclusion, recommendations, implication and limitations of the study are summarized.

4.2 CONCLUSION OF THE STUDY

The researcher conducted a qualitative study that followed the exploratory, descriptive and contextual research designs. Ten midwives working in the Labour and Neonatal Units, for more than six months, were purposively selected. The study explored and described the perceptions of midwives regarding factors contributing to NM. Using different data collection strategies the researcher was able to conduct one-on-one interviews. The researcher used an audio tape recorder and collected field notes for data collection. The conclusion answers the following research questions:

- What are the perceptions of midwives regarding factors contributing to NM in labour/neonatal units of Jubilee Hospital?
- What recommendations can be made to reduce NM in labour/neonatal units of Jubilee hospital?

Based on the above research questions, the following research objectives were used during research process:

- To explore and describe the perceptions of midwives regarding factors contributing to NM in labour/neonatal units of Jubilee Hospital.
- To make recommendations that would assist in reducing NM.
4.2.1 Research question 1
What are the perceptions of midwives regarding factors contributing to NM in labour/neonatal units of Jubilee Hospital?

Five categories and fourteen sub-categories emerged under this question during data analysis. The categories and sub-categories assisted the researcher in exploring and describing the perceptions of midwives regarding factors contributing to NM. Under categories, participants perceived patient factors, obstetric complications, mother’s condition in relation to pregnancy, lack of human resources (human and material) and organisational factors as factors contributing to NM.

- **Patient Factors**

In this category, participants’ perceptions were that lack of knowledge about preventive measures to reduce NM, lack of adherence to scheduled ANC services and late reporting to the hospital when in labour all contributed to NM. The group of midwives that participated in this study felt that late booking, not adhering to scheduled ANC services as well as pregnant women not booking during pregnancy contributed to NM, since most of the babies who die in the Neonatal Unit are babies whose mothers did not book during pregnancy. The selected midwives perceived that some of the pregnant mothers were admitted to hospital with very high blood pressure as a result of not adhering to ANC appointments. Other pregnant women reported to the hospital too late, i.e. when they were already in the advanced stage of labour or they presented with obstetric problems, and both these factors led to new-born babies dying.

- **Obstetric complications**

In terms of obstetric complications, the midwives that partook in the study perceived prematurity, birth-asphyxia with meconium aspiration as factors contributing to NM. Participants felt that severe prematurity was one of the major factors contributing to NM. They expressed that the Neonatal Unit receives babies who are severely premature and that these babies need to be transferred to tertiary hospital promptly. Most of these severe premature babies, however, end up dying in the Neonatal Unit because of delayed emergency transport for referred new-borns.
• **Mother’s condition in relation to pregnancy**

A mother’s condition in relation to her pregnancy was perceived, by participants, as a factor that influences NM. Hypertensive disorders, malnutrition, anaemia and HIV and AIDS during pregnancy were considered as causes of NM by the participating midwives. Most neonatal deaths that occurred, participants of the study associated them with the mothers’ health and/or conditions, like hypertensive disorders, malnutrition, anaemia and HIV and AIDS.

• **Lack of resources**

This category has two sub-categories which are: lack of human resources and lack of material resources. Under these two sub-categories emerged four distinctions (refer to Table 3.2). Participants perceived a shortage of competent, experienced midwives and doctors (who were needed for procedures like neonatal resuscitation that saves newborns’ lives) as factors contributing to NM. The lack of material resources, such as CTG machines, KMC unit and admission beds at the referral hospital were also perceived as contributing to NM, as they made the proper management of neonates either inadequate or impossible.

• **Organisational factors**

Participants perceived organisational factors, such as poor support from management for the personnel of the Labour and Neonatal Units as well as poor supervision of newly employed midwives as contributing, to a degree, to NM. Delayed transport for referred neonates was also perceived as a barrier towards the reduction in NM.

• **Application of the Pender’s Health Promotion Model**

Finally, the three main concepts of the Pender’s Health Promotion Model, namely individual characteristics and experience, behaviour-specific cognition and affect, and behavioural outcome (Maville & Huerta, 2008: 259) were applied to the data to further strengthen and validate the findings of this study.
4.2.2 Research question 2
What recommendations can be made to reduce NM in labour/neonatal units of Jubilee hospital?

To answer this question, the researcher asked the midwives, who participated in the study, regarding their recommendations for strategies that would reduce NM. The participants made these five recommendations: in-service training for midwives and doctors, community awareness about the importance of attending ANC services, provision of adequate number of competent and experienced midwives and doctors, availability of a KMC unit and the improvement of emergency transport system for referred neonates.

- **In-service training for midwives**
  Participants recommended in-service training for midwives and doctors in skills, such as Essential steps in managing obstetric emergencies such as neonatal resuscitation, as strategies that could help reduce NM. Participants held the perception that some neonatal deaths that occurred were due to midwives being unable to perform emergency obstetric procedures like neonatal resuscitation.

- **Community awareness about the importance of attending ANC services**
  A need for community awareness about the importance of attending ANC services was also recommended by participants. Participants observed that most of the neonatal deaths were due to mothers not adhering to ANC appointments. When the community is aware of the importance of attending ANC services, pregnant mothers will have knowledge about pregnancy and the danger signs during pregnancy and, therefore, pregnant mothers will promptly seek medical assistance when experiencing obstetric problems.

- **Provision of an adequate number of competent and experienced midwives and doctors**
  Participants recommended that an adequate number of competent midwives and doctors must be available as it would assist in the reduction of NM. It is expected that these midwives and doctors will handle the neonates with specialised care that could
prevent unnecessary deaths. The availability of enough midwives and doctors will allow for the proper monitoring of patients and prompt decisions.

- **Availability of KMC unit**

The availability of a KMC unit was recommended by participants. Participants felt that premature related deaths, mostly due to hypothermia, can be reduced through the use of KMC. Nursing sick and stable premature babies in separate units was also recommended as a strategy that could reduce new born deaths.

- **Improvement of emergency transport system for referred neonates**

Many new born babies died whilst awaiting transport to the academic hospital and as such participants recommended that the emergency transport for referred neonates be improved.

Participants further recommended that the emergency staff members of local ambulances should be trained in the resuscitation of new-borns, amongst other skills, and that those ambulances should be equipped with essential neonatal equipment, such as ventilators. In so doing, the turnaround time of emergency transport for sick babies can be reduced.

In view of the above findings, it can safely be concluded that the research objectives have been reached and the research questions have been answered.

**4.3 RECOMMENDATIONS**

Based on the research findings, the researcher therefore recommended that:

- Community awareness about the importance of attending ANC services should be implemented as a strategy to reduce socio-cultural factors that influence NM.

- Continuous improvement of professional knowledge, skills and attitude of midwives and doctors.

- Continuous support and supervision of midwives and can positively influence midwives' perceptions of caring for pregnant mothers and their babies.
• Community awareness about the importance of attending ANC services should be implemented as a strategy to reduce socio-cultural factors that influence NM.

• Provision of adequate number of competent and experience midwives and doctors.

• Improvement of emergency transport system for referred new-borns.

• Availability of KMC unit in the hospital can save premature related deaths

4.4 IMPLICATIONS OF THE STUDY

This study has multiple implications for the following: nursing education, community nursing practice, the government/policy makers and the research.

4.4.1 Nursing education
The participants expressed their concerns about midwives who are unable to perform new-born resuscitation; this is a challenge reflecting a knowledge deficit in the basic important skills involved in caring for neonates. This knowledge deficit of midwives was perceived as a factor contributing to NM. It is then recommended that new-born resuscitation should become part of the in-service programme in the hospital to equip midwives and part-time doctors.

4.4.2 Community nursing practice
Some of the pregnant women booked late, some women did not adhere to ANC services and others reported late to the hospital when they were in labour or were experiencing obstetric problems. Participants considered all these behaviours by pregnant women as due to their lack of general knowledge about pregnancy. The community nursing practice therefore has a responsibility to promote the health of the community through health promoting strategies, such as community dialogues about the importance of attending and adhering to ANC services. Strengthening community participation in health related matters and in the planning of health services is thus recommended.
4.4.3 The government/policy makers
The lack of human and material resources to manage mothers and children were mentioned as some of the factors that contributed to NM and as such the following need to be attended to:

- A staffing norm should be established for midwives and doctors.
- The National Department of Health needs to review or re-visit its present national norm of nurse: patient ratios.
- A retention strategy for midwives and doctors should be implemented.
- The National Department of Health needs to increase the number of training nurses and doctors each year.
- There should be a strategy for the equal distribution of resources among all health facilities in the country. The National Department of Health should develop a monitoring and evaluation policy to regulate the availability of equipment according to the needs of each health facility.
- The availability of KMC units can serve as a strategy to reduce premature related deaths.
- There is a need for an improved referral system and emergency transport for mothers and their neonates who are referred.

4.4.4 The research
The general perceptions of midwives regarding factors contributing to NM and their recommendations for Jubilee Hospital were revealed. A similar study to investigate the perceptions of midwives regarding factors contributing to NM across the country is needed. Similarly, a study should be conducted on other categories of health care providers, such as doctors and managers to describe and analyse their perceptions about factors contributing to NM. A follow-up quantitative study on the perceptions of midwives regarding factors contributing to NM is also needed as it would cover different aspects in NM.
4.5 LIMITATIONS OF THE STUDY

- The study was limited to midwives working in Jubilee Hospital and as such the findings cannot be generalised to all midwives across the entire province.

- The study focused exclusively on midwives, while the beneficiaries of the health services (pregnant women, families and the community) were excluded and their inputs could have added more information. The extra information could have made the study more comprehensive in order to inform policy makers about how to improve mother-child services.

4.6 REFLECTIONS OF THE RESEARCHER

The study reflected my experience as an advanced midwife who has worked in a Maternity Obstetric Unit for a long time. During this study, I realized that midwives working in the Labour and Neonatal Units are faced with many challenges, such as staff shortages and the lack of essential equipment and yet these midwives were expected to provide quality nursing care to mothers and their babies.

I was touched by their perceptions regarding factors contributing to NM as most of their challenges were things that they are unable to change alone as they need collaboration with other multi-disciplinary team. The midwives were in a very difficult situation and were not getting the support one would expect from the management.

The fact that I come from the same profession, gave the participants the willingness to confide in me and I maintained a non-judgmental attitude. My interviewing and listening skills improved a lot during the course of this study. I maintained eye contact, non-verbal communication was used, the silence of participants was observed and, above all, I managed to probe and in so doing obtained much needed information from participants.

4.7 FINAL CONCLUSION

Multiple factors challenging the midwives emerged as categories and sub-categories. Various strategies to reduce NM exist in SA already, yet NM occurs despite the
availability of these strategies. It is therefore suggested that recommendations made be implemented.
LIST OF SOURCES


Baleta, A. 2011. South Africa takes steps to reduce per perinatal mortality. South Africa has had some successes with its unique perinatal audit programme but reducing the country’s high perinatal death rate is still proving difficult: SA World Report.


ANNEXURE A: MEDUNSA RESEARCH AND ETHICS COMMITTEE CLEARANCE CERTIFICATE

UNIVERSITY OF LIMPOPO
Medunsa Campus

MEDUNSA RESEARCH & ETHICS COMMITTEE
CLEARANCE CERTIFICATE

MEETING: 07/2012
PROJECT NUMBER: MREC/H/210/2012: PG

PROJECT:
Title: Perceptions of midwives regarding factors contributing to neonatal mortality in Jubilee Hospital, Hemmanskraal

Researcher: Mrs M Mthokkoa
Supervisor: Ms M Madumo
Co-supervisor: Ms Y Uys
Hospital Superintendent: MS Magano (Nursing / Jubilee Hospital)
Department: Nursing Sciences
School: Health Care Sciences
Degree: MCur

DECISION OF THE COMMITTEE:
MREC approved the project.

DATE: 12 September 2012

PROF. G A OGUNJUWO
CHAIRPERSON MREC

The Medunsa Research Ethics Committee (MREC) for Health Research is registered with the US Department of Health and Human Services as an International Organization (IORG0004319), as an Institutional Review Board (IRB00005122), and functions under a Federal Wide Assurance (FWA00009419)

Expiration date: 11 October 2016

Note:

i) Should any departure be contemplated from the research procedure as approved, the researcher(s) must re-submit the protocol to the committee.
ii) The budget for the research will be considered separately from the protocol.

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES.
ANNEXURE B: HOSPITAL PERMISSION TO CONDUCT STUDY

TSHWANE RESEARCH COMMITTEE
CLEARANCE CERTIFICATE

Meeting: 31 October 2012
PROJECT NUMBER: 2012/43

Title: Perception of midwives regarding factors contributing to neonatal mortality in Jubilee Hospital, Hammanskraal.

Researchers: Mrs M Motlhoko
Supervisor: Ms M Madumo
Department: Nursing Science

DECISION OF THE COMMITTEE:
Approved

NB: THIS OFFICE REQUESTED A FULL REPORT ON THE OUTCOME OF THE RESEARCH DONE:

Date: 31 October 2012

Dr. K.E. Letebile-Hartel
Chairperson Tshwane Research Committee
Tshwane District

Mrs. M. Morewane
Director; District Health Services Support
Tshwane District

NOTE: Resubmission of the protocol by researcher(s) is required if there is departure from the protocol procedures as approved by the committee.
ANNEXURE C: LETTER REQUESTING PERMISSION TO CONDUCT STUDY IN JUBILEE HOSPITAL

UNIVERSITY OF LIMPOPO (Medunsa Campus) – PERMISSION LETTER

FACULTY OF HEALTH SCIENCES
DEPARTMENT OF NURSING SCIENCE

05 NOVEMBER 2012

Attention: Ms. Magano
Chief Executive Officer
Jubilee Hospital
Private Bag 449
Hammanskraal

PERMISION TO CONDUCT STUDY

I am a Master's degree student at the Department of Nursing, Faculty of Health Sciences, University of Limpopo (Medunsa Campus). I therefore request permission to conduct the study titled: “Perceptions of midwives regarding factors contributing to neonatal mortality in Jubilee Hospital, Hammanskraal”.

The purpose of the study is to explore and describe perceptions of midwives regarding factors contributing to neonatal mortality in Jubilee Hospital, Hammanskraal, with the aim of making recommendations that would help decrease neonatal mortality and improve the quality of care during pregnancy, delivery and post-delivery to both mother and baby. One-on one interview using semi-structured questions will be used. Midwives who meet the sampling criteria and agree to participate in the study will be interviewed. Interviews will be conducted at the convenient times to avoid disruptions in the ward routine.

The interview will be guided by the following research questions:
• What are the perceptions of midwives regarding factors contributing to neonatal mortality?
• What recommendations can be made to reduce neonatal mortality in Jubilee Hospital?

For any information/clarity about the study, please contact Nursing Department at these numbers: 0125214305.

Your response will be highly appreciated.

Yours truly

Mmapuso Evah Mothokoa
ANNEXURE D: INFORMED CONSENT

UNIVERSITY OF LIMPOPO (Medunsa Campus) ENGLISH CONSENT FORM

Statement concerning participation in a Clinical Trial/Research Project.

Name of Study

PERCEPTIONS OF MIDWIVES REGARDING FACTORS CONTRIBUTING TO NEONATAL MORTALITY IN JUBILEE HOSPITAL, HAMMANSKRAAL

I heard the aims and objectives of the proposed study and was provided with the opportunity to ask questions and was given adequate time to rethink the issue. The aim and objectives of the study are sufficiently clear to me. I have not been pressured 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 is not revealed. Regarding images of the face, I understand that it may not be possible to disguise my identity, and I consent to the use of these images.

I understand that participation in this study is completely voluntary and that I may withdraw from it at any time and without supplying reasons.

I know that this study has been approved by the Medunsa Research Ethics Committee (MREC), University of Limpopo (Medunsa Campus) and Jubilee Hospital. 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 participant/volunteer  Signature of participant
Statement by the Researcher

I provided verbal and/or written information regarding this study. I agree to answer any future questions concerning the study as best as I am able. I will adhere to the approved protocol.

………………………... ……………………… ……………………… ………………………
Name of researcher    Signature     Date            Place
Qualitative Data Analysis

MCur: Nursing
M.E Mothokoa

THIS IS TO CERTIFY THAT
Dr. Annie Temane has co-coded the following qualitative data:
10 Individual Qualitative Interviews

For the study:

PERCEPTIONS OF MIDWIVES REGARDING FACTORS CONTRIBUTING TO NEONATAL MORTALITY IN JUBILEE HOSPITAL, HAMMANSKRAAL

I declare that the candidate and I have reached consensus on the major categories, subcategories and quotes reflected by the data during a consensus discussion. I further declare that adequate data saturation was achieved as evidenced by repeating themes.

Annie Temane

M.A.Temane (DCur, Research Methodology)
annie.temane@gmail.com
## ANNEXURE F: INTERVIEW GUIDE

The following questions will guide participants during the interview:

- What do you think are the factors contributing to neonatal mortality at Jubilee Hospital?
- How does the shortage of experienced midwives and doctors contribute to neonatal mortality?
- What would you regard as the correct midwife: patient ratio?
- How many midwives are on duty and how many patients are admitted?
- How does the lack of essential equipment contribute to neonatal mortality?
- How many Cardiotogogram machines do you have in the unit?
- What do you mean by low Apgar score?
- Why are babies with low Apgar score delivered in this unit?
- Any other thing that you think contributes to neonatal mortality?
- What changes would you recommend to reduce neonatal mortality?

The following communications skills will be utilized during the interviews:

- Probing
- Paraphrasing
- Listening
- Reflection
**ANNEXURE G: INTERVIEW TRANSCRIPTION**

**Date:** 09/02/2013  
**Venue:** Jubilee Hospital  
**Method of data collection:** One-on-one interview

<table>
<thead>
<tr>
<th><strong>Researcher’s questions</strong></th>
<th><strong>Participant’s answers</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>What do you think are factors contributing to neonatal mortality in Jubilee Hospital?</td>
<td>Shortage of staff, mostly experienced midwives and doctors, shortage of essential equipment, delay in referring pregnant women with obstetric problems to tertiary hospital and patients who refer themselves to the hospital.</td>
</tr>
<tr>
<td>You mentioned a shortage of staff, mostly experienced doctors and midwives, as one factor that contributes to neonatal mortality. Could you explain what you mean by that?</td>
<td>There are student nurses and community service professional nurses who rotate working here. They are not yet experienced in the management of obstetric conditions. There are also doctors who work in the Labour Ward part-time and they too have no experience in obstetrics.</td>
</tr>
<tr>
<td>How does a shortage of experienced midwives and doctors contribute to neonatal mortality?</td>
<td>The student nurses and community service professional nurses need to be mentored and supervised most of the time. This becomes difficult for the already understaffed midwives, who have to do patient care and supervision at the same time. This causes inexperienced nurses to monitor pregnant women alone.</td>
</tr>
<tr>
<td>Please continue.</td>
<td>At times the community service professional nurses are unable to detect any abnormality and continue to monitor these women without reporting abnormalities to the senior midwives.</td>
</tr>
<tr>
<td>Please continue.</td>
<td>Again, when experienced midwives supervise the inexperienced midwives, some patients are not monitored as they are supposed to and this also leads to an inability to detect problems early.</td>
</tr>
</tbody>
</table>
Ultimately, babies with low Apgar scores are born, some babies survive and others do not. As already mentioned, there are part-time doctors working here, they are at times unable to make prompt decisions regarding obstetric problems, which also contribute to neonatal mortality.

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
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<tbody>
<tr>
<td>Could you give me example?</td>
<td>Conditions like failed induction of labour or malposition “equals” a caesarian section. Doctors, who work as part-time, will take time to act in such conditions and hence babies with low Apgar scores are delivered. These babies are transferred to the intensive care unit, but not all babies survive. Again, some doctors do not understand the standard operating procedures, like referral to the next level of care in conditions such as severe hypertensive disorder in pregnancy. This will give us the problems that were mentioned earlier.</td>
</tr>
<tr>
<td>What are those problems?</td>
<td>Delivering or extracting babies with low Apgar scores.</td>
</tr>
<tr>
<td>How does a shortage of essential equipment contribute to neonatal mortality?</td>
<td>Most of the time we would have one functional Cardiotogogram machine with six women on induction of labour by Cytotec. All these women on Cytotec must be on continuous Cardiotogogram monitoring.</td>
</tr>
<tr>
<td>Please continue.</td>
<td>The “prevalence” of mortality of newborns is because of patients who are on induction of labour by Cytotec and are not closely monitored because of a lack of Cardiotogogram (CTG) machines. In this unit we use one CTG machine among four to six patients. The moment one takes off the CTG machine from one patient to the other, fetal condition changes and nobody is able to detect fetal bradycardia or tachycardia.</td>
</tr>
<tr>
<td>I also hear you mentioned staff-shortages as the other problem in the unit and you explained how it contributes to NM. According to</td>
<td>According to my experience from other institutions where I have worked before, it was like this: High care patients such as Pregnancy Induced</td>
</tr>
<tr>
<td>Question</td>
<td>Answer</td>
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<tr>
<td>your experience, what would you regard as the correct midwife: patient</td>
<td>Hypertension on Magnesium Sulphate= one patient per one midwife;</td>
</tr>
<tr>
<td>ratio?</td>
<td>Patient on induction of labour by Cytotec=2 patients per midwife and</td>
</tr>
<tr>
<td></td>
<td>Low risk patients=3 patients pre midwife.</td>
</tr>
<tr>
<td>What is the situation in this unit?</td>
<td>Firstly, the midwives in this unit are understaffed. You may find that one midwife is nursing four patients, low risk together with high risk. Like now, I monitor three patients on induction of labour and one low risk patient. It becomes very difficult for one midwife to monitor all these patients.</td>
</tr>
<tr>
<td>How many midwives are on duty and how many patients are admitted in the</td>
<td>We are three experienced midwives, two community-service professional nurses and two enrolled nursing auxiliaries. There are ten patients at the moment with seven patients needing constant monitoring.</td>
</tr>
<tr>
<td>unit?</td>
<td></td>
</tr>
<tr>
<td>Any other factor that you think contributes to NM?</td>
<td>There are other pregnant women who do not use their own health care facilities, but refer themselves to the hospital when in labour.</td>
</tr>
<tr>
<td>I hear you say self-referral by pregnant women contribute to NM. Did I</td>
<td>Yes.</td>
</tr>
<tr>
<td>hear you correctly?</td>
<td></td>
</tr>
<tr>
<td>How does self-referral by pregnant women contribute to NM?</td>
<td>The influx of patients in this unit including “self-referrals” increases the burden on the Labour Ward midwives. At times there are more than five patients to be admitted, including the “self-referrals”, and there are already nine patients admitted in the ward with only 11 beds. The midwives will then prioritize emptying the ward by concentrating on post-natal observations, completion of records and transferring other patients, who have already delivered, to postnatal wards to try and create open beds. When they now attend to these mothers, it may be already late for others.</td>
</tr>
<tr>
<td>Question</td>
<td>Answer</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>I hear you mentioned that when midwives attend to the self-referral patients it may already be too late for others. What do you mean by this?</td>
<td>When you attend to these women, you find that one patient is has had two previous caesarian sections with pre-eclampsia. We may then end up delivering babies with low Apgar scores.</td>
</tr>
<tr>
<td>Please continue.</td>
<td>Some pregnant mothers are admitted with very high blood pressure. When you look in the patient’s ANC card, there is only one ANC visit.</td>
</tr>
<tr>
<td>Anything else?</td>
<td>No.</td>
</tr>
<tr>
<td>I hear you mentioned that part-time doctors are unable to make prompt decisions regarding obstetric problems; could you explain what you mean by that?</td>
<td>Some doctors, who come as part-time, are not managing certain obstetric conditions well.</td>
</tr>
<tr>
<td>What changes would you recommend to reduce neonatal mortality?</td>
<td>• More midwives need to be employed&lt;br&gt;• In-service training for the new staff such as Essential Management of Obstetric Emergencies (ESMOE)&lt;br&gt;• Standard Operating Procedures to be available for all doctors&lt;br&gt;• Thorough orientation of part-time doctors and midwives&lt;br&gt;• To have enough and functioning obstetric equipment, like CTG machines&lt;br&gt;• Management must offer support to the Labour Ward staff members</td>
</tr>
<tr>
<td>Any other recommendation or anything else?</td>
<td>I think I said everything.</td>
</tr>
<tr>
<td>Thank you for your time and comments.</td>
<td></td>
</tr>
</tbody>
</table>


ANNEXURE H: LETTER FROM THE LANGUAGE EDITOR

DECLARATION OF LANGUAGE EDITING

I, Therina van der Westhuizen, ID nr 861007 0057 086, hereby declare that I have edited the dissertation of Mmapuso Evah Mothokoa, entitled

PERCEPTIONS OF MIDWIVES REGARDING FACTORS CONTRIBUTING TO NEONATAL MORTALITY IN JUBILEE HOSPITAL, HAMMANSKRAAL.

And that it is submitted without me viewing the final product.

Regards,

To whom

T. van der Westhuizen

SATI reg nr: 1002991