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ENHANCING EFFECTIVE IMPLEMENTATION OF RECOMMENDATIONS FOR THE SAVING MOTHERS REPORT IN MATERNITY UNITS OF LIMPOPO PROVINCE, SOUTH AFRICA

by

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Thesis Submitted in Fulfillment of the Requirements for the Degree:

Doctor of Philosophy (PhD) in Health

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DECLARATION

"I, **Kobela Elizabeth Mothapo (Student Number: 11618168)**, declare that the thesis entitled '**Enhancing Effective Implementation of Recommendations for the Saving Mothers Report in Maternity Units of Limpopo Province, South Africa**' submitted to the **University of Venda** for the degree of **Doctor of Philosophy (Health)** is my own work in design and in execution and has not been previously submitted for a degree at this or any other university or institution and that all sources that I have used or quoted are indicated and duly acknowledged".

K.E. Mothapo : .....
11618168

Date Signed : 28th August 2019

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ABSTRACT

Background: The National Committee for the Confidential Enquiries into Maternal Deaths recommend the implementation of "Saving Mothers' recommendations" as a measure to reduce maternal deaths. However, this objective has not been achieved because the Maternal Mortality Rate in South Africa was standing at 134.33/100 000 live births and Limpopo Province at 165.16/100 000 live births. The national target for reduction of maternal mortality was 20% for all provinces for 2016. Limpopo Province's reduction was below 12.5% for 2016.

Purpose: The purpose of the study was to develop a strategy to enhance the implementation of the Saving Mothers' recommendations in the maternity units of Limpopo Province.

Methods: The convergent parallel design was used in this study. The study was conducted in phases, namely: Phase 1(a) was a qualitative research approach and a non-experimental, descriptive and exploratory design. The population consisted of district managers who were managing the Maternal Health Services and registered midwives who were working in the maternity units of Limpopo Province. Non-probability purposive sampling was used for both the district managers and the registered midwives. Data were collected using a central question for the managers managing Maternal Health services which was "What support are you giving to facilitate the implementation of the recommendations by the Saving Mothers Report?" and the question for the registered midwives was "What challenges are you experiencing when implementing the Saving Mothers' recommendations." Tesch's open-coding technique was used to analyse qualitative data. Trustworthiness was ensured through credibility, confirmability, dependability, transferability and authenticity. Phase 1(b) was a quantitative and a non-experimental descriptive design. The population comprised of 200 patients who were included in the study. Questionnaires were developed and used to collect

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data. Data was analysed using the Statistical Package for Social Sciences (SPSS, version 24.0) with the assistance of the statistician. Discussion of data were done in an explanatory sequential way where data from Phase 1a was discussed and supported by data from Phase 1b.

Findings: The themes that emerged were: Challenges related to implementation of the recommendations of the Saving Mothers Report in maternity units, Description of existing training programmes and in-service education for health care professionals, Knowledge on implementing recommendations for the Saving Mothers Report when providing care in maternity units and Suggestions related to improvement of adherence to recommendations for the Saving Mothers Report in maternity units. Some of the themes were supported by the quantitative results whilst some not supported.

Validity and reliability were ensured by giving the questionnaires to experts on the subject, colleagues and promoters to analyse and determine if items adequately represent content in the correct proportion. Ethical considerations were ensured by obtaining ethical approval from the University of Venda Ethics Committee and permission to access the facilities from the Limpopo Province Department of Health. The participants signed informed written consent. Phase 2 entailed strategy development and validation of the developed strategy.

Recommendations: The recommendations included that the Department of Health should employ more staff and put operational managers in permanent positions. Sufficient equipment and supplies essential for maternal health care and maternal health infrastructure should be procured and a good plan for the managing thereof implemented. It is also recommended that health care workers should work hand in hand with the community structures and the 'mosate'.

Keywords: enhancing, effective implementation, recommendations, saving mothers, maternity units.

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LIST OF ACRONYMS

AMSTL	Active Management of Third Stage of Labour
ANC	Antenatal Care
ART	Antiretroviral Treatment
BANC	Basic Antenatal Care
BOEM	Build on Strengths, Overcome Weaknesses, Explore Opportunities and Mitigate Threats
CCLO	Chief Community Liaison Officer
CEO	Chief Executive Officer
CTG	Cardiotocograph
DHIS	District Health Information Software/System
DoH	Department of Health
EOC	Emergency Obstetric Care
ESMOE	Essential Steps in Managing Obstetric Emergencies
HAART	Highly Active Antiretroviral Therapy
MCWH	Maternal, Child and Women's Health
MDGs	Millennium Development Goals
MDSR	Maternal Death Surveillance and Response
MH	Maternal Health
MHCM	Maternal Health Care Manager
MMR	Maternal Mortality Ratio/Rate
MoH	Ministry of Health
NCCEMD	National Committee for Confidential Enquiry into Maternal Deaths
NDoH	National Department of Health
PHC	Primary Health Care
PNC	Postnatal Care
SANC	South African Nursing Council

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SBAs	Skilled Birth Attendants
SDGs	Sustainable Development Goals
SPSS	Statistical Package for Social Sciences
SWOT	Strengths, Weaknesses, Opportunities and Threats
TOP	Termination of Pregnancy
UI	Unit Interval
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
WHO	World Health Organisation

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CHAPTER 1

ORIENTATION TO THE STUDY

1.1 Introduction and Background

Chapter 1 is an orientation to the study. This chapter commences with an introduction and background that indicates what inspired the researcher to undertake the study, and also fosters an understanding of the situation that led to the research questions and the purpose of the study. The introduction and background is followed by the explanation of the conceptual framework on which the researcher based the study. The researcher incorporated the conceptual framework into the methodological processes and methods to explain the process followed in the study. The chapter is concluded with an outline of this study and a chapter summary.

Saving Mothers' recommendations were made by the National Committee for Confidential Enquiries into Maternal Deaths (NCCEMD) after investigating the number, causes and avoidable or preventable factors which led to with maternal deaths in South Africa (SA) for the country and its provinces (Department of Health, 2012). The Confidential Enquiries system of monitoring and analysing maternal deaths has been in operation in South Africa since 1st October 1997, with the first publication of the comprehensive report into maternal deaths in South Africa in October 1999, which dealt with maternal deaths which occurred during 1998 in detail (Department of Health, 2012). The "Saving Mothers: Report on Confidential Enquiries into Maternal Deaths in South Africa 1998", had recommendations that was intended to reduce maternal mortality rate (MMR).

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The national MMR target is 38/100 000 live births by 2015. The Recommendations for Saving Mothers are implemented, but in South Africa the MMR increased from 151.77 per 100 000 live births in 2008 to 176.22 per 100 000 live births in 2010. In Limpopo Province, MMR escalated from 27/100 000 in 1998 to 198/100 000 deaths in 2010 (Department of Health, 2012). Although a reduction of 12.5% was noticed for the period 2011-2013 to 2014-2016, South Africa's MMR is at 134.33 per 100 000. In 2018, Limpopo Province's MMR is at 165.16/100 000 deaths for the period 2014-2016 (Department of Health, 2018). Irrespective of the implementation of the Saving Mothers Report recommendations, the MMR is escalating. The implementation of the Saving Mothers' recommendations need to be effective in the reduction of the MMR. Therefore, it is necessary for the development of a strategy to enhance the effective implementation of the Saving Mothers Report recommendations (Department of Health, 2012).

The World Health Organization (WHO) classification of MMR are: MMR lower than 20/100 000 live births; Low MMR between 50 and 149/100 000 live births: High MMR above 150/100 000 live births: Very High (Betrán, Wojdyla, Posner & Gulmezoglu, 2005). Looking at the WHO's classification of MMR, and comparing South Africa's MMRs it is clear that South Africa has a very high MMR. The United Kingdom (UK) started with the Confidential Enquiries into Maternal Deaths in the twentieth century and formalised it in 1952 (Mander, 2008). The Eighth Report into the Confidential Enquiries into Maternal Deaths reported that the UK experienced a reduction in maternal mortality during the years 2006 to 2008 and that is was due to their maternity staffs' willingness and getting fully involved by embracing the work of the Enquiry, and acting on its findings and recommendations (Centre for Maternal and Child Enquiries, 2011). The strategy used in this case did not include the client, and it is accordingly necessary to develop the strategy that will include the client or the health care consumer.

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India had 24 million births and 117 100 maternal deaths in 2009. The country experienced a slow reduction in the maternal mortality owing to the absence of political willingness, poor management ability, underdeveloped midwifery services which were offered, usage of ineffective strategies like prenatal care without the back-up of Skilled Birth Attendants (SBAs) or Emergency Obstetric Care (EOC). Poor implementation of policies, poor accountability of human resources in rural areas, fragmented care and absence of referral systems, non-availability of obstetricians, and inappropriate delegation of lifesaving functions to medical officers and nurses were also identified as some factors for the slow reduction of maternal mortality. The strategy was developed by forming partnership with private sector obstetricians and it was effective as maternal deaths decreased quickly because even the poor could access the services of the obstetricians (Mavalankar, Singh, Patel, Desai & Singh, 2009).

In 2012, 10% of the world's maternal mortality came from Nigeria and an intervention was done by the Society for Gynaecology and Obstetrics of Nigeria supported by the International Federation of Gynaecology and Obstetrics. An effective strategy for the reduction of maternal and neonatal mortality and for strengthening the capacity of health workers in Obstetric and Neonatal Care was developed. The strategy included establishment of safe motherhood committees, protocols of management of obstetric complications and implementation of advocacy visits to the government officials, which also excluded the clients. The strategy proved effective as MMR reduced in hospitals that were involved (Akuse, 2012). WHO reported that 265 000 maternal deaths which is about half of the global MMR occurred in Sub-Saharan Africa alone and one third of the maternal deaths occurred in South Asia (187 000) (UNICEF, 2013; Department of Health, 2012).

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The MMR for South Africa has been increasing since 1998 despite the implementation of recommendations that were given since then after the first confidential enquiry into maternal deaths. That also includes all the provinces of South Africa (Department of Health, 2012). The maternal mortality rate is increasing with years despite the recommendations that are made by the NCCEMD. Simpson, Kortz and Knox (2009) indicated that women are critically concerned about safety and risk during pregnancy and birth and that it is for the service providers to ensure that mother and baby survive. They further showed that safety of patients during childbirth is a concern all over the world. All clinicians and health care systems have as their goal safe care for mothers and infants during labour and birth. They pointed out that strategies to achieve the safe care goal, like operational and clinical practices based on professional guidelines/standards and best available evidence, need to be well-designed and supported with sufficient resources and committed system leadership.

Table 1.1 shows the maternal death for the provinces of South Africa from 2008 to 2012. Limpopo Province showed an increase of MMR irrespective of implementation of the Saving Mothers Report recommendations' since October 1999.

Table 1.1: Comparison of MMR in South Africa per province from 2008-2012

Province	2008	2009	2010	2011	2012
Eastern Cape	180.4	215.2	197.0	158.26	146.44
Free State	267.0	350.9	263.5	240.08	124.54
Gauteng	136.0	160.2	159.2	121.45	142.52
KwaZulu-Natal	183.8	194.2	208.7	186.74	160.33
Limpopo	**176.6**	**160.4**	**166.7**	**195.51**	**185.80**
Mpumalanga	179.8	159.4	218.6	190.13	173.76
North West	161.7	279.5	256.1	153.75	127.76
Northern Cape	274.4	251.8	267.4	191.10	149.33
Western Cape	61.8	113.1	88.0	64.81	78.64
South Africa	**164.8**	**188.9**	**186.2**	**159.14**	**146.71**

(South Africa, 2013; Note: Coincidental deaths and births in private hospitals are not included in these calculations)

The MMR for South Africa is 134.33/100 000 live births for 2014-2016 and for Limpopo Province is 165.16/100 000 for 2014-2016 which shows a reduction though not considerable (Department of Health, 2018). Free State is the only province which shows a decline in maternal deaths. It is therefore necessary for the implementation of the recommendations by the Saving Mothers Report to be looked into and a strategy to be formulated for the enhancement of the effective implementation thereof.

The five leading causes of maternal deaths in Limpopo Province in the Triennium 2008-2010 were non-pregnancy related infections which amounted to (35.6%), obstetric haemorrhage amounting (17.6%), hypertensive disorders (13.8%), pre-existing Medical and Surgical disorders (10.2%) and anaesthetic complications (5.7%) (Department of Health, 2012). The "Saving Mothers Report recommendations" in South Africa is a regular report which is released by the National Committee on Confidential Enquiries into Maternal Deaths (NCCEMD) after conducting a systematic multidisciplinary anonymous investigation of all or a

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representative sample of reported maternal deaths occurring at an area, region or national level which identifies the numbers, what caused the deaths and/or remediable factors associated with them (Department of Health, 2007). In recent years, the recommendations are made according to the province as the causes of maternal deaths are not the same for all provinces, but a ternd of these causes noted.

The Saving Mothers' recommendations for Limpopo Province (Department of Health, 2012) since 2012 are as follows:

1. Prioritize the implementation of training on Essential Steps in Managing Obstetric Emergencies (ESMOE).
2. Improve the audit Basic Antenatal Care (BANC).
3. Drills on prevention and management of obstetric haemorrhage to be conducted at all levels of care.
4. Strengthen Postnatal Care.
5. Strengthen contraception services.
6. Implement second trimester termination of pregnancy.
7. Improve knowledge and skills of midwives and doctors, including safe administration of anaesthesia.
8. Promote the use of guidelines during training of doctors and midwives.
9. Appointment of Obstetrician and Gynaecology specialist in regional hospitals.

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10. Develop referral criteria and establish referral routes.

11. Emergency Obstetric ambulances to be made available per municipality (Department of Health, 2012).

This study focused on the implementation of the following recommendations:

1. Prioritize the implementation of training on Essential Steps in Managing Obstetric Emergencies (ESMOE).

2. Improve the audit Basic Antenatal Care (BANC).

3. Drills on prevention and management of obstetric haemorrhage to be conducted at all levels of care.

4. Strengthen Postnatal Care.

Maternal deaths could be decreased if the Saving Mothers' recommendations are effectively implemented. The pregnant woman and her unborn baby should be safe in the hands of trained health care providers. It was necessary that a strategy to enhance the effective implementation of the recommendations for the Saving Mothers Report was developed which when implemented will reduce the maternal deaths rate.

1.2 Problem Statement

Implementation of the recommendations for the Saving Mothers Report should reduce the maternal mortality rate, but the current situation in South Africa does not indicate this thought. The researcher as a Midwifery lecturer became aware of the problem when going through the statistics and reports by the NCCEMD.

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The Global MMR was 400 for every 100 000 live births in 1990 and 260 for every 100 000 live births in 2008 which indicate a 34% reduction. In contrast, South Africa's MMR was 230 for every 100 000 live births in 1990 and 410 for every 100 000 live births in 2008, indicating an increase of 78% (WHO, 2011). The statistics for MMR indicates that Limpopo Province is far above from the national target for 2015 of 38/100 000 (StatsSA, 2008).

Table 1.2 indicates that the MMR for all Limpopo Province districts was high per district and has increased for the period 2010-2012 as compared to 2008-2010. The MMR was supposed to reduce as the recommendations are being implemented.

Table 1.2: Comparison of Limpopo MMR between 2008-2010 and 2011-2012 per district

Province	District	2008 - 2010			2011 - 2012		
		Live Births	Maternal Deaths	MMR	Live Births	Maternal Deaths	MMR
Limpopo	Capricorn DM	80476	222	275.86	55572	168	302.31
Limpopo	Sekhukhune DM	74496	131	175.85	49876	86	172.43
Limpopo	Mopani DM	77758	115	147.89	54100	89	164.51
Limpopo	Vhembe DM	93263	67	71.84	64903	86	132.51
Limpopo	Waterberg DM	40656	78	191.85	29411	55	187.00
Limpopo Province							**185.80**

(Department of Health, 2014); MMR: Maternal Mortality Ratio

Table 1.3 indicates the MMR for different districts for 2014-2016, which shows a slight decrease from 2012, with Limpopo Province 165.16/100 000. The researcher as a result deemed it necessary to look into and come up with a strategy to effectively implement the recommendations of the Saving Mothers Report.

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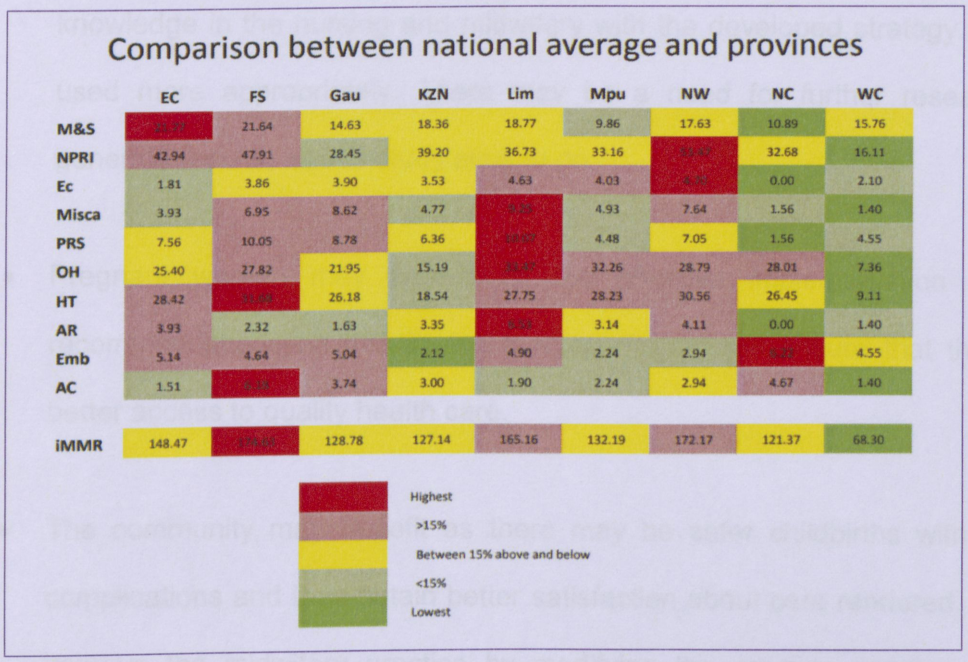
Table 1.3: Comparison of MMR for provinces for 2014-2016



Source: https://www.midwivessociety.co.za/downloads/2018presentations/; Saving Mothers 2014-2016 Seventh triennial report on confidential enquiries into maternal deaths in South Africa: National Committee for Confidential Enquiries into Maternal deaths

1.3 Significance of the Study

The findings and the strategy developed from the proposed study may provide the following significance:

- The Maternal-Child and Women's Health (MCWH) Directorate may benefit as the results may help in modification of policies and protocols, thus leading to reduction of maternal and mortality and morbidity rates. The Department of Health (DoH) may benefit as it may help the department as reduction of maternal mortality and morbidity will save money for hospital care of mothers who complicate during hospitalisation.

- The study may also influence the modification or review of policy and restructuring of guidelines for improved maternal care, thus saving money. The Nursing Education Directorate may benefit by using the findings to shape the curriculum and make it comprehensive.

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- It may benefit research as any new addition to the existing body of scientific knowledge in the nursing and midwifery with the developed strategy can be used more appropriately. There may be a need for further research to generate results, as this study aims to do.

- Pregnant women may benefit as the effective implementation of the recommendations on the Saving Mothers Report will ensure that they get better access to quality health care.

- The community may benefit as there may be safer childbirths with fewer complications and thus obtain better satisfaction about care rendered. It may improve the midwifery practice by modifying the practice, leading to the reduction of the mortality and morbidity of mothers, achieving the MDG 5 and the SDG 3, and thus making South Africa internationally comparable.

1.4. Purpose of the Study

The purpose of this study was to develop a strategy to enhance the effective implementation of the recommendations of the Saving Mothers Report in maternity units of Limpopo Province, South Africa.

1.5 Research Objectives

The objectives of this study were to:

❖ Phase 1(a)

- Identify the interventions by maternal health district managers to facilitate the implementation of recommendations on the Saving Mothers Report in maternity units of Limpopo Province, South Africa.

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- Explore the challenges of registered midwives in the effective implementation of recommendations on the Saving Mothers Report in the maternity units of Limpopo Province, South Africa.

❖ Phase 1 (b)

- Explore views and perceptions of patients on maternal health care interventions provided at health facilities of Limpopo Province, South Africa.

❖ Phase 2

- Develop the strategy to enhance the effective implementation of recommendations on the Saving Mothers Report by health workers in maternity units of Limpopo Province, South Africa.
- Validate the strategy to enhance the effective implementation of recommendations on the Saving Mothers Report by the health workers in the maternity units of the Limpopo Province, South Africa.

1.6 Research Questions

The research questions which guided this study were:

- How do patients perceive the maternal health care interventions provided at the health facilities in Limpopo Province?
- What are the interventions practiced by managers to facilitate the implementation of Saving Mothers Report recommendations?
- What are the challenges faced by the registered midwives when implementing the recommendations by the NCCEMD for the Saving Mothers Report in maternity units of Limpopo Province?

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- How can the strategy to enhance the implementation of the recommendations by the NCCEMD for the Saving Mothers Report by health workers in the maternity units of Limpopo Province be developed?

1.7 Conceptual Framework

Houser (2012) and Boswell and Cannon (2012) showed that it is necessary to always emphasise how the theoretical framework is linked to the study so that the reliability of the study design, the applicability of the findings and implications to practice can be determined. Houser (2012) and Boswell and Cannon (2012) indicated that it can be achieved by:

- Ensuring that the theoretical framework is consistent with the research questions and study variables.

- Conceptualising a literature review focused on the definition of the concepts within the theoretical framework and supporting the relationships among the concepts.

- Choosing a research design that flows logically from the theoretical foundation and the relationships that are expected.

- Ensuring consistency between concepts, constructs and operational definitions and the conceptual framework.

- Referring to the theoretical framework during interpretation of the study results.

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relationships with others, both professionals and non-professionals, interest in advancing knowledge in the area of interest and in creating new knowledge. The theory also emphasized the dedication to further the good of mankind rather than to benefit themselves (George, 2011). In this study, the mastery of skills and knowledge is essential for fulfilling the purpose of effectively implementing the recommendations by the Saving Mothers Report in maternity units in the Limpopo Province.

Nursing is defined as nurturing and caring for someone in a motherly fashion and explains that care is rendered with compassion, skill and understanding to those in need of care, counsel and confidence in the area of health (George, 2011). On the other hand the theory states that nursing wisdom is acquired through meaningful experience and that sensitivity alerts the nurse to an awareness of inconsistencies in a situation that might signify a problem like increasing maternal mortality rate (George, 2011). It also mentions that the nurses' beliefs and values regarding reverence for the gift of life, the worth of the individual, and the aspirations of each human being determine the quality of nursing care that is given and that nurses' purpose in nursing represents a professional commitment (George, 2011), thus the need to effectively implement the recommendations for Saving Mothers' report.

The theory conceptualizes both the desired situation which in this study is the reduced MMR and the prescription by which it is to be brought about which in this study is the implementation of the Saving Mothers' recommendations. The Prescriptive theory directs action toward an explicit goal which in this study is to enhance the effective implementation of Saving Mothers' recommendations for the goal of reducing maternal deaths (George, 2011).

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1.7.1 The Prescriptive Theory Factors

The prescriptive theory comprise of several factors which are:

1.7.1.1 The Central Purpose

The central purpose of the nurse defines the quality of health the nurse desires to render or sustain, how committed s/he is to his/her patient and specifies what s/he perceives to be his/her special responsibility in caring for the patient which in this study is the effective implementation of Saving Mothers' recommendations for the goal of reducing maternal deaths. The central purpose is based on the nurse's philosophy, as what s/he believes in and upholds a high attitude towards life and reality that evolves from each nurse's beliefs and code of conduct, including his/her values that motivate the nurse to act, guide her thinking about what s/he is to do and influences his/her decisions (George, 2011).

The recommendations on the Saving Mothers Report (2011-2013) for Limpopo Province are:

- Prioritize the implementation of training on Essential Steps in Managing Obstetric Emergencies (ESMOE).
- Improve the audit Basic Antenatal Care (BANC).
- Drills on prevention and management of obstetric haemorrhage to be conducted at all levels of care.
- Strengthen Postnatal Care.
- Strengthen contraception services.
- Implement second trimester termination of pregnancy.
- Improve knowledge and skills of midwives and doctors including safe administration of anaesthesia.

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- Promote the use of guidelines during training of doctors and midwives.
- Appointment of Obstetrician and Gynaecology specialist in regional hospitals.
- Develop referral criteria and establish referral routes.
- Emergency Obstetric ambulances to be made available per municipality (Department of Health, 2012).

These recommendations should be implemented effectively in the maternity units of Limpopo Province, thus leading to the reduction in maternal mortality. The maternal mortality in Limpopo Province is not decreasing as the recommendations are not being implemented effectively. Three essential components are identified in this theory and they include reverence for the gift of life, a respect for the dignity, worth, autonomy and individuality of each human being, and a resolution to act dynamically in relation to one's beliefs (George, 2011).

Wiedenbach formulated the beliefs about the individual as follows:

- Individuals are given the special ability to develop within themselves the resources that enable them to maintain and sustain themselves.
- Individuals are naturally striving towards self-direction and relative independence, and desire to make the best use of their capabilities and potentialities and also to fulfil their responsibilities.
- Human beings must be stimulated for them to fully utilise their capabilities for the realization of their self-worth.
- Whatever individuals do, reflect their best judgement at that time.
- The individual needs to be aware of himself/herself and to accept himself/herself for the individual's sense of integrity. Thus the central purpose

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is the nurse's thinking what s/he put in words, believes in, and accept as a yardstick to measure his/her action to the patient, and it is based on what s/he believes in and gives him/her a reason for being which is the mission to accomplish and in this study to reduce the maternal mortality (George, 2011).

1.7.1.2 The Prescription

A prescription is a directive to activity specifying both the nature of the action that will most likely lead to fulfilment of the nurse's central purpose and the thinking process that determines it. In this study, the prescription is the chosen recommendations for the Saving Mothers Report and the purpose is the reduction of maternal mortality. A prescription points to the broad general action necessary for the implementation of the basic concepts and also suggests the specific behaviour necessary to carry out these actions according to the central purpose. In this study, the actions are voluntary. A prescription directs three kinds of voluntary actions which include the action that is agreed upon and understood by both the recipient and the practitioner, the action that is directed by the recipient and the action that is directed by the practitioner where the recipient is not consulted (George, 2011) much of which are all present in the recommendations for Saving Mothers.

1.7.1.3 The Realities

The nurse has to take into consideration the realities of the situation in which s/he is to provide nursing care, which will affect or impact the way the nursing care is rendered and also the quality of the nursing care. In this study, the realities were the challenges that the registered midwives met when implementing the recommendations for the Saving Mothers Report. Wiedenbach's Prescriptive Theory describe the realities as having physical, physiological, psychological, emotional and spiritual aspects.

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The five realities defined are the *agent*, the *recipient*, the *goals*, the *means* and the *framework*. The agent who is the health professional has personal characteristics, capabilities, capacities, and commitment and competence in nursing.

The agent as stated by George (2011) has four responsibilities which include:

- To reconcile his/her assumptions about the realities with his/her central purpose.
- To make clear what is to be achieved out of his/her practice in terms of what s/he does which is possible to be achieved.
- To practice nursing and midwifery according to what was set to be achieved.
- To engage in other actions which will lead to her self-realization and to making the nursing practice better.

The recipient who is the patient has personal attributes, problems, capabilities, aspirations and the ability to cope with the concerns or problems being experienced. The patient is vulnerable, depending on the health professionals for care and risk losing individuality, privacy, value and decision-making power (George, 2011).

According to Ernerstine Wiedenbach's Prescriptive Theory the goal is the desired outcome that the nurse wishes to achieve. In this study, potentialities is the reduction of maternal mortality. The means include the skills, techniques, procedures and devices or equipment that may be used to facilitate nursing practice. The stipulation of the activity's goal gives focus to the nurse's action and implies his/her reason for taking it (George, 2011). The framework consists of the human which in this case refers to the fact that the nurse is human, environmental referring to the working conditions of the nurse, professional and organizational facilities that not only make up the context within which nursing is practical, but also constitute its currently

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existing limits referring to challenges that may hinder nursing. The framework comprises all the internal and external factors, which in this study are the processes and facilities in the situation that affect the nurse's ability to obtain the desired results. In this study, it refers to the reduction in MMR and it includes a number of factors which may be existing or missing such as policies, setting and atmosphere, time of day, humans and happenings that may be current, past or anticipated (George, 2011).

The realities make every situation unique. The success of professional nursing practice depends on them. Unless the realities are recognised and dealt with, they may prevent the achievement of the goal. In this study, the concept's central purpose, refers to the reduction of maternal deaths, prescription refers to Saving Mothers' recommendations and realities refers to the challenges that affect the effectiveness of the implementation of the recommendations for the Saving Mothers Report, all of which are interdependent according to Wiedenbach's theory.

The prescription is developed care depending on the central purpose, carried out in the realities of the situation, which has its own challenges (George, 2011). The recommendations for the Saving Mothers Report are developed care based on the reduction of maternal deaths and they are implemented in the situation with challenges which affect the implementation of the recommendations.

The study focused on the implementation of the four recommendations, which are:

- Prioritize the implementation of training on Essential Steps in Managing Obstetric Emergencies (ESMOE).
- Improve the audit for Basic Antenatal Care (BANC).

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- Drills on prevention and management of obstetric haemorrhage to be conducted at all levels of care.
- Strengthen Postnatal Care.

1.8 Definition of Concepts

❖ Enhancing

Enhancing refers to increasing the quality, value or extent of something (Soanes & Hawker, 2008). In this study refers to facilitating the effective implementation of Saving Mothers' recommendations.

❖ Effective Implementation

Effective implementation refers to putting a decision, plan or agreement into effect so that the desired results/goal are achieved (Soanes & Hawker, 2008). In this study refers to putting into action the recommendations by the Saving Mothers Report to reduce the maternal mortality.

❖ Saving Mothers

Saving Mothers refers to making economic use of a reduction in a resource such as money or time (Soanes & Hawker, 2008). In this study refers to making sure that the women survive through pregnancy and childbirth safely.

❖ Recommendation

Recommendation refers to suggestion or proposal as to the best course of action (Soanes & Hawker, 2008). In this study refers to the prescriptions or the desired actions set out or given by the NCCEMD for Saving Mothers to reduce the maternal deaths.

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❖ Maternity Units

Maternity units refers to the period during pregnancy and shortly after childbirth (Soanes & Hawker, 2008). In this study refers to any institution that the women visit for care during their pregnancy and childbirth.

1.9 Research Methodology

Research methodology refers to the methods and techniques used for collection, processing and analysing data. Research methods include the methods of, the size of the sample, method to collect data, the measuring instrument choosing and the techniques for analysing data (Brink, van der Walt & van Rensburg, 2018).

This study was conducted in a natural setting, where the setting was an uncontrolled, real-life situation or environment. There was no manipulation or change of the environment by the researcher (Brink et al, 2018). The study was conducted at selected hospitals and clinics in Limpopo Province. The approach used was a mixed method with qualitative and quantitative strands. The convergent parallel research design was used where the researcher collected both qualitative and quantitative data roughly at the same time and then intergrated the information in the interpretation of the results (Creswell, 2014). The population in this study comprised of all patients seeking maternity health services from Limpopo Province maternity units, all district managers for maternal health services and all registered midwives working in maternity units of Limpopo Province, South Africa. Non-probability sampling was used to select the clinics. The research methodology in this study is explained in detail in Chapter 3.

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1.10 Organization of Chapters

The study consists of seven (7) chapters structured as follows:

Chapter 1	Overview of the Study
Chapter 2	Literature Review
Chapter 3	Research Design and Methodology
Chapter 4	Presentation and Discussion of the Results
Chapter 5	Development of a Strategy to Enhance the Effective Implementation of Recommendations for the Saving Mothers Report
Chapter 6	Validation of the Developed Strategy
Chapter 7	Summary, Recommendations, Limitations and Conclusions

1.11 Summary

This chapter introduced and provided an overview of the study. The purpose and the objectives of the study were stated, the conceptual framework which the study was based on was explained with relevant concepts defined in relation to the conceptual framework. The research methodology used in the study was introduced and explained. The chapter also gave an outlay of thesis chapters. Chapter 2 will concentrated on the literature review relevant to enhancing the effective implementation of recommendations for the Saving Mothers Report in maternity units of Limpopo Province, South Africa.

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CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

Chapter 1 provided an overview and the outline of the study. In this chapter, the researcher examined literature concerning the enhancement of the effective implementation of the recommendations for the Saving Mothers Report. Ernestine Wiedenbach's Prescriptive Theory which was used in this study emphasises that the purpose which in this study refers to the reduction of maternal mortality in Limpopo Province should be clarified. Furthermore, it is important for registered midwives to master skills and knowledge central to fulfilling the purpose of effectively implementing the recommendations of the Saving Mothers Report (George, 2011). The prescription in this study refers to the recommendations of the Saving Mothers Report.

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2.2 Purpose of the Literature Review

Literature is reviewed to determine the theoretical framework for the study, to indicate the place where the study fits into the boarder debates, and as such to give reason for the significance of the research project against the existing research work that is already there (de Vos *et al.*, 2012). The literature review in this study also focused on the trends for maternal mortality and examined the perceptions of patients on maternal health care provided at health facilities, the challenges faced by health professionals when implementing the recommendations of the Saving Mothers Report. The literature cited in this chapter also focused on maternal health with regard to the chosen recommendations and maternal death.

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The strategies developed by other countries to reduce maternal mortality and their implementation were looked into. It was also necessary to conduct a literature review in order to:

- Critically analyse and appraise the recent research work on the research topic. The researcher looked at a comprehensive picture of the state of knowledge that is available.
- Clarify the research problem and recheck the research questions.
- Put the study in line with the general body of knowledge, thus reducing the likelihood of unintentionally duplicating and increasing the possibility that the new study makes a valuable contribution.
- Obtain clues to the research methods, techniques and instruments. This aspect gives the researcher information about what designs, techniques and methods, and what types of data gathering instruments exist and are effective.
- Do some refinement on parts of the study, more specifically the research problem, conceptual framework, research design and the process of analysing data.
- Compare the findings of previous studies with the findings of this study. This process reflects the relevance of the new findings to existing research work.
- Inform, guide or support a qualitative study, especially in relation to data collection and data analysis (Brink et al, 2018).

2.3 Maternal Mortality

Maternal mortality is widely regarded as a key indicator of population health and of social and economic development. Its levels and trends are monitored closely by the

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United Nations and other organisations, inspired in part by the United Nations' (UN) Sustainable Development Goals (SDGs), which call for a three-fourths reduction in the maternal mortality rate (MMR) between 1990 and 2015. Unfortunately, the empirical basis for such monitoring remains quite weak, requiring the use of statistical models to obtain estimates for most countries (Wilmoth, Mizoguchi, Oestergaard, Say, Mathers, Zureick-Brown & Chou, 2012).

WHO (2011) classifies maternal deaths as direct, indirect and incidental. WHO furthermore highlights other direct causes (8%) of maternal deaths as ectopic pregnancies, embolism and anaesthesia-related risks. Other indirect causes (20%) include an existing medical condition that is worsened by pregnancy or delivery such as malaria, diabetes, anaemia, hepatitis and sexually transmitted infections (WHO, 2011). These causes are similar to the leading causes of maternal deaths in South Africa which are non-pregnancy related infections, obstetric haemorrhage, and complications of hypertension in pregnancy (Department of Health, 2012).

Lewis (2008) and Visvanathan (2011) are of the view that the vast majority of women die because they do not receive the timely health care that they need. This might be due to lack of basic health care provision, inability to access the local health service, failure to get services from a skilled birth attendant, denied access to care because of cultural beliefs and practices and because responsibility for decision-making falls on other family members.

These barriers are linked and are explained by using the three delays hindering the implementation of the rcommendations by women concept:

- A delay associated with the decision to seek care
- A delay in arriving at a place of care

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- A delay in the provision of appropriate care

The first two delays relate to the issue of access to care encompassing factors in the family and community, including transport. The third delay relates to factors in the health facility, including the quality of care (Lewis, 2008; Visvanathan, 2011). In order to have a successful Safe Motherhood Programme, all three delays must be addressed.

According to Lewis (2008), effective timing is critical in preventing maternal mortality and disability. The ''three delays" concept (Thaddeus & Maine, 1994) is a useful tool to identify the points at which delays can occur in the management of obstetric complications. This concept is also used to explain the social factors responsible for maternal death, to develop strategies to address these delays and help health care professionals target interventions that prevent maternal mortality at every stage (Thaddeus & Maine, 1994).

In most instances, women who die in childbirth, experience at least one of the three delays (UNFPA, 2003; Lewis, 2008):

- **Delay in deciding to seek care** for an obstetric complication which may occur for several reasons: late recognition that there is a problem; fear of the hospital or of the costs that will be incurred there, or lack of a decision maker (Hunt & Mezquita, 2010; Lewis, 2008). These women or their families may have been unaware of the need for care or of the warning signs of problems in pregnancy or financial, family or socio-cultural barriers prevented this (UNFPA, 2003; Lewis, 2008). Socio-cultural factors may primarily influence decision-making on whether to seek care, rather than affect whether women reach a care facility in time (Gabrysch & Campbell, 2009). Socio-cultural factors include maternal age, educational level, marital status, ethnicity,

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religion, family composition, husband's level of education and the woman's autonomy (Gabrysch & Campbell, 2009).

- **The delay in actually reaching the care facility**, after the decision to seek care has been made, is usually caused by limited transportation options and poor roads (Lewis, 2008; Hunt & Mezquita, 2010). This delay may be caused by the service not existing or being too far away; a lack of transport, or the cost of transport (UNFPA, 2003; Lewis, 2008; Hunt & Mezquita, 2010). The physical distance and difficulty with locating transport connote aspects of remoteness such as poor road infrastructure, poor communication between communities, poverty, limited access to information and strong adherence to traditional values (Gabrysch & Campbell, 2009). Solutions must be devised that will either bring services closer to communities or make public transport available and affordable (Gabrysch & Campbell, 2009).

- **The delay in obtaining the provision of care at the facility** (Lewis, 2008; Hunt & Mezquita, 2010) is underscored by various factors, including women often have to wait for hours at the referral centre because of poor staffing, prepayment policies and/or difficulties in obtaining blood supplies, equipment or an operating theatre (Hunt & Mezquita, 2010). This delay could be due to the facility not being appropriately equipped and staffed and/or was the care received being inadequate or actually harmful (UNFPA, 2003). The third delay is typically indicative of suboptimal quality of care (Thorsen, Sundby & Malata, 2012). These factors have led to inadequate monitoring, missed and incorrect diagnoses, delayed or incorrect treatment, delayed referrals, patients not being stabilized before referring, premature discharges and outright negligence (Thorsen *et al.*, 2012).

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These three reasons for delay in receiving appropriate quality obstetric care are not necessarily interdependent on each other; a delay in one phase may or may not exacerbate or prolong a delay in another (Thorsen *et al.*, 2012). A maternal death is usually due to a combination of factors across the three phases and putting the pieces together can give a better understanding of what actually happened (Hunt & Mezquita, 2010; Thorsen *et al.*, 2012). The clues from the various delay phases can assist health care management with adapting or developing strategies that improve the health care system and the quality of care rendered (UNFPA, 2003; Lewis, 2008; Thorsen *et al.*, 2012).

Nearly 50% of women 20-24 years of age in Asia and Africa are married by the age of 18 years, which puts them at an increased risk of early pregnancy, maternal disability, and death. Worldwide, about 16 million girls aged 15-19 years and 2 million girls younger than 15 years old give birth every year. Half of all adolescent births occur in just seven countries: Bangladesh, Brazil, Democratic Republic of the Congo, Ethiopia, India, Nigeria, and the USA. Adolescent pregnancy poses a threat to both mother and her newborn baby because adolescent girls are not physically mature and might enter pregnancy with depleted nutritional reserves and anaemia (Bhutta, Das, Bahl, Lawn, Salam, Paul, Sankar, Blencowe, Rizvi, Chou & Walker, 2014).

Globally, more than half a million women die each year due to complications relating to pregnancy and childbirth. Of the estimated 536 000 worldwide maternal deaths in 2005, developing countries accounted for more than 99%. About half the maternal deaths (265 000) occurred in Sub-Saharan Africa alone and one third took place in South Asia (187 000) (UNICEF 2009). Thus, Sub-Saharan Africa and South Asia accounted for 84% of global maternal deaths, with haemorrhage being the leading cause of death in these regions. Sepsis, prolonged or obstructed labour,

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hypertensive disorders of pregnancy, especially eclampsia, and complications of unsafe abortions, claim further lives which correlate to South Africa's most common causes of maternal deaths which are HIV/AIDS, hypertension and haemorrhage (Department of Health, 2012). The internationally agreed quantitative target with regard to improving maternal health has two components which are to reduce by three quarters between 1990 and 2015, the maternal mortality ratio of which the indicators for monitoring progress in this regard are the maternal mortality ratio and the proportion of births attended by skilled health personnel, and to achieve by 2015, universal access to reproductive health. The indicators for monitoring progress in this regard are the contraceptive prevalence rate, as well as antenatal care coverage (Department of Health, 2012).

WHO (2014) released the results of the study conducted in low- and middle-income countries which indicated that between 2010 and 2012, 214 070 of 220 235 enrolled women (97.2%) completed follow-up. The MMR was 168 per 100 000 live births, ranging from 69 per 100 000 in Argentina to 316 per 100 000 in Pakistan. Overall, 29% of maternal deaths occurred around the time of delivery: most were attributed to haemorrhage, pre-eclampsia or eclampsia, or sepsis. Most maternal, foetal and neonatal deaths occurred at or around delivery and were attributed to preventable causes.

Delays in decision-making, travel and treatment compounded by ignorance of obstetric complications, inadequate use of maternal health care services, poor health care infrastructure, and harmful rituals were found to be major contributing factors of maternal deaths in India. India's MMR stood at 570 in 1990, which fell to 470 per 100,000 live births in 1995, 390 in 2000, 280 in 2005, and 230 in 2008. India's annual decrease of MMR by 4.9% since 1990, now records 63 000 maternal deaths per year. The first delay refers to the delay in recognizing emergency

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obstetric complications and making a prompt decision to seek care. This is particularly important in cases such as postpartum haemorrhage which can lead to maternal death within hours.

The data reveal that in about two-thirds of the cases (65%), it took 2-7 days while, in another quarter of cases, it took more than a week to recognize the complications that led to subsequent deaths. Of those cases where the complications were recognized, only 64% had decided to seek care (Khan & Pradhan, 2013). The leading direct causes of maternal deaths in Uganda are somehow the same as those in South Africa and they include haemorrhage (26%), sepsis (22%), obstructed labour (13%), unsafe abortion (8%) and hypertensive disorders in pregnancy (6%) (MoH Uganda, 2010).

The 2005-2007 Saving Mothers Report for South Africa further indicated that the five major causes of maternal death remained the same during 2005-2007 and 2002-2004 and were: non-pregnancy-related infections - mainly AIDS (43.7%), complications of hypertension (15.7%), obstetric hemorrhage (antepartum and postpartum haemorrhage, 12.4%), pregnancy-related sepsis (9.0 %), and pre-existing maternal disease (6.0%). However, compared with the previous triennium there had been a 20. 1% increase in the number of deaths reported which clearly indicates that the implementation of the recommendations is not effective (Department of Health, 2010).

In South Africa, the period 1998 to 2008 was largely characterized by an incremental pattern in HIV prevalence. HIV prevalence appears to have either stabilized or declined after 2007 in some provinces of South Africa. The Saving Mothers 2005-2007 Report states that the true impact of HIV/AIDS on the pregnant population is now becoming apparent in South Africa. The report further states that, compared

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with the previous triennium (2002-2004), there was an increase in the number of maternal deaths reported in South Africa (Department of Health, 2008).

Table 2.1 shows that Limpopo Province is still below the target for antenatal client initiated on antiretroviral treatment (ART).

Table 2.1: Antenatal clients initiated on ART rate

Province	APP Target FY 2014/15	FY 2012/13	FY 2013/14	Q1 FY 2014/15	Q2 FY 2014/15	Q3 FY 2014/15	Progress	ANC start ART Q3 FY 2014/15
Eastern Cape	93	80.5	79.0	88.1	90.3	93.4		4,885
Free State	93	83.7	80.8	81.6	87.7	90.8		2,179
Gauteng	93	83.1	63.1	79.9	86.2	85.0		9,854
KwaZulu-Natal	93	83.1	85.5	91.4	94.1	95.4		12,857
Limpopo	93	69.4	78.6	89.8	91.4	92.5		4,093
Mpumalanga	93	81.1	74.2	91.4	89.6	95.1		5,231
North West	93	74.7	79.2	54.6	90.3	114.0		12,963
Northern Cape	93	81.1	80.0	87.9	89.7	89.5		580
Western Cape	93	94.2	79.9	82.0	80.7	79.2		1,874
National	**93**	**81.7**	**76.7**	**83.8**	**89.9**	**95.6**		**54,516**

Source: Data are from the District Health Information Software (DHIS), http://www.hst.org.za

In low-income countries, one half to two thirds of births occur either at home or in community health clinics, often without a skilled health care worker being present. In these situations, it may not always be possible to transfer a woman to an emergency obstetric care facility in time to perform a life-saving procedure should the need arise. Furthermore, as more emphasis is placed on delivery at health care facilities and as women become more aware of the benefits, there has been an increase in the workload at referral hospitals in low-resource areas, many of which are underequipped and understaffed. Thus, even when a referral is made, the quality of care is often inadequate, especially for women who arrive late with a complication (WHO, 2014).

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In developing countries, the current deliberate choice to focus research and related interventions on reducing maternal deaths and saving maternal lives has not brought about the expected reduction in the MMR (Prata, Screenivas, Vahindnia & Potts, 2009; Lyengar & Lyengar, 2009; Rosenfield & Schwartz, 2005; Mbonye, Asimwe, Kabarangira, Nanda & Orinda, 2007). However, it is acknowledged that the cornerstone in implementing safe childbirth processes and related interventions or strategies to reduce maternal deaths is optimal midwifery skills (Ssengooba, Neema, Sentumbwe & Onama, 2003; WHO, 2006). Proficient midwives therefore play a crucial role that could lead to a substantial reduction in the number of maternal deaths (Lyengar & Lyengar, 2009; WHOa, 2006).

Haemorrhage has been found to be the major reason for maternal deaths in India like in South Africa. Other important determinants found are sepsis, post-abortion complications and obstructed labour. Again, delays in decision-making, travel, and treatment independently or in combination contribute to maternal mortality in the country (Khan & Pradhan, 2013). Khan and Pradhan (2013) further pointed out that the state of India is known for its adherence to traditional rituals. However, some of these existing practices lack scientific logic and often adversely affect maternal health. Such a phenomen is also common occurrence in South Africa. The findings in the study by Khan and Pradhan also pointed that women are often discouraged to have adequate food during pregnancy, increasing their risk of anaemia and associated maternal complications. Though not encouraged, sometimes pregnant women consume locally-available alcohol to avoid any pain. The women giving birth with the help of relatives or at most by a traditional healer (dai) is quite common. Moreover, a dai's treatment is often sought in case of any post-delivery complication as well.

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The type of medical assistance received during delivery has an impact on reproductive health and, hence, maternal mortality. The percentage of women whose live births occurred in a health facility provides an indication of the percentage of births attended to by skilled health personnel. The data for South Africa based on the delivery rate at facilities from the District Health Information System (DHIS) of the Department of Health shows that the percentage of women in South Africa whose live births occurred in a health facility increased from 62.2% in 2001 to 88.3% in 2009. The data also report that there are similar increases occurred in all the provinces, which should actually have lowered the maternal mortality rate rather than increasing it (Department of Health, 2010).

South Africa's Demographic and Health Surveys (SADHS) conducted in 1998 and 2003 and points out that 89% of women had their last live birth in a health facility in 2003, an increase of 6% since 1998. However, a substantial percentage of women (17%) are not attended to by skilled personnel during delivery even when giving birth in health facilities as it is expected (Department of Health, 2010).

Statistics for the HIV status of women who died in the triennium 2002-2004 was compared with the triennium 2005-2007, as covered by the Confidential Enquiry into Maternal Deaths in South Africa. The report shows that 46.2% of the women who died of maternal causes were HIV-positive during 2005-2007 compared with 36.0% during 2002-2004. The Saving Mothers (2005-2007) Report further shows that 59% of maternal deaths were tested for HIV infection from 2005-2007, up from 46.3% in the last triennium. Furthermore, 79% of those who were tested in 2005-2007 were HIV-infected. The steady increase in testing could be a reflection of the expansion of the Prevention of Mother-to-Child Transmission Programme (PMTCT) (Department of Health, 2008).

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Although the highest percentages of causes are at the interface of health care and the provider, a high percentage of avoidable factors occurs within the community for mothers, babies and children. These community-based modifiable factors are predominantly delays in recognizing danger signs and seeking care. Gaps in family knowledge contribute to unhealthy behaviours and delay in seeking care (WHO, 2008; http://whqlibdoc.who.int/hq/2008/WHO-MCH-89.2.pdf. Accessed on the 18/11/2014). Developing countries face serious challenges that impede the attainment of goals related to maternal deaths. The challenges include the severe shortage of human resources; lack of competent health care practitioners; lack of transportation or viable roads to reach high level care facilities in case of referrals; unpredictable availability of essential medicines; electricity outages and lack of the necessary infrastructure (Prata *et al.*, 2009; Petterson, 2007). These challenges contribute significantly to the occurrence of maternal deaths in resource-poor settings, especially in rural areas of developing countries where resources are even more scarce and inaccessible (Prata *et al.*, 2009; Petterson, 2007). The Limpopo Province maternal mortality statistics per district for January to June 2012 are indicated in Tables 2.2 to 2.6 below (Ntuli, 2014).

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Table 2.2: Capricorn Health District Maternal Mortality

Hospital	Number of Live Births	Number of Maternal Deaths	MMR (Maternal Deaths per 100 000 Births)
Pietersburg	1479	26	**1759.9**
Mankweng	2745	8	**291.4**
W.F. Knobel	763	1	**131.1**
Zebediela	921	1	**108.6**
Botlokwa	692	1	**144.5**
Seshego	2030	5	**246.3**
Helen Franz	1155	3	**259.7**
Lebowakgomo	1721	1	**58.1**

Source:http://policyresearch.limpopo.gov.za/bitstream/handle/123456789/809/Evaluation%20of%20Maternal%20Mortality-Limpopo%20Initiatives.pdf?sequence=1. Accessed on 12/05/2014.

Table 2.3: Sekhukhune Health District Maternal Mortality

Hospital	Number of Live Births	Number of Maternal Deaths	MMR (Maternal Deaths per 100 000 Births)
Matlala	788	4	**507.6**
Mecklenburg	1394	1	**71.7**
Jane Furse	2514	10	**397.8**
St Ritas	2219	6	**270.4**
Dilokong	1868	1	**53.5**
Philadelphia	1779	5	**281.1**
Groblersdal	902	0	**0**

Source:http://policyresearch.limpopo.gov.za/bitstream/handle/123456789/809/Evaluation%20of%20Maternal%20Mortality-Limpopo%20Initiatives.pdf?sequence=1. Accessed on 12/05/2014.

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Table 2.4: Vhembe Health District Maternal Mortality

Hospital	Number of Live Births	Number of Maternal Deaths	MMR (Maternal Deaths per 100 000 Births)
Tshilidzini	2655	8	301.3
Messina	810	4	293.8
Louis Trichardt	787	1	127.1
Malamulele	2192	4	182.5
Elim	1887	4	212.0
Siloam	1553	5	300.0
Donald Fraser	2331	2	85.8

Source:http://policyresearch.limpopo.gov.za/bitstream/handle/123456789/809/Evaluation%20of%20Maternal%20Mortality-Limpopo%20Initiatives.pdf?sequence=1. Accessed on 12/05/2014.

Table 2.5: Waterberg Health District Maternal Mortality

Hospital	Number of Live Births	Number of Maternal Deaths	MMR (Maternal Deaths per 100 000 Births)
Ellisras	626	2	319.5
Mokopane	1332	4	300.3
George Masebe	729	1	137.2
Thabazimbi	580	2	344.8
Voortrekker	708	4	564.9
FH Odendaal	625	3	480.0
Warmbath	845	0	0
Witpoort	576	1	173.6

Source:http://policyresearch.limpopo.gov.za/bitstream/handle/123456789/809/Evaluation%20of%20Maternal%20Mortality-Limpopo%20Initiatives.pdf?sequence=1. Accessed on 12/05/2014.

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Table 2.6: Mopani Health District Maternal Mortality

Hospital	Number of Live Births	Number of Maternal Deaths	MMR (Maternal Deaths per 100 000 Births)
M Malatji	1230	4	325.2
Letaba	1693	5	295.3
Sekororo	1114	3	269.3
Dr CN Phatudi	1098	2	182.1
Kgapane	2110	9	426.5
Nkhensani	2351	6	255.2
Van Velden	699	2	286.1

Source:http://policyresearch.limpopo.gov.za/bitstream/handle/123456789/809/Evaluation%20of%20Maternal%20Mortality-Limpopo%20Initiatives.pdf?sequence=1. Accessed on 12/05/2014.

In view of the maternal deaths statistics in the above tables, despite the implementation of the Saving Mothers Report recommendations, the MMR is not decreasing. It is evident that a strategy to enhance the effective implementation of the Saving Mothers Report recommendations is necessary for the reduction of the MMR in Limpopo.

2.4 Trends in Maternal Deaths

The global MMR declined from 397 maternal deaths per 100 000 live births in 1990 to 263 in 2008, for an average annual decline of 2.3%. In all of the MDG sub-regions of Asia, it was estimated that the MMR would decline by 4% or more per year over the period 1990 to 2008. For the region as a whole, the MMR declined at an estimated rate of 4% per annum (95% unit intereval/UI, 3.5-4.6%). In contrast, for Sub-Saharan Africa the estimated annual rate of decline is only 1.7% (95% UI, 1.1-2.2%). From 1990 to 2008, the annual number of births in Asia decreased by 0.5% per year (falling from 82 to 74 million), whereas in Sub-Saharan Africa the total number of births increased by 1.5% per year (rising from 23 to 32 million). The slower progress in reducing the MMR for Sub-Saharan Africa relative to Asia, coupled with differential trends in the number of births, has resulted in a major

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regional shift in the burden of maternal mortality over the period of this study (Wilmoth *et al.*, 2012).

For major world regions, the estimated rate of decline varies considerably, from over 4% in most parts of Asia, to less than 2% in Sub-Saharan Africa and under 1% in developed countries (Wilmoth *et al.*, 2012). The recent estimates from the United Nations indicate that the number of maternal deaths has declined by more than a third globally since 1990, from approximately 555 000 deaths in 1990 to 350 000 deaths in 2008. Other countries have seen significant reductions in maternal mortality, but South Africa has shown an increase in MMR (DoH, 2012).

2.5 Maternal Health with Regard to the Chosen Recommendations

The implementation of the chosen recommendations will ensure that the MMR will reduce significantly and thus contribute to the good health of mothers. It is important for the mother to be healthy for her and the baby to survive pregnancy and labour (WHO, 2011; Pollock & King, 2009). A high MMR signifies poor maternal health and improvement in the maternal health factors will lead to low MMR (WHO, 2011). Complications of pregnancy and childbirth like postpartum haemorrhage in most of the developing countries result in maternal deaths among women of reproductive age (WHO, UNICEF, UNFPA & World Bank, 2012; Prata, Sreenivas, Vahidnia & Potts, 2009). WHO UNICEF, UNFPA & World Bank (2012) state the safe motherhood principles which ensure that a trained provider with midwifery skills is present at every birth, transport is available for referral services and quality emergency obstetric care is available as the most important intervention in promoting and improving maternal health.

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The cornerstones of safe motherhood based on the WHO's Safe Motherhood initiatives are considered to be:

- **Choice of contraception** - provision of enough information and effective services to individuals and couples so that they can plan the timing, number and spacing of pregnancies.
- **Antenatal care** - the recognition of risk factors and early detection of complications of pregnancy and effective management and health advice.
- **Clean and safe delivery** - to make sure that all health workers are trained and acquire the necessary knowledge, competence and resources which may be human or material to undertake clean and safe delivery and give safe care for mother and baby during the postpartum period.
- **Essential obstetric care** - to ensure that necessary care is rendered to those women who have high risk pregnancies for prevention of complications.
- **Choice of termination of pregnancy** - to give women with unwanted pregnancies a safe, legal and acceptable choice to terminate their pregnancies (Department of Health, 2007).

Maternal health relate to health care factors for both mother and baby which encompasses family planning services, preconception care, prenatal or antenatal care, caring for a woman in labour or delivery care, postnatal care (PNC), care of the newborn, basic essential obstetric care and emergency obstetric care (WHO, 2011; Prata, Passano, Sreenivas & Gerdts, 2010; Pollock & King, 2009). The above factors are aimed at a decline maternal morbidity and mortality as follows:

- **Preconception** deals more with education, keeping the pregnant woman healthy and running tests on women to reduce risk factors that might affect

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future pregnancies and prevent complications, while effective family planning provide information, counselling and a number of temporary and permanent preventive contraceptive methods (Prata *et al.*, 2010; MoH, 2010).

- **Prenatal and antenatal care** deals more with early detection of any possible complications of pregnancy so that they can be dealt with and/or refer the woman to proper specialist medical services (Prata *et al.*, 2010).
- **Maternity or delivery care** is about promoting the use of skilled birth attendants and to ensuring that all women have life-saving emergency interventions at the time when they are in labour and during delivery (Ssengooba, Neema, Mbonye, Sentumbwe & Onama, 2003).
- **Postnatal care (PNC)** is all about ensuring that appropriate PNC is rendered to women and babies after delivery for early diagnosis of postpartum complications.
- **Newborn care** includes being more aware of the need to discourage some common practices that are dangerous to newborn health and to advocate good practices that promote good newborn health (Prata *et al.*, 2010; MoH, 2010).
- **Basic essential obstetric care** emphasizes the preventive services, medical actions and procedures that can be carried out by skilled birth attendants like antenatal care with preventive interventions, early detection and treatment of common problems of pregnancy and early management of complications of pregnancy and labour to decrease the need for emergency interventions (Prata *et al.*, 2009; UNFPA, 2003).
- **Emergency obstetric care** refers exclusively to the activities to save life, including blood transfusion and surgery (Prata *et al.*, 2009; UNFPA, 2003).

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WHO (2011) stated that resources needed for the implementation of an activity or intervention which in this study are the Saving Mothers' recommendations are referred to as the input indicators in health programmes. In maternal health care input indicators may include maternal health policies, human resources essential for maternal health care, materials, financial resources of maternal health services, equipment and supplies essential for maternal health care and maternal health infrastructure. Maternal health care process indicators are measured by the proportion of women delivered by skilled attendants, antenatal care coverage, contraception prevalence rate and unmet needs for family planning (WHO, 2011). Maternal health care outcome indicators are measured using MMR, neonatal mortality rate, total fertility rate and infant mortality rate and these relate to or impact health outcomes of health programmes (WHO, 2011).

Pregnancy and birth are the exciting but worrying times for the family of the woman. Labour and childbirth are natural physiologic processes, experienced uniquely by different women. Women most of the time conceive normally, have normal foetal growth, labour, and birth that necessitates very little or no intervention in the process. Different views that women and their families have about childbearing are based upon their knowledge, experiences, belief systems or cultures, and social and family backgrounds. The health care team make an important part of the way the woman and her family will experience childbirth, which is dynamic.

There must be effective communication between the caregiver and the labouring woman, and her family, and between the members of the care team to ensure safety of both mother and baby, which is what all clinicians and health care systems aim to achieve (Simpson *et al.*, 2009). The United Kingdom (UK) National Health Service supports organisations and frontline clinical professionals in the prioritisation of patient safety and quality care provision to reduce the risk of illness, suffering and

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unnecessary expenditure which result from poor care, illness that can be avoided and deaths that could have been prevented (Machin & Jones, 2014).

Antenatal care (ANC) is a success story as far as global coverage is concerned. Worldwide, about 71% of women receive ANC, in industrialised countries more than 95% of pregnant women have access to ANC. In Sub-Saharan Africa, 69% of pregnant women had at least one ANC visit, more than in South Asia, at 54% (Lincetto, Mathebesoane-Anoh, Gomez & Munjanja, 2012). In a study conducted in Jharkhand it was found that among mothers who gave birth in the five years preceding the National Family Health Survey (NFHS) 3, 57% of the mothers received antenatal care from a health professional, and only one-third of the mothers received antenatal care during the first trimester of pregnancy, indicating that women were not visiting the clinic for ANC in the first trimester.

Most of the births in Jharkhand in the above study took place at home (Khan & Pradhan, 2013).

Table 2.7 shows that the only province that met the target with the antenatal visit before 20 weeks of pregnancy is Western Cape and it also shows that Limpopo is still far below the target.

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Table 2.7: Antenatal 1st visit before 20 weeks rate

Province	APP Target FY 2014/15	FY 2012/13	FY 2013/14	Q1 FY 2014/15	Q2 FY 2014/15	Q3 FY 2014/15	Progress	1st visits <20wks Q3 FY 2014/15
Eastern Cape	65	39.6	43.3	43.7	49.1	49.1		14,677
Free State	65	53.5	56.8	56.4	59.8	59.3		6,880
Gauteng	65	37.8	43.7	45.2	49.2	49.0		29,112
KwaZulu-Natal	65	30.7	55.9	52.7	59.2	58.1		30,932
Limpopo	65	42.0	45.8	45.4	52.8	51.6		16,786
Mpumalanga	65	42.2	49.0	53.9	57.4	57.4		12,074
North West	65	44.1	50.6	52.4	53.7	63.0		13,295
Northern Cape	65	52.9	55.4	56.9	58.9	59.3		3,334
Western Cape	65	58.2	61.0	63.6	66.9	67.0		15,438
National	65	41.2	49.9	50.3	55.0	55.4		142,528

Source: Data are from the District Health Information Software (DHIS), http://www.hst.org.za

Indonesia had challenges of delivering adequate and effective maternal health care which included shortage of health staff, limited access to quality facilities, lack of awareness and cultural constraints regarding safe motherhood. There was also low nutritional and health status of women, the need for contraception were unmet, and maternal deaths were not properly recorded. Skilled attendance by a skilled worker during delivery is taken as the most important single factor for the reduction of maternal deaths. Official records for 2010 in Indonesia indicated that 82% of births were assisted by a skilled birth attendant. Likewise, in South Africa, 90% of women are assisted by skilled health workers in health care facilities.

The studies in Indonesia showed that women who received antenatal ANC are more likely to be attended by a skilled attendant at birth. Women from rural areas, those from poor households and with little education are more likely not to have ANC and they prefer to give birth at home (Belton, Myers & Ngana, 2014).

The couple year protection rate is a proxy for the contraceptive prevalence rate. The couple year protection rate is the rate at which couples (specifically women) are protected against pregnancy using modern contraceptive methods, including

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sterilizations. The target for the couple year protection rate in South Africa is 70%. The couple year protection rates in South Africa have been fairly stable, with an average close to 30% since 2001. The exception to this pattern has been the Western Cape where these rates increased sharply to 59.3% in 2007 (Department of Health, 2012).

Access to and utilization of antenatal care services have an impact on pregnancy outcome, child survival and maternal health. The use of ANC during pregnancy is currently high in South Africa, as 97% of pregnant women utilized ANC during 2005 with some provinces exceeding 100% antenatal coverage. This may have been caused by an underestimate of the population of potential ANC clients in the catchment area (Department of Health, 2012). The high utilization of ANC in all provinces of South Africa should have resulted in the reduction of the maternal deaths and not the increase as it is the case.

Sexual and reproductive health services have improved in recent years. The rate of contraception use is 60%, and the seroprevalence of syphilis in pregnant women who are tested at antenatal clinics has decreased in all age groups. Coverage of ANC is very high, with 94% of women attending at least one antenatal visit. However, the timing, number, and content of these visits are not optimum for all women, e.g. only 73% of women attend up to four visits, and one audit of antenatal cards showed that only 11% of more than 3000 cards from districts across the country scored 80% or more for completeness of interventions undertaken and recorded during antenatal visits. NCCEMD data show that 68% of women who died of infections unrelated to pregnancy (such as AIDS) attended ANC, and women who did not attend ANC had a four-fold higher risk of maternal death compared with the overall pregnant population 1300 (Department of Health, 2012).

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As previously mentioned, in low-income countries, one half to two thirds of births occur either at home or in community health clinics, often without a skilled health care worker being present. In these situations, it may not always be possible to transfer a woman to an emergency obstetric care facility in time to perform a life-saving procedure should the need arise. Furthermore, as more emphasis is placed on delivery at health care facilities and as women become more aware of the benefits, there has been an increase in the workload at referral hospitals in low-resource areas, many of which are underequipped and understaffed. Thus, even when a referral is made, the quality of care is often inadequate, especially for women who arrive late with a complication (WHO, 2014).

The termination of the pregnancy rate at a facility can be used as a proxy for the unmet need of family planning. Data on the termination of the pregnancy rate at facility for all provinces for 2008 and 2009 show that there has been no change in the overall rate of the termination of the pregnancy rate at facility between the two reported years in South Africa (Department of Health, 2012). However, a closer look at provincial patterns indicates that all the provinces, except Gauteng, experienced a decline in the termination of the pregnancy rate at facility rates from 2008 to 2009 (Department of Health, 2012). South Africa's Constitution is based on international standards that recognize the fundamental principles of human dignity, equality, human rights and freedom for all, as well as health care, security and access to health information, and are enriched in the Bill of Rights that forms part of South Africa's constitution. According to the Bill of Rights, sexual and reproductive rights include the right to life; the right to freedom and security; the right to equality; the right to privacy and confidentiality; the right to freedom of thought; and the right to information and education (Department of Health, 2012). South African reproductive health policies and the laws that underwrite them are observed to be among the most progressive and comprehensive in the world in terms of the recognition that

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they give to human rights, including sexual and reproductive rights (Cooper, Morroni, Orner, Moodley, Harries, Cullingworth & Hoffman, 2009).

Reviewing the progress made in reproductive health and rights in the first 10 years of democracy in South Africa, Cooper *et al* (2009) observed that, despite important advances, significant changes in women's reproductive health status are difficult to discern, given the relatively short period of time and the multitude of complex factors that influence health, especially inequalities in socio-economic and gender status. Gaps in the implementation of reproductive health policies and in service delivery remain and need to be addressed in order for meaningful improvements in women's reproductive health status to be achieved just like in the implementation of Saving Mothers' recommendations.

While the proportion of women who received at least one ANC visit increased from 64% to 81% between 1990 and 2009 in developing countries, only 36% of women, on average, in low-income countries received the recommended four or more ANC visits between 2005 and 2010 (Comfort, Peterson & Hatt, 2013). Financial barriers can play an important role in affecting timely access to maternal health (MH) services, which include ANC, skilled care at delivery, access to facility based deliveries, and PNC. As a result, financial incentives, including health insurance, can address the demand-side and supply-side factors which affect the use and provision of MH services, thereby potentially influencing maternal and neonatal health outcomes (Comfort *et al.*, 2013). There are various pathways through which insurance may ultimately affect maternal and neonatal health outcomes. First, insurance may influence the use of MH services through the reduction in the price. In turn, greater use of MH services, which are known to influence MH outcomes, should reduce maternal mortality and other related health outcomes. In addition, insurance may influence the quality of MH services provider accreditation processes,

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modes of provider payment and, more generally, by ensuring consistent flows of funding to providers (Comfort *et al.*, 2013). One of the recommendations for Saving Mothers advocates for the strengthening of the PNC for women to save their lives.

Table 2.8 indicates that Limpopo Province is still below target as far as postnatal visits within 6 days is concerned, which is the crucial period to identify abnormalities and attend to them on time thus also reducing maternal deaths further.

Table 2.8: Mother postnatal visit within 6 days rate

Province	APP Target FY 2014/15	FY 2012/13	FY 2013/14	Q1 FY 2014/15	Q2 FY 2014/15	Q3 FY 2014/15	Progress	Postnatal visits Q3 FY 2014/15
Eastern Cape	80	55.5	54.6	57.0	57.0	58.5		15,930
Free State	80	80.9	83.4	81.9	80.7	81.1		8,968
Gauteng	80	85.1	86.9	83.9	87.4	83.2		42,458
KwaZulu-Natal	80	69.3	72.3	72.9	69.0	72.2		30,660
Limpopo	80	73.0	72.3	72.6	71.2	74.7		22,051
Mpumalanga	80	61.6	54.1	56.1	60.4	61.6		11,228
North West	80	78.9	74.0	88.4	78.3	79.8		12,569
Northern Cape	80	51.7	51.8	53.8	56.9	56.7		3,038
Western Cape	80	0.0	82.8	94.3	103.5	107.9		25,583
National	80	65.1	73.1	75.1	75.5	76.9		172,485

Source: Data are from the District Health Information Software (DHIS), http://www.hst.org.za

The health care providers who are caring for the women during childbirth, including medical doctors, registered midwives and others, are qualified for the job that they are doing, as such they are expected to have the knowledge and skills to take good care of the patients during childbirth effectively. If the chosen recommendations are effectively implemented, it would also reflect in the maternal health issues.

2.6 Perceptions of Patients on Maternal Health Care Provided at Health Facilities

In the United States a study was conducted by Berg (2011) to identify the causes of maternal mortality and putting measures in place to reduce such. It was discovered that the review committee ideally was based in the health department of a state or

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large city as a core public health function. This provided stability for the process as well as facilitated implementation of the review committees' recommendations. The review committee was recommended to be multidisciplinary, with its members being official representatives of their organizations or departments, again to improve buy-in of the stakeholders.

Clark, Beatty and Reibel (2015) conducted a study in Australia on developing expectations of maternity framework and previously-identified weaknesses of methods used to measure patient satisfaction were addressed and a valid framework for investigating women's perception of their maternity-services experiences was developed. This framework has the potential to contribute to the ongoing development and improvement of maternity-care service.

Kaye, Nakimuli, Kakaire, Osinde, Mbalinda and Kakande (2015) conducted a study in Kampala, Uganda where they assessed women's perceptions of the structure, process and outcome of intrapartum care in Mulago Hospital. The study focused specifically on labour ward duty shift handovers. The results showed that maternity duty handovers were associated with patient dissatisfaction, particularly the process of handover, the decision-making that follows handovers and failure of communication of information to patients and their caretakers. Consequently, duty handovers were perceived as inadequate. They were described as gaps in the continuity of care, and contributed to poor quality of care, birth trauma and mothers' dissatisfaction with the childbirth experience. In the study that was conducted to look into health issues in two rural Eastern Cape villages in South Africa, village leaders, community health workers and self-help women groups were used. The findings in Siruma, Hornby and Srinivas (2014) highlighted inadequate service delivery of ambulance services, which frequently failed to timeously reach expectant mothers in urgent need of transportation to a referral hospital which, in turn, led to complications

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and increasing the MMR.

In their study on measuring the quality of maternity care Draycott, Collins, Crofts, Siassakos, Winter, Weiner and Donald (2015) recommended that clinical outcomes and process measures that are important to stakeholders should be measured, ideally in standardized sets for benchmarking. Furthermore, a holistic interpretation of quality should also reflect patient experience, ideally integrated with outcome and process measures, into a balanced suite of quality indicators. This gives the researcher the need to look into the patients' views and perceptions on the care that they are given at the maternity facilities in Limpopo Province.

2.7 Challenges Faced by Midwives When Implementing the Recommendations for the Saving Mothers Report

A study conducted by Bar-Zeev, Barclay, Kruske and Kildea (2013) in Australia found that the resourcing and organisation of health services and the beliefs, attitudes and practices of clinicians were the major factors affecting the quality of care. There was an urgent need to address the identified issues in order to achieve the implementation of the ANC principles and equity in women's access to high quality ANC with the aim of closing the gap in maternal and neonatal health outcomes. A study conducted by Morrow, McLahlan, Forster, Davey and Newton (2013) in Australia yielded results which indicated that change was needed and believed that the new way of providing care would be better for women and increase individualised care as midwives had a challenge of not having autonomy over rendering PNC. Midwives also agreed that the changes would facilitate rest for women, believed that removal of routine observations for women after a vaginal birth was safe and that it would allow more time with women. Over time, midwives were more likely to feel autonomous when providing PNC. However, some concerns were raised, mostly in relation to the challenges around postnatal documentation, care

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provision without the guidance of a care/clinical pathway, and about limiting the use of the call bell to only emergency situations (Morrow et al, 2013).

Midwives were not confident that the changes would necessarily translate to a measurable increase in women's satisfaction with care, and were not convinced that the changes translated into more time to spend listening and providing support to women. In Switzerland, the results of a study conducted by Frei and Mander (2009) on the relationship between first-time mothers and care providers in the early postnatal phase showed that the quality of the caring relationship between a woman and a care provider influences satisfaction with received care. It determines the extent to which women feel in control of their situation at discharge. Organizational and professional factors influence this relationship which, in turn, can influence a nurse's level of job satisfaction and thus becomes a challenge in the nurse rendering her job.

A study conducted by Edouard, Dodd and Bernstein (2000) in Cairo on the implementation of the reproductive health programmes indicated that there was much still remaining to be done to improve the understanding of the concept of reproductive health, support reproductive rights, operationalize reproductive health care within basic health services and promote a more conducive social, cultural and economic environment, especially for women and girls, to enable the attainment of reproductive health. The findings in that study revealed that the understanding of the reproductive health programmes was a challenge to the health workers for them to implement the services as required. In a study conducted by Siruma, Hornby and Srinivas (2014) in the Eastern Cape Province of South Africa where an assessment of maternal health issues in two villages was done, the results highlighted an inadequate service delivery of ambulance services, which frequently failed to timeously reach expectant mothers in urgent need of transportation to a referral

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hospital which was a challenge to the midwives as patients reached them already in a complicated condition.

2.8 Strategies to Reduce Maternal Deaths

Reduction in maternal mortality is a key MDG 5 as related to sustainable development goal (SDG) 3 which is aimed at ensuring healthy lives and promoting the well-being of all people at every age, which means from the newborn to the elderly. In an effort to contribute toward achievement of MDG 5, FIGO's Safe Motherhood and Newborn Health Committee worked with associations of obstetricians, gynecologists, and midwives in 10 low- and middle-income countries between 2006 and 2011. Contributions were made by professional associations in high-income countries through a structured north-south mentoring program. Each project focused on identified needs within each country and resulted in varied approaches and targets, ranging from clinical training, protocol development, and implementation of clinical audits through to legislative and policy changes. Significant and largely sustainable results were achieved, particularly in relation to the relatively small-scale funding available. This resulted in direct improvements in maternal and newborn health outcomes (Lalonde & Grellier, 2012).

SDG 17 encourages the strengthening of means of implementation and revitalization of global partnership for sustainable development which will help South Africa as a country to get support from other countries. The MMR target is less than 70 per 100 000 live births by 2030. Globally, 78% of women benefited from skills, care and knowledge during pregnancy, delivery in 2016 as compared to 61% in 2000. Sub-Saharan African countries, however, were at a rate of 53% benefit which shows that the skills, care and knowledge are low in these countries.

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The United States of America managed to reduce maternal mortality and improve maternal health by implementing the national management protocol which was aimed at reducing the maternal mortality (King & Facog, 2012). Vietnam and Morocco managed to succeed in improved maternal health through implementing the recommended actions (Pucher, Macdonnell & Arulkumaran, 2013). According to Pattison & Bergh (2008), Thailand had maternal mortality levels above 400/100 000 live births.

The Thai Department of Health gave priority to the training of paramedical personnel in their first three health plans (1961-1976) and to increasing the numbers of newly registered midwives. The mortality halved to 200-250/100 000 live births in 1970. Midwives became the key figures in villages and, by 1980, the MMR was 98/100 000 live births. The next health plans concentrated on strengthening and equipping district hospitals. By 1985 the mortality had halved again to 42/100 000 live births; in 1990 it was 25/100 000 live births and in 1995 11/100 000 live births. This strategy worked and solved the problem. The above two cases are good examples for benchmaking for the purpose of assisting with implementation of recommendations for Saving Mothers' report in Limpopo.

One of the primary strategies to reduce maternal deaths in developing countries has been to ensure that every woman has access to a skilled birth attendant during delivery and emergency obstetric care in the case of complications (Prata *et al.*, 2009: 131; UNFPA, 2003). However, the quality of midwifery and obstetric care depends on many factors, including the health and work ability of health care professionals (Knezevic, Milosevic, Golubic, Russo & Mustajbegovic, 2011; UNFPA, 2009).

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A study was conducted in Burkina Faso to find the best strategy to implement recommendations for reducing maternal and neonatal deaths. The findings indicated that the successful integration of a Maternal and Neonatal Death Review (MNDR) system in the activities and the effective implementation of the recommendations in the health facilities needs the active engagement of the authorities in the Ministry of Health (MoH) and the involvement of the professional associations (Akitionga, Thiéba, Quédraogo, Kiemtoré, Liliou, Sanon & Lankoandé, 2012).

Maternal mortality is audited through the National Committee on Confidential Enquiries into Maternal Deaths (NCCEMD), and is notable since South Africa is the only developing country to have such a process which is a mechanism that is regarded as crucial to maternal survival and quality of care in many European countries (Department of Health, 2012). The recommendations presented in the Saving Mothers Reports are approved by the Minister of Health and are incorporated into the strategies for maternal and child health care both nationally and for every province. Despite the clear links between the audit process and the National Department of Health, the 2002-04 Saving Mothers Report showed that very few of the recommendations for reduction of maternal deaths in South Africa that were made in previous reports had been implemented, which is a reason why the strategy to enhance their effective implementation is necessary (Department of Health, 2006). South Africa initiated the enquiries into maternal deaths by the NCCEMD when it was realised that the MMR is escalating. The inquiries were done periodically describing the magnitude of the problem of maternal deaths, the pattern of disease causing maternal deaths, the avoidable factors, missed opportunities and substandard care related to these deaths and made recommendations concerning ways of decreasing the number of maternal deaths (Department of Health, 2012).

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The three conditions that contribute to the majority of preventable maternal deaths in South Africa were identified for 2008-2010 as non-pregnancy related infections, obstetric haemorrhage, and complications of hypertension in pregnancy. The committee summarised its recommendations for South Africa into five key points which can be referred to as 5 Hs, namely **H**IV, **H**aemorrhage, **H**ypertension, **H**ealth Worker Training and **H**ealth System strengthening and the recommendations in full are as follows:

- HIV-AIDS
  - Promote the "Know your status" and "plan your pregnancy" messages in communities and in the health sector; and ensure non-judgemental approaches.
  - Ensure every maternity facility is able to screen for HIV infection and perform early initiation of highly active antiretroviral therapy (HAART) therapy; and to recognise and treat co-infections, especially respiratory infections.

- Haemorrhage
  - Promote preventive interventions: community education, prevent prolonged labour, prevent anaemia; use of safe methods for induction of labour and practice active management of the third stage of labour (AMSTL).
  - Severe obstetric haemorrhage must have the status of a major alert requiring a team approach; with immediate attention to diagnosis of the cause of haemorrhage, resuscitation and stepwise approach to arresting the haemorrhage.

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❖ Hypertension

- All maternity facilities must provide calcium supplementation to all women throughout their ANC and ensure the detection, early referral and timely delivery of women with hypertension in pregnancy.
- Severe hypertension, imminent eclampsia, eclampsia and HELLP syndrome must be recognised as life threatening conditions (Major Alerts) requiring urgent attention.
- All maternity facilities must be able to administer magnesium sulphate to prevent convulsions, administer rapid acting agents to lower severely raised blood pressure, provide close monitoring prior to and following delivering and manage fluid balance safely.
- Promotion of Family Planning Services in the population at large (women, their partners, families and communities).

❖ Health Worker Training

- Train all health workers involved in maternity care in the ESMOE-EOST programme and obstetric anaesthetic module,
- Train all health care workers who deal with pregnant women in HIV advice, counselling, testing and support (ACTS), initiation of HAART, monitoring of HAART and the recognition, assessment, diagnosis and treatment of severe respiratory infections.

❖ Health System Strengthening

- Ensure 24-hour access to functioning emergency obstetric care (both basic and comprehensive).
- Ensure accessible and appropriate contraceptive services for all women which are integrated into all levels of health care and which must be available

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on site for women post-miscarriage and post-partum women (Department of Health, 2012).

- The dominant medicalised model of care entails the notion of risk, and medical technology has emerged as a possibility to control the risks associated with childbirth (Nakano, Ferreira, de Almeida & Gomes, 2012).
- Maternity care process and outcomes data should be tracked, benchmarked, and used for quality improvement purposes. Some maternity care performance measures have been endorsed by nationally recognized organizations.
- Additional performance measures may need to be developed and incorporated into ongoing quality improvement efforts that support patient safety goals. A culture of improvement requires a continuous process for measuring, improving, evaluating, and repeating the process as often as needed until the desired outcomes are achieved.
- Process and outcome measurement serve as the foundation to these improvement processes that enable organizations to assess their own performance, as well as compare it to those of other comparable facilities (Nakano, Ferreira, de Almeida & Gomes, 2012).

Rosevear (1999) states that incidences of patients suing doctors, nurses and hospitals are continuing to rise and that is because:

- Patients 'expectations are greater than ever before, but money is limited.
- If things did not go as expected, it must be someone's fault.
- The new National Health System climate encourages patients to complain assuming that this can improve the service provided.

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- Sometimes, when things go wrong they are handled badly by poor communication.
- The fear of litigation makes doctors and nurses defensive which increases the suspicion of patients.

Pattinson and Bergh (2009) argued that implementing recommendations to reduce maternal deaths means little more than ensuring guidelines are in place and used; this is far from the truth. Initiating and sustaining change is a complex process involving many structures in a health system and a variety of roleplayers, each of whom has to show commitment to change. The agents of change include both managers ('enablers') and clinicians ('doers'). Changing clinical practice cannot be seen in isolation of the other three areas of implementing recommendations, namely, policy, administration and training. The costs, frequency of visits and sustainability of changes still need to be determined. However, no matter how good the implementation of recommendations is, the attitude of health professionals will be crucial to their success.

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2.9 Summary

Chapter 2 reviewed the perinent literature that focussed on maternal mortality, their trends in different countries, the views and perceptions of patients on the care that they are given at the health facilities, maternal health with regard to the chosen recommendations and challenges faced by health professionals in implementing recommendations of the Saving Mothers Report. The strategies that are employed by different countries to reduce the maternal mortality were also looked into. Chapter 3 details the methodology and its application in this study.

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CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

Chapter 2 described the literature that was reviewed in relation to this study. This chapter deals with the methodology and covers in detail the research setting, the research design and the methods applied. The methodology was chosen in accordance with the problem statement, purpose, and the objectives of the study.

3.2 Research Setting

This study was conducted in a natural setting. A natural setting is an uncontrolled, real-life situation or environment. The researcher did not manipulate or change the environment in the study (Brink *et al.*, 2018). The study was conducted at selected hospitals and clinics in Limpopo Province. Limpopo Province is situated in the North Eastern corner of South Africa and shares borders with Botswana, Zimbabwe and Mozambique. Figure 3.1 shows Limpopo Province, its districts and health facilities.

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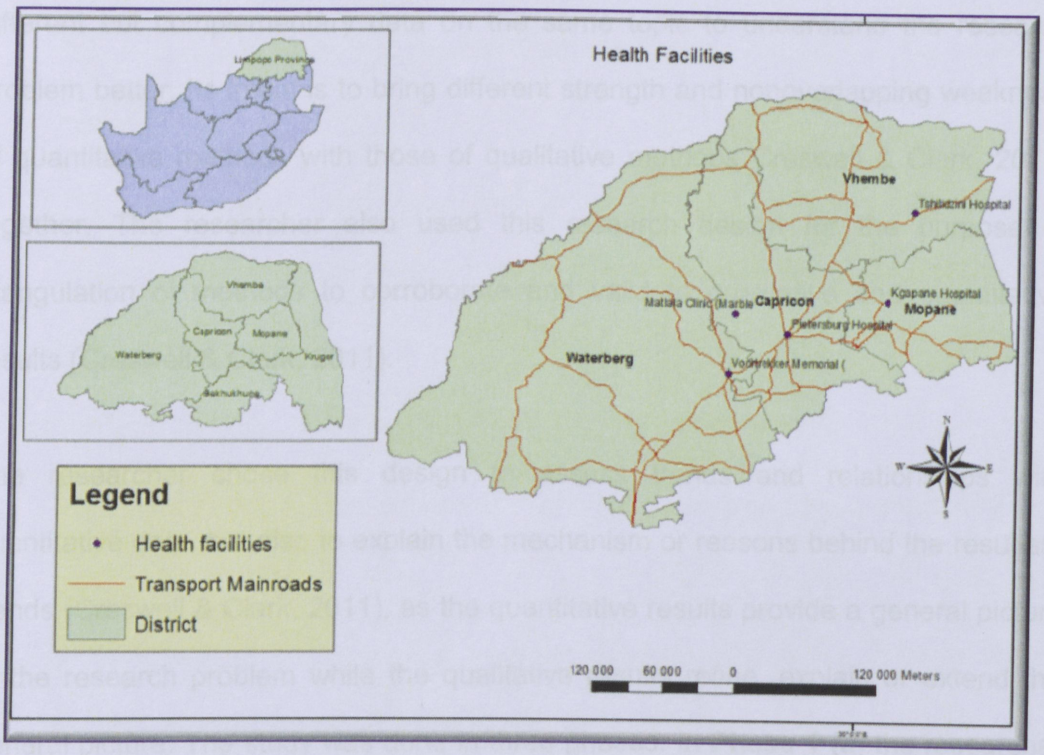
Figure 3.1: Limpopo Province districts and health facilities



It covers an area of 123 910 km^2 with an estimated population of 5.4 million people. The province is divided into five districts: Mopani, Sekhukhune, Capricorn, Waterberg and Vhembe. The province has 443 clinics, 27 community health centres, 30 district hospitals, 4 regional hospitals and one tertiary hospital with two complexes. The province is considered poor, with approximately 80% of people living in rural areas. Over 97% of the population is classified as black Africans, while whites make up 2% and coloured and Indians make up 0.4% and 0.5%, respectively (Department of Health, 2012). The environment was not manipulated by the researcher in anyway.

3.3 Research Design

The convergent parallel research design was used for this study. The convergent parallel mixed research design is a mixed methods design in which the researcher collects both qualitative and quantitative data at roughly the same time, analyse data

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separately and intergrates the information at the interpretation of results (Creswell, 2014). The purpose of the convergent parallel mixed research design was to obtain different but complementary data on the same topic to understand the research problem better. Its intent is to bring different strength and nonoverlapping weakness of quantitative methods with those of qualitative methods Creswell & Clark, 2011) together. The researcher also used this research design for the purpose of triangulation of methods to corroborate and validate qualitative and quantitative results (Creswell & Clark, 2011).

The researcher chose this design to assess trends and relationships with quantitative data, but also to explain the mechanism or reasons behind the resultant trends (Creswell & Clark, 2011), as the quantitative results provide a general picture of the research problem while the qualitative results refine, explain or extend the general picture. The study was done in three phases: In **Phase 1 (a)** the researcher conducted a qualitative enquiry and in **Phase 1 (b)** the researcher designed and implemented a quantitative strand that included collecting and analysing quantitative data, whereas in **Phase 2** the researcher developed a strategy and validated the developed strategy.

The internal and external factors which are realities that influenced the implementation of the recommendations for the Saving Mothers Report were determined. The realities considered in this study included the agent rendering health services, the recipient of health services, the means, the framework and the goal which Wiedenbach describe as consisting of all physical, physiological, psychological, emotional and spiritual aspects. The researcher chose to use the convergent parallel research design because:

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- The researcher felt that there was equal value for collecting and analyzing both quantitative and qualitative data to understand the problem.
- The researcher wanted to practice both qualitative and quantitative research methods.
- The researcher can manage extensive data collection and analysis activities though the researcher was conducting the study individually (Creswell & Clark, 2011).

The convergent parallel design has the following strengths and advantages:

- The design makes intuitive sense. New researchers to mixed methods often choose this design.
- It is an efficient design as both types of data are collected during one phase of the research at roughly the same time.
- Each type of data can be collected and analyzed separately and independently, using the traditional techniques for each type.
- It enables team research where the team can include individuals with both qualitative and quantitative expertise (Cresswell & Clark, 2011).

The researchers can expect the following challenges when using the convergent parallel design:

- It requires much effort and expertise because of the con-current data collection and the fact that equal weight is given to each data type.
- Researchers need to consider the consequences of having different samples and different sample sizes when merging the two data sets.

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- It can be challenging to merge two sets of very different data and their results in a meaningful way.
- Researchers may face the question of what to do if there is a contradiction between the quantitative and the qualitative (Creswell & Clark, 2011).

3.4 Research Methods: Description of Phases

Table 3.1 summarises the objectives, research design, population, sampling approaches, data collection and data analysis strategies employed in the various phases of the study.

3.4.1 Phase 1(a): Qualitative Design

A qualitative research approach was chosen because the researcher wanted to get a full understanding of the challenges that the health professionals encounter in implementing the recommendations for the Saving Mothers Report in maternity units of Limpopo Province.

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Table 3.1: Methodology layout

Phase	Objective	Research Design	Population	Sampling Approach
Phase 1 (a)	Objective 1	Qualitative	• All managers of the maternity health services in Limpopo Province. • All registered midwives working in the maternity wards of Limpopo Province.	• Non-probability sampling • Purposive and convenience sampling.
	Objective 2	Qualitative	• All managers of the maternity health services in Limpopo Province. • All registered midwives working in the maternity wards of Limpopo Province.	
Phase 1(b)	Objective 3	Quantitative	• All postnatal patients seeking maternity health services in maternity wards of Limpopo Province	• Non-probability sampling • Probability sampling • Simple random sampling • Fish-bowl technique
Phase 2	Objective 4	Strategy development process	• Data from all managers of the maternity health services, all registered midwives working in the maternity wards and • All patients seeking maternity health services in maternity wards	• Results from Strategy Development Process us to develop the analysis matrix
	Objective 5	Quantitative	• District managers and registered midwives	• Non-probability sampling • Purposive sampling • The developed strategy validated

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The researcher also wanted to get a full view of the support the registered midwives were given by the Maternal Health Care Managers (MHCMs). A qualitative exploratory descriptive and contextual research design was used for two objectives:

1. To identify the interventions by the health district managers to facilitate the implementation of Saving Mothers' recommendations in maternity units of Limpopo Province, and
2. To explore the challenges faced by registered midwives when implementing the recommendations of the Saving Mothers Report in Limpopo Province, South Africa.

Burns and Grove (2011) indicated that in qualitative research people are studied in their natural setting in order to discover the social world of cultures and languages by living with them and learning by observation and talking to them in order to identify the characteristics and significance of human experiences as described by participants and interpreted by the researcher at different levels of abstraction.

This study was conducted in a natural setting where human behaviour and events occur. The focus of qualitative research is on participants' experiences when implementing the recommendations for Saving Mothers' report (Creswell, 2009; Burns & Grove, 2011; Hansen, 2006; Polit & Beck, 2017).

3.4.1.1 Population

Population is the overall group of persons or objects that the researcher have interest in studying (Brink *et al.*, 2018). The population for this study included all district managers for maternal health services and all registered midwives working in maternity units of Limpopo Province, South Africa as they have experience of implementing the Saving Mothers' recommendations.

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3.4.1.2 Accessible Population

In this study, the accessible population was all district managers for maternal health services and all registered midwives working in maternity units of the selected hospitals of Limpopo Province, South Africa.

3.4.1.3 Target Population

The target group for this study included all district managers of maternal health services and all registered midwives working in maternity units of hospitals of Limpopo Province, South Africa.

3.4.1.4 Sampling

Sampling is a process undertaken by the researcher in selecting the sample from a population so that information about the phenomenon being study is obtained from a representative number (Brink *et al.*, 2018). Non-probability purposive sampling was used in this study where the participants were selected by non-random methods meaning that there was no way of estimating the probability that each participant had of being included in the sample.

Purposive sampling uses the judgement of an expert in selecting cases or it selects cases with a specific purpose in mind. In purposive sampling a sample is selected on the basis of knowledge of a population, its participants, and the purpose of the study (de Vos *et al.*, 2012). The researcher included all districts of Limpopo Province and from each district one hospital with the highest maternal mortality was chosen.

The researcher selected those registered midwives who were on duty on the day the researcher visited the particular hospital for data collection. Sampling was done in two stages; sampling of hospitals and sampling of participants.

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3.4.1.4.1 Sampling of Hospitals

The researcher selected one hospital per district with the highest number of maternal deaths. The hospitals that were included in the sample as they indicated to have the highest MMR in their districts included Mankweng Hospital in Capricorn district (Table 2.2), Jane Furse Hospital in Sekhukhune district (Table 2.3), Tshilidzini Hospital in Vhembe district (Table 2.4), Voortrekker Hospital in Waterberg (Table 2.5) and Kgapane Hospital in Mopani (Table 2.6) as these hospitals were indicated to have the highest MMR in their respective districts.

3.4.1.4.2 Sampling of Participants

Purposive sampling method was used in this study to select the participants. According to Polit and Beck (2017), purposive sampling is based on the belief that researcher's knowledge about the population can be used to handpick sample members. The researcher might decide purposely to select participants who are judged to be typical of the population or knowledgeable about the issues of the study.

A purposive sampling method was used to select participants who are district managers and registered midwives working in hospitals with the highest maternal mortality rate in the selected districts with one or more years of experience as they have experience in implementing the Saving Mothers' recommendations. All district Maternal Health Services managers were selected as they are only five.

Convenience sampling was also used in selecting the registered midwives as the researcher included those registered midwives who were on duty on the day that the researcher visited the hospital for the purpose of data collection. A minimum of three registered midwives were selected per hospital. The minimum total number of registered midwives was fifteen (15). Eighteen registered midwives were

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interviewed. The sample size was determined by data saturation which is the point at which no new information was obtained and redundancy achieved.

3.4.1.4.3 Inclusion Criteria

The inclusion criteria included all district managers of maternal health services for the districts with the highest maternal deaths and all registered midwives working for one or more years in maternity units of hospitals with highest maternal deaths in the selected districts of Limpopo Province, South Africa.

3.4.1.5 Data Collection

Data collection is the accurate, step-by-step gathering of information relevant to the research aim or specific objectives, questions or hypothesis of a study (Burns & Grove, 2011). To achieve objectives 1 and 2, in-depth-individual interviews were conducted. The data gathering method for qualitative design was in-depth individual interviews for both managers and registered midwives. This is a one-on-one interview between the researcher and participants. The interviews were conducted in English. The instrument was pre-tested before the main data collection process. An appointment was made with the operational manager for the day where most of the staff was on duty. On the day of data collection the researcher explained research to the staff, made them to sign consent and conducted interviews in a private room.

3.4.1.5.1 Data Collection for District Managers

The objective that was relevant for the district managers was:

> *"To identify the interventions by maternal health district managers to facilitate the implementation of recommendations on the Saving Mothers Report in maternity units of Limpopo Province, South Africa."*

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The researcher fixed an appointment to see the district managers during their free time. On the day of data collection, the researcher requested the district manager for the utilization of her office for data collection and explained the information about the study to the manager and requested an informed consent form to be signed.

The managers were asked one central question:

> *"What support are you giving to facilitate the implementation of the recommendations by the Saving Mothers Report?"*

The researcher probed further to ensure that all the objectives were covered and for more clarification on points which were not covered by the participants in the answers provided. The managers were also asked what are the inputs, processes and outcomes for the implementation of Saving Mothers' recommendations. The researcher used a voice recorder to capture the interview, informed consent was obtained from the participants.

The researcher also took descriptive/observational field notes during the interview sessions. The researcher observed the non-verbal communication gestures when conducting the interview and noted them in the field notes. The researcher strived for a positive closure to the interview, which was done by providing the participants with a summary of the interview, thus giving them an opportunity to clarify, refine or correct the interviewer's summary (Polit & Hungler, 2006).

3.4.1.5.2 Data Collection for Registered Midwives

The objective that was relevent for the registered midwives was:

> *"To explore the challenges of registered midwives in the effective implementation of recommendations on the Saving Mothers Report in the maternity units of Limpopo Province, South Africa."*

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The researcher made an appointment to visit the unit for data collection. On the day that the researcher visited the hospital she first gave full information (Annexure P) to the participants and those who were willing to take part in the study were requested to sign an informed consent form (Annexure Q).

The interview was conducted in a quiet room in the unit after hours and those without transport were offered a lift home. The interviews were unstructured with one central question:

> *"What challenges are you experiencing when implementing the recommendations on the Saving Mothers Report?"*

The participants provided their experiences and challenges that they encountered when implementing the Saving Mothers' recommendations. The researcher probed further to ensure that all the objectives were covered and for more clarification on points which had not been covered by the participants in the answers provided, focusing on the implementation of the chosen recommendations. The researcher used a voice recorder to record the interview after obtaining informed consent from the participants.

The researcher also took descriptive/observational field notes during the interviews (Polit & Beck, 2017; Creswell & Creswell, 2018). The researcher observed the non-verbal communication gestures when conducting the interview and noted them in the field notes. The researcher strived for a positive closure to the interview, which was done by providing the participants with a summary of the interview, thus giving them an opportunity to clarify, refine or correct the interviewer's summary (Polit & Beck, 2017).

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❖ Probing

Probing was used to obtain more information from the participants. The focus was on the prioritization of the implementation of training on ESMOE, improvement of the BANC audit, drills on prevention and management of obstetric haemorrhage and the strengthening of PNC. Probing refers to a technique used by interviewers to get more information from participants in a specific area of the interview (Burns & Grove, 2005).

The researcher read the question again, explaining the question further and asked the participant to explain a statement that has been made. Polit and Beck (2017) clarified the purpose of probing as to get more useful information than participants volunteered to give during their initial responses. The interviewer took care not to make the participant feel like they were cross-examined. An example of probing is: "Could you explain more about your challenges in implementing the recommendations for the Saving Mothers Report?"

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❖ Paraphrasing

Paraphrasing is the repeating of a statement or text in another form or expressing ideas in one's own words (Burns & Grove, 2011). The participants' statements were paraphrased to ensure that the interviewer had clearly understood what the participant wanted to say.

❖ Reflecting

Reflecting refers to thinking about what was said earlier and interpreting what was said and attaching meaning to it (Department of Health, 2005). The researcher reflected what was said back to the participant and displayed feelings to show empathy, e.g., "You look discouraged when you talk about shortage of resources; would you like to talk about it?"

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3.4.1.5.3 The Post-Interview Phase

The post-interview phase is the time after the actual interview between the researcher and the participants (Rossouw, 2003). The researcher listened to the tape-recorded interviews and checked whether they were audible and complete (Polit & Beck, 2017). The data recordings were labelled with identification numbers and the date data were collated. The researcher wrote field notes on the observations made during interviews to help the researcher to remember how the interview process went.

3.4.1.6 Data Analysis

Burns and Grove (2011) defined data analysis as a technique used to reduce, organise and give meaning to data. According to Polit and Beck (2017) data analysis is a systematic organisation of research data whereby the researcher use techniques such as coding, the process of translating verbal data into categories or numeric form. An independent coder to code the data were used in this study and data were analysed using Tesch's eight steps of open-coding approach in qualitative data analysis (Creswell, 2009) as explained below:

- **Step 1**

The researcher read the transcriptions carefully to get a sense of the whole (Creswell, 2009). The researcher listened to and transcribed the audio recordings, read and re-read the verbatim transcripts, to get an understanding of the interviews and to become familiar with the data.

- **Step 2**

The researcher picked one interview and analysed its contents. The researcher went through it; looking for the underlying meaning of the information. The researcher wrote thoughts in the margin (Creswell, 2009). The co-coder assisted with coding of

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the transcribed data and after a discussion, a consensus between the researcher and the co-coder was reached.

❖ Step 3

When the participants' interviews were transcribed, the researcher made a list of topics according to what was derived from the data. Topics that were the same were clustered together and arranged in columns. They were then arranged as main topics, specific topics, and leftovers (Creswell, 2009).

❖ Step 4

The researcher then went back to the data with the list of topics. Topics were abbreviated as codes and a code was written next to the appropriate segments of the text. The researcher tried to organize the topics checking if new categories and codes would emerge (Creswell, 2009). Themes and sub-themes were sorted and identified.

❖ Step 5

The most descriptive wording for the topics were derived and turned into categories. The researcher reduced the total list of themes by grouping together topics that were related to each other. Lines to indicate interrelationships were drawn between sub-themes (Creswell, 2009).

❖ Step 6

The final decision for each category was made on the abbreviations and the codes were ranked in an alphabetical order (Creswell, 2009).

❖ Step 7

Data belonging to each category were assembled in one place and a preliminary analysis was done (Creswell, 2009).

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❖ **Step 8**

The researcher made a record of the existing data (Creswell, 2009) with the use of direct quotations by the participants for supporting each theme and sub-themes.

3.4.1.7 Measures to Ensure Trustworthiness

Trustworthiness is a method of establishing validity and reliability of qualitative research, and it is achieved when it accurately represents the experience of the study participants. It measures the truth value of the study. It encompasses the four criteria, which are credibility, dependability, confirmability, transferability and authenticity (Polit, Beck & Hungler, 2009; Polit & Beck, 2017). Trustworthiness of data in this study was ensured by using the following criteria:

3.4.1.7.1 Credibility

Credibility refers to confidence in the truth of the data. It involves two aspects, first, carrying out the investigation or study in a way that its believability is enhanced, and, second, taking steps to demonstrate credibility (Polit *et al.*, 2009). In this study, credibility was achieved by:

❖ Prolonged Engagement

Th researcher spent a long time with the participants as possible which was 40 minutes to 1 hour and data were collected until data saturation was attained. The investment of sufficient time also ensured building of trust and rapport with the participants.

❖ Referential Adequacy

This was ensured by using a voice recorder.

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❖ Peer Debriefing

Was ensured by asking a colleague with similar status who is outside the study and who understood the nature of the study to review the perceptions, insights, and analysis.

❖ Member Checks

Member checks were done to ensure the credibility of the study. Member checks refer to providing feedback to the study participants regarding preliminary findings and interpretations and securing the participants' reactions. The participants were asked about their responses during the data collection and also at the end when data has been collected and analysed to confirm if their responses were correctly interpreted (Polit *et al.*, 2009).

❖ Persistent Observation

Denotes to the researcher focusing on the aspects of a situation that are relevant to the phenomena being studied (Polit & Beck, 2017). During the interviews, the researcher spent time with the participants listening and observing non-verbal cues like sighing, leaning back or frowning expressions between the questions. Persistent observation in this study was achieved by observation of participants during interviews, including probing and paraphrasing to focus on issues mentioned by the participants.

❖ Triangulation

The researcher used qualitative and quantitative methods and also collected data from three sources which were the maternal health care managers (MHCMs), registered midwives and postnatal women. The researcher also used mixed methods design.

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3.4.1.7.2 Dependability

This refers to data stability over time and over conditions (Polit *et al.*, 2009). In this study, dependability was ensured by doing an enquiry audit where a scrutiny of the data and relevant supporting documents was done by an external reviewer, which in this case was the independent coder who was given the raw data including the field notes to come up with themes independently and thereafter an agreement was reached with the researcher for final themes, which also ensured confirmability. The participants were also contacted by the researcher with the results during validation to check if the transcripts represented what the information given by the participants (Rossouw, 2003)

3.4.1.7.3 Confirmability

Confirmability refers to the objectivity or neutrality of the data, such that two or more people would agree about the data's relevance or meaning (Polit *et al.*, 2009). Babbie and Mouton (2007) indicated that the confirmability audit trail is an adequate trial that should be left to enable the auditor to determine if the conclusions, interpretations, and recommendations can be traced to their sources and if they are supported by the inquiry.

The researcher ensured the confirmability of data by developing an audit trail which is a systemic collection of documentation, in this case the field notes and the voice recordings that allow an independent auditor to come to conclusions about the data. An independent coder was used by the researcher for the purpose of analysing transcriptions, reviewing raw data, tape-recorded data, written field notes, documents, and results independently (Annexures V and W).

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3.4.1.7.4 Transferability

Transferability refers to the extent to which the findings from the data can be transferred to other settings or groups and is similar to the concept of generalizability (Polit *et al.*, 2009). The researcher described the research setting richly and thoroughly, including what transpired and the non-verbal clues which happened during the interviews was thoroughly noted in the study.

The developed strategy was validated by the stakeholders to test its feasibility and effectiveness. Fittingness of the study was supported when, on formal presentation of the research findings, the district managers and the registered midwives unknown to the researcher confirmed that the descriptions reflect their experiences regarding their interactions when implementing the recommendations for the Saving Mothers Report.

3.4.1.7.5 Authenticity

Authenticity is the extent to which the researcher shows a number of differing realities fairly and faithfully which may exist in the same situation or how people may experience same things differently (Polit & Beck, 2017). The researcher ensured authenticity by recording the interviews. Word-by-word transcription of recorded interviews was done with the non-verbal cues noted in the field notes and indicated in the transcripts. A strategy and recommendations were developed to ensure the authenticity of the study. Validation of the strategy was done by district managers and registered midwives.

3.4.2 Phase 1(b): Quantitative Design

A quantitative non-experimental descriptive research design was used for **Objective 3** which was to assess the views and perceptions of patients on maternal health care provided at health facilities of Limpopo Province. Quantitative research is a means of

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testing objective theories by examining the relationship among variables and these variables can in turn be measured, typically on the instrument, so that numbered data can be analysed using statistical procedures (Cresswell, 2009; Burns & Grove, 2009). Cresswell (2009) further explained that those who engage in this form of inquiry have assumptions about testing theories deductively, building in protections against bias, controlling for alternative explanations, and being able to generalise and replicate the findings. Quantitative data provide frequency counts and means or averages for the variables of interest using numerical data to generalize findings (Parahoo, 2006; Maree, 2008).

3.4.2.1 Population

The population for this study comprised all postnatal patients seeking maternity health services from Limpopo Province maternity units. A target population is the entire set of participants about which the researcher would like to make generalisations (Brink *et al.*, 2018). The target population for this study objective were those women seeking six weeks PNC at selected primary health care facilities.

3.4.2.2 Sampling

Sampling was described in section 3.4.1.4. Sampling was conducted in two stages, sampling of clinics and sampling of postnatal women. Non-probability sampling was used in this study. Purposive sampling was used by the researcher to choose clinics with the largest population in a district from the list of clinics in the province. Purposive sampling uses the judgement of an expert in selecting cases or it selects cases with a specific purpose in mind. In purposive sampling a sample is selected on the basis of knowledge of a population, its participants, and the purpose of the study (Neuman, 2007). Probability random sampling was used in this study to select the postnatal women.

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The Fishbowl technique was used to select the women. Participants had different chances of being included in a sample (Polit & Beck, 2017).

3.4.2.2.1 Sampling of the Clinics

The researcher used probability sampling to select the clinics. Two clinics were selected per district since clinics were categorised per district. Probability systematic or interval sampling was used in this section where every third element from the list of clinics in the municipality served by the selected hospital was selected (Brink *et al.*, 2018). The clinics which were used as per list of clinics are indicated in Table 3.2.

3.4.2.2.2 Sampling of Postnatal Patients

Probability or random sampling was used in this study. The Fishbowl technique was used to select the patients. The researcher prepared small papers on which half were written 'Yes' and half were written 'No' and put them in a bowl. Each of the patients coming for PNC on the day of data collection were requested to pick a piece of paper from the bowl each. Whoever picked up a piece of paper written 'Yes' was included in the study if she agreed and whoever picked up a piece of paper written 'No' was excluded from the study. The pieces of papers were put back into the bowl after each draw of participants (Brink *et al.*, 2018).

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Table 3.2: Sampled clinics per district

District	Hospital	Clinics
Capricorn	Mankweng (Man)	Evelyn Lekganyane Rethabile
Sekhukhune	Jane Furse (JF)	Mable Hall Moganyaka
Mopani	Kgapane (KPN)	Duiwelskloof Maphalle
Vhembe	Tshilidzini (Tshil)	Malamulele Thohoyandou
Waterberg	Voortrekker (VT)	Mahwelereng Mapela

3.4.2.2.3 Inclusion Criteria for Postnatal Patients

All patients who visited the clinic for postnatal services on the day of data collection were included in the study. These patients were included in the study as they would have gone through pregnancy, labour and postnatal period. The sample included all postnatal patients who agreed to participate in the study and they were made to sign an informed consent form.

3.4.2.2.4 Sample Size

The sample size is largely a function of the purpose of the enquiry, the quality of the informants, and the type of sampling strategy used (Neuman, 2007). The sample comprised 20 patients per clinic from each district, which yielded a total of 200 postnatal patients.

3.4.2.3 Data Collection

In this study, data was collected using self-administered/individually questionnaires (Annexures R) for objective 1b, to explore views and perceptions of postnatal patients on maternal health care interventions provided at health facilities of

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Limpopo Province, South Africa. The questionnaire was translated into Sepedi, Tshivenda and Xitsonga languages to accommodate those patients who were not familiar with English. A questionnaire is referred to by Babbie (2007) as a document containing questions and or other types of items designed to solicit information appropriate for analysis. The basic objective of a questionnaire is to obtain facts and opinions about a phenomenon from people who are informed on the particular issue (de Vos *et al.*, 2012).

Data collection took place at the clinic where the researcher requested for a room which was free from disturbance where she could work with the participants. The questionnaire comprised of closed-ended questions that were orderly ranked according to Likert scales and a checklist (Annexure R). The questionnaire comprised of the biographic data section, care during pregnancy section, care during labour section, and care during postnatal section. The researcher explained the information about the study to the patients as detailed in Annexure P, requested those willing to take part in the study to sign the consent form (Annexure Q), administered the questionnaires to the postnatal patients that satisfied the inclusion criteria who were in the postnatal wards or bringing babies for a 3-days or 6-weeks visit on the day of data collection after obtaining the informed consent from them.

The participants were given 20 minutes to complete the questionnaire and those who needed help in explanation of the questions and filling in the questionnaire were helped. Those who could not read and write were assisted by the researcher and field workers who read for the participants, ticked and wrote for the participants according to the participants' answers. The participants were thanked after collection of questionnaires.

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3.4.2.4 Data Analysis

Burns and Grove (2011) defined data analysis as the technique used to reduce, organise and give meaning to data. According to Polit and Beck (2008), data analysis is a systematic organisation of research data and the researcher uses techniques such as coding, the process of translating verbal data into categories or numeric form. Data were analysed by a statistician using the Statistical Package for Social Sciences (SPSS) 24.0 for Windows software. Data were analysed quantitatively using descriptive statistics to synthesise and describe data as the study was a representative sample. Tables and figures were used to display the results.

3.4.2.5 Validity and Reliability

Validity refers to the degree to which an instrument measures what it is supposed to be measuring (Polit & Hungler, 2006). Wood and Ross-Kerr (2006) defined internal validity as the extent to which the results of the study can actually be attributed to the action of the independent variable and not on something else. When an instrument is valid, it truly reflects the concept it is supposed to measure (LoBiondo-Wood & Haber, 2009). Validity was ensured by giving the questionnaire to experts on the subject, colleagues and supervisors to analyse the items to see if they represented adequately the content in the correct proportion.

Reliability of an instrument is the degree of consistency with which it measures the attribute it is supposed to be measuring (Polit & Hungler, 2006). LoBiondo-Wood and Haber (2009) and Brink *et al.* (2018) defined reliability as the extent to which the instrument yields the same results on repeated measures. They further explained that it is concerned with consistency, accuracy, precision, stability, equivalence and homogeneity. The questionnaire was pre-tested by using it on a small number of respondents at a clinic not in the sample list before the actual data collection. Data

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were collected from participants with characteristics required for the study. The researcher did not influence the completion of the questionnaires. The participants responded to the same questions and were given the same time to attend to the questionnaire.

3.5 Phase 2: Strategy Development

A strategy was developed based on data analysis and interpretation of collected data from the mothers, the registered midwives and the district managers so that professional nurses would be enabled to deliver quality health care services through the effective implementation of the recommendations for the Saving Mothers Report, hence, reducing maternal morbidity and mortality rate. In order to do so, the Strategy Development Process in conjunction with Ernestine Wiedenbach's Prescriptive Theory were used in order to identify the realities in the implementation of the recommendations for the Saving Mothers Report (George, 2011; Guillot, 2013) which is discussed in detail in Chapter 5. The steps followed were as follows (Guillot, 2013).

- Step 1

Analyse: Realities as reflected by Ernestine Wiedenbach were identified and analysed with their factors.

- Step 2

Decide: Develop the analysis matrix as working towards a central purpose.

- Step 3

Design: Develop a strategy by using BOEM.

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- Step 4

Act: Validation of the strategy and implementation of the developed strategy. From the analysis of realities, the researcher identified the positives which were categorised in strengths and opportunities and the negatives which were categorised in weaknesses and threats. The researcher developed the strategy by building on the strengths, overcoming the weaknesses, explored opportunities and minimized threats (BOEM) that were harmful for the enhancement of effective implementation of the recommendations for the Saving Mothers Report through activities/actions that were indicated in Table 5.2 of strategy development (see Chapter 5).

3.6 Validation of the Strategy

Validation is defined as the scientific process where collected and analysed data are checked for their accuracy (Chinn & Kramer, 2015). The main purpose of validation was to evaluate the effectiveness of the developed strategy. Validation of the strategy was done with two (2) maternal health care managers out of 4 from the main study, four (4) operational managers out of fifteen (15) and sixteen (16) professional nurses with midwifery from Capricorn and Waterberg districts. The researcher made an appointment with participants and visited them at their place of work. The background of the study and results were presented to them. The researcher then presented the developed strategy to participants who brought in their suggestions. Afterwards self-administered questionnaires was distributed for them to complete (see Chapter 6 of the study).

3.7 Ethical Considerations

Ethical considerations imply that the researcher carried out the research competently, managed resources honestly, and acknowledge fairly those who contributed guidance or assistance, and communicate results accurately and consider the consequences of the research for society and by acknowledging any

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contributor to the research in the report (Akinsola, 2005). Ethical clearance was obtained from the University of Venda Ethics Committee and Permission to conduct the study was obtained from the University of Venda Higher Degrees Committee (Annexure A), the Department of Health Ethics Committee in the Limpopo Province (Annexures B and C) and the District Managers of the districts (Annexures D to O).

The principles of respect for person, principles of beneficence and justice were considered, as well as the issue of vulnerable subjects.

3.7.1 Principles of Respect for Person

- The Right to Self-Determination

The right to self-determination has to do with autonomy, that agreeing to participate rest on the hands of the participants without pressure (Brink *et al.*, 2018). Participants were made aware that they had the right to stop participating at any time, were free to refuse to give information on any question and were welcomed to ask for clarification at any point. The risk of coercion was dealt with by indicating the nature and purpose of study (Annexure P).

- The Right to Self-Disclosure and Information

The right to full disclosure and information implies that participants must be told about the nature of the study (Brink *et al.*, 2018). Participants were fully briefed about the extent of the study before data collection.

- Informed Consent

Informed consent means that subjects had full knowledge and understand of the research project in which they were asked to participate. It includes providing subjects with a full description of the purpose of the project and its general value. All procedures used in the research and why, the amount of time and energy that the

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research took and the manner in which data would be used were spelled out clearly to participants (Brink *et al.*, 2018). The consent form was designed so that the participants signed it to show that they have entered into an agreement with the researcher at the participants' free will and that they were free to withdraw from the study at any time (Brink *et al.*, 2018) (Annexure Q).

3.7.2 Principles of Beneficence

- Right to Freedom

Freedom from harm involved the researcher taking actions necessary to diminish threats from the subject of the study, including physical harm such as injury or fatigue, harm to participant's development, loss of self-esteem, stress, fear or economic harm such as loss of wages (Brink *et al.*, 2018). The researcher was aware that the study did not expose participants from any physical harm, but nevertheless made an effort to be sensitive and responsive to any psychological discomfort and was prepared to provide clarification where necessary. The risk of economic harm was explained when informed consent was obtained and commitment made regarding the use of time was adhered to by the researcher.

- Risk/Benefit Ratio

Before the inception of the project, the researcher must check the ratio between the benefits and the risk of the study. If the risks are more than the benefits, an effort must be made to maximize benefits and minimize risk (Brink *et al.*, 2018). In this study, the benefits outweighed the risks. Midwives would gain knowledge from the study and the strategy that was developed will capacitate them, hence, successful implementation of maternal guidelines. The community represented by pregnant women and mothers would receive better care, hence, good maternal outcomes. The possible risks identified were loss of time during data collection.

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- Vulnerable Subjects

The term "vulnerable subjects" is in terms of children, mental ill subjects who cannot give consent (Burns, Grey & Grove, 2013). Again it has to do with hiding important information from the subjects during data collection and deceiving them, where the researcher failed to explain the fully procedure that will be used because of fear that subjects might refuse to participate, subjects are made vulnerable this way (Brink *et al.*, 2018). In this study, the researcher explained to the participants all the information that was necessary regarding the study, how the study was conducted and reasons behind data collection.

3.7.3 Principles of Justice

This principle embraces subjects' right to fair selection and treatment and the right to privacy.

- Right to Fair Election

Brink *et al* (2018) indicated that participants must be chosen because they possess the characteristics that are related to the problem under study, and not only because of their availability. In this study, participants were selected because they were suitable and met the requirement under study. Although purposive, convenience and simple random sampling was used, subjects were selected fairly as they were neither related to the researcher nor the researcher's friends.

- Right to Fair Treatment

Subjects must be treated fairly and the researcher has to respect any agreement made with the subjects. When data collection requires an appointment, the researcher should be on time and should terminate data collection process at the agreed time. The benefits promised the subjects should be provided. Subjects should be treated respectfully and courteously at all times (Brink *et al.*, 2018). In this

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study, subjects were respected by respecting and understanding their culture. The researcher indicated that the completion of the questionnaire took 1 hour 30 minutes, the researcher and her team did not exceed this agreed time.

3.7.4 Right to Privacy

Privacy is defined as the extent in which the participant's information will be shared with or withheld from others. Invasion of privacy occurs when private information is shared without the individual's knowledge and against his/her will or wishes (Brink *et al.*, 2018). Therefore, data were collected with the subjects' knowledge and consent. Individuals who agreed to participate in research had the right to expect that the information collected from or about them remained private and this occurred through either anonymity or confidentiality procedures. The researcher collected data in a private consulting room with each participant.

- Confidentiality and Anonymity

Confidentiality entails that no information provided by the participant should be revealed or made available to any person (Brink *et al.*, 2018). When the participant agreed to take part in a research project, this right does not apply anymore since the information provided was included in a research report. The researcher however, ensure that anonymity of any person or an institution was protected in the report by safeguarding that it was not possible to relay particular data to a particular person.

The project leader and all professional people who participated in the research were responsible for this aspect of the research. Complete anonymity, that is, when not even the researcher can trace the data to a specific subject, is seldom possible (Brink *et al.*, 2018). This fact was brought to the attention of people participating in the investigation. If the anonymity of participants was threatened, all research records should be destroyed. A code was assigned to every participant so that they

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remained anonymous. Participants did not write their names on the questionnaires and also did not include anything that one can trace to them.

3.7.5 Protection from Harm

Research was planned and undertaken in such a manner to avoid as far as possible any physical or psychological harm to the subject. Participants were respected, not looked down upon. The researcher related well to participants, understood their culture and did not say anything which might be regarded as an insult and did not ask questions that offended participants. The researcher was transparent during questions (Brink *et al.*, 2018).

3.8 Summary

This chapter dealt with the research methodology. The mixed method research methodology was used in this study where the researcher combined elements of both the qualitative and quantitative research approaches for the purpose of the breadth and depth of explaining, understanding and collaboration. A sequential exploratory design, formed the basis of the research design and methods, population and sampling, data collection methods, data analysis, validity and reliability, trustworthiness and credibility, ethical consideration, were explained. Chapter four (4) encompasses the presentation of results for the two methods and discussions therof.

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CHAPTER 4

PRESENTATION AND DISCUSSION OF THE RESULTS

4.1 Introduction

Chapter 3 provided an overview of the research methodology used in this study. An exploratory sequential design was used. This chapter focuses on the presentation and discussion of research findings. The qualitative objectives were to:

- Identify the interventions by maternal health district managers to facilitate the implementation of recommendations on the Saving Mothers Report in maternity units of Limpopo Province; and
- Explore the challenges of registered midwives in the effective implementation of recommendations on the Saving Mothers Report in the maternity units of Limpopo Province.

Eighteen (18) registered midwives from five hospitals (1 hospital per district) and 4 MHCM managers were sampled, though the fifth MHCM declined to participate in the study.

The central question asked to the registered midwives was:

> *"What challenges do you experience when implementing the recommendations for the Saving Mothers Report."*

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Whereas the central question for the MHCM was:

> *"What support are you giving to facilitate the implementation of the recommendations by the Saving Mothers Report?"*

In-depth one-on-one interviews were conducted at the participants' work places. Data were analysed following Tesch's open-coding technique of eight steps of qualitative data analysis that is inductive and descriptive (Creswell, 2014). The researcher spent a minimum of forty-five (45) minutes with each participant. Five themes with sub-themes emerged from the results.

For the quantitative part of the study the objective was:

- To explore views and perceptions of patients on maternal health care interventions provided at health facilities of Limpopo Province.

For the quantitative strand of the study, 200 postnatal mothers were sampled from 5 districts of the Limpopo Province. The respondents were sampled from 2 clinics of each district. Self-administered closed ended questionnaires were used to collect data at the clinics during the postnatal visits. Data were analysed using the Statistical Package for Social Sciences (SPSS) version 24. Data was presented using tables.

Discussions were made based on the merged data of the two research strands according to themes and sub-themes contained in the central questions. The discussions were also based on implementation of recommendations for the Saving Mothers Report and Ernerstine Wiedenbach's Prescriptive Theory (George, 2011). The quantitative results were used to support the qualitative results though some did not have quantitative data support.

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4.2 Presentation of the Research Results

Qualitative findings were presented followed by the quantitative component, then the discussions of qualitative findings with direct quotes and supported by quantitative findings and contextualized within the relevant literature.

4.2.1 Presentation of Qualitative Results

4.2.1.1 Demographics of the Participants

Table 4.1 summarises the demographic data for participants in the qualitative part of the study.

Table 4.1: Demographic data for qualitative participants

Demographic	Number	Percentage
Gender		
Males	2	9
Females	20	91
Age of registered midwives		
>30 years	7	31.8
30 - 39 years	3	13.6
40 - 49 years	8	36.6
50- 59 years	4	18.1
Years of experience		
3 - 9	12	55
10 - 15	6	27
15 and above	3	14
Position held		
Registered nurse	16	73
Operational manager	2	9
District manager	4	18
Qualifications		
Diploma in Nursing	10	45
BCur	4	18
Advanced Midwifery	8	36

Twenty-two (22) registered midwives of whom two were males and twenty female were interviewed. It was not suprising to find that many participants were females

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because the nursing profession is a female dominated. The results indicated that there was no difference between the challenges faced by female and male participants. The participants' ages ranged from 25 to 58 years, they were all registered midwives, with 8 of them having a qualification in advanced midwifery and each had a minimum of two years working experience in a maternity ward.

The results indicate that the older midwives were more experienced and confident in their work. The results also showed that the ones with advanced midwifery qualifications had more experience, confidence and knowledge than the ones without such training.

The researcher conducted interviews with 22 participants of whom 7 (31.8%) were below 30 years of age, 3 (13.6%) were between 30 and 39 years old, 8 (36.6%) were between 40 and 49 years of age and 4 (18.1%) were between 50 and 59 years of age. All the participants were within their respective years of working and actively involved in rendering of midwifery care. They were all qualified midwives who were expected to be able to implement the recommendations for the Saving Mothers Report. Five of the participants (22.7%) were operational managers.

Most of the participants (36%) were between the ages of 40 to 49 years and thus matured adults nearing retirement age which may indicate the need to train more the younger registered midwives for future practice so that the recommendations for Saving Mothers may be effectively implemented. About 91% of the participants were females as nursing is predominantly a female profession, whereas 55% of the participants had 3 to 9 years of experience which made them familiar with the procedures and what is expected from them in the maternity units.

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The participants had relevant qualifications to work in maternity units as 45% had a Diploma in Nursing, 18% had a BCur degree in Nursing and 36% had an Advanced Diploma in Midwifery.

4.2.1.2 Themes and Sub-Themes That Emerged from the Data

Tesch's 8 steps of inductive, descriptive open-coding technique was used to analyse the qualitative data (Creswell, 2014). Table 4.2 shows the five themes and their respective sub-themes that emerged from analysis of the raw data.

Table 4.2: Themes and sub-themes

Themes	Sub-themes
1. **Challenges related to implementation of recommendations of the Saving Mothers Report in maternity units**	1.1 Poor supply of resources led to the lack of adherence to protocols 1.2 Increased workload due to increased number of admissions causing poor management resulting in complications 1.3 Problems associated with the referral system which was experienced at multiple levels 1.4 Lack of adherence to protocols and lack of cooperation by women themselves led to avoidable complications 1.5 Existing negative attitudes and practices of health professionals at different levels outlined 1.6 Lack of appreciation by the management
2. **Description of existing training programmes and in-service education for health care professionals**	2.1 Insufficient versus existence of ESMOE, LINC and BANC training experienced in some hospitals 2.2 Challenges in getting the health care professionals to attend programmes
3. **Knowledge related to provision of care to women whilst implementing the Saving Mothers Report recommendations in maternity units**	3.1 Insufficient knowledge and confidence experienced from newly qualified health care professionals during provision of care 3.2 In-service training and unit lectures provided aimed at improving knowledge and skills of patients and health care professionals
4. **Suggestions related to improvement of adherence to recommendations of the Saving Mothers Report in maternity units**	4.1 Staff recruitment suggested to solve staff shortages 4.2 Review of staff allocation protocols suggested in addressing absenteeism, burnout and resignation

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4.2.2 Quantitative Results

The results from quantitative strand are illustrated in tables, graphs and charts. A statistician was consulted and the statistical software programme SPSS (version 24) was used to analyse data. Data analysis entailed categorising, ordering, manipulating and summarising the data to describe it in meaningful terms (Zindiye, 2008). The demographic information from section A of the questionnaire was analysed using descriptive statistics and described as frequencies and percentages. Data were summarised and presented by making use of descriptive statistics. The mean, standard deviation, minimum and maximum values for all scaled questions was also computed and used in the explanation of the findings.

The Chi-Squared test was performed to respond to the research purpose of this study which is to develop a strategy to enhance the effective implementation of the recommendations of the Saving Mothers Report in maternity units of Limpopo Province, South Africa. The researcher required the personal information of respondents; this included respondent's age, religion, marital status, educational status, employment status and head of household. Demographic information was useful in determining and comparing patterns amongst different categories of research participants.

4.2.2.1 Ages of Respondents

Age distribution of respondents in this study was thought to be important since it reflects the experiences accumulated over the years. The reseacher was able to know whether respondents are old or young (Zindiye, 2008). The results indicated that there was no difference in the experience on the implementation of the Saving Mothers' recommendations as far as age was concerned. Table 4.2 shows the age categories of the 200 respondents.

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Table 4.3: Ages of respondents

Age	Frequency	Percent
< 20 years	22	11.0
20 - 29 years	90	45.0
30 - 39 years	75	37.5
≥ 40 years	13	6.5
Total	**200**	**100.0**

Of these 200 respondents, 22 (11%) were below 20 years old; while 90 (45%) had an age range between 20 and 29 years; 75 (37.5%) had an age range between 30 and 39 years and 13 (6.5%) fell 40 years and above. The results indicated that there were respondents who were less than 20 years old (11%), which may be classified as a high risk group, especially as they were not matured. Most of the respondents were between 20 and 39 years old which is a suitable period for a woman to fall pregnant. A small number of respondents were above the age of 40 years which could make them to be high risk clients as they were above child-bearing age.

4.2.2.2 Marital Status of Respondents

The results of the investigation into the marital status of the 200 participants of the study are provided in Table 4.4.

Table 4.4: Marital status of respondents

Marital Status	Frequency	Percent
Single	122	61.0
Married	76	38.0
Divorced	2	1.0
Total	**200**	**100.0**

Of the 200 respondents, 122 (61%) were single, while 76 (38%) were married, and 2

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(1%) were divorced. The results indicated that most of the respondents 122 (61%) were single which may render them to have less support as they did not have spouses and may also cause them to have stress due to partners not being responsible for the baby. Of the respondents, 38% were married which may have support by their spouses, but 2 (1%) of respondents were divorced, which may cause them stress.

4.2.2.3 Parity of Respondents

The results of the investigation into the parity of the 200 respondents of the study are provided in a Table 4.5.

Table 4.5: Parity of respondents

Parity	Frequency	Percent
1	53	26.5
2	58	29.0
≥ 3	89	44.5
Total	**200**	**100.0**

Of the 200 respondents, 53 (26.5%) were pregnant for the first time; while 58 (29%) were pregnant for the second time; and 89 (44.5%) were pregnant for the third time and above which make them to begin to be at risk during pregnancy (due to the higher parity). The results indicated that most of the respondents 89 (44.5%) had three (3) or more children, which may predispose them to problems of multiparous women; though they have experience as far as pregnancy is concerned; 26.5% of respondents had only one (1) pregnancy which may indicate that they have little knowledge and experience about childbearing issues.

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4.2.2.4 Employment Status of Respondents

The results of the investigation into the employment status of the 200 respondents of the study are provided in a Table 4.6. Of these 200 respondents, 40 (20.0%) were employed; while 160 (80%) were unemployed. The employed respondents may be unable to honour all appointments to the clinic due to work while the unemployed may run short of funds to visit the clinic.

Table 4.6: Employment status of respondents

Employment status	Frequency	Percent
Employed	40	20.0
Unemployed	160	80.0
Total	**200**	**100.0**

4.2.2.5 Distance from Clinic

The results of the investigation into the distance from the health facility details of the 200 respondents of the study are provided in Table 4.7.

Table 4.7: Distance from clinic

Distance	Frequency	Percent
<5 km	97	48.5
5 - 10 km	71	35.5
> 10 km	32	16.0
Total	**200**	**100.0**

Of the 200 respondents, 97 (48.5%) stayed less than 5 km from the health facility; while 71 (35.5%) stayed 5-10 km from the health facility; and 32(16%) stayed more than 10 km from the health facility. A high number of respondents stay less that 5 km from the clinic, thus making it easier for them to visit the clinic.

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4.2.2.6 Health-Seeking Patterns

The results of the investigation into the health-seeking behaviour of the 200 respondents of the study are provided in a Table 4.8.

Table 4.8: Health-seeking patterns

Health-Seeking Behaviour	Frequency	Percent
Never sick	70	35.0
Wait and see if it gets worse	35	17.5
Seek medical care	95	47.5
Total	**200**	**100.0**

Of the 200 respondents, 70 (35.0%) never got sick during their pregnancy; while 35 (17.5%) indicated that they waited to see if it got worse before seeking help; and 95 (47.5%) indicated that they sought medical care which is a good tendency towards safe pregnancy.

4.2.2.7 Perceptions of Maternal Care Rendered During Pregnancy

The perceptions of women on maternal care they received from health care professionals during pregnancy are presented in Table 4.9 on the next page.

4.2.2.8 Interpretation of Maternal Care Rendered During Pregnancy

Table 4.10 illustrates the perception of respondents on maternal care rendered to them during pregnancy.

Table 4.10: Interpretation of maternal care rendered during pregnancy

Interpretation	Frequency	Percent
Negative	82	41.0
Positive	118	59.0
Total	**200**	**100.0**

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Of the 200 respondents, 82 (41%) indicated that the care they received during pregnancy was negative, while 118 (59%) perceived the care as positive.

4.2.2.9 Perceptions of Maternal Care Given During Labour

The women's perceptions of maternal care that they received during their time in labour are presented in Table 4.11.

4.2.2.10 Interpretation of Maternal Care Rendered During Labour

The results of the investigation into the interpretation of care received during labour of the 200 respondents of the study are provided in Table 4.12.

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Table 4.9: Perceptions of maternal care rendered during pregnancy

Item no	Items	Strongly agree		Agree		Uncertain		Disagree		Strongly disagree	
		n	%	n	%	N	%	n	%	n	%
C1	The medical care I received during my pregnancy was perfect.	5	2.5	9	4.5	37	18.5	81	40.5	68	34
C2	Nurse treated me in a very friendly and courteous manner.	6	3	11	5.5	62	31	121	60.5	0	0
C3	Doctors treated me in a very friendly and courteous manner.	1	0.5	7	3.5	109	54.5	155	77.5	45	22.5
C4	I was given antenatal card on the first visit to the health facility	4	2	3	1.5	20	10	166	83	7	3.5
C5	My pregnancy was confirmed on my first visit to the health facility	7	3.5	2	1	17	8.5	169	84.5	5	2.5
C6	My pregnancy was timed on my first visit (Estimated delivery date)	5	2.5	10	5	21	10.5	157	78.5	7	3.5
C7	I was examined on my first visit to the health facility	6	3	20	10	20	10	147	73.5	7	3.5
C8	My blood pressure was taken on all my visits to the health facility	1	0.5	2	1	17	8.5	174	87	6	3
C9	My mid-upper arm circumference was measured	10	5	5	2.5	21	10.5	159	79.5	5	2.5
C10	My weight and height was measured at every visit	2	1	11	5.5	23	11.5	160	80	4	2
C11	I was counselled and voluntary tested for HIV	1	0.5	1	0.5	17	8.5	176	88	5	2.5
C12	My urine was tested	2	1	5	2.5	21	10.5	168	84	4	2
C13	I was given iron supplementation	0	0	2	1	20	10	176	88	2	1
C14	I was given folate supplementation	2	1	2	1	21	10.5	172	86	3	1.5
C15	I was given calcium supplementation	8	4	1	0.5	21	10.5	165	82.5	5	2.5
C16	I was given information on emergencies	9	4.5	7	3.5	20	10	160	80	4	2
C17	I was given advice on lactation & contraception during pregnancy	11	5.5	9	4.5	21	10.5	155	77.5	4	2

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Table 4.11: Perceptions of maternal care given during labour

Item no	Items	Strongly agree		Agree		Disagree		Strongly disagree		Missing	
		n	%	n	%	n	%	n	%	n	%
D1	The medical care I received during labour was perfect.	9	4.5	13	6.5	29	14.5	69	34.5	80	40
D2	Nurse treated me in a very friendly and courteous manner.	11	5.5	17	8.5	42	21	109	54.5	21	10.5
D3	Doctors treated me in a very friendly and courteous manner.	2	1	4	2	23	11.5	118	59	53	26.5

Table 4.12: Interpretation of maternal care rendered during labour

Interpretation	Frequency	Percent
Not good	68	34.0
Good	132	66.0
Total	**200**	**100.0**

Of the 200 respondents, 68 (34.0%) indicated that the care they received during labour was not good; while 132 (66%) indicated that the care they received was good. The results suggest that most of the respondents perceived the care rendered during labour as good, while a lesser amount perceived the care as not being good.

4.2.2.11 Perception of Maternal Care Given During Postnatal Period

The women's perceptions of maternal care that they received during postnatal period are presented in Table 4.13.

4.2.2.12 Interpretation of Maternal Care Rendered During Postnatal Period

The results of the investigation into the perception of care received during postnatal period of the 200 respondents of the study are provided in Tables 4.13 and 4.14.

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Table 4.13: Perception of maternal care given during postnatal period

Item no	Items	Strongly agree		Agree		Disagree		Strongly disagree		Missing	
		n	%	n	%	n	%	N	%	n	%
E1	The medical care I received after delivery or postnatal was perfect.	10	5	7	3.5	29	14.5	136	68	18	9
E2	My blood pressure was taken	7	3.5	1	0.5	12	6	161	80.5	19	9.5

Table 4.14: Interpretation of maternal care rendered during postnatal period

Interpretation	Frequency	Percent
Not good	52	26.0
Good	148	74.0
Total	**200**	**100.0**

Of these 200 respondents, 52 (26.0%) indicated that they perceived the care they received during the postnatal period as not good; while 148 (74%) indicated that they perceived the care received during the postnatal period as good. The results indicated that most of the respondents perceived the care they received during the postnatal period as good.

4.2.2.13 Additional Comments

The results of the investigation into the comments that the respondents were given a chance to bring forward of the 200 respondents of the study are provided in Table 4.15. Of the 200 respondents, 12 (6.0%) did not comment; 73 (36.5%) indicated that the attitudes of staff need to improve; 17 (8.5%) commented about shortage of medication; 28 (14%) indicated to be satisfied with the care that they received; 43 (21%) indicated that they wait for a long time and that the service is slow while 27 (13%) indicated that there was shortage of nurses. The results indicated that most of

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the respondents commented about the attitudes of staff which is negative, long waiting periods and shortage of nurses which impact negatively on the implementation of the recommendations for the Saving Mothers Report.

Table 4.15: Additional comments

Do you have any comment that you would like to add?	Frequency	Percent
No comments	12	6
Attitudes of staff should improve.	73	36.5
No medication	17	8.5
The care is good they should keep it up	28	14
The service is too slow. We wait for too long.	43	21.5
There is shortage of nurses	27	13.5
Total	**200**	**100.0**

4.3 Discussion of the Results

Merging and discussion of qualitative and quantitative findings was done. The discussion focussed on the support offered by district managers to the registered midwives and the challenges faced by the registered midwives when implementing the Recommendations for the Saving Mothers Report. There were some qualitative sub-themes which were not supported by quantitative results.

4.3.1 Theme 1: Challenges Related to Implementation of the Recommendations for the Saving Mothers Report in Maternity Units

The Saving Mothers' Report recommendations for Limpopo Province included prioritizing of ESMOE, improving BANC audit, drills for management of haemorrhage, strengthening of PNC, strengthening of contraception services, implementation of second trimester termination of pregnancy (TOP), improving the knowledge and skills of midwives and doctors including safe administration of

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anaesthesia, promoting use of guidelines during training of doctors and midwives, appointment of obstetricians and gynaecologists, developing referral criteria and establishing referral routes and emergency obstetric ambulances which should be made available in each municipality.

During the interview sessions, the registered midwives indicated that they experienced challenges related to the implementation of the recommendations for the Saving Mothers Report. The problems indicated lack of material resources, shortage of midwives which could lead to lack of implementation and adherence to protocols. Increased workload due to the increased number of admissions was blamed for poor management resulting in complications and problems associated with the referral system which was experienced at multiple levels. The lack of adherence to protocols and lack of cooperation by women themselves was viewed to be leading to avoidable complications. Late booking for ANC or no booking led to difficulty in managing complications.

Existing negative attitudes and practices of health professionals at different levels was noted. Prevailing communication problems was blamed on several factors experienced during the provision of care. Women's health-seeking behaviour which was not only problematic, but also posed a challenge during provision of care was also cited. This confirmed that midwives were experiencing challenges when implementing the Saving Mothers' recommendations in maternity units. This was supported by a participant from Voortrekker Hospital (VT) who said:

> *"Eish… The recommendations are very ideal to improve maternal health, but we face problems when we are expected to implement them. We experience lot of barriers and challenges here and we really get frustrated. For example, women don't come to facilities on time; then to whom will we accurately implement the recommendations to? We are also so short-staffed in the units even at the primary health care."*

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The study findings corroborated research conducted by Mulaudzi, Phiri, Peu, Mataboge, Ngunyulu and Mogale (2016) on challenges experienced by South Africa in attaining the MDGs 4, 5 and 6. Results in that study indicated that there were obstacles in the implementation of maternal mortality reduction strategies, guidelines, recommendations and also identified barriers to attain zero HIV and TB infections and management. The results in this study indicated that midwives experienced challenges in the implementation of the Recommendations for the Saving Mothers Report. The sub-themes that emerged from Theme 1 are illustrated in Table 4.16.

4.3.1.1 Sub-Theme 1.1: Poor Supply of Resources Lead to Lack of Adherence to Protocols

In the health facilities needed resources for the effective implementation of the Saving Mothers Report are material and human. The resources to implement the recommendations of the Saving Mothers Report for the Limpopo Province are crucial to reduce maternal mortality.

Table 4.16: Sub-themes that emerged from theme 1

Theme	Sub-themes	
1. **Challenges related to implementation of the recommendations of the Saving Mothers Report in maternity units**	1.1.	Poor supply of resources lead to lack of adherence to protocols
	1.2.	Increased workload due to increased number of admissions blamed for poor management resulting in complications
	1.3.	Problems associated with the referral system which is experienced at multiple levels
	1.4.	Lack of cooperation by women lead to nonadherence to protocols which could lead to avoidable complications
	1.5.	Existing negative attitudes and practices of health professionals at different levels
	1.6.	Insufficient appreciation by the management

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The needed resources were for implementing the recommendations which included both to prioritize ESMOE and improve BANC audit, drills for management of haemorrhage, improve knowledge and skills of midwives and doctors, including safe administration of anaesthesia, promote use of guidelines during training of doctors and midwives, develop referral criteria and establish referral routes and emergency ambulances to be made available per municipality.

The registered midwives indicated that they were facing challenges of limited resources, both material and human, to facilitate the implementation of the recommendations for the Saving Mothers Report. Hence, this was found to be interfering with their competency of adherence to protocols. This was confirmed by one of the participants from Mankweng Hospital (Man) when she said:

> *"Eish, there is a great shortage of blood. Blood for transfusion is scarce and it takes a long time to get access to the blood. You will be expected to refer a patient for blood transfusion whereas to save life, this could be done from the facility as in the recommendations **H** number two directs for prevention of anaemia and treatment of haemorrhage."*

The National Department of Health's (NDoH) Recommendation 6 states, "Blood must be available at every institution where caesarean sections are performed. However, health facilities would still experience a shortage of blood." The situation has not improved as Theron (2000) also found that lack of availability of blood transfusion in facilities resulted to 1.7% cases of maternal mortality occurring due to requirement for urgent blood transfusions which was not accessed.

This was supported by du Plessis (2013) who found that use of blood and blood products for obstetric haemorrhage is lifesaving, however, in the developing countries there seemed to be increasing obstetric haemorrhage which is still one of the leading causes of maternal deaths. du Plessis further indicated that although

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there was evidence of a downward trend towards the mortality due to obstetric haemorrhage, massive haemorrhage as well as utilization of blood transfusion had increased in the developed world (du Plessis, 2013). The third **H** of the recommendations prescribes that haemorrhage should be dealt with diligently and prevented as much as possible (NDoH, 2016). One of the participants from Man said:

> *"Even for those clients with mild anaemia, who needs iron preparations, sometimes medications like Ferrous Sulphate, Folic Acid and Calcium supplements were not available at the clinics. Patients are told/ encouraged to buy for themselves which they may not buy if they don't have enough money and they may not report and we will only notice when the woman is not improving on subsequent visit or when the woman presents with complications. So we conclude that the patient never follow the instructions."*

The NDoH (2007) prescribe routine supplementation of iron to pregnant women as one of the essential steps to prevent post-partum haemorrhage. The study by Mazer-Amirshahi, Goyal, Suleman, Umar, Foxd, Zocchi, Hawley & Pines (2017) concurred that drug shortages for medications is a major health threat caused by prescription drug shortages in public health in the United States. The American Society of Health-System Pharmacists (ASHP) indicated that the drug shortage tripled in number from 2004 to 2014 with many shortages reported to be due to business decisions and disrupted supply as a result of quality control problems (Mazer-Amirshahi *et al.*, 2017).

The quantitative results of this study, data in Table 4.15, 8.5% of respondents indicated that there were no medications at the clinics. The results of the study done by Abdelrahman, Saad, Sabry and Farid (2016) supported the results of this study as it was found out that shortage of medicines in Cairo was perceived as having led to deterioration of patients' conditions and even death occurred.

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Another respondent from Kgapane Hospital (KPN) expressed sentiments that the shortage of staff hinders the adherence to implementation of protocols when saying:

> *"The ratio of registered midwives to patients is 1: 30. Observation of patients is hampered. More staff is needed for us to be able to cope and to provide the care to patients."*

The quantitative strand results support Table 4.14 from women, respondents commented that there was shortage of staff and because they wait for a long time (more that 3 hours) before they were attended to by midwives. This was supported by Ferrera, Boelleb, Salomona, Milianic, Hériteauc, Astagneauc, Temimeaa and Laboratoire (2014) about management of nurse shortage in the intensive care unit where the results showed that an increase in health care-associated infections in intensive care units are associated to reduced nurse staffing resources. The 5Hs recommends that health worker training should be intensified, but even if health workers are trained, but shortage of staff and overload of patients will still hamper midwives to accurately implement the required protocols, thus putting the patients' life in danger.

A participant from Jane Furse Hospital (JF) was also concerned about the shortage of resources, both material and human when saying:

> *"There are no resources for resuscitation. We are expected to act swiftly and the health system is to be strengthened but sometimes you just feel we are running a 24-hour service that does not have all that is needed and we let patients down. At this facility, the blood gas machine is not available and if the blood is taken to laboratory during resuscitation then the results takes too long to be back, which may delay the commencement of correct treatment."*

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The participant further said:

> *"Other equipment like scan machine and mobile X-Ray machine are also not available sometimes." Sighing. This contribute to delay at the health facility, whereas the situation is the emergency".*

The health facilities need to have necessary equipment to facilitate and promote the implementation of the recommendations like X-Ray machines, blood pressure monitoring machines, haemoglucometer, thermometer, cardiotocograph (CTG) machine and many other equipment for the diagnosis, intervention and monitoring where necessary. The results of the study by Smith and Dixon (2009) on health care professionals' views on safety in maternity services agreed with what was found in the current study because they indicated that due to lack of funding for maternity services resources are not purchased nor well maintained and staff are often forced to work with outdated, broken equipment which becomes dangerous to staff and patients as they may even give wrong results leading to wrong diagnosis.

The participant from KPN hospital shared the same sentiment when she said:

> *"We are expected to provide quality care, however, they do not provide us with necessary materials to work."*

The findings of quantitative data from women summarised in Table 4.15 revealed shortage of staff and other tools to implement the recommendations and that if more staff can be hired they (women) can be attended quickly and as one of the women indicated that she was made to get out of bed immediately after delivery as there were less delivery beds. This was supported by the study conducted by Gupta, Mang, Wei, Ortwine, Bhavan, Johnson and Agrawal (2018) where it was found that lack of resources in hospitals in Puerto Rico led to disruption on rendering quality patient care, as such even protocols and guidelines would not be followed. The

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observations points to non-compliance with the fifth of the 5 Hs recommendations which encourages the **H**ealth system strengthening which include that services should be rendered for 24 hours around the clock and that there should be sufficient equipment for the provision of services.

However, this is contrary to the results from the commission of enquiry into the Free State health care system (2015) where it was found that shortages and stock outs of medication and medical supplies are chronic, and are endangering the lives and health of vulnerable people across the province and discourages people from accessing health care and trusting in the health care system. They further indicated that there were insufficient human resources coupled with poor management of human resources which prevent the fulfilment of the right of access to health care services. However, it is contrary to the study conducted by Phala (2011) where the results indicated that the hospital met the requirements by WHO for the equipment which were needed in a hospital.

The results in this sub-theme indicate that implementation of the Recommendations for the Saving Mothers Report was not fully implemented since the recommendations indicate that heamorrhage during pregnancy, labour and post-partum period should be prevented and attended to. The results showed that patients' were not given iron preparations as required but advised to buy, which some may not do thus predisposing them to anaemia. Shortage of human and material resources was indicated in both the qualitative and quantitative results and this negatively affected the implementation, as the protocols could not be adhered to due to shortage.

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4.3.1.2 Sub-Theme 1.2: Increased Workload Due to Increased Number of Admissions Blamed for Poor Management Resulting in Complications

The effective implementation of recommendations for the Saving Mothers Report need adequate and competent human resource to manage workload of patients in maternity units. If there is unequal allocation of staff, at some level of care the staff will be overloaded with work, be burned out which may lead to underperformance and complications to patient due to errors made.

The results in this study revealed that registered midwives have a heavy workload because of an increased number of admissions, some due to self-referral and the units became overcrowded which could lead to provision of poor care to patients which result to complications. Most of the participants indicated that the PHC (Primary Health Care) facilities were not conducting deliveries thus leading to most of the patients referring themselves to the hospitals thus causing overcrowding in hospitals. Participants also indicated that PHC facilities were staffed with midwives who are qualified in Advanced Midwifery, but are not conducting deliveries and refer patients. The recommendation state clearly that the province must *develop referral criteria and establish referral routes.* It is not clear whether this recommendation is not implemented. The participant from JF said:

> *"In the unit there are also high risk patients in this very same over-crowded ward who needs to be monitored frequently and they end up complicating due to lack of frequent monitoring as midwives will be dealing with the normal deliveries who should be done at clinics. It seems as though the staff at the clinics are inexperienced as the results that they refer the patients with do not tally/ correlate with what is found on arrival to the hospital. I think the clinic staff need to be in-service on referral system. The unit is small."*

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Participants further mentioned a serious shortage in quality and quantity of professional midwives, whereas they were admitting an increased number of patients who could be managed at PHC; these made it difficult for them to render quality care to their patients and to implement the Saving Mothers Report as required. This was supported by the WHO Report (2006) that pointed to a shortage of skilled birth attendants in many developing countries which remains a challenge to improve maternal health outcomes. Provision of high-quality health care is a key aspect of governmental policies (Department of Education Science Training, 2002; Department of Health 2006; Scottish Government Health Directorates, 2007) as cited by Cameron, Roxburgh, Taylor & Lauder (2011).

DoH (2003) also stated that nurses and midwives play an important role of professional workforce, thus government need to ensure that sufficient number of students are educated to guarantee a continuity supply of recruitment in the profession. In all areas, poor monitoring of the foetus during labour featured in the top three avoidable factors probably associated with perinatal deaths, and poor management of the second stage and no or incorrect use of the partogram were also commonly listed. All these factors should be relatively simple to correct, if there are adequate and competent staff (Windle, 2008; Duffield, Diers, O'Brien-Pallas, Aisbett & King, 2011).

One of the participants from KPN said:

> *"We have high risk patients who are referred to the hospital and there are those who are self-referral who will just choose to deliver at the hospital then they cause the unit to have lots of patients. Resulting to some patients being progressed on the benches, as the beds would be occupied and full. Patients are referred with reasons like no delivery pack at the clinic."*

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It was noted that PHC midwives would transfer patients with invalid reasons for referral; and those patients would deliver normally without complications. According to participants at hospitals views, some of the transferred patients did not warrant to be transferred to the hospital, these made them to conclude that most PHC midwives might be transferring patients due to incompetency in obstetrics skills and knowledge. Pattinson (NDoH, 2009) in Saving Mothers and Saving Babies campaign concurred that perinatal care indices for the provinces shows that quality of care depends on availability of adequate resources at the facilities, staff with the right skills mix and knowledge to manage the patient. The health care providers have responsibilities to ensure that they have the appropriate knowledge and skills and deal with their patients with empathy. In Limpopo Province this was supported by the introduction of Essential Steps in the Management of Obstetric Emergency (ESMOE) training for staff rendering maternity services, and the community service for the newly qualified 4 year course nurses. NDoH (2007) also stated in the Saving Mothers' fourth report that one of the key recommendations that academic institutions and referral centres, including medical schools and nursing colleges, should be allocated areas of responsibilities. In addition, medical schools and nursing colleges should improve the teaching of relevant clinical competencies and skills. This included the following: - all undergraduates must be trained on the Guidelines for Maternity Care in South Africa 2015; Essential Steps in Managing the Common Causes of Maternal Death in South Africa. The training programme ESMOE improved the interns' skills between 31% and 65%. The fire-drills are intended to train all the staff in the maternity units.

The findings by Smith and Dixon (2009) supported the health care professionals' views about safety in maternity services where the results indicated that high-risk women in the maternity ward demand more attention and time from the midwives. As a result of having to stretch more than enough time on duty without taking

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breaks, most of the midwives reported tiredness and being burnt out, thus leading to more mistakes being committed. This was also supported by a study conducted by Ly, Kouanda and Ridde (2014) in Burkina Faso where the results indicated that the referral of patients from the PHC centres increased the workload at the referral hospitals which needed the staff complement to be increased.

The qualitative results tally with the quantitative results where it showed that 60.5% of participants strongly disagreed that they were given the best care by midwives during pregnancy, whereas 3% strongly agreed. The quantitative results also indicated that during labour 59% of participants strongly disagree that they were given the best care with 1% strongly agreeing. Long queues when seeking for health care was a challenge. The study conducted by Rala (2013) on barriers to quality care during labour supported the results that patients could not get quality care as the companions for patients were not allowed for some reasons. The study conducted by Itote (2016) in Kenya indicated that pregnant women were not given the best care as there was long time waited after arrival to the health care facility before being attended to, diagnosed and given appropriate intervention. The results indicated that the number of patients are increasing in the hospitals, but the number of staff members remain the same or even going down as some of the staff members leave the facility and are not replaced, thus leading to the staff being overworked and complications occurring as they cannot be noticed easily. Ly *et al* (2014) in Burkina Faso conducted a study in which they found that when the number of patients increased it was necessary to increase the number of staff members, otherwise that can lead to staff not coping with the workload, thus lowering the standard of care.

The abnormally high ratio of midwife: patient (1: 30) affect the effective implementation of the recommendations as Ernestine Wiedenbach's Prescriptive

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Theory explain them as framework which comprises all the extraneous factors that affect the nurse's ability to obtain the desired results which in this case is the reduction in maternal mortality rate and it includes a number of factors which like policies, settings, and atmosphere (George, 2011). The balancing of the registered midwives with the number of patients which need to be attended to will enhance the effective implementation of the recommendations for the Saving Mothers Report, but if the midwives are overworked, that will hinder the effective implementation of the recommendations which will lead to the increase in the MMR.

4.3.1.3 Sub-Theme 1.3: Problems Associated with the Referral System, Which is Experienced at Multiple Levels

The key Recommendation number 2 in NDoH (2007) states that referral routes and criteria for referral must be established and implemented. However, this is still a challenge between health facilities. The results from the interviews indicated that there were problems with the referral system at different levels of care. The Pietersburg Mankweng Hospital Complex referral protocol (2014) states that only consultants are allowed to discuss patients with referring institutions and that all patients should come with their blood results. The referred women from the district hospitals are not handled by the referring doctors as directed in the Pietersburg Mankweng Hospital Complex referral protocol (2014). Those from the PHC to the hospitals are also not done as they should as the women are referred without or incomplete records. It was confirmed by a participant from Man who said:

> *"I am not saying that we don't get maternal deaths from local but most of the maternal deaths are patients who have been transferred from other hospitals and the reason is that doctors who transfer do not check patients before transfer and patients come with no blood results. The women from PHC also just come in saying the clinic is not working during the night"*

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The patient is supposed to be done the necessary investigations like blood tests depending on the patient's condition before transfer so that time must not be wasted on arrival to the receiving hospital.

The other participant from Man hospital confirmed that by saying:

> *"We don't know the referring doctors and they do not write all the information so much that the doctor have to call back to find out what was done and what was not done to the patient. They sometimes don't send patients on time. They sent patients with no results, no sonar done, and we don't know whether they are not doing that because they don't know what is to be done or what. Delays are caused as patients need to be checked for things that could have been done at the transferring hospital. Even though they do not do all that is required from them, but at least they are able to start the Magnesium Sulphate for patients with pre-eclampsia and they do it well".*

The results are supported by the results of the study done in Taiwan in 2016 where the results showed that the referring hospital and the referral hospital had problems in communication and agreement in what needed to be done before referral, thus an agreement was developed so that it could be followed during transfers (Chen & Lin, 2016).

The other participant from Tshilidzini Hospital (Tshil) confirmed the challenges associated with transferral system:

> *"Mmmh, hei!! (Scratching the head) The recommendations are the best, but the implementation is the problem. Like the means of referral is a long process with the arrangement of transport and other logistics. The patient will even complicate further while the doctor is still trying to arrange for a transfer."*

This was supported by the findings of Kiruja, Osman, Egal, Essén, Klingberg-Allvin and Erlandsson (2017) on maternal near-miss and death incidences in Somaliland

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where the reasons for late arrival to the referral hospital were stated as poor knowledge, poor communication and problems with transportation. The results indicated that there was communication breakdown between referring hospitals as there are no clear policies on transfer of patients from one hospital to the other. It also indicated that the hospitals at different levels of operation like the district hospital and the tertiary where the patients should be transferred end up blaming each other for the process of transfer, which is problematic.

Contrary to the study conducted by Nkurunziza, Toma, Odhiambo, Maine, Riviello, Gupta, Habiyakare, Mpunga, Bonane and Hedt-Gauthier (2016) on referral patterns and predictors of referral delays for injured patients in rural Rwanda supported the results as they showed that more than 50% of referrals were completed in a timely fashion because there was a strong referral system and also a patient support programme was in place.

The study conducted by Murray and Pearson (2006) on maternity referral systems in developing countries showed that there need to be a healthy collaboration, a formal communication protocol and transport system for the patients to get the best care out of the referrals. The recommendation expects use of guidelines in training of doctors and midwives. The protocol for managing hypertension in pre-eclampsia is as follows:

- Stabilise the patient and transfer as a priority to a specialist institution.
- Insert an indwelling catheter and record urinary output.
- Insert an intravenous infusion and give fluid restrictedly using 200 ml Ringer Lactate guarding against fluid overload at 80 ml per hour.

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- Start Magnesium Sulphate ($MgSO_4$) preventing the seizures to develop. Put 4 grams in 200 ml Ringer Lactate and run over 20 minutes. If the transfer is estimated to last longer than four hours, give 5 grams $MgSO_4$ intramuscularly in each buttock (will be 14 g in total). The quick transfer will do with 4 grams.
- Administer oral alpha Methyldopa immediately.
- If patient has severe acute hypertension where systolic is ≥160mmHg or diastolic is ≥110 mmHg give Nifedipine 10 mg orally.
- Monitor blood pressure every 30 minutes until the patient arrives at the referral hospital. Give a second dose of Nifedipine if the systolic blood pressure is still ≥160 mmHg or diastolic is ≥110 mmHg after 30 minutes of giving Nifedipine.
- Make the Emergency Medical Services personnel and the specialist hospital about the urgency of the case. Keep the clinic manager informed concerning the case and any transport problems encountered.
- The patient to be transferred by an experienced nurse or well-trained paramedic to continue $MgSO_4$ regimen, keep patient on the side and take complete records with the patient (NDoH, 2016).

It was also indicated in the results that for the third **H** of the 5Hs which was Hypertension there was good management which also indicated that the health worker training was effectively done as far as that is concerned.

An effective transfer system exists when the initiating facility make a decision to refer the patient after diagnosing the patient, adhering to the protocol of care for that category of patient, treat and make the patient stable. The forms for referral should be filled in and arrangements with the facility to receive should be made following the correct communication channels. The patient and family should be given an

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explanation regarding the reasons for referral and all processes to follow. The receiving facility should be ready to receive the patient, provide necessary treatment with documentation, plan rehabilitation, support the family and refer the patient back. The referral should be monitored for number, compliance to protocols, and documentation quality. It is important for the health professionals to be supported and trained if necessary (NDoH, 2012).

4.3.1.4 Sub-Theme 1.4: Lack of Cooperation by Women Led to Non-Adherence to Protocols Which Could Lead to Avoidable Complications

One of the recommendations for the Saving Mothers Report specific for Limpopo Province emphases the need for BANC audit. The registered midwives indicated that BANC audits are not done regularly and that there are even no follow-ups on how BANC is conducted. This was noticed when one of the registered midwives from VT said:

> *"There is no time to really check women and do everything that needs to be done on women when they come for ANC as the clinic will be full and you spend a lot of time with one patient as the others are waiting and they get annoyed. We end up just doing things that we think are more important and because the BANC audits are not really done we get used to working like that."*

This was supported by the quantitative results as it was indicated that 83% of participants disagree that they were given ANC card on the first visit while, with 3.5% who strongly disagreed, only 2% strongly agreed and 1.5% agreed to the statement.

Guidelines for Maternity Care in South Africa (2016) states that pregnant women are expected to book for ANC as early as before 12 weeks of pregnancy. Women are expected to visit the clinic 4 to 5 times during pregnancy. If the pregnancy is without risk factors, women are expected to visit the clinic at 20 weeks, 26 to 28 weeks, 32

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to 34 weeks and 38 weeks. The woman should also visit the clinic at 41 weeks if still pregnant. For women at high risk return visits are scheduled according to their specific challenges. It is important for the return dates to be correctly scheduled by the midwives and honoured by the women for the pregnancy to be monitored so that the best possible pregnancy outcome for women and their babies may be achieved.

However, on the first visit of booking the midwives need to do the following: confirm and time the pregnancy, take full and relevant history, perform full physical examination, measure the mid-upper arm circumference, estimate the gestational age, do the essential screening investigations, do the other screening tests that are not done as routine, administer medications and vaccines, do a final assessment and give health information to the woman (NDoH, 2016). All the above need to be done on every woman that come for ANC booking and it takes a lot of time to complete as each aspect needs to be thoroughly attended to. Pregnant women end up feeling that they wait a long time before they are attended to when they go for first ANC booking and they either stay away or book late. The quantitative results tallied with this as it was shown that 73.5% of participants disagreed that they were examined on the first visit, with 3.9% strongly disagreeing to that, only 6% strongly agreeing and 3% agreeing to the statement.

ANC aims at assessing for pregnancy problems and risks, diagnosis and treatment of problems arising during ANC, providing medication and information to improve pregnancy outcome and preparing the woman physically and psychologically for labour and parenthood (NDoH, 2014). The results in this study showed lack of adherence to protocols by the health care workers and as women did not cooperate, thus leading to the complications that could have been avoided. The participants indicated that health seeking behaviours of women are sometimes problematic and they pose a challenge to the provision of care to the women. This was confirmed by

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participant from Tshil when she said:

> *"We still get unbooked cases. Most of the HIV positive women come being unbooked or booking late and it makes it difficult to manage as they come being in labour even though they know what is expected from them." This is supported by the quantitative results in table 4.9, 80% of women responded negatively to the midwives giving them health education on obstetrical emergencies and 4.5% of women responded positively. The protocol expect the women to book before 12 weeks of pregnancy (NDoH, 2014).*

One of the participant KPN said:

> *"Some patients come being unbooked and being HIV positive, making it difficult to manage during labour. They give reasons as "I was not aware that I was pregnant, especially the older women as they are shy to attend antenatal clinic with younger women. How do you then manage such a patient because even if you want to adhere to the protocols they booked late and made it difficult to implement the Saving Mothers Report and there is nobody to apply them on." Some give reasons that they have lost their cards. Some patients still come having delivered at home. Some women still have pica which lead to low haemoglobin and endangering their lives during delivery and postnatal." Sighing!*

Boltman-Binkowski (2015) showed that most of the avoidable causes of deaths were patient related which included late booking and seeking of medical intervention. The quantitative findings in Table 4.8 were contrary to this results as 47.5% indicated that they seek medical help immediately when they are not well during pregnancy.

Another participant from JF confirmed the above by saying:

> *"Some patients go to the traditional healers before they come to the hospital though they are told at the clinics that they should report to the health institution immediately. At the traditional healers they are given "makgorometsa" which is medication to fasten labour, cause precipitate labour which lead to bleeding and you as a midwife will just be unprepared and surprised. People get prayed for and they think they are*

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healed and stop taking medications like ARVs, then they complicate when they come to deliver and they die."

This was supported by the results of the study conducted by Dako-Gyeke, Aryeetey, Mcough and Adongo (2013) in Ghana which indicated that women had socio-cultural interpretations of pregnancy. The study indicated that the process of pregnancy which led to anxiety, prompting them to seek multiple sources of care. The results indicated that they use medical care together with herbalists, spiritual care and traditional healers' birth attendants. The women used multiple forms of care as they believed that different sources of care complement each other and that medical care at the facility is necessary for ANC and emergencies. The multiple care shown to be disruptive to continued use of skilled provider care.

Smith and Dixon (2009) in their study on health care professionals views about safety in maternity services also came to the conclusion that women who were unbooked or present themselves very late to the facilities put more pressure on the services especially if the woman's first language is not the same as the midwife and the woman does not understand English well as there will be a problem of misunderstanding each other and problems are thus missed.

Oiyemhonlan, Udofia and Punguyire (2009) on identifying obstetrical emergencies at Kitampo municipal hospital indicated that most of the women attended clinic and were given health advice on what to do in case of problems, however, when experiencing problems they acted differently by seeking traditional care, thus making it difficult for recommendations to be implemented. The results also indicated that women with complications of pregnancy and labour do not seek medical care as they do not understand the extent of the complications and they think that they are minor, and they would go to the hospital if they bleed, see liquor coming out, have abdominal pains or persistent headaches.

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The results indicate that women were not given health education on obstetric emergencies to watch out for and to report to the midwives during their pregnancy. The Saving Mothers' recommendations 5Hs, including HIV, haemorrhage, hypertension, health worker training and health system strengthening need to be met and there is no way in which they can be effectively implemented without the midwives as health workers mostly in contact with the women strengthen the health education. The midwife is expected to give pregnant women health education about the obstetric emergencies verbally or in a written form on danger signs and symptoms of pregnancy which include: severe headaches, abdominal pain, drainage if liquor through the vagina, vaginal bleeding and decreased foetal movements (NDoH, 2014). According to Ernerstine Wiedenbach's Prescriptive Theory there is the recipient of care who is the patient and is vulnerable, depending on the health professionals for care and risking losing individuality, privacy, value and decision-making (George, 2011).

The quantitative results supported this as it was indicated that 80% of participants indicated to disagree with the statement that information about obstetric emergencies was given to them, 2% strongly disagreed, whereas only 9% strongly agreed and 7% agreed.

4.3.1.5 Sub-Theme 1.5: Existing Negative Attitudes and Practices of Health Professionals at Different Levels

The registered midwives need to have positive relationship with their patients in order for the patients to trust them and so that the recommendations for the Saving Mothers Report may be effectively implemented as a joint effort. The midwives observing the expected guidelines like Batho Pele principles can foster the positive relationship. According to NDoH (2014) the actions requested from midwives and nurses include ensuring that they promote professional attitudes and ethical

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behaviour and also ensuring a non-judgemental approach to people infected with HIV of which if all of these are adhered to all pregnant women encountering midwives and nurses would feel accepted.

However, the participants which were the postnatal women indicated that they were reluctant to visit the clinics because of the negative attitudes and the behaviours that are unpleasant and displayed by the health workers. They indicated that when they go for visits at the clinic they are made to wait for long periods while nurses are working slowly and taking long breaks and do not even explain to them why they have to wait for a long time. The quantitative results in Table 4.15 indicate that 73 (36.5%) participants out of 200 indicated that the staff have negative attitudes towards them whereas 28 participants (14%) indicated that the care they received was good. Referring to Table 4.15, (21.5%) participants pointed that the service was slow, whereas 27 (13.5%) participants reported shortage of nurses. This was confirmed in a quote by one of the registered midwives JF who said:

> *"We still have unbooked cases who maybe visited the clinic only once or even never and those who deliver at home and only come to the hospital after delivery and when you try and find out why they do that they give reasons that the clinic is far, some say that the nurses at the clinic will just be going up and down and not helping them. They will also tell you that even when you are helped you are talked to like you are a small child and not respected. It is difficult to implement the recommendations as the women come late for you to do what you are supposed to do on them."*

This was supported by the findings from the study conducted by Mannava, Durrant, Fisher, Chersich & Luchters (2015) on the attitudes and behaviours that are displayed by maternal health care providers when they interact with clients which indicated that the health providers had negative attitudes and behaviours which commonly included verbal abuse, rudeness like not attending or belittling patients. There was also physical abuse displayed towards women, not availing themselves

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for duty, corruption, not regarding clients' privacy, poor communication, disregarding and unaccommodatingness to cultural issues and practices, and authoritative or frightening attitudes.

The study indicated that behaviours were influenced by work overload, patients' attitudes and behaviours, health provider prejudices, and superiority feelings of health care providers. The results were also supported by Lumadi (2015) on the attitudes of staff working in the labour ward towards a clinical practice guideline for monitoring women during labour where it was found that negative attitudes of the labour ward staff made if difficult for the staff to implement the guidelines.

The results denote that the attitudes of the health providers at the facilities make the women to be reluctant to visit the facilities. The results were supported by the quantitative results, table 4.15, 73 (36.5%) participants indicated that the midwives had negative attitudes. This was supported by the study conducted by Mannava, Durrant, Fisher, Chersich and Luchters (2015) where the results indicated that high maternal mortality continued to exists due to women not seeking medical care due to the negative attitudes and behaviours which were seen to highly over-weigh the positive attitudes of health care providers. The recommendations require that HIV, haemorrhage, hypertension be diagnosed and managed early and effectively.

Women are not visiting the clinics as a response to the attitudes and behaviours of the health care providers, this will hinder the care and lead to complications. The conceptual framework of Ernerstine Wiedenbach points out that the patient is vulnerable, and depend on the health professionals for care. Privacy and value to the patient should be given by the health worker. (George, 2011).

The midwives like any other public servants are expected to behave in a way that will uplift the service. They are at the forefront of the implementation and the

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success of the government policies and programmes like the recommendations for the Saving Mothers Report depends on public servants to succeed. The fifth H of the 5Hs recommendations encourages the strengthening of the health facilities of which the practicing of Batho Pele principles by the midwives would add positively to as it would also strengthen the relationship between the health providers and the women. Principles of Batho Pele include:

- **Consultation:** Citizens should be consulted about the level and quality of the public services they receive and, wherever possible, should be given a choice about the services that are offered.Pregnant women should be consulted about their needs.
- **Service Standards:** Citizens should be told what level and quality of public service they will receive so that they are aware of what to expect. Women should know about services to expect.
- **Access:** All citizens should have equal access to the services to which they are entitled. Women should have equal access to health and maternity services.
- **Courtesy:** Citizens should be treated with courtesy and consideration. Women should be treated courteously and with respect at all times.
- **Information:** Citizens should be given full accurate information about the public services they are entitled to receive. Women are entitled to full, accurate information concerning pregnancy, labour and puerperium.
- **Openness and transparency:** Citizens should be told how national and provincial departments are run, how much they cost and who is in charge. Women should know how decisions are made and departments are run.

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- **Redress:** If the promised standard of service is not delivered, citizens should be offered an apology, a full explanation and a speedy and effective remedy; and when complaints are made, citizens should receive a sympathetic, positive response. Women should be offered an apology and solution when standards are not met.
- **Value for money:** Public services should be provided economically and efficiently in order to give citizens the best possible value for money. Midwives should provide services that are worth the money paid for (Meyer, Naude, Shangase & van Niekerk, 2014).

4.3.1.6 Sub-Theme 1.6: Insufficient Appreciation by the Management

There is an outcry on unfavourable working conditions due to a number of factors which include work overload with skeleton staff. The recommendation number 5 of the 5**H**s encourages the strengthening of the health facilities. The management of the facilities need to support the health professionals in all the challenges they meet in their work environment so that they are able to tolerate their challenges.

Some of the participants indicated that the management of the health facilities do not show support and appreciation for the difficult conditions that they are working in and for the efforts that are being taken to provide care to the patients. This was noticed when one of the participants from JF said:

> *"There is low morale of staff as there are complaints about shortage are not attended to. There is also no compliments about the hard work from management."*

This was supported by the results of the study by Banovcinova and Baskova (2014) in Slovakia where the results indicated that the midwives were having burnout and low morale as a result of conflicts with doctors, supervisors and colleagues. It was

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also indicated that their low morale was as a result of work overload which lead to emotional exhaustion. Mudallal, Saleh, Modallal and Abdel-Rahman (2017) also concurred with the results as they indicated that nurses had low moral due to their unfavourable conditions which included work overload due to shortage of manpower.

One of the participants from Man said:

> *"There is not much support from management as they do not appreciate the effort put by the staff in this difficult situation. The staff is doing the job, but the performance management system is demoralizing them. People who get rewarded in PMS are not even really performing that well. Management is not really supportive to the staff. They are not engaging in the work even when it is very busy."*

The district managers indicated that they offered support to the registered midwives in the implementation of the recommendations for Saving Mothers in many ways which include provision with equipment, organisation of in-service training and workshops, facilitation of perinatal meetings, and also making sure that during a maternal death review they do not adopt a blaming attitude but a supportive one.

The results are supported by Smith and Dixon (2009) on health care professionals' views on safety of patients in maternity services. The results in that study indicated that the dire situation that the staff face at work which include increased workload and shortage of staff which led to burnout. The results further indicated that the burnout was not shared by management which resulted in the safety of women in the hands of those health professionals compromised and it was attributed to poor management.

The results also showed that visit by the manager to the ward would boost the morale of staff. This is supported by the findings in the study by Hämmig (2017) on health and well-being at work: The key role of supervisor support that if the

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employee is unable to count on the direct supervisor's support in case of problems at work and even at home was showing substantially increased risk of poor health and work-related outcomes.

On the contrary, the results also showed that in other hospitals there is support by management as indicated by one of the participants from Tshil when she said:

> *"Management is trying to support us, especially the hospital management. The district management is not doing enough as far as the PHC concerned as they are not handling deliveries. Even the councilors are aware of the problem."*

One of the participants from Tshil hospital also said in support of the above:

> *"The management is giving support to the staff, they even visit other hospitals for benchmarking in order to try and help us."*

The results of the study conducted at eThekwini District, KwaZulu-Natal on the challenges faced when implementing the BANC approach supported this results. Lack of management support was indicated as one of the causes of retardation of the implementation of the approach (Ngxongo & Sibiya, 2014).

The results of the study conducted by Calvert (2014) regarding support for midwives in New Zealand also concurred with the results of this study. In that study the results showed that when support is provided by means of professional supervision in the midwifery programme for reregistration there is a high possibility of leading to midwives feeling valued. The results also pointed out that the feeling of being valued led to job satisfaction increasing which led to less violence in the workplace, thus helping in reduction of turnover rate. Improved the care for the childbearing women was indicated as the end result.

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4.3.2 Theme 2: Implementation of Training Programmes and In-Service Education for Health Care Professionals

The recommendation for the Saving Mothers Report for Limpopo Province which are related to training programmes include prioritization of ESMOE, improvement of BANC audit, drills for management of haemorrhage, improvement of knowledge and skills of midwives and doctors and the promotion of use of guidelines during training of doctors and midwives (NDoH, 2013). The strengthening of the health system can be ensured with knowledgeable and well trained practitioners.

The second theme that emerged from the results was description of existing and implementation of training programs inclusive of in-service education for health care professionals. The registered midwives showed that in some hospitals there was lack of training in programmes like Essential Steps in Managing Obstetric emergencies (ESMOE), LINC and Basic Antenatal Care (BANC) which was viewed as a problem. If the registered midwives were trained in programs they will be able to manage the emergencies like ante-partum haemorrhage better and the pregnant women will be well cared for and their lives will be safe.

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However, some participants pointed the existence of ESMOE, LINC and BANC training which was appreciated at some hospitals. The training was viewed as informative, although there was a challenge for few ESMOE trained health care professionals to train colleagues. The challenge was that it was problematic for the registered midwives to attend the existing training programmes which was blamed on shortage of staff. This was indicated by one of the participants from Man who said:

> *"ESMOE is a good and helpful training programme that enhances the skills and improves the care of mothers but it is centralised. The staff that is sent there is expected to come back and train others but there is no time to do that as we have a lot of shortage. As such some staff members*

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do not get to be trained and they just work. Most of the time we just work to get the work finished without following the correct procedure. I wonder if there is a way that can be used to get the information to all the staff members for the safety of mothers. The information is good from ESMOE, but it does not reach the people. Staff in this unit are really not included in the training. They need to be trained on ESMOE, LINC, BANC and other competencies for patients to be better cared for."

The above statement correlates with findings from the study conducted by McDermott, Beck, Buffington, Annas, Supratikto, Prenggono, Ekonomi and Achadi in Endonesia (2001) about the models of training. The results in that study revealed that it was more beneficial to train midwives using an intensive in-service that combined competency-based skill training with peer review and continuing education. The results showed that more knowledge and skills was acquired on management of complications by those having attended training than those who did not attend any training programme. ESMOE is the programme that trains health professionals in the management of the obstetric emergencies and the steps to follow when dealing with different emergencies like maternal resuscitation, pre-eclampsia, eclampsia, obstetric haemorrhage and others are explained in the ESMOE Aid booklet. The health professional is able to refer quickly if necessary so that the emergency is effectively attended to and the lives of both the mother and the baby are saved. If the steps in the ESMOE Aid booklet are not followed, the lives of the mother and the baby will be lost.

BANC is the Basic Antenatal Care that the woman should receive when visiting the health care facility during pregnancy. It actually starts before conception where the woman needs to be advised and checked whether she is in the appropriate state to fall pregnant or there are risks which need to be attended to optimize her health and knowledge before falling pregnant. During the preconception period, she will be checked for medical conditions including HIV, obstetric history, nutritional status,

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rubella immunity, tobacco, alcohol and drugs use, social-economic status, mental status and risks for genetic disease in preparation for the baby (NdoH, 2016).

BANC also entails the care that the woman should receive during her pregnancy including records, examinations, treatment and vaccination, investigations, health education and follow-ups (NDoH, 2016). If BANC is not implemented, the life of the pregnant woman and her unborn baby will be put at risks, thus the maternal and neonatal mortality and morbidity will increase (NDoH, 2016).

The results indicated that the registered midwives appreciate the training programs that are recommended and they are eager to take part in them so that the lives of women can be saved but they just find themselves being hindered by the challenges facing them. The strengthening of the health facilities can be achieved by strengthening the training and the drills to improve the competence of registered midwives. The sub-themes that emerged from theme 2 are outlined in Table 4.17.

Table 4.17: Sub-themes that emerged from theme 2

Theme	Sub-themes
2. **Existing and implementation of training programmes and in-service education for health care professionals**	2.1 Insufficient versus existence of ESMOE and BANC training experienced in some hospitals 2.2 Challenges encountered when gathering health care professionals to attend training programmes

4.3.2.1 Sub-Theme 2.1: Insufficient Versus Existence of ESMOE and BANC Training Experienced in Some Hospitals

Time is very precious when dealing with the medical emergency in a maternity ward. A quick response can save a life much as a delayed response can lead to the loss of a life. The training of all health care professionals who take part in the maternity care on ESMOE and obstetric anaesthesia was recommended by the Saving Mothers Report (NDoH, 2013). The ESMOE training should be done to address the issue of

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improvement of the health worker knowledge and skills thus helping them to think quickly and critically in a medical emergency and act swiftly to save the mother and the baby's lives. The Saving Mothers Report couple the training of health care professional in ESMOE with the training in HIV screening and treatment protocols. If midwives are trained in the ESMOE, obstetric and HIV screening and treatment, the pregnant women and their babies will be efficiently treated thus saving lives and HIV will be better managed. This will also strengthen the prevention of mother to child transmission leading to less children born with HIV infection. This was supported by the study by Naidoo (2017) where the results showed that after training in ESMOE the health professionals were more competent thus saving more lives and improving the maternal mortality rate.

The Saving Mothers Report (NDoH) 2013 also recommended training of midwives in BANC for Limpopo Province so as to equip them with knowledge, competence and refined skills of normal and abnormal pregnancy. The training will improve the implementation of care of pregnant women to get the best possible pregnancy outcome for both women and their unborn babies. The training of midwives would also help them to acquire assessment skills to diagnose pregnancy problems early, treat or refer the women on time so that their lives may be saved.

The results in this study indicated that in some hospitals, there was lack of ESMOE and BANC training experienced by the registered midwives. This was viewed as a problem as the staff is not competent in contemporary issues thus unable to provide care to women as required or expected. This was supported by a participant from Man hospital who said:

> *"ESMOE is being trained centrally, at Polokwane. A small number of staff is trained for ESMOE with a view that they must train others, but when they come back they don't give feedback it is difficult for the people to*

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train others on coming back as the ward is busy and the pressure of work make it difficult for practicing, we just want to do the work and finish."

The study conducted by Draycott, Collins, Crofts, Siassakos, Winter, Weiner and Donald (2015) supported this as the results indicated that the staff could not be sufficiently trained due to insufficient funds. However in the study which was conducted by Ameh and van den Broek (2015) the results showed that the contributing factor towards not getting the staff to be trained in emergency obstetric care and newborn care included lack of leadership and cultural issues. If the leadership can prioritize the training and support the staff to ensure training and competency most of the lives of mothers and their babies can be saved.

Participant three from JF said this with concern:

"Some staff members end up not being trained. The information is good from ESMOE, but it does not reach the people. We do not even have a place where we can simulate the training if there is a chance for us to do that. Remember that if you have trained something, but you don't practice it, you forget."

The above statement correlates with the study on modeling benefits of cross-training conducted by Jomon and MacDonald (2014). In that study the results revealed that training of staff per category was not happening due to reasons including shortage, lack of time and others and after deciding to do cross-training there were benefits that were realized. The study by van den Ven, Fransen, Schuit, van Runnard Heimel, Mol and Oei (2017) also supported the results in this study as the results indicated that the effects of the training done decline after three months thus the staff need to be re-trained especially is not practicing what they learned regularly. This was supported by the study Moran, Naidoo and Moodley (2015) where the results indicated that although training for emergency obstetric care was done on health workers it was not enough to reduce the mortality rate considerably. It was

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recommended that drills should be incorporated in the daily routine of the health facilities.

It was also supported by another participant from Man hospital who said:

> *"Patients will be better observed. Staff in this unit are really not included in the training. They need to be trained on ESMOE and other competencies for patients to be better cared for. The skills audit is also not done and that could help in training for the competencies which are lacking."*

The results are contrary to the study conducted by Frank, Lombaard and Pattison (2009) where they were checking whether completion of ESMOE training would improve the knowledge and skills of interns where they found out that the interns after training they became more competent and had more knowledge than before training. The results also indicated that in some hospitals the ESMOE, LINC and BANC training are done and they are appreciated by the staff and viewed as informative though they have a little impact on reducing maternal mortality rate. This was noticed when one of the participants from Tshil hospital who said:

> *"Training of staff on ESMOE is really happening here. Most of the staff are ESMOE trained. About 90% and they have knowledge, the only thing that is a problem is shortage of staff and unavailability of equipment for the implementation that is why we still get problems with implementation which lead to loss of women' s lives."*

The maternal mortality rate reported to have declined by 11% as reported by NDoH (2013) and the main reason was the intensified attention on non-pregnancy related infections with the strengthening of HAART whereas deaths due to obstetric emergencies only reduced by 6%. It was further supported by the results of a study done by Gülmezoglu and Lawrie (2015) on the impact of training staff on emergency resuscitation. The results in that study indicated that there is a great possibility for the decrease in maternal and neonatal deaths if there could be an increased

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utilization of the facility by the women. The results also recommended proper and timeous intervention by the health professionals when an emergency arise. The results also indicated that if a person is skilful in emergency resuscitation can make the difference between life and death. This denotes that training in emergency resuscitation is essential for health care practitioners at all levels of health care. However, in this study the results indicated that there is a challenge for the training to be conducted and drilled upon.

The results pointed there was difference in the attendance of the training programs and also of the drills where every facility has its own challenges which includes shortage of staff, lack of equipment, insufficient supervision, ignorance and demotivated staff. It was also pointed out that if the staff attend the training they come back having gained knowledge and skills though they tend to forget if they do not practice what was gained and they can practice that if there are audits to check if drills are done. The second **H** in the Saving Mothers' recommendations which is Haemorrhage encourages that immediate attention should be to diagnosing the cause of haemorrhage, resuscitating and taking stepwise approach to stopping the haemorrhage which will need a trained competent midwife. The Ernestine Wiedenbach's Prescriptive Theory indicate that training must take place in order to improve practice and reduce the maternal mortality rate are prescripts which must be carried out to accomplish the central purpose (George, 2011).

4.3.2.2 Sub-Theme 2.2: Challenges Encountered When Gathering Health Care Professionals to Attend Training Programmes

The registered midwives need to be trained as required by the recommendations for the Saving Mothers Report NDoH (2013) so that they improve their knowledge and skills. The registered midwives also need to keep doing drills for the management of haemorrhage on order for them to keep updated and to act quickly, appropriately

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and effectively when a situation occurs. Their assessment and management skills will improve after training.

It was noted in the results that the registered midwives that were trained being 60% for Man, 70% for JF, 45% for VT, 65% for Tshil and 55% for KGN were unable to train other colleagues and that causes problems in the implementation of the recommendations. Most of the participants indicated that the staff is unable to attend the existing programmes due to shortage of staff. This was evidenced by one of the participants from VT when saying:

> *"If every midwife in the unit can be trained on ESMOE then maybe we will be able to prevent maternal deaths better as we would have more insight in our practice and would be more competent."*

The above statement correlates with the results of the study conducted by Frank et al (2009) checking whether completion of ESMOE training lead to improved knowledge and skills in the management of obstetric emergencies. The results in that study indicated that after completing the ESMOE training package there was a notable improvement as far as the skills and knowledge of health professionals as compared to before training. Another participant from JF confirmed that by saying:

> *"We are functioning with skeleton staff and that makes it difficult for the staff to attend training as they should. And even after training you come back but when you must implement there are no resources."*

The above statement concur with the results of the study on perceptions of nurses on Focused Ante Natal Care in Tanzania. The results in that study revealed that though nurses had positive perception, the big challenge in the implementation was the shortage of human and material resources which hindered the successfulness of BANC (Yengo, Monareng & Monama, 2014).

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The results of the study conducted by Moran, Naidoo and Moodley (2015) on the role of continuous training also concurred with the results of this study as they indicated that there was a need for the simulation training of ESMOE to be integrated into the routine practice of maternity clinical units. It also pointed that there is a very small improvement of clinical skills thus calling for intensification of ESMOE training to even include it in the formal training of medical doctors.

The results of this study indicates that there were challenges which the registered midwives meet when they must attend the training for the training programs to improve their skills and knowledge for them to be competent especially in dealing with the obstetric emergencies. The participants indicated problems concerning shortage of staff that when they must attend the training there is no one to remain on duty and inability to train those who were left behind, and transport problems. The insufficient equipment when they must practice what they have learned, lack of simulation room for the practice or drills and monitoring and evaluation of the training and drills were also cited as challenges.

Ernestine Wiedenbach referred to challenges as realities which include the situation which the nurse find herself in and it affects the care that is rendered to the patient (George, 2011). The fourth **H** of the Saving Mothers' recommendations which is Health professional training require the training of all health workers who are taking part in maternity care in the ESMOE programme and obstetric anaesthetic module of which according to the results of this study is still a challenge and need attention.

For the registered midwives to effectively implement the recommendations for the Saving Mothers Report they must be trained. The results of the study indicated that there are challenges that make it difficult for registered midwives to attend training programmes. The challenges include shortage of staff, transport problems,

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insufficient equipment when they must practice what they have learned, lack of simulation room and equipment for the practice or drills and monitoring and evaluation of the training and drills. These challenges need to be addressed for the improvement in the implementation of the Saving Mothers Report for the reduction of the maternal mortality rate. The problem of staffing need to be addressed by motivating for more staff to be hired and the midwives need to be provided with reliable transport when they attend training. The midwives also need to be provided with equipment and materials for patient care so that they may be able to practice what they have learned to save the lives of mothers and babies. There need to be a provision for simulation for repetitive practice and drills on obstetric emergencies management so that staff can be able to practice without endangering the lives of mothers and babies until competency is achieved.

4.3.3 Theme 3: Knowledge on Implementing Recommendations for the Saving Mothers Report When Providing Care in Maternity Units

The newly qualified health care professionals appeared not to possess knowledge, experience and confidence when implementing recommendations for the Saving Mothers Report during the provision of care to women. NDoH (2016) report indicated the causes of maternal deaths to be related to challenges regarding the health care system, failure of the women to use the health care facilities, inadequate services and substandard care due to knowledge and skill of the health care providers being inadequate. The registered midwives need to have knowledge, competence and be confident in their management of HIV/AIDS, prevention of haemorrhage during childbirth and management of hypertensive disorders.

The quantitative results in Table 4.9 indicated that 176 (88%) of women disagreed that they were offered voluntary counselling for HIV testing at the PHC facilities. The midwives need to have knowledge of prevention of mother-to-child transmission

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(PMTCT) which include prevention of HIV transmission to women of childbearing age, prevention of unplanned pregnancies on HIV positive women, prevention of HIV transmission from mother to her baby and give treatment, care and support to women with HIV and their families (NDoH, 2016). These can be achieved by identifying HIV positive women, providing anti-retroviral treatment on the same day and ensuring virological suppression of pregnant and breastfeeding women. Health education, unit lectures and in-service education are provided with the aim of improving knowledge and skills of patients and health care professionals. This was noticed when one of the participants from VT hospital said:

> *"Newly qualified nurses have only studied at school to pass. They really do not have the experience, the confidence that come with being competent. They must still learn a lot as they are also getting to practice independently after qualifying. Remember they will be doing trial and error with two lives at stake, which is too bad. There is shortage of manpower thus making it difficult to mentor newly qualified midwives which lead them to just work without support." Shaking the head!!*

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In support of the above it was indicated that the midwives had limited knowledge of the health policies which led to limited ability on implementation of recommendations in the study conducted in Ghana (Banchani & Tenkorang, 2014). Sub-themes that emerged from this theme are outlined in Table 4.18 below

Table 4.18: Sub-themes that emerged from theme 3

Theme	Sub-themes
3. Knowledge on implementing recommendations for the Saving Mothers Report when providing care in maternity units	3.1 Insufficient knowledge and confidence experienced by newly qualified health care professionals during provision of care 3.2 In-service training, health education and unit lectures provided aimed at improving knowledge and skills of patients and health care professionals

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4.3.3.1 Sub-Theme 3.1: Insufficient Knowledge and Confidence of Health Care Professionals During Provision of Care

The recommendations for the Saving Mothers Report mainly affecting Limpopo Province include prioritization of ESMOE, improving audits for BANC, conducting drills for the management of haemorrhage, strengthening PNC, improving the skills and knowledge of midwives and doctors including safe administration of anaesthesia and promotion of the use of guidelines during training of doctors and midwives. The recommendations most involve improving the knowledge and skills of the midwives and if a person possess enough knowledge and skills, the person's confidence will automatically be boosted. If the above-mentioned recommendations for Limpopo Province are effectively implemented the maternal mortality can be reduced.

The results showed that some of the health care professionals especially the newly qualified were lacking knowledge related to the causes of maternal deaths whilst others have the knowledge. The avoidable causes of maternal deaths as indicated in the Saving Mothers 2011-2013 Sixth report on the Confidential Enquiries into Maternal Deaths in South Africa included the ones with no patient-orientated avoidable factor which amounted to 51.7% and the patient orientated avoidable factors which amounted to 48.3% (NDoH, 2014). They also indicated that some health care professionals do not have confidence in their practice. This was supported by one of the participants from VT hospital who mentioned:

> *"Maternity ward is very challenging, and it needs somebody with more knowledge. Eishhh……. it's really hard for newly qualified midwives. The products of training or newly qualified professional nurses lack skill and knowledge. They have theory in their heads but skills uh uh…. Maybe is because they spent less time in the clinical area. They are not conversant with most of the procedures and they are always surprised. The newly qualified midwives are the ones who are not yet competent and they need mentoring but because of shortage it is not always possible, then they feel unsure when they must be left to manage the ward."*

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This was supported by the results of the survey on midwives' knowledge for perinatal mental health, confidence, attitudes and learning needs where it was found that midwives indicated high knowledge and confidence in diagnosing women with depression and anxiety though, they indicated to have confidence in managing those women (Noonana, Jomeenb, Galvinc & Doodya, 2018). The quantitative results of the study from women indicated that information on the obstetric emergencies was not sufficiently provided to 160 (80%) of women by the midwives at the clinic during ANC. The study conducted by Thopola, Kgole and Mamogobo (2013) on the experiences of professional nurses who were newly qualified and on community service also supported this when indicating that newly qualified professional nurses felt although they were qualified they still needed to be supervised and mentored by the experienced professional nurses showing that they lacked confidence as far as their knowledge was concerned. The results of the study conducted by Bäck, Hildingsson, Sjöqvist and Karlström (2017) in Sweden on developing confidence and competence in Midwifery indicated that for the midwives to feel confident they needed to be more hands on and have positive results, advance in their knowledge.

The recommendations in the study conducted by Boltman-Binkowski (2015) on assessment of quality care in managing post-partum haemorrhage supported these results as they mentioned that the training needs of health professionals should be addressed and that the health professionals with interest in maternal care should be given a chance to further their studies in the field of midwifery. It was also recommended that the scope of practice should be regularly updated and that there should be continuous professional development which may assist maternal health care providers with ensuring that their skills are evidence-based and updated.

The study conducted by Ntuli and Ogunbanjo on Midwifery workforce profile in Limpopo Province referral hospitals demonstrated that there is a shortage of

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registered nurses with advanced midwifery training/diplomas in referral hospitals of the Limpopo Province. This has a potentially negative effect in reducing the high maternal mortality rate in the province.

The fourth **H** of the recommendations for Saving Mothers is about Health professional training which will ensure that the health workers acquire knowledge and be able to implement the recommendations thus saving lives. The results in this study indicated that the newly qualified registered midwives still needed to be mentored as they are not yet confident in practicing independently and that can present a challenge as there is a concern about shortage of staff. When a person has got knowledge of something without having developed the psychomotor skills of putting it into action, the person will not have the confidence in performing as she/he knows that there is no competence. The more knowledgeable the midwives become, the more confident they will be in implementing the recommendations for the Saving Mothers Report.

4.3.3.2 Sub-Theme 3.2: In-Service Training and Health Education Provided Aimed at Improving Knowledge and Skills of Patients and Health Care Professionals

The recommendations for the Saving Mothers Report specific for Limpopo Province include prioritization of ESMOE, conducting drills for the management of haemorrhage, strengthening PNC, Improving the skills and knowledge of midwives and doctors. If in-service training is implemented, knowledge and skills of registered midwives will improve thus they will be able to implement the recommendations for the Saving Mothers Report effectively. Health education for the mothers was also indicated to be necessary, the quantitative results on Table 4.9 showed that 80% of participants indicated that they were not given information on obstetric emergencies.

It was indicated in the results that there is a necessity to conduct health education

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sessions for patients on issues which include family planning and spacing of children as quantitative results in Table 4.9 indicated that 77.5% of participants disagreed for having told about contraception during pregnancy. In-service education and lectures to staff members in the health care units on ESMOE and other resuscitative management are also necessary to equip them with knowledge for them to implement recommendations for the Saving Mothers Report effectively. This activity will aim to improve the knowledge and skills of the patients and the health care professionals. This was confirmed in the statement made by one of the participants when she said:

> *"We are trying by all means to put everyone on board by conducting lectures and by giving health education to the women so that they are alert especially because we deal more with the high risk group but……..hey …… it is tough due to shortage of staff and a large number of patients."*

This was emphasized by an audit conducted by Horner, Rautenbach, Mashamba, Mbananga, Olurunju, Ramahlo and Kwinda (2014) on Antenatal care at a community health centre in Tshwane North sub-district, Gauteng Province where it was discovered that the patient-related factors for non-compliance to protocols included the fact that patients did not always return for follow-up visits, or booked late; and also that health system is overwhelmed by a high number of pregnant women. The results also indicated that there were health worker-related factors which included deficiencies in skills and knowledge. In the quantitative results 80% of participants indicated that they were not given information on obstetric emergencies and 77.5% indicated that they were not advised about lactation and contraceptives though that does not indicate that the registered midwives did not have knowledge about them.

The results of a study on training health care providers on emergency obstetric care found that there was a need for capacity building for the health care providers for

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recognition and management of complications during pregnancy, labour, and post-natal period. The competency-based skills and the drills approach was used and it proved to be effective in improving the knowledge and competency of the health care providers (Ameh & van den Broek, 2015).

The Guidelines for Maternity Care in South Africa stipulate that needs to give information to pregnant women by registered midwives should include danger signs and symptoms of pregnancy, how to care for themselves, delivery plan and care of the newborn and the infant (NDoH, 2014). The NDoH (2014) further request actions for the registered midwives and nurses involved in the care of pregnant women which include ensuring that they undergo ESMOE training, participate in emergency obstetric simulation training exercises and ensuring that all pregnant women are offered information on screening and management of HIV, TB and common medical conditions. The registered midwives and nurses are also expected to ensure use of contraceptives where appropriate. The results of this study indicated that there were lectures and health education taking place in the maternity units in order to improve the knowledge and skills of the registered midwives and perinatal women. However, the quantitative results in Table 4.9 revealed that 80% of the participants were not given information on obstetric emergencies, which can be re-enforced through health education and in-service training. The recommendation on haemorrhage expects the registered midwives to prevent haemorrhage and to educate women about the possible obstetric emergencies that may arise.

4.3.4 Theme 4: Suggestions Related to Effective Implementation of Recommendations for the Saving Mothers Report in Maternity Units

During the interviews it was revealed that registered midwives came up with suggestions to improvement of adherence to implementing recommendations for the Saving Mothers Report. The recommendations for the Saving Mothers Report

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specific for Limpopo Province and the suggestions for their effective implementation are included in Table 4.19.

The registered midwives during interviews gave suggestions on how the implementation of the recommendations for the Saving Mothers Report can be enhanced. The suggestions included that there be request to recruit retired health care professionals to curb shortage of staff, staff recruitment, request to purchase material resources for assisting in execution of better care for the patients, training of staff in ESMOE and anaesthesia administration, drills to be included in managers' performance management evaluation and that BANC audits be done regularly. This became evident as one of the participants from Tshil said:

> *"As you know that there is shortage of staff, emergencies are missed when the ward is full. It will be much helpful if retired staff can be recruited back. Assessment of patients is also not done or not thoroughly done because of overflow of patients. We are just rushing through the work to finish. If necessary materials can be made available, staff be trained as they should be and updated with contemporary information and how to administer anaesthesia. The BANC audits could also make a huge difference in how BANC is done, thus avoiding complications."*

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Table 4.19: Recommendations and suggestions for their effective implementation

Recommendation	Suggestions for effective implementation
1. Prioritization of ESMOE	Provision of more staff to curb shortage. Decentralization of training. Management taking a lead to make sure that staff is trained.
2. Improving audits for BANC	Targets being set for audits. Audits be included in the performance management of managers.
3. Conducting drills for the management of haemorrhage	Providing more staff to curb shortage. Provision of simulation equipment for drills. Drills be included in the performance management of operational managers.
4. Strengthening postnatal care (PNC)	Active management of third stage of labour. Aseptic technique be adhered to in third and fourth stage of labour.
5. Improving the skills and knowledge of midwives and doctors including safe	The staff in maternity wards to be trained in administration of anaesthesia to be trained for the

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administration of anaesthesia	staff working in maternity wards and to be practiced and drilled regularly.
6. Promotion of the use of Guidelines for maternity care in South Africa during training of doctors and midwives	Provision of guidelines for maternity care to all training doctors and midwives. Making the guidelines for maternity care available in every unit dealing with pregnant women and conducting deliveries.

This was supported by the results of the study done in Australia where it was concluded that a small amount of primary facilities were utilized. A large number of patients were going to the hospital thus putting more strain on the staff at the hospital whereas those in primary health were being underutilized (Kruske, Kildea, Jenkinson, Pilcher, Robin, Rolfe, Kornelsen & Barclay, 2016). This was supported by the quantitative data where participants were requested to give any additional comment and 21.5% of participants indicated that the service was slow and making them to wait for too long and 13.5% of participants indicated that there was shortage of nurses (see Table 4.19). More staff need to be provided to curb the shortage so that the effective implementation of recommendations for Saving Mothers especially the recommendation on training staff for ESMOE can be realized as indicated in Table 4.19.

The sub-themes that emerged from Theme 4 are illustrated in Table 4.20.

Table 4.20: Sub-themes that emerged from theme 4

Theme	Sub-themes
4. Suggestions related to improvement of adherence to recommendations for the Saving Mothers Report in maternity units	4.1 Enhance patient care 4.2 Improve the skills of health professionals

4.3.4.1 Sub-Theme 4.1: Enhance Patient Care

During the interviews registered midwives suggested ways in which patient care can be ensured improved which will eventually lead to the effective implementation of the

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recommendations for the Saving Mothers Report. The participants suggested that for the recommendation prioritization of ESMOE to be better adhered to there should be additional staff that are recruited and hired to increase the ones that are there so that when others attend training there are some to take care of patients. The suggestions included recruitment of the retired health professionals into the service to cope with the provision of care.

This was evidenced by one of the participants from Man hospital when she said:

> *"Mmmhh…. We are so overworked because there is shortage of staff. We cannot even attend ESMOE because there is no one to remain on-duty. If more staff can be hired maybe it will be better. When you go off in the afternoon you are so tired that it is even difficult to walk…. Sighing."*

The study conducted by Kebaetse, Mokone, Badlangana and Mazhani (2016) on academic staff recruitment and retainment challenges at the University of Botswana medical school found that there was a problem in recruiting and retaining the academics at the medical school and it was recommended that the Ministry of Health and the University of Botswana should share teaching and service responsibilities to help to reduce staff shortages on both sides, and should look into increasing the salaries of the academic staff and look into structured mentoring and talent management.

The quantitative results as presented in Table 4.14 it shows that 27 (13.5%) of the participants indicated that there is shortage of staff. This was also supported by the study done by Windle (2008) on addressing nurse shortage in United States of America where the results indicated that enough nurses could not be recruited due to financial constraints. The study in Nigeria on job satisfaction and retention of midwives found that though midwives had a worthwhile accomplishment feeling and satisfaction on caring for the women and neonates, they were not satisfied about the

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opportunities for promotions, salaries and accommodation which made the retention of midwives difficult (Adegoke, Atiyaye, Abubakar, Auta & Aboda, 2015).

The 4th and 5th of the 5Hs recommendations for the Saving Mothers Report (NDoH, 2013) is about health professional training and health system strengthening and they are referred to as the basic building blocks. The recruitment of staff need to be done in conjunction with training of the very staff and the provision of a 24-hour service with a maternity waiting area.

The results showed that for the implementation of the recommendations for Saving Mothers to be effective the recruitment, hiring and retaining of staff is necessary. The quantitative results also confirmed this as seen in Table 4.14 10 participants commented that there is shortage of staff in the health facilities. The Saving Mothers' recommendation on health worker training require the health care providers to be trained on emergency obstetric management and the one on health system require health facilities to be accessible for 24 hours and that can only happen if there is enough staff available to man the facilities.

One of the participants from Man said:

> *"You know, if the training for ESMOE can be decentralized and be given to mixed categories of staff, most of the staff will be able to attend as it can be organized at a smaller scale. Our managers should take a lead in making sure that staff is trained and drills are done for the better care of patients. The provision of simulation equipment could highly improve staff competency. It is no use for you to be on-duty if you are not equipped with skills and knowledge. ….Mmmm I think that can be better implemented if it is put into the performance management of managers for evaluation."*

This was supported by the study conducted by Jomon and MacDonald (2014) where the results indicated that decentralization of training and cross-training proved to

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optimize time and staff utilization. The provision of equipment and the inclusion of the obstetric emergencies management training into the managers' performance management agreement was recommended (Ameh & van den Broek, 2015). Ernestine Wiedenbach's theory mentions realities, which have got an influence in how the nurse practice towards the attainment of the central purpose which in this study included shortage of staff, lack of simulation equipment was seen as some of the realities which need to be attended to enhance the effective implementation of recommendations for the Saving Mothers Report (George, 2011).

4.3.4.2 Sub-Theme 4.2: Improve the Skills of Health Professionals

The recommendations for the Saving Mothers Report for Limpopo include the improvement of skills and knowledge of midwives and doctors including safe administration of anaesthesia and promotion of the use of Guidelines for maternity care in South Africa during training of doctors and midwives (NDoH, 2012). The allocation of available staff according to their interest and providing staff according to the requirements stipulated in the guidelines for maternity care would enhance the effective implementation of the recommendations (NDoH, 2016). The staff also need to be trained in specialities of midwifery for maximisation of their knowledge and skills.

The Safe Midwifery Staffing Guidelines (2015) requires that the individual practitioner's preferences, needs and values should be taken into consideration when allocating, however it goes on to say that it should not override the circumstances of the individual patient which should take priority when allocating staff.

The results revealed that the registered midwives suggested that there should be review of allocation protocols to address absenteeism, burnout and resignations of

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staff as it happens due to staff being allocated in units that they do not have interest on.

This was identified when one of the participants from VT hospital said:

> *"You are just allocated to a particular unit, whether you like it or not. If you request to go out you are told that you cannot go out without somebody coming to that ward, irrespective of whether you are happy or not and remember you cannot be productive if you are not happy. It could also help if guidelines are made available in the ward for referral when necessary."*

This was supported by Banovcinovaa and Baskovaa (2014) on their study on work stress which indicated that when allocating midwives in their workplace, the manager needs to consider the physical, psychological and social aspects on the working environment. That should be done in order to reduce stress and burnout as high levels of stress may change the attitudes to work thus negatively affecting patient care.

The quantitative results also supported this as in Table 4.14 is shows that 73 participants which is 36.5% indicated that the staff have negative attitudes towards them when they visit the clinic. The attitudes forms part of the realities according to Ernestine Wiedenbach's theory which needs to be attended to in order to realize the central purpose. The 5**H**s recommendations for the Saving Mothers Report **H** number 5 encourages strengthening of the health system which will require the staff with positive attitudes to care for the women.

This was further noticed when one of the participants from KGP said:

> *"The other thing that does not get enough attention is the training of staff working in maternity in the anaethesia administration and care of a patient under anaethesia. I think staff should be trained for that and drills need to*

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be done to make sure that everyone is competent in that field so that all could help when the need arise."

This was supported by the study conducted by Cornthwaite, Alvarez and Siassakos (2015) on team training for safer birth where the results revealed that clinicians and every member of the team should be trained together in both the emergency and non-emergency obstetric situations so that when the need arise any member of the staff is competent and can be able to help saving the lives of both the mother and the baby. The study went further to show the need to undertake role-plays in reinforcing the skills and knowledge to the health professionals.

The results indicated that there is a need for the material and equipment to be purchased so that better care can be provided to the women. This is in line with the 5Hs of the recommendations as the first **H** talks about haemorrhage which needs material resources like medication to deal with it. The second **H** in the recommendations is for hypertension which also need medication to be effectively dealt with. The fifth **H** involves strengthening of the health system which cannot be done without the purchase of material resources including equipment. In Ernestine Wiedenbachs' theory the realities which involves the working environment of the nurse need to be conducive to the rendering of quality care and that can be possible if the resources are purchased.

4.4 Summary

Chapter 4 focused on the presentation of both qualitative and quantitative research findings as well as discussion of the findings. The themes and sub-themes for qualitative research findings were discussed, supported with the quantitative findings, though not all the sub-themes were supported by quantitative results. The relevant literature was used to support the findings and also integration of Ernerstine Wiedenbach's Prescriptive Theory in relation to the recommendations for the Saving

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Mothers Report was done. Chapter 5 centres on the development of the strategy for enhancing the effective implementation of recommendations for the Saving Mothers Report.

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CHAPTER 5

DEVELOPMENT OF A STRATEGY TO ENHANCE THE EFFECTIVE IMPLEMENTATION OF RECOMMENDATIONS FOR THE SAVING MOTHERS REPORT

5.1 Introduction

Chapter 4 addressed data analysis, presented, interpreted, integrated and discussed both qualitative and quantitative results. Findings were contextualized and intergrated to Ernerstine Wiedenbach's Prescriptive Theory as the conceptual framework on which this study is based. Guided by the study objectives, the researcher identified the interventions by maternal health district managers to facilitate the implementation of recommendations on the Saving Mothers Report, and explored the challenges of registered midwives in the effective implementation of recommendations on the Saving Mothers Report as well as explored views and perceptions of patients on maternal health care interventions provided at health facilities.

From the collected data, four main themes with sub-themes emerged from qualitative data. Tables and figures were created from quantitative results. The researchers focused on the five Hs which are recommended for attention by the Saving Mothers Report and the recommendations specifically for Limpopo Province.

In this chapter, a strategy to enhance effective implementation of the Saving Mothers Report was developed using the Strategy Development Process in collaboration with Ernestine Wiedenbach's Prescriptive Theory as this study's framework (Guillot, 2013; George, 2011).

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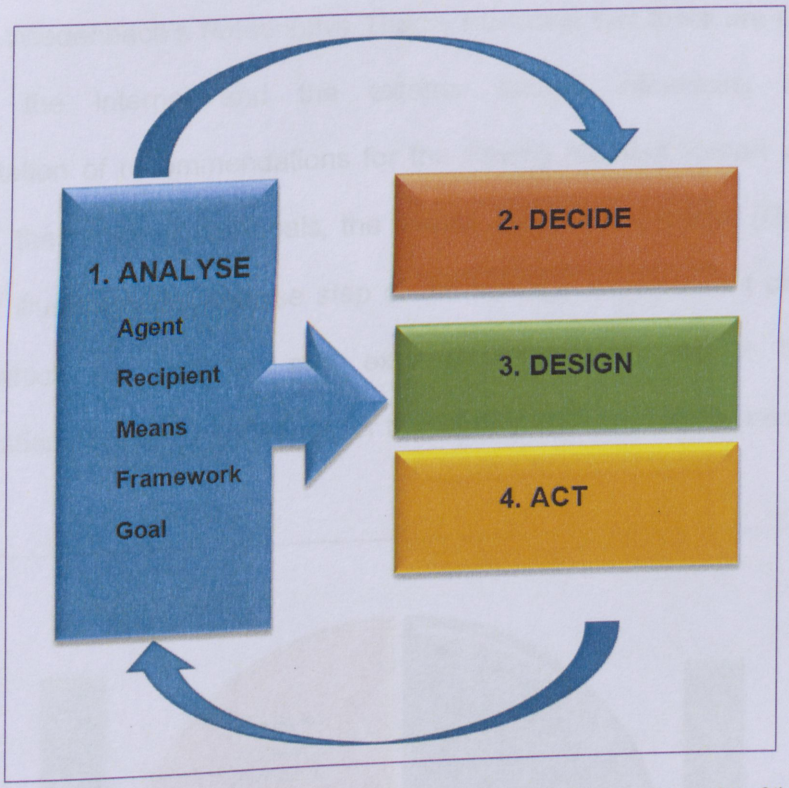
Figure 5.1 illustrates the template in relation to Ernestine Wiedenbach's theory and their steps, which were used to develop the strategy to enhance the effective implementation of the Saving Mothers Report. The Strategy Development Process was designed by Guillot (2013) for the CenterFirst to develop an effective contact centre strategy and proved to work effectively.



(Acessed from:https://www.google.co.za/search?q=strategy+development+template &tbm)

Figure 5.1: Template for strategy development process

5.2 Application of the Strategy Development Process

This chapter focused on the development of a strategy to be used to enhance the effective implementation of recommendations for the Saving Mothers Report. In this study Strategy Development Process in collaboration with Ernerstine Wiedenbach's Prescriptive Theory was used to analyse, decide, design and act in order to develop the strategy. The Strategy Development Process consist of four steps which include

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ANALYSE, DECIDE, DESIGN AND ACT (Guillot, 2013).

5.2.1 Analyse

The first step of the Strategy Development Process is to analyse and it included the identification of opportunities, internal capabilities and advantages of the organisation. At this stage the limitations for the organisation are also pointed out as they may hinder the ability to take advantage of the opportunities (Guillot, 2013). Ernestine Wiedenbach's Prescriptive Theory mentions that there are realities which represent the internal and the external factors influencing the effective implementation of recommendations for the Saving Mothers Report which include the agent, the recipient, the goals, the means and the framework (George, 2011). Figure 5.2 illustrates the analyse step of the strategy development process where realities which are internal and external factors that affect the effective implementation of recommendations for the Saving Mothers Report are checked out.

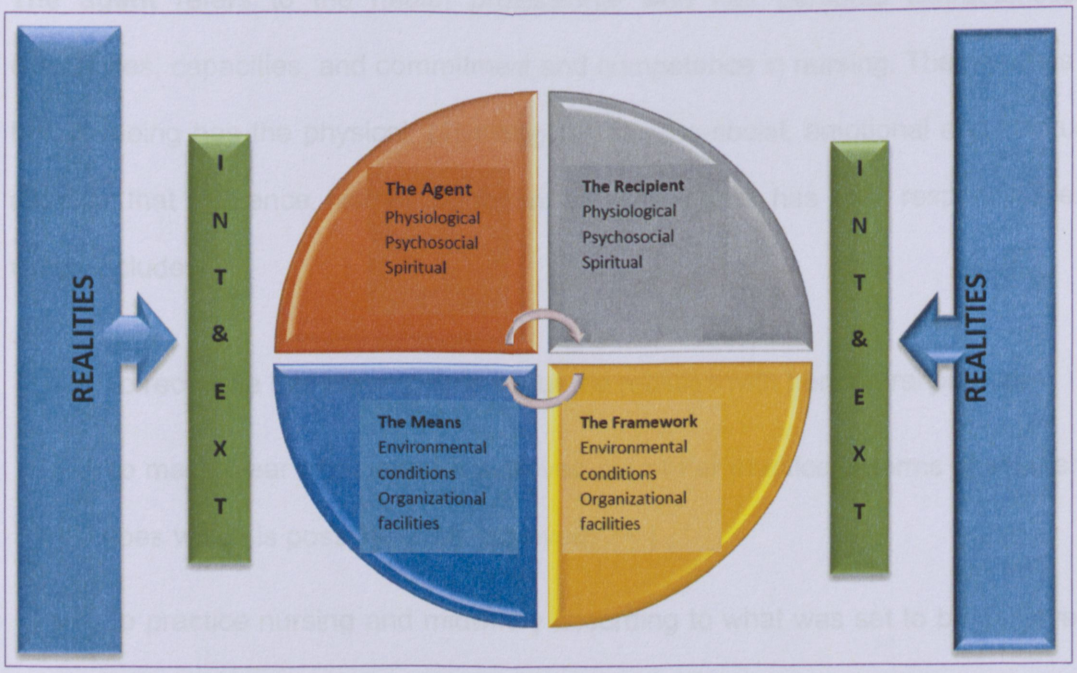

Figure 5.2: Analyse step of the strategy development process

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This step corresponds with identification of realities in the Ernestine Wiedenbach's theoretical framework which refers to the internal and external factors. The internal factors are those factors that are found within maternity health care services which can help the health care facilities to either achieve or fail to achieve their objectives. These factors can have an impact either in a positive or a negative way on how the recommendations for the Saving Mothers Report are implemented (George, 2011). The factors can be manipulated in order to achieve the objectives of the health facility.

Realities refers to the internal and external factors which influence the implementation of the recommendations for Saving Mothers' report and they are the five realities in Ernestine Wiedenbach's prescriptive theory which include the agent, the recipient, the goals, the means and the framework that are found there in the maternity unit (George, 2011).

The agent refers to the health professional who has personal characteristics, capabilities, capacities, and commitment and competence in nursing. The agent as a human being has the physical, physiological, psycho-social, emotional and spiritual aspects that influence his/her performance. The agent has four responsibilities, which include:

- To reconcile her assumptions about the realities with her central purpose.
- To make clear what is to be achieved out of her practice in terms of what she does which is possible to be achieved.
- To practice nursing and midwifery according to what was set to be achieved; implement the recommendations for Saving Mothers.

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- To engage in other actions that will lead to her self-realization and to making the nursing practice better (George, 2011). This refers to the reduction of MMR.

The recipient who is the patient has personal attributes, problems, capabilities, aspirations and the ability to cope with the concerns or problems being experienced. The patient is vulnerable, depending on the health professionals for care and risking losing individuality, privacy, value and decision-making (George, 2011).

The means include the skills, techniques, procedures and devices or equipment that are used to facilitate nursing practice. The stipulation of the activity's goal gives focus to the nurse's action and implies her reason for taking it (George, 2011).

The framework consists of the human factor where in this case refers to the fact that the nurse is human, the environmental referring to the working conditions of the nurse. The framework also encompasses the professional and organizational aspects that not only make up the context within which nursing is practical but also constitute its currently existing limits referring to challenges may hinder the effective implementation of the recommendations for the Saving Mothers Report (George, 2011).

The goal refers to the desired outcome that the midwife wishes to achieve when implementing the recommendations for the Saving Mothers Report, which in this study refers to the reduction of maternal mortality (George, 2011).

A detailed description of realities follows:

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5.2.1.1 The Agent

The agent refers to the human resource in the health care sector, which include the district maternal health care managers (MHCM), the registered midwives, the enrolled nurses, enrolled nursing assistants, ambulance drivers, doctors and other multidisciplinary health team members as reflected from the results of the study. They are the internal factors as they are part of the maternity health system. They have their personal characteristics, capabilities, capacities, commitment and competence which will influence the implementation of the recommendations for the Saving Mothers Report positively or negatively, and thus affecting the maternal mortality.

Competencies are part of outputs in a form of theoretical knowledge and practical skills noticed by the researcher from the registered midwives and managers. The results of the study indicated that some of the registered midwives had the knowledge, experience, skills and confidence whereas others had knowledge, skills deficit with no experience thus they also had diminished confidence in what they were doing. Though the registered midwives indicated that being knowledgeable about the management of women regarding the implementation of management of obstetric emergencies but lacking the necessary materials makes the management difficult which give rise to frustrations and confusions.

The registered midwives also indicated that some midwives especially the newly qualified were not knowledgeable and skilled enough. The difficulty was mostly influenced by shortage of staff where one registered midwife would be expected to manage quite a number of women. The other frustrating situations were caused by knowledge deficit noticed at PHC were midwives would just refer women to hospital because they were not sure of their findings, and also not being able to help women as they report very late to the health care facility. The practical skills and theoretical

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knowledge possessed by registered midwives were seen as an output of the activities performed as they were made to undergo training in ESMOE (Kellogg, 2004).

Registered midwives reported that they could not train others after attending training and workshops due to shortage. The district maternal health care managers were supporting midwives though they did not manage to provide equipment for drills, monitor and did not conduct BANC audits. Inability or inadequate monitoring, and shortage of equipment for drills and not conducting BANC audits regularly give rise to poor implementation of the recommendations for the Saving Mothers Report in some areas as an outcome (Kellogg, 2004). Maternal health care managers gave more support to those facilities nearer to them which are PHC facilities and facilities that were far from them which are hospitals were not fully supported as their problems were noticed but some were not solved. Registered midwives indicated that the manager do not really come to support them and mostly question them only if there was a problem and if not, they do not visit them. Inadequate support by managers also gave rise to the ineffective implementation of recommendations for the Saving Mothers Report.

The personal characteristics of the health professionals can be either positive or negative as the results of this study indicated. There were registered midwives allocated to a health care facility with every shift though there was a great shortage of midwives in hospitals in which most of the midwives indicated that few registered midwives were allocated with junior nurses especially during the night which makes implementation of the recommendations for the Saving Mothers Report difficult thus leading to poor maternal outcomes. The shortage was also aggravated by the fact that other midwives would be send to attend workshops or meetings leading to those remaining on duty to be overloaded with work.

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It was indicated in the results that most of the primary health care (PHC) facilities are not working at night thus the strain is put on the registered midwives on night duty. The PHC facilities were provided with midwives who have specialised with advanced midwifery while at the hospital they are less, thus they are sometimes overwhelmed by the conditions of patients they are faced with.

In the hospitals and the PHC facilities there were junior nurses and non-nursing staff employed and who assisted midwives during the implementation of recommendations for the Saving Mothers Report. All the districts where data were collected had maternal health care managers who were supporting midwives in the provision of maternal health care services, but mostly they were in contacts with those registered midwives at the PHC facilities. The hospitals were under the leadership and supervision of the Chief Executive Officer. The maternal health care managers were not responsible for the availability of equipment, thus they could identify the shortage but could not prioritise the buying of the equipment but only recommend, making the implementation of the recommendations for the Saving Mothers Report challenging in hospitals hence the shortage of equipment as an output.

The results of the study showed that the registered midwives were committed to their job, though it also reflected that some of the midwives were not committed as they worked at a slow pace leading to the women having to wait for a long time at the PHC facilities before being attended to. The results also indicated that the registered midwives had challenges like shortage of staff, shortage of equipment and others which made it difficult for them to implement the recommendations for the Saving Mothers Report.

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The agent as the provider of care in the maternity health facility showed to have some attributes which may either be positive or negative or need attention so that they may work in four of a positive outcome for the mother and child (George, 2011).

5.2.1.2 The Recipient

According to George (2011), the recipient is the patient who is seeking health care from the agent. The recipient possess some attributes, problems, capabilities and aspirations and the ability to cope with the concerns or problems being experienced. The recipient as a human being also has the physical, physiological, psychosocial, emotional and spiritual aspects that influence his/her performance. The recipient also has own culture and beliefs. All of the above about the recipient influences the implementation of recommendations for Saving Mothers either positively or negatively, thus determining whether the maternal mortality will increase or reduce.

People are social beings as much as pregnant women need their family support and also need their community acceptance. The results indicated that the pregnant women presented themselves to PHC facilities for ANC and whenever they were not feeling well. The women attended PHC facilities for management because their value belief systems and culture were not against the health care rendered at the PHC facilities and they were also getting support from their families and communities for that. Some women's values, beliefs and culture influenced the effective implementation of recommendations for the Saving Mothers Report negatively as they stayed away from the health care facilities until very late in their pregnancies. Some of the women used both the health care facilities management and the traditional healers' interventions, which led to complications.

The results also indicated that some of the women diagnosed with HIV positive would stop taking their ART as they would be told that they were bewitched and take

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traditional medication or being told that they were healed after being prayed for at the churches, thus leading to the deterioration of their health and those of their unborn babies. Some women did not tell the midwives about their positive HIV status even though they knew, as they did not disclose to their husbands and families, thus even the adherence to ART became a problem as they had to hide the treatment.

The above practices by the pregnant women influenced by social interactions made the effective implementation of the recommendations for the Saving Mothers Report difficult therefore leading to poor outcomes. High-risk women who were referred to hospitals for ANC were able to transport themselves. Some of the women from poor backgrounds were unable to go to the hospital because of money thus they become at risk of complicating together with their unborn children as the recommendations for the Saving Mothers Report could not be implemented on them to come out with best outcomes.

Most women showed to have accepted and used the maternal health care services and showed that by giving birth in the health care facilities. However, the results of the study also indicated some registered midwives indicated that some women were using traditional health services together with maternal health care services from health care facilities. HIV positive women would consult traditional healers for treatment of HIV and they would stop taking ART giving the virus an opportunity to thrive and their lives and those of their unborn babies at risk.

Some of the women would stop treatment after being to the spiritual healers and pastors who promised them that after they have been prayed for and been laid hands they were healed of HIV. The registered midwives indicated that some of the women would start at the traditional healer when in labour before going to the health care facility and that even when already admitted at the health care facility the

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traditional medicine would be taken to hasten labour (makgorometsa) which at times caused precipitate labour or if there are complications like cephalopelvic disproportion complications like uterine rupture may occur.

The effective implementation of the recommendations for the Saving Mothers Report would be hindered in this instance and the outcome would be undesirable with the health facility being blamed for complications outside its cause. The results also showed that some of the women would stay at home having not attended ANC and even during labour and only come to the hospital at the last moments so that they can just deliver on arrival thus no time to effectively implement the recommendations for the Saving Mothers Report. Personal attributes are related to the individual's life style, attitude, education, beliefs, work and culture and they can have a positive or negative effect to the individual's health. Women are encouraged to be supported by family and relatives in their care during pregnancy, labour and post-natal period even when raising children all are lending a hand.

The pregnant women as recipients should have their personal attributes, problems, aspirations and capabilities understood by the registered midwives as agents so that they may be helped appropriately and be made to work with and not against the registered midwives in implementing the recommendations of the Saving Mothers Report, thus reduce the maternal mortality. When the women has accepted and is receptive to the health service, they would follow all the instructions and health education being given leading to effective implementation of recommendations for Saving Mothers by the health professionals as inputs leading to positive maternal outcomes (Kellogg, 2004).

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5.2.1.3 The Means

The means are those requirements such as skills, techniques, procedures, devices and equipment that are needed so that the health care service can be rendered. They are collectively the means to enable activities that would help to achieve the central goal or positive outcome (George, 2011). The means are necessary for the effective implementation of the recommendations for the Saving Mothers Report.

The results of the study indicated that maternal district managers informed all the maternal health care facilities about the recommendations for the Saving Mothers Report so that they may be implemented during the provision of maternal health care to women. The Saving Mothers Report was not distributed to the health facilities like the maternity guidelines, but only informed about their availability. The qualified staff was hired at the health facilities to render maternity services to women. This refers to consideration of getting the best value for money as complications would be diminished and the effective implementation of the recommendations for the Saving Mothers Report would reduce the maternal mortality rate, thus saving money for the country. It will lead to reduction of referrals of women to the next level of care hence improved maternal health care service delivery.

Eventhough the staff members were qualified, they were not enough in numbers and some of them did not have enough knowledge, experience and confidence to implement the recommendations for the Saving Mothers Report. The shortage of staff lead to the lower categories like the enrolled nursing assistants being allocated to take part in the provision of maternal care whereas they do not have enough knowledge to interpret the findings.

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The results also indicated that there was insufficient equipment supply for the effective management of women during maternal care and that those equipment which were available were not well kept and serviced, thus not functioning well.

The results indicated that the maternal district managers faced a challenge of having to support the registered midwives at the hospitals though they could not help them with the purchasing and supply of equipment. The registered midwives indicated that there was shortage of basic assessment and diagnostic equipment like blood pressure taking machine necessary for the provision of maternal health care services and prevention of complications.

In cases where equipment was available and functioning, registered midwives were able to diagnose preventable complications like gestational hypertension and they could be managed before going into pre-eclampsia by starting treatment on time and referring the woman to relevant higher level facilities when necessary. The results indicated that the availability and response time for ambulance were longer than expected which can lead to women to complicate while awaiting transfer to another level of care. The maternal district managers indicated that though the registered midwives reports that the ambulance takes longer, the emergency medical services (EMS) staff reported to be arriving on time. The results indicated that most of the participants were given the drugs during ANC such as ferrous sulphate, folic acid and calcium preparations thus enhancing the effective implementation of recommendations for the Saving Mothers Report by optimising the haemoglobin of the women in case the woman get any of the haemorrhagic conditions later during the pregnancy and for preparation for blood loss during labour. Although postnatal women indicated that they were given drugs, some postnatal women indicated that they were told to buy the drugs from the pharmacy when they were pregnant and sometimes they did not have the money.

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Registered midwives were taken through ESMOE training to empower the registered midwives with knowledge, skills and competence to be able to manage obstetric emergencies effectively and with efficiency. Value for money was not taken into consideration where the training and updating including drills of staff did not progress as expected due to shortage of staff and lack of equipment as such hindering the effective implementation of recommendations for the Saving Mothers Report.

Competence include the capabilities and potentials that an individual possesses which encompasses the knowledge and skills that an individual has in order to perform the necessary job (Booyens & Bezuidenhout, 2013). The managers should support midwives through provision of resources and training so that implementation of recommendations for the Saving Mothers Report can be effectively done. To ensure that competencies of registered midwives are refined, managers should put in place a training programme for their units, especially for the newly qualified registered midwives.

The experts in the field of maternal health services should be invited to give registered midwives more and recent information regarding obstetrical emergencies which include haemorrhage and hypertension. The registered midwives must also be send to attend workshops, symposia, seminars and also perinatal mortality review meetings so that they learn more on what could have been done in certain situations so that they can be empowered. The devices as the means in implementing the recommendations for the Saving Mothers Report were the need to include the modern advances or new, sophisticated and improved ways in medicine with the provision of newly designed equipment's was identified (Bezuidenhout, 2014). Technology has taken over and fills a huge and important role in maternity health care services where a women can be attached to machinery like the CTG and

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the data scopes for monitoring of the maternal and the baby's well-being and progress of labour.

There are devices that were identified by the researcher as necessary in the health care system to enhance the effective for implementation of recommendations for the Saving Mothers Report to be effective and bring desirable outcomes for both midwives and pregnant women. The registered midwives reported that they were letting the enrolled nursing assistants to monitor the patients' vital signs even in high risk women due to shortage of staff and as the enrolled nursing assistants do not have experience and competence the interpretation may not be accurate as the machines were reported to be old and malfunctioning at times.

The results also indicated that the women appreciated the mom-connect where they were registered through their cell phones and they were getting hints and advices through their pregnancy, labour and also going to giving advice on the raising up of their babies. The programme proved to be very helpful and supporting the reduction of maternal mortality. The hospitals had CTG machines for monitoring of uterine contractions and foetal heart rate during labour.

Although there are CTG machines in hospitals, they were not enough and were not serviced regularly as such most of the time they were not functioning thus making it difficult for the midwives to implement the recommendations for the Saving Mothers Report effectively. The sonar machines are found in the hospitals. It could be very useful if the PHC facilities could also be provided with sonar machines as they may be able to enhance the diagnosis of a pregnant woman with ease. The ESMOE training is done at identified places. The ESMOE training would reach many staff members if it was put into a video play to be played even on cell phones. The available technology in the maternity units would be useful in the implementation of

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recommendations for the Saving Mothers Report and making it effective which will ensure that women and babies' lives are saved and improve maternal health outcome (Kellogg, 2004).

Procedures followed in the public sector for the acquisition of equipment and devices for implementing the recommendations for the Saving Mothers Report play a part in making it easy or difficult to implement the recommendations. Finance is necessary for the supply of material resources and their maintenance. Resources like equipment, material supplies including medication and transport services that registered midwives need be able to implement the recommendations for the Saving Mothers Report effectively.

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5.2.1.4 The Framework

The framework as one of the realities in Ernestine Wiedenbach's Prescriptive Theory consists of the human factors where in this case refers to the fact that the nurse is human, the environmental factors referring to the working conditions of the nurse. The framework also encompasses the professional and organizational aspects that not only make up the context within which nursing and midwifery are practiced but also include the challenges that may hinder the effective implementation of the recommendations for the Saving Mothers Report (George, 2011).

The results of the study showed that all health care facilities had registered midwives, enrolled nurses and enrolled nursing assistants working on a permanent basis. Health services are an essential health care which was scientifically proven and socially acceptable by society using technology and that is made accessible to all people in the country (DoH, 2014). These include the health services, which are

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rendered by registered midwives to women during pregnancy or ante-natal care, delivery or labour and during the post-natal period. The care of women at the above times necessitate the effective implementation of Saving Mothers Report for the survival of the women.

The environmental factors include the economic influences as identified to be affecting activities for implementation of recommendations for the Saving Mothers Report negatively or positively to produce an outcome that can either beneficial or not depending on whether it is available and used productively. The Department of Health was allocated a budget to run the services as it is done each year. Although there is a budg*et al*location, nowadays South Africa as a whole and Limpopo Province in particular is in such a state of economy that the 'buzz' word is 'there is no money.' The health care status of the country is adversely affected and the people that are most hit are the poor who depend on the public health services for their well-being. The country is facing many corruption allegations including the state capture, which lead to the economic decline.

It seems as if the authorities are trying to save money to address the backlog and in the process the health care services are negatively affected as evidenced by issues like shortage of staff and resources. The results indicated that in most health facilities the staff on managerial posts are acting with no incentives and not in posts for many years, which lead to them not able to take decisions when necessary and make them not motivated. The managers who were on secondment did not have enough confidence to lead as they also considered the fact that what if the post is given to somebody else in future. The staff could not be hired due to the fact that there was no budget.

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The results of the study indicated that there was shortage of equipment like blood pressure machines, CTG machines and many others. Shortage of equipment makes the management of pregnant women challerging as the effective implementation of recommendations for the Saving Mothers Report becomes difficult and will lead to undesirable outcome. There are ambulance services to transport women from their homes to the PHC facilities, from the PHC facilities to the hospital. Even if the ambulance services are provided, they seem not to be enough or not well co-ordinated as the results indicated that the ambulances takes a long time to arrive when needed.

The economic status of the women also affected the maternal health care services adversely as they did not go to the health service for check-up due to insufficient funds. The women complicated as they were still trying to get money to visit the health facility to be started on the treatment and that needed more money for management and putting their lives at risk than when came earlier. The problem of budget not being enough from the government also negatively affected the availability of staff as a reduced number of personnel including midwives were trained even if the demand was high. The training of less number of midwives lead to shortage as the attrition through resignation, pensions, deaths and other ways continued.

The Maternity Care Guidelines used in South Africa were available and used during the training of midwives when doing R425 diploma course and also for the training of doctors. The guidelines were also supplied to the wards for referral by health care professionals during their practice. Registered midwives were trained on BANC as the results indicated. The challenge that was noticed was the monitoring of whether the guidelines thus the recommendations were followed as there were no audits conducted for BANC as required by recommendations the Saving Mothers Report.

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The tarred road was within short distance for some of the PHC facilities as such the ambulance services could easily reach the facilities and villages. The women in those facilities with tarred roads being near could also reach the hospitals with own transport with ease when experiencing obstetrical emergency situations. Some of the PHC facilities were far from tarred roads making it difficult for the emergency services to reach them with ease as they would take a long time with bumpy movement leading to the facilities being inaccessible to communities thus the effective implementation of recommendations for the Saving Mothers Report was negatively affected. The state of the road for other facilities made some pregnant women not to visit clinics throughout their pregnancy, labour and postnatal thus complicating and being prone to maternal death. There was a need for proper infrastructure of the PHC facilities and tarred roads to the health facilities for all communities as inputs for the enhancement of the activities leading to positive outcomes (Kellogg, 2004).

The results showed that the organisational factors included that few PHC facilities were offering 24 hour maternal health care services, and that after working hours most of the facilities were referring women to hospitals for reasons not valid for referring. Most PHC facilities were not offering 24 hours maternal health care, but only offering services during the day. Community health care centres were operating 24 hours with midwives doing day duty and night duty and not using a call system.

The results indicated that nurses at the PHC recommended to work day duty and night duty and not call system and the government was not implementing that. The maternal health services were available at some health facilities during the day and at night whereas in some PHC facilities maternal health care services were not available 24 hours due to shortage of registered midwives, thus women who needed the maternal health services were unnecessarily transferred to the next level of care

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to try and deal with shortage even though there were registered midwives on call and were to claim. The transfers to the hospitals increased workload at hospitals thus causing stress and burnout for the registered midwives at the hospital and hindering the effective implementation of the recommendations for the Saving Mothers Report. The results also indicated that some women were not booked on the first day of attending ANC, but were returned back and given another date for booking which also affected their finances negatively and their social life in general. The results indicated that all pregnant women who visited the PHC facilities for ANC were given counselling for HIV testing and that women illegible for ART were started on treatment. There was health education given to pregnant women about obstetric emergencies, which enhances the effective implementation of recommendations for the Saving Mothers Report although a large percentage of women indicated that they were not given the health education.

There were reports of insufficient equipment like blood pressure machines and urine testing apparatus and in other facilities equipment was not working, though registered midwives used whatever is available to them to diagnose women and give treatment as needed and sometimes the woman would have to be referred for the unavailability of equipment. An indication was given about the availability of ambulance services for transportation of women to hospitals for next level of care, but the response time for the EMS was found to be satisfactory in few instances.

Health care services and resources were found to be available as inputs and there were activities taking place for the realisation of positive outcomes of which if they were not available negatively influenced the effective implementation of recommendations for the Saving Mothers Report. The unavailability of health care services and resources lead to the non-reduction of maternal mortality rate as the recommendations for the Saving Mothers Report could not be implemented. The

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professional factors were also noticed from the study as The South African Nursing Council (SANC) also provides rules and regulations within which all nurses and midwives in the country registered with the body were obliged to observe and practice within in their day to day practice as a regulatory mechanism, thus protecting all the citizens. The Saving Mothers Report is a professional document in itself as the committee that is investigating the maternal deaths and making the recommendations has been legislated. The sixth report of 2011-2013 (NDoH, 2014) recommended BANC audits be conducted to ensure the proper care of women during pregnancy for the best outcome for both the mother and child. Most of the registered midwives indicated that BANC audits were not conducted regularly at their facilities and that was not reinforcing the effective implementation of the recommendations for the Saving Mothers Report.

The NDoH (2014) also made a recommendation that the woman in labour should be assisted by more than one midwife during rendering maternal health care services. Due to shortage of staff the above could not be implemented. When midwives assisted each other in the care of women during labour there was usually a better implementation of the recommendations for the Saving Mothers Report which gave rise to positive maternal outcome. The shortage of staff lead to some midwives being assisted by lower category nurses and that sometimes left them frustrated when complications like post-partum haemorrhage (PPH) arouse as lower category nurses did not have knowledge and competency leading to poor maternal outcomes.

Facilities were provided with maternal health care guidelines and there were maternal health protocols put on the walls for referral during an obstetric emergency. As part of shortage of resources it was indicated that there was shortage of maternity care guidelines and only one was provided per facility therefore they could not be put in each consulting room as recommended by the IDEAL clinic realization.

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The training of midwives and doctors was done in conjunction with the maternity guidelines as recommended in the Saving Mothers Report. Although the training was done according to the maternity guidelines the registered midwives indicated that the newly qualified midwives did not have enough knowledge and skills. They indicated that it might be due to the short time that they spent in the clinical area during their training for midwifery and for the best outcomes in the maternal care there should be expertise in knowledge and skills of practitioners.

All practising midwives are required to be enrolled or registered with SANC as a regulatory body and are legally bound to comply with its rules and regulations in their practice for the protection of the public. Any midwife that can be proved to have acted against the prescribed rules and regulations of the SANC can be removed from the register and legal action can be taken for her by the patient or her family which motivates the registered midwives to be as diligent as they can be in their practice when implementing the recommendations for the Saving Mothers Report. Health education was given to pregnant women during ANC including information about obstetric emergencies as recommended by the Saving Mothers Report, however the results indicated that some of the women reported to have not been given such information during their ANC attendance.

The recommendations for the Saving Mothers Report also require midwives to give health education to pregnant mothers on family planning. Some postnatal mothers indicated that they were given health education on family planning during ANC whilst others indicated that they were not given such health education. The registered midwives need to act within the legal provisions as an input so that the activities coming out of that may be acceptable and bring about the best maternal outcomes.

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Perinatal meetings were conducted on monthly basis and attended by registered midwives where they learnt about errors that may have happened in the rendering of health care to women. The registered midwives were taken through ESMOE training in the health care facilities for improvement of their knowledge and competencies in the management of the obstetric emergencies as stipulated by the recommendations for the Saving Mothers Report and that will serve positively in the implementation. The results of the study indicated that the drills were conducted by registered midwives. Irrespective of ESMOE training being conducted and drills being conducted in the health care facilities there was still a backlog due to shortage of resources needed for drills and for practice. The ESMOE training also could not be done to most of the registered midwives due to shortage of staff, which lead to the poor management of obstetric emergencies like antepartum haemorrhage, eclampsia, postpartum haemorrhage and others. Nursing and midwifery as professions have their professional factors that influence the implementation of recommendations for Saving Mothers leading to much desired outcomes (George, 2011).

The constitution of the country stipulates the rights for every citizen and women, pregnant or not are included. The laws of the county also protects all citizens as an organisational factor, thus supporting the effective implementation of the recommendations for the Saving Mothers Report. All health services including the maternal health are provided for free in all public health facilities as the constitution of the country also provide that every citizen has a right to health care. The results indicated that most of the PHC facilities were within 5 kilometres radius and accessible to the women though there were some women who stayed far from the health care facilities. Those women who were staying far from the health facilities did not have full access to the maternal health services, thus hampering effective implementation of the recommendations for the Saving Mothers Report.

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The hospitals were reported to be about 70 kilometres away from other villages and as the EMS was said to be having a lengthier response time women needed to have money for transport to the hospital and if not would find it hard to access the maternal health care and given the shortage of staff they may end up with complications. If the EMS was accessible women would be monitored by knowledgeable staff en-route to the hospital to prevent complications but using their transport they were not monitored by any skilled practitioner. The other factor that affected the accessibility of maternal health care services was shortage of staff. Insufficient EMS services also made accessibility of services at the next level of care not to reach some women. PHC facilities not offering a 24-hour service also negatively affected the accessibility of the maternal health care services thus impeding the effective implementation of recommendations for the Saving Mothers Report. The government has structures of how the maternity units posts and hirachy should be so that monitoring and evaluation of the maternity health care services can be carried out.

The maternal health care services are affected both positively and negatively by politics. The positive influence include the point that the National Department of Health (NDoH) has committed to the rendering of a 24-hour health service at all levels including the PHC. However, the negative influence came as some health care facilities were unable to comply with the National policy of rendering 24-hour maternity health care services citing their reasons which included shortage of staff and not in agreement with the call system.

Due to the fact that the maternal health care services were not available for 24 hours, the community could not access the service. Politics influence made the government to ignore the matter of qualifications, competence and expertise when hiring people for decision-making positions, thus their priorities were not in line with

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the needs of the communities. The deployment of people who are not knowledgeable and skilled to supervisory positions in the health sector gave rise to the situation that they would not notice even when services are not performing well. Politics thus becomes a hindrance in the effective implementation of recommendations for the Saving Mothers Report, which will lead to the increase in the maternal mortality rate.

There are maternal district managers for each district who monitors the services provided including the implementation of the recommendations for the Saving Mothers Report. The managers communicates with other maternal health care providers through perinatal meetings. The PHC facilities are trying to implement the ideal clinic realization programme so that there may be improved health care services including the maternal health care services. In order for the programme to succeed, there must be improvement of structural makeup of PHC facilities and their furniture.

New PHC facilities for the delabitated ones were build and they are accessible and affordable to the community. However, there are still those PHC facilities which are old though many of the PHC facilities were build long ago and they are old and depreciating. The infrastructure was unable to accommodate the community as the PHC services are expected to run many services nowadays and due to the burden of disease. Where the infrastructure was up to standard with enough consulting rooms to accommodate the patients, the challenge was shortage of staff, thus the effective implementation of recommendations for the Saving Mothers Report was challenged.

The results indicated that there are so many projects started brought forward by the Department of Health, which lead to managers spending a lot of time in meetings,

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that they do not have time to supervise and to implement some of the projects. Proper supervision by the managers would ensure effective implementation of recommendations for the Saving Mothers Report as challenges would be seen early and be rectified. Politics as an input needs to be influenced in such a way that the activities can be performed in a way that will ensure a good outcome, which is reduction of maternal mortality rate (Kellogg, 2004).

5.2.1.5 The Goal

According to Ernerstine Wiedenbach's Prescriptive Theory in George (2011), the goal is the desired outcome that the registered midwife works towards achieving when rendering maternity services. In this study the goal refers to the effective implementation of the recommendations for the Saving Mothers Report which would eventually lead to the reduction of maternal mortality and reflected in the next step of this process which is decide.

5.2.2 Decide

This is the second step of the Strategy Development Process. During this step it was decided upon what the organisation must be or where it needs to be taken to (Guillot, 2013). This step relates to the central purpose in the Ernestine Wiedenbach where the central purpose and how to arrive at it must be mapped as indicated in Figure 5.5. The matrix was drawn to indicate where the organisation needed to be directed to. The central purpose in this study was to reduce the maternal mortality which can be achived by effective implementation of recommendations for the Saving Mothers Report.

Figure 5.3 shows DECIDE, as the second step of the strategy development process, which relate to the central purpose as indicated by Enerstine Wiedenbach's Prescriptive Theory.

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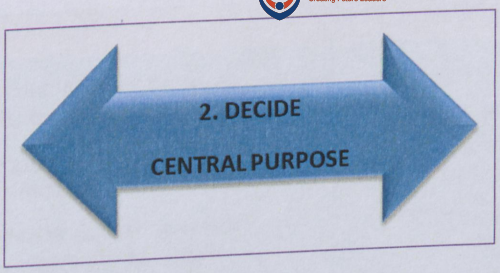

Figure 5.3: Decide and the central purpose from Ernestine Wiedenbach's theory

❖ Development of the Analysis Matrix

The matrix was drawn directed by the results of the study. The matrix emerged from the agent, the recipient, the means, the framework and the goals from the results got from data analysis of data collected about the effective implementation of recommendations for the Saving Mothers Report from the postnatal mothers, registered midwives and district maternal health managers. Table 5.1 illustrates the analysis matrix derived from the discussions above. Figure 5.4 and Table 5.1 show the analysis matrix developed from the results to analyse step of the strategy development process in order to achieve the central purpose that was decided upon in the decide step of the strategic development process.

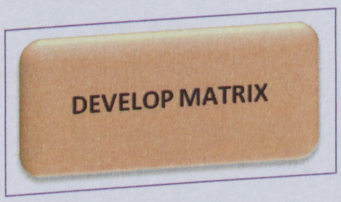

Figure 5.4: The developed analysis matrix

Table 5.1: The developed analysis matrix

Realities	Positive	Negative
Agent	• Provincial maternal health manager were available • District maternal health manager were available • Registered midwives are available	• Shortage of registered midwives • Seconded operational managers • Lack of commitment from registered midwives • Insufficient competency by the

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		midwives
Recipient	• Women present themselves to the PHC facilities for ANC • Support by the family and community • High risk women transport themselves to hospitals	• Late or no booking for ANC • Use of traditional and spiritual healers which lead to harmful practices • Non-compliance to HIV treatment by pregnant women • No transport money for pregnant women to attend ANC at hospitals
The means	• Information given to facilities about the recommendations for the Saving Mothers Report • Qualified staff available • Availability of ambulance services • Mom-Connect programme availability • Provision of drugs like iron preparations and calcium to women • Training of registered midwives for ESMOE	• Saving Mothers Report not distributed to health facilities • Shortage of staff • Insufficient knowledge, skills, experience and confidence of midwives • Delayed response by EMS • Unavailability of iron preparations and calcium to women at health facilities • Insufficient equipment • Drills not conducted at the health facilities
The framework	• There are registered midwives, enrolled nurses and enrolled nursing assistants to implement the recommendations for the Saving Mothers Report • The registered midwives are trained for the care they are rendering • Equipment available for assessing and provision of care at health facilities • Maternity guidelines are used in training of midwives and doctors • Registered midwives are trained on BANC • Availability of tarred roads • Health care facilities are open during the day • HIV counselling done well and treatment started for legible patients • Health education on obstetric emergencies given • SANC rules and regulations available for regulating the practice of registered midwives • The Saving Mothers Report as a legal and official document • Maternity care guidelines provided	• Low budget in the Department of Health • Staff in management on acting positions and not hired due to finance • Insufficient monitoring of the implementation of the maternity guidelines and the recommendations for the Saving Mothers Report • Insufficient and not well maintained equipment • Low economic standard of women • Less number of midwives trained due to low finances • BANC audits not done regularly • Some areas where women live far from tarred roads • The state of some of the PHC facilities not satisfactory • 24-Hour service not offered at some PHC facilities • Security system at the PHC not satisfactory • Women not booked at their first visit for ANC but given another date • Some women not given information

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	to the health facilities to serve as a reference and guidelines in practice • Health education on family planning given • Perinatal meetings conducted • Staff trained on ESMOE • Constitution of the country available and protecting everybody • Free health services offered for women at public facilities • Emergency medical services available • Managers available for supervision and evaluation	about obstetric emergencies • Unavailability of enough monitoring on the adherence to rules and regulations • Saving Mothers Report not provided to all units for update and information on what recommendations to be carried out • Not enough Maternity guidelines provided for all the delivery rooms for reference • Some registered midwives not giving health education on family planning • Not all registered midwives attend perinatal meetings and the time is limited • Drills not done as they should • Health facilities overcrowded • Some women staying far away from the health facilities • Response time very long and women complicates • Underqualified and inexperienced people given managerial posts • The Department starting many projects running at the same time
The goal	• The recommendations are implemented	• The recommendations for the Saving Mothers Report are not effectively implemented

5.2.3 Design

This step of the strategy development process focus on the implementation or formulation of the strategy (Guillot, 2013). The actions for improving the implementation of the recommendations for the Saving Mothers Report were designed at this stage. It relates to the Build on strengths, Overcome weaknesses, Explore opportunities and Mitigate threats (BOEM) action plan. The prescripts in the Ernestine Wiedenbach's theory indicate the prescriptions of what needs to be done and how should it be done and by whom should it be done was stipulated. This step requires the development of partnerships, formulation of policies and requires update of technologies (Guillot, 2013). Figure 5.5 illustrates the design step of the

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Strategy Development Process and prescripts in Ernestine Wiedenbach's Prescriptive Theory with BOEM applied.

The design step of the strategy development process in relation to the prescripts of Ernestine Wiedenbach's theory and BOEM where prescripts were developed as to what needed to be done with each and every aspect of the findings to enhance the effective implementation of the recommendations for Saving Mothers (described in section 5.3.2.1).

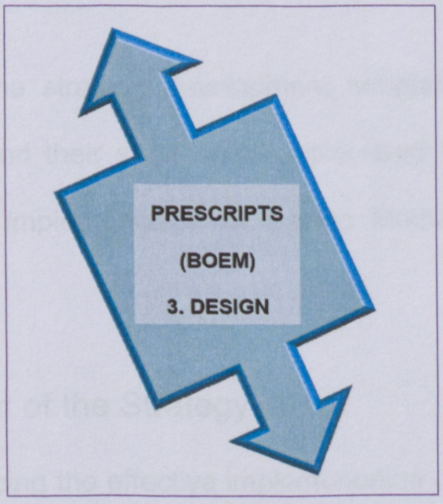

Figure 5.5: Design and the prescripts (BOEM) from Ernestine Wiedenbach's theory

Figure 5.6 illustrates the ACT step of the strategy development process which was not covered in this study as it represent the actual implementation of the strategy.

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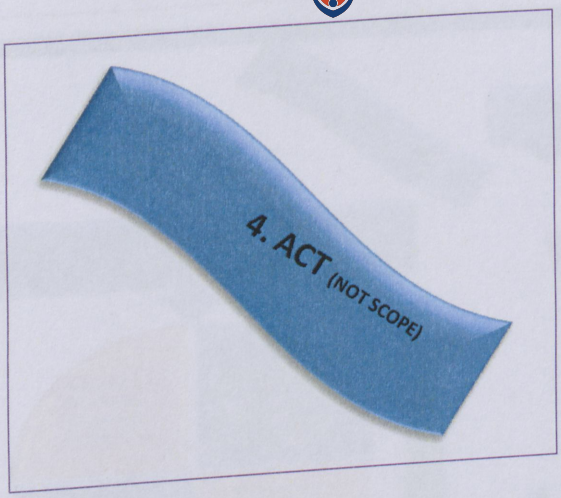

Figure 5.6: Act step of the strategy development process

Figure 5.7 illustrates the strategy development template in relation to Ernestine Wiedenbach's theory and their steps which were used to develop the strategy to enhance the effective implementation of Saving Mothers Report (Guillot, 2013; George, 2011).

5.2.3.1 Development of the Strategy

The strategy for enhancing the effective implementation of recommendations for the Saving Mothers Report was formulated from the results of the analysis which were categorised into the positives and the negatives. The positives were further categorised into strengths and opportunities and the negative into the weaknesses and the threats. BOEM action plan was applied to the developed analysis matrix where the following were done (Pearce, 2010):

- Building on the identified strengths
- Overcoming the weaknesses
- Exploring the available opportunities and
- Mitigating the threats that were anticipated.

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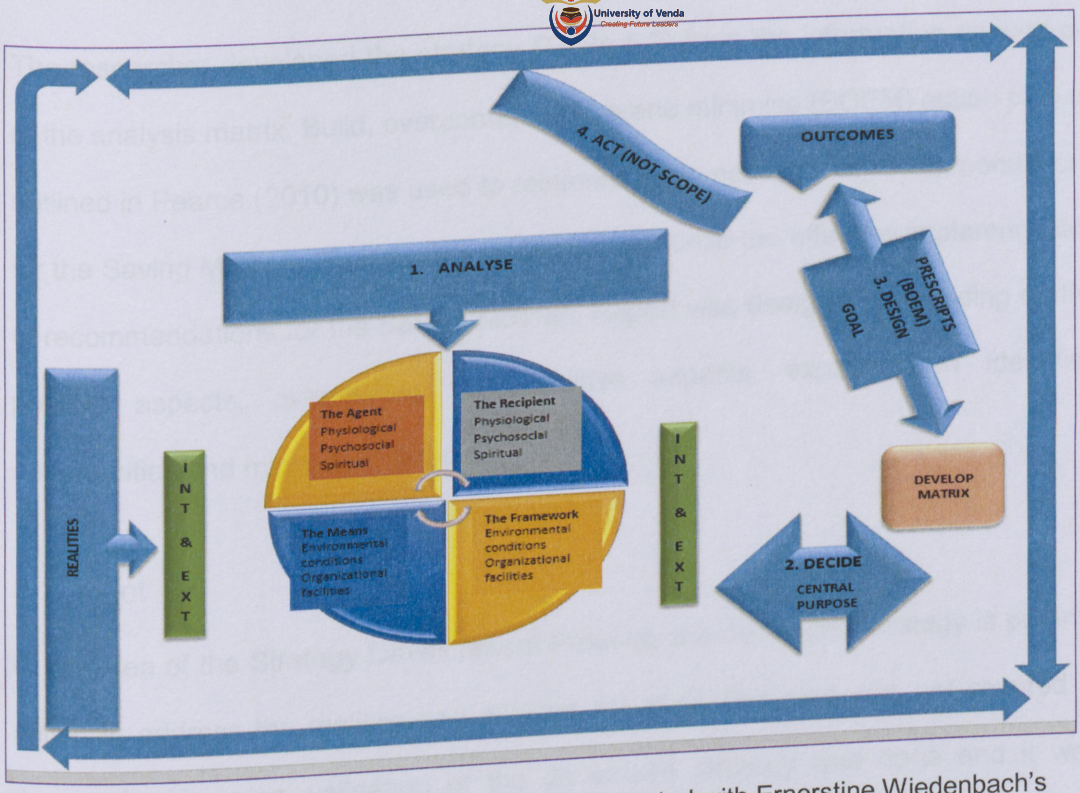

Figure 5.7: Strategy Development Process integrated with Ernerstine Wiedenbach's Prescriptive Theory

The Strategy Development Process with its steps Analyse, Decide, Design, Act in conjunction with BOEM action plan was used to develop the strategy to enhance the effective implementation of recommendations for the Saving Mothers Report. The figure shows how internal and external factors influence the implementation of recommendations for the Saving Mothers Report and how BOEM plan was used to come up with the strategy to enhance the effectiveness of the implementation of the recommendations to reduce the maternal mortality rate.

5.2.3.2 Orientation to the Strategy

During the analyse step of the Strategy Development Process was used in relation to Ernestine Wiedenbach's Prescriptive Theory. The positive aspects and the negative aspects in the implementation of the recommendations for the Saving Mothers Report in maternity units of Limpopo Province were pointed out and discussed.

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The researcher developed the strategy (Table 5.2) from the information derived out of the analysis matrix. Build, overcome, explore and minimise (BOEM) action plan as outlined in Pearce (2010) was used to reinforce implementation of recommendations for the Saving Mothers Report. The strategy to enhance the effective implementation of recommendations for the Saving Mothers Report was designed by building on the positive aspects, overcoming the negative aspects, exploring on identified opportunities and minimizing threats.

5.2.4 Act

In this step of the Strategy Development Process, the developed strategy is put into action to address the realities and achieve the goal. This step was not covered in this study. However, validation of the developed strategy was done and it was detailed in Chapter 6.

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Table 5.2: Developed strategy through BOEM from Strategy Development Process

AGENT	
Strengths	**Action to be taken to build on positive**
Provincial and District maternal health manager were available	• Researcher to advice the Provincial manager to require a quarterly report from the district maternal health manager on support, evaluation and monitoring. • Researcher to advice the MHCM to draw a programme for visits at the health facilities to support, evaluate and monitor the implementation of the recommendations for the Saving Mothers Report. • District managers to be visited by the researcher to facilitate for integration of different projects so that they may have time to supervise and monitor registered midwives when implementing the recommendations for the Saving Mothers Report.
Knowledge about management of obstetric emergencies	• The researcher to advice operational managers to interact with obstetrical experts to conduct continuous professional development and in-service training including ESMOE to staff to keep up to date with knowledge and to refine skills. • All midwives to be included in training to ensure that every member of staff know what is expected from her/him in a particular situation. • The researcher to advice the Provincial manager for the drills to be included in the operational managers' performance management agreement.
Weaknesses	**Action to be taken to overcome the negative**
Shortage of midwives	• The researcher to advice the Provincial Maternal Health Manger to motivate the Department of Health to; ✓ Approve a bigger number of midwifery trainees yearly for R425 programme, one-year midwifery and advanced midwifery to address shortage of registered midwives. ✓ Reinstate midwifery training to enrolled nurses in an attempt to increase the number of registered midwives.
Knowledge deficit of midwives	• The researcher to advice the Provincial and district managers to motivate for placement of at least one advanced midwife per PHC facility which will facilitate mentoring for other staff members thus patients will be better cared for. • Advice the Operational managers to organize multi-disciplinary perinatal meetings within the unit to review maternal deaths occurring in the unit and release as many registered midwives as possible to attend the district perinatal meetings so that they may learn from the discussions.

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	• Advice the Operational managers to encourage registered midwives to engage in furthering their studies to keep up to date with knowledge and contemporary issues in maternity care so that they may implement the recommendations for the Saving Mothers Report successfully.
Opportunities	**Actions to be taken to explore the opportunities**
Implementation of recommendations for the Saving Mothers Report	• The researcher to advice the MHCMs to; ✓ To give an incentive like a rotating trophy every year to health facilities implementing the recommendations effectively as a motivation. ✓ To give report at the perinatal meetings on the performance of the district on the implementation of the recommendations for the Saving Mothers Report.
Threats	**Actions to be taken to mitigate the threats**
Lack of team work amongst midwives	• The researcher to encourage the Operational manager to motivate staff to be taken through team building activities and to be made aware that they need each other in practice so that the maternal mortality can be reduced. • Operational managers should motivate for more staff to be hired so that midwives may help each other.
Lack of integration with other health structures on recommendations for the Saving Mothers Report	• The researcher to advice the MHCMs to: ✓ Facilitate for education of home based carers on matters relating to pregnancy including taking of blood pressure and testing of urine so that they can diagnose and refer women early if they discovered any deviation from normal ranges hence initiating management of the women by midwives in time. ✓ Encourage information distribution on maternal health care in many ways like at churches, stokvels and through radio stations.
Burn-out amongst registered midwives	• Operational managers to motivate for debriefing sessions for registered midwives especially after attending to a maternal death

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RECIPIENT	
Strengths	**Actions to be taken build on the positive**
Ability of women to transport themselves to PHC facilities	• The researcher to advice the registered midwives to give continuous health education to the pregnant women to transport themselves to health care facilities on time when in labour and if diagnosed high risk.
Services acceptable and accessible to the community	• The researcher to encourage the MHCMs to: ✓ Ensure that all health care professionals to treat members of the community with respect and positivity. ✓ Train staff on moral re-genesis so that the community may be warmly attended to. ✓ Ensure that information about the hours of service and services rendered at the health facility where they can be seen and to always make the community aware of them. ✓ Motivate for PHC facilities to render 24-hour service and if it cannot be done to increase the number of registered midwives especially those with advanced midwifery at the hospitals.
Women attend ANC early at PHC facilities	• The researcher to advice operational managers to: ✓ Encourage the praising of women, attend to them at first visit and give health education regularly to women about the importance of booking early for ANC and keeping appointments. ✓ Educate home based carers on maternity matters so that they may identify women with problems and refer them to health care facilities.
Weaknesses	**Actions to be taken to overcome the negative**
Use of traditional and spiritual healers by women	• The researcher to advice the MHCMs to: ✓ Ensure that the community and pregnant women are given health education about the dangers of using the traditional medicines and spiritual healers and stoppage of prescribed medication. ✓ Motivate the provincial government to work together with traditional healers and encourage them to refer pregnant women to health care facilities and to workshop them on safe practices to prevent cross infection.

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	✓ Include traditional healers as part of the clinic committee members so that information can be disseminated to other traditional healers and in that way they may understand how western medicine work. ✓ Motivate for billboards to be erected to offer health education for pregnant women on the importance of adhering to what they learn at PHC facilities.
Opportunities	**Actions to be taken to explore the opportunities**
Family support for women	• The researcher to advice the operational managers to keep informing the community through ward councillors, traditional leaders, traditional healers, church gathering and radios to support women in maternal care and help them to reach the health facility during pregnancy and labour.
Threats	**Actions to be taken to mitigate the threats**
Inability to avail self to health care facility due to lack of finances	• The researcher to advice registered midwives to: ✓ Educate women about the importance of follow-up visits ✓ Involve the chief's kraal and other community structures and clinic committee to explain the importance of honouring the follow-up appointments so that the recommendations for the Saving Mothers Report can be implemented to reduce the maternal mortality. ✓ Advocate for establishment of maternal obstetric units in each hospital with maternity waiting areas for high risk pregnant women.
Lack of compliance by women	• The researcher to advice registered midwives to: ✓ Build trusting relationship with patients and to attend to them with a positive attitude so that patients may rely on them and do as advised. ✓ Conduct client satisfaction surveys to serve as guide for service improvement. • Advise the MHCMs to monitor implementation of Bathopele when visiting health facilities.
	THE MEANS
Strengths	**Actions to be taken to build on the positive**
Availability of equipment	• The researcher to advice the Operational managers to continue motivating for the required equipment.

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	• The asset manager to be encouraged to; ✓ Budget every year for buying and maintenance of equipment to ensure the supply of equipment and to keep inventory of equipment. ✓ Negotiate an in-service, maintenance and service contract for the new equipment being purchased from the supplying company.
Availability of drugs	• The researcher to encourage registered midwives to ensure that all drugs are entered into a drug register to help monitor stock. • MHCMs to keep communicating with the deport personnel to ensure continuous supply of drugs.
Weaknesses	**Actions to be taken to overcome the negative**
Knowledge and skills deficit when managing obstetric emergencies	• The researcher to advice the MHCMs to: ✓ Include the drills in the performance management of the operational managers. ✓ Announce performances of health facilities in relation to the implementation of re commendations for the Saving Mothers Report at each perinatal meetings.
Insufficient supply of equipment	• The researcher to advice Operational managers to: ✓ Submit wish-list for equipment with motivation each year. ✓ Request benchmarking sessions at other advanced provinces to be at the same pace with the outside world. ✓ Get involved in formulating specifications for the purchase of equipment as they know exactly what is needed. ✓ Motivate for budget for equipment for the implementation of recommendations for the Saving Mothers Report from management.
Delayed response time by ambulance services	• The researcher to advice the Provincial maternal health care manager should make a motivation to the Provincial Department of Health for; ✓ Purchasing of more ambulances to increase the ambulance responses when called by midwives and to allocate ambulances specifically for maternal health care services only. ✓ Identifying a central area for the ambulance to be controlled from to reduce the delay when an ambulance is needed. ✓ Motivating to department of transport for road maintenance and further road construction for easy transport by

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	ambulances.
Lack of co-operation during transfer of a patient from one facility to the other leading to delay	• The researcher to facilitate formulation of clear policies on the procedure to be stipulated for the whole province in collaboration with the Provincial manager.
Opportunities	**Actions to be taken to explore the opportunities**
Availability of ambulance services	• The district health care managers to discuss the availability and allocation of ambulances for maternal health services with the EMS managers to ensure that the service is improved.
Availability of Mom-connect programme	• The researcher to advice MHCMs to: ✓ Support the health facility coordinators and midwives to register women on mom- connect. ✓ Encourage support to women about the functionality of the programme. ✓ Advocate for reminders on cell-phones in the mom-connect programme for follow-up ANC visits with the National Department of Health. ✓ Forward an input to include the voice messages on mom-connect.
Availability of consulting rooms	• The researcher to advice registered midwives to reduce the waiting period for women by using several consulting rooms if available as that would discourage them from visiting the health facility in future. • The researcher to advice Operational managers to motivate for more staff to be hired to work in the consulting rooms.
Threats	**Actions to be taken to mitigate the threats**
Shortage of supply of drugs at health facilities	• The researcher to advice Operational managers to motivate for more frequent ordering of drugs and for the government to go into contract with some private pharmacies for supply of drugs to patients if they are out of stock at the deport.
Hiring of unqualified politicians for management posts	• The researcher to advice MHCMs, operational managers and registered midwives to make motivations for submission to the National and Provincial department of Health for hiring of properly qualified and experienced personnel as managers as they will know how to prioritize in implementing the recommendations for the Saving Mothers Report thus reducing the maternal mortality rate.

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THE FRAMEWORK	
Strengths	**Actions to be taken to build on the positive**
Trained Personnel in midwifery available	• The researcher to advice MHCMs to: ✓ Organize workshops and in-service trainings for EOSMOE and other information related to recommendations for the Saving Mothers Report and implement drills. ✓ Recognise health facilities implementing the ESMOE drills by the provincial manager. ✓ Include drills into the operational managers' performance management agreement. ✓ Stage a drill at a particular health facility without the staff being aware in order to get the real evaluation of the response.
Weaknesses	**Actions to be taken to overcome the negative**
Secondment of operational managers to higher post	• The researcher to advice MHCMs and Operational managers to motivate for the filling of vacant managerial posts.
PHC facilities not offering a 24 hour maternal health care services	• The researcher to advice the MHCMs to motivate for; ✓ Upgraded security at all health care facilities so that midwives and patients are safe at all times. ✓ Hiring of more midwives so that the recommendations for the Saving Mothers Report can be effectively implemented. ✓ Psychological support for registered midwives and encourage them to persevere in saving lives of women even during difficult times. ✓ Implementation of day duty and night duty at PHC facilities instead of call system. ✓ Building of maternity waiting home for high risk women to wait for their delivery dates so that they are to the advanced technological machinery and experienced human resources.
Opportunities	**Actions to be taken to explore the opportunities**

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SANC rules and regulations provision	• The researcher to advice the MHCMs to encourage registered midwives to practice within their legal and SANC rules and regulations provision so that they may avoid disciplinary actions by the SANC.
Accessible tarred and gravelled roads to PHC facilities	• The researcher to advice the Provincial managers and MHCMs Provincial to motivate for tarred roads to health facilities to the department of roads and transport for easy access of facilities by ambulances so that they may even last longer.
Threats	**Actions to be taken to mitigate threats**
Inaccessibility of health services due to transport	• The researcher to advice registered midwives to advice women to live with relatives who stay nearer to the health facility especially towards the last days of pregnancy. • The researcher to advice MHCMs to motivate for provision of waiting wards for high risk patients staying far from the health facility and staff hired for those waiting wards.
Failure to conduct BANC audits	• The researcher to advice MHCMs to draw programmes to conduct BANC audits without the midwives at the health facility being aware so that they get a true picture of how the midwives practice.
Dilapidated and insufficient infrastructure	• The researcher to advice MHCMs to motivate for building or revitalisation of health facilities, which may include buying, park homes to be used for consultations.

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5.5 Summary

In this chapter, the strategy for enhancing the effective implementation of Saving Mothers Report was developed using the Strategy Development Process in relation to Ernestine Wiedenbach's Prescriptive Theory. Internal and external factors which positively or negatively influenced the effective implementation of recommendations for the Saving Mothers Report were identified and discussed. The strategy for enhancing the effective implementation of recommendations for the Saving Mothers Report was developed in the design step of the strategy Development Process by coming up with actions to build on the strengths, overcome weaknesses, explore opportunities and minimize threats. Chapter 6 details how the developed strategy was validated.

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VALIDATION OF THE DEVELOPED STRATEGY

6.1 Introduction

In the previous chapter, the results from the analysis of the data were used to develop the strategy. The strategy development process in conjunction with Ernestine Wiedenbach's Prescriptive Theory were used to develop the strategy that will be utilised in the maternity units to enhance the effective implementation of the recommendations for the Saving Mothers Report. This chapter focusses on the validation process of the developed strategy. The aim was to check how applicable the developed strategy will be in the maternity units of Limpopo Province. The researcher sampled the participants for validation, collected data for validation using a checklist, analysed collected data. The researcher also supported findings with the literature.

6.2 Validation of the Developed Strategy

Validation is the scientific process which is undertaken by the researcher to verify the soundness, accuracy or legitimacy of the developed strategy (Chinn & Kramer, 2015). Validation was conducted to determine how useable the developed strategy will be in enhancing the effective implementation of the Saving Mothers Report in reducing the negative identified while re-enforcing the positive found in the study results. Validation of the strategy was done by visiting the district maternal health care managers and the registered midwives from selected health facilities in the Capricorn and Waterberg districts.

The researcher provided the copies of the developed strategy one week before visiting to the participants so that they may have time to go through them. A checklist was developed wherein the participants would indicate their responses by ticking and on the provided space to give their inputs on how the developed strategy could be improved.

6.3 The Purpose of Validation

The purpose of validation was to verify the applicability of the developed strategy in addressing the identified challenges from the results of the study in enhancing the effective implementation of the recommendations for the Saving Mothers Report in an attempt to reduce the maternal mortality rate.

6.4 Methodology

Validation is defined as building the system in the right way. One objective of validation was to ensure the systems behave as defined by its specifications. Validation also ensures that the system is free of errors introduced by developers during the implementation step (Houben, Lenie & Vanhoof, 1999). In this context validation was undertaken to check the applicability of the developed strategy. Quantitative research design, a descriptive non-experimental research, cross-sectional design was used to validate the developed strategy. The researcher used this design in order to handle data collected in a short period of time at the same and also due to the fact that in this design generalization can be done as long as there was enough representation. A survey was conducted to check whether the identified challenges in the effective implementation of recommendations for the Saving Mothers Report could be addressed by the developed strategy thus leading to reduction of the maternal mortality rate.

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6.4.1 Population

The population for the validation of the developed strategy included all registered midwives, operational managers and district maternal health care managers who participated in the study and who are placed in the maternal health care facilities in Capricorn and Waterberg districts.

6.4.2 Sampling of Health Facilities

The two health districts, Capricorn and Waterberg were sampled for the purpose of validation of the developed strategy as they were included during the main study. Non-probability purposive sampling method was used to sample the two districts as they already knew and participated in the main study. In Capricorn district the health facilities sampled to participate in the validation of the developed strategy were Mankweng Hospital and two PHC facilities; under it were Evelyn Lekganyane clinic and Rethabile clinics. In Waterberg district the health facilities sampled to participate in the validation of the developed strategy were Voortrekker Hospital and two PHC facilities were Mapela and Mahwelereng clinics.

6.4.3 Sampling of Participants

Non-probability, purposive sampling was used to select the respondents. One (1) district MHCM was selected per district bringing the number to two (2). One (1) operational manager per health facility was selected, making the total six (6). Two registered midwives per facility were selected using convenience method of sampling which included those who were on duty the day the researcher went for data collection at the facility, making the total twelve (12). The total number of respondents selected for the validation process was twenty (20).

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6.4.4 Data Collection

Data were collected at different dates per facility. The researcher made appointments with each facility for the purpose of data collection. The developed strategy with action plan was sent to the facilities two weeks before the visit for data collection so that the respondents may go through it and get to interrogate it. The facilities were visited between the 1st September 2018 and the 30th September 2018 for data collection. The district MHCM were visited at their offices per prior appointment. The researcher introduced herself and allowed respondents to introduce themselves. The researcher then explained the purpose of the validation and gave a summary of the conducted study, its results and the developed strategy. Respondents were given time to ask questions for clarity. Consent forms were distributed to participants to sign in agreeing to take part in the validation. The checklist (Annexure R) were distributed to the respondents to be completed. After each response on the checklist, there was a space provided for the respondent's inputs and ideas to be added. The respondents were given 15 minutes to complete the checklists and thereafter the checklists were collected by the researcher and the assistant researcher. The researcher made closing remarks, allowed the manager to make closing remarks and thanked the participants.

6.4.5 Data Analysis

Data were analysed using descriptive statistics to describe and summarise collected data. The inputs and comments from the participants were included in the data analysis for validation of the developed strategy. The results of the data analysis for validation of the developed strategy were presented in Table 6.1.

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6.5 Presentation of Validation Results

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Tables were used for presentation of the validation data analysis results. The respondents were affirmative about the developed strategy being in line with their clinical practice and clinical environment and were positive that it would enhance the effective implementation of the recommendations for the Saving Mothers Report which would eventually lead to the reduction of the maternal mortality rate. Table 6.1 presents the biographical analysis of the respondents. Twenty (20) respondents took part in the validation process of the developed strategy.

Table 6.1: Biographical presentation of respondents for validation (n = 20)

1.1 How old are you?	**Frequency**	**Percentage**
20 - 29 years	4	20
30 - 39 years	2	10
40 - 49 years	2	10
50 - 59 years	12	60
60 and above	0	0
Total	**20**	**100**
1.2 What gender are you?	**Frequency**	**Percentage**
Male	2	10
Female	18	90
Total	**20**	**100**
1.3 What race are you?	**Frequency**	**Percentage**
African	20	100
Coloured	NIL	0
White	NIL	0
Indian	NIL	0
Total	**20**	**100**
1.4 What ethnic group do you belong to?	**Frequency**	**Percentage**
Pedi	9	45
Tsonga	4	20

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Venda	6	30
Other (Specify) Zulu	1	5
Total	**20**	**100**

1.5 What rank are you holding?	Frequency	Percentage
District MCHM	2	10
Operational manager	3	15
Registered midwife	15	75
Total	**20**	**10**

1.6 Years in this rank	Frequency	Percentage
Less than 2 years	3	15
2 years	2	10
3 years	1	5
4 years	2	10
5 years and above	12	60
Total	**20**	**100**

1.7 What is your highest qualification?	Frequency	Percentage
Diploma in Nursing/Midwifery	8	40
Advanced Diploma in Midwifery	4	20
Basic degree/BCur	7	35
Masters degree	1	5
PhD	Nil	0%
Total	**20**	**100**

The respondents belonged to different age groups, except 60 years and above, which indicated that the people on duty were young enough and energetic to do the job. The age group with more representation (60%) were aged between 50 and 59 years who had service with the functioning of the Department of Health and were able to contribute meaningfully in the validation of the developed strategy.

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All genders were represented though the majority of participants (90%) were female and that is because the nursing profession is female dominated.

The respondents were all African (100%) which was helpful as they were familiar with the practises, culture, values and beliefs of the mothers as they lived amongst them, and thus were able to evaluate the developed strategy relevantly. All the ethnic groups in Limpopo Province were represented with Pedi speaking (45%), Tsonga speaking (20%), Venda speaking (30%) and Zulu speaking (5%) which made the respondents to be familiar with the different values with regard to pregnancy and as South Africans they understood the laws and the functioning of the implementation of the recommendations for the Saving Mothers Report. All ranks were represented though the majority of respondents (75%) were registered midwives who were at the front of implementing the recommendations for the Saving Mothers Report. The operational managers made 15% of the respondents and district managers consisted 10% of the respondents thus evaluation of the strategy was done at all levels.

The years of experience were represented from 2 years (15%) though the majority (60%) had 5 years of experience or more, thus they were used to the running of the Health Department as far as the implementation of the recommendations for the Saving Mothers Report was concerned. All the respondents had the qualifications required to practice as midwives with the highest being the ones with Diploma in Nursing/Midwifery (50%), thus being the ones directly implementing the recommendations for the Saving Mothers Report and could evaluate the applicability, suitability and acceptability of the developed strategy. The respondents with Advanced Diploma in Midwifery were few (10%) which indicated the need to train more advanced midwives.

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6.6 Discussion of Validation Results

6.6.1 Suitability, Feasibility and Acceptability of the Developed Strategy

The results from validation checklists indicated that all the respondents (100%) agreed that if implemented, the developed strategy could be suitable, feasible and acceptable for implementation by both the mothers and the health providers. The respondents made inputs about the developed strategy which were also incorporated in the final strategy.

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Table 6.2: Validation results

QUESTION	YES	NO	COMMENT
2.1 Indicate with ticking a "yes" or "no" to the following questions about the suitability, feasibility and acceptability of the developed strategy			
Is the developed strategy acceptable to be implemented	20 (100%)	0 (0%)	
Do you think the developed strategy is suitable to effectively enhance the implementation of the Saving Mothers Report	19 (95%)	1 (5%)	There is shortage of staff
Do you think the developed strategy is suitable for implementation to effectively enhance the implementation of the Saving Mothers Report	20 (100%	0 (0%)	
2.2 Indicate by ticking a "yes" or "no" to the following questions on the developed strategy about the AGENT			
Can the developed strategy positively influence the availability of registered midwives	20 (100%	0 (0%)	
Can the developed strategy facilitate in the improvement of the number of midwives being trained for both basic and advanced midwifery	19 (95%)	1 (5%)	Political by in is needed
Can the developed strategy facilitate the improvement on the competency of registered midwives	18 (90%)	2 (10%)	Only if practical training is improved
Can the developed strategy enhance training of registered midwives on ESMOE	20 (100%)	0 (0%)	
Can the developed strategy enhance the conducting of drills in the facilities	20 (100%)	0 (0%)	
Can the developed strategy facilitate the improvement of knowledge on management of obstetric emergencies	18 (90%)	2 (10%)	Equipment for drills are not provided. Exclude non-nursing duties.
Can the developed strategy enhance the employment of operational managers on permanent posts	18 (90%)	2 (10%)	Political willingness is necessary
Can the developed strategy enhance the positive attitudes of registered midwives when attending to pregnant women	19 (95%)	1 (5%)	Only if the welfare of midwives are taken care of.

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Can the developed strategy enhance better understanding of HIV nature by the women	19 (95%)	1 (5%)	More staff and training re-enforcement is needed
Can the developed strategy enhance the implementation of health education to pregnant women on obstetric emergencies by the registered midwives during ANC	19 (95%)	1 (5%)	It will be difficult if there is no staff provided
2.3 Indicate by ticking a "yes" or "no" to the following questions on the developed strategy about the RECIPIENT	**YES**	**NO**	**COMMENTS**
Can the developed strategy enhance the increasing women's beliefs in Medical care and reduce their beliefs in traditional medicine	18 (90%)	2 (10%)	Only if positive results are visible from health facilities
Can the developed strategy enhance earlier booking of women for ANC	16 (80%)	4 (20%)	Women do not feel sick. Screening of women is needed
Can the developed strategy enhance the compliance to treatment by women during childbirth	17 (85%)	3 (15%)	The challenge will be mixing with traditional
2.4 Indicate by ticking a "yes" or "no" to the following questions on the developed strategy about the MEANS	**YES**	**NO**	**COMMENTS**
Can the developed strategy improve the availability of equipment	15 (75%)	5 (25%)	Political will and finance is a challenge
Can the developed strategy enhance the procurement to maintain availability of drugs	17 (85%)	3 (15%)	Political will and finance is a challenge
Can the developed strategy enhance the strengthening of the HIV counselling services	19 (95%)	1 (5%)	Emphasize client responsibility
Can the developed strategy enhance the support of staff in the maternity wards by the management	17 (85%)	3 (15%)	Open communication lines.
Can the developed strategy increase the utilization of health care facilities by the pregnant women	19 (95%)	1 (5%)	It will need convincing first
Can the developed strategy enhance team work amongst registered midwives	17 (85%)	3 (15%)	Performance system to be checked
Can the developed strategy improve communication between the PHC facilities and the hospitals	20 (100%)	0 (0%)	

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Can the developed strategy shorten the waiting periods of women at maternity health care facilities	17 (85%)	3 (15%)	Improve nurse-patient ratio
Can the developed strategy enhance the improvement of the health care infrastructures	17 (85%)	3 (15%)	The government do not look after infrastructure
Can the developed strategy improve the purchasing of the CTG machines and blood pressure machines for the health facilities	17 (85%)	3 (15%)	Political will and finance is a challenge
Can the developed strategy enhance the conducting of BANC audits at all maternity care health facilities	18 (90%)	2 (10%)	Audits needs a lot of time
2.5 Indicate by ticking a "yes" or "no" to the following questions on the developed strategy about the FRAMEWORK	**YES**	**NO**	**COMMENTS**
Can the developed strategy enhance a better co-ordination of services between the hospitals and the PHC facilities	17 (85%)	3 (15%)	Clear policies can make this possible
Can the developed strategy when implemented facilitate the reduction of ambulance response time	17 (85%)	3 (15%)	If implemented
Can the developed strategy enhance the reinforcement of the functional 24-hour maternity care services at the PHC facilities	19 (95%)	1 (5%)	Safety at PHC facilities to be improved
Can the developed strategy enhance the sustainability of the free maternity services at public health care facilities	19 (95%)	1 (5%)	Politics play an important role
Can the developed strategy overcome the weakness of women not honouring their follow-up appointments	17 (85%)	3 (15%)	The beliefs need to be changed first
Can the developed strategy enhance better co-ordination of many projects that are done by the Department	19 (95%)	1 (5%)	If managers for projects can be reduced
Can the developed strategy facilitate effective communication between the registered midwives and the Department of Health	17 (85%)	3 (15%)	The lines are not open
Can the developed strategy when implemented enhance the addition of appointment reminders on	20 (100%)	0 (0%)	

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Mom-Connect for pregnant women			
Can the developed strategy enhance the appointment of managers by qualifications and experience and not by political activity	18 (90%)	2 (10%)	Politicians are hungry for money
Can the developed strategy enhance the building and extension of tarred roads to the health facilities and communities	17 (85%)	3 (15%)	It is a huge financial implication and need collaboration
Can the developed strategy enhance the allocation of more registered midwives to the hospitals than PHC facilities not working 24-hours to curb work overload	17 (85%)	3 (15%)	There is overall staff shortage
2.6 Indicate by ticking a "yes" or "no" to the following questions on the developed strategy about the GOAL	**YES**	**NO**	**COMMENTS**
Can the developed strategy enhance the effective implementation of recommendations for the Saving Mothers Report	19 (95%)	1 (5%)	It needs money which seem to be a problem
Can adherence to the strategy lead to the reduction of maternal mortality rate	20 (100%)	0 (0%)	
2.7 Please provide your comments, inputs and additions on how the strategy can be improved.			
The summary from the responses indicated that: Teamwork is necessary between registered midwives. Drills need to be conducted regularly. Awareness campaign for women need to be done through media. Mastering of skills in managing pregnant women needs to be monitored. Infrastructure must be maintained. There should be debriefing of midwives after dealing with a maternal death. Staff: patient ratio need to be corrected. Non-nursing duties must be taken away from midwives. Patient responsibilities need to be emphasized.			

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The inputs which were brought forward by respondents included the following:

- Teamwork is necessary between registered midwives.
- Drills need to be conducted regularly.
- Awareness campaigns for women need to be done through media.
- Mastering of skills in managing pregnant women needs to be monitored.
- Infrastructure must be maintained.
- There should be debriefing of midwives after dealing with a maternal death.
- Staff:patient ratio need to be corrected.
- Non-nursing duties must be taken away from midwives.
- Patient responsibilities need to be emphasized.

6.6.2 The Agent

The validation results also indicated that all twenty (20) respondents agreed that the strategy could positively influence the availability of the registered midwives if it can be implemented, thus the shortage of staff will be addressed making it possible for the recommendations for the Saving Mothers Report to be effectively implemented. The respondents also indicated that staff: patient ratio should be attended to. The respondents also indicated that midwives should be relieved from non-nursing duties.

Stonehocker, Muruthi and Rayburn (2017) who pointed out the need for hiring more staff so that the maternal services can be better managed supported it. The results also indicated that majority of participants (95%) believed that the strategy could improve the number of registered midwives being trained for basic and advanced midwifery. The strategy was supported by Hennesy, Hicks and Koesno (2006) who

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indicated that the midwives needed to be trained and qualify in both basic and advanced maternity skills to ensure the survival of both mother and child. The majority of respondents (95%) indicated in the results that the strategy could improve the competency of midwives, while 100% of respondents indicated that the training of midwives on ESMOE could be improved through the developed strategy. All (100%) the respondents agreed that conduction of drills in the facilities could be enhanced by the developed strategy which would lead to improvement in the knowledge on management of obstetric emergencies as indicated by 90% of respondents. Naidoo (2017) supported this strategy when advocating for the regular workshops in the training for emergency obstetrical management.

The results indicated that 85% of respondents indicated that the strategy could enhance the employment of operational managers on permanent posts. Most of the respondents (95%) indicated that the strategy could enhance positive attitudes of midwives when attending to pregnant women thus encouraging women to attend ANC better. This strategy was supported by Akashi, Yamada, Huot, Kanal and Sugimoto (2014) in their study in Cambodia at a public hospital where they indicated that after the change of health providers' attitudes the attendance by the customers was improved and they were even willing to pay for the services.

Most of the respondents (95%) indicated that the strategy could enhance better understanding of the nature of HIV by the women, thus availing themselves to ANC earlier in their pregnancies for the implementation of recommendations for the Saving Mothers Report to be effective. 95% of participants agreed that the strategy could enhance the giving of health education on obstetric emergencies by the midwives to pregnant women during ANC, thus enabling women to consult the health facilities early when encountering the emergencies. The participants also made inputs with regard to educating the women through the media which was

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included in the strategy. Collaboration with other groups of interest in educating women was supported by (Essendi, Mills & Fotso, 2011). Ash and Flett (2016) supported this strategy as they indicated the need for the midwives to equip pregnant women with knowledge on obstetric emergencies so that they notice them early and report at health care facilities.

6.6.3 The Recipient

Most of the respondents (90%) indicated that the strategy could increase the women's believe in medical care and decrease their believe in traditional medicine and even suggested that the awareness could be conducted through radio, whereas 10% of respondents disagreed; 85% of respondents agreed that the strategy could enhance more women to organise money to attend ANC for high risk and follow-up as they would have understanding on reasons why, thus providing an opportunity for the recommendations for the Saving Mothers Report to be effectively implemented. 80% of respondents indicated that through the implementation of the developed strategy early booking for ANC by pregnant women could be enhanced. The results also indicated that 85% of participants indicated that the strategy could enhance compliance to treatment by women. The respondents also indicated that patient responsibilities needed to be emphasized. Muhwava (2014) supported this strategy as she indicated that women turns to book early and honour their appointments for ANC if they understand why they should attend.

6.6.4 The Means

Most of the respondents (90%) indicated that the strategy could improve the provision and maintenance of equipment, whist 10% of the respondents did not agree with that. 85% of respondents agreed that the strategy could enhance the availability of drugs at the facilities as it was indicated in the discussion of results that there are no drugs available at PHC facilities. Heinskanen, Ahonen, Karttunen,

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Kanrva and Timonen (2015) supported the strategy as the findings of their study conducted in Finland on medicine shortages indicated that the shortage put stress on the customers and the providers. On the point of the developed strategy strengthening the HIV counselling testing services 95% of respondents agreed with the notion; 85% of respondents indicated that the developed strategy could strengthen the support of staff by management in the maternity wards.

Sigurdardottir, Svavarsdottir and Juliusdottir (2015) supported this with the results from their study on family nursing hospital training and the outcome on job demands, control and support where it was found that health professionals with high work demand and high support from their administrators could cope better and even take extra programs. A majority of participants (95%) indicated that the developed strategy could increase the utilization of health care facilities by the pregnant women.

This was supported by the results of the study by Astari, Rustina, Pratomo and Prasetyo (2018) where they concluded that the efforts of the community health nurses improved the knowledge, attitudes and behavouir of pregnant high-risk women and increased the utilisation of health services; 85% of respondents agreed that if the developed strategy could be implemented it could enhance teamwork amongst midwives and enhance the improvement of the health care facilities infrastructures.

All the respondents (100%) indicated that the developed strategy could improve communication between the PHC facilities and the hospitals. The developed strategy was believed to could shorten the waiting periods of women at maternity health care facilities and enhance the conduction of BANC audits by most of the participants (90%). Esposito and Canton (2014) supported this as he indicated

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clinical audits as important for identification of gaps and implementation of remedial action in patient care. Respondents who agreed that the developed strategy could come up with the improvement of the purchasing of CTG machines and blood pressure machines for the health services are 80%.

6.6.5 The Framework

The results for the validation of the developed strategy as far as the framework is concerned also showed that the majority of the respondents (80%) indicated that the developed strategy could enhance a better co-ordination of services between the hospitals and the PHC facilities, reduce the ambulance response time and help women honour their follow-up appointments. The same percentage of participants agreed that the developed strategy could enhance the building of tarred roads connecting communities to health facilities and enhance the allocation of more registered midwives to hospitals than to PHC to curb the work overload.

The study conducted by Ferrer, Boelle, Salomon, Miliani, Heriteau, Astagneau and Temime (2014) indicated the need to hire more staff to the intensive care unit to curb the overload that was experienced. Most of the respondents (90%) indicated that the developed strategy could do away with the appointment of managers and directors by how active they are politically and could enhance the addition of appointment reminders on mom-connect for pregnant women. The appointment of the appropriate qualified workforce and directors as per strategic plan of the country was emphasised (Milicevic, Vasic, Edwards, Sanchez & Fellows, 2018).

Longman, Kornelsen, Pilcher, Kildea, Kruske, Grzybowski, Robin, Rolfe, Donoghue, Morgan and Barclay (2017) in their study found that lack of quality leadership in health services was a barrier for attainment of the strategic intent. Almost all the respondents (95%) indicated that the developed strategy could enhance

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reinforcement of the 24 hour maternity care services at the PHC facilities, the sustainability of the free maternity services at public health care facilities and better co-ordination of projects by the department of Health. In support of this woman-centred 24-hour rural free maternity services at a local level was recommended (Milicevic *et al.*, 2017). The above-mentioned results indicate that the developed strategy can enhance the effective implementation of recommendations for the Saving Mothers Report in the maternity units if implemented.

6.6.6 The Goal

All the respondents (100%) indicated that the developed strategy could lead to the reduction of maternal mortality rate. Most of the respondents (95%) agreed that the developed strategy could enhance the implementation of recommendations for the Saving Mothers Report. If the recommendations for the Saving Mothers Report can be implemented, the implication, which will indicate its effectiveness, will be the reduction of maternal mortality rate.

6.7 Summary

Chapter 6 dealt with validation of the developed strategy which included twenty participants from two health districts. The respondents also took part in the main study. The checklist was used as a tool for the validation of the developed strategy. The validation results indicated that the respondents were in support of the developed strategy as being appropriate, acceptable, suitable and feasible in enhancing the effective implementation of recommendations for the Saving Mothers Report. Respondents gave inputs with regard to the developed strategy which were incorporated into the study by the researcher. Chapter 7 deals with the summary, recommendations, limitations and conclusions of the study.

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SUMMARY, RECOMMENDATIONS, LIMITATIONS AND CONCLUSIONS

7.1 Introduction

The previous detailed the process followed to validate the developed strategy. Data for validation was collected from the MHMCs, operational managers and registered midwives in the Capricorn and Waterberg districts. One hospital and two clinics per district were selected for validation purposes.

A total of 20 respondents were used for validation of the developed strategy. The results of the collected data indicated limited gaps about the developed strategy, there were inputs that were forwarded by the participants in the responds on the checklists. This chapter discussed the conclusions and recommendations of this study.

7.2 Purpose of the Study

The purpose of this study was to develop a strategy to enhance the effective implementation of the recommendations of the Saving Mothers Report in maternity units of Limpopo Province, South Africa.

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7.3 Summary

7.3.1 Study Objectives

The study was conducted being guided by a mixed method objectives which were:

7.3.1.1 Phase 1a: Qualitative Research Objectives

- Identify the interventions by maternal health district managers to facilitate the implementation of recommendations on the Saving Mothers Report in maternity units of Limpopo Province, South Africa.
- Explore the challenges of registered midwives in the effective implementation of recommendations on the Saving Mothers Report in the maternity units of Limpopo Province, South Africa.

7.3.1.2 Phase 1b: Quantitative Research Objectives

- Explore views and perceptions of patients on maternal health care interventions provided at health facilities of Limpopo Province, South Africa.

The results of Phase 1a and 1b objectives were discussed in Chapter 4. Four main themes with sub-themes emerged from qualitative data analysis. The qualitative results were discussed and supported by the quantitative results though some of the themes did not have quantitative support. Ernestine Wiedenbach's Prescriptive Theory was integrated into the discussions.

❖ Theme 1: Challenges Related to Implementation of the Recommendations of Saving Mothers Report in Maternity Units

The registered midwives indicated that they encountered challenges in regard to of the recommendations for the Saving Mothers Report. The challenges indicated included lack of material resource, shortage of midwives which led to work overload due to increased admissions. The challenges caused poor management of pregnant

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women leading to complications. There were also challenges as far as the referral system at multiple levels was concerned. Women were reported to have no cooperation, booking late for ANC leading to avoidable complications and hindering the effective implementation of recommendations for the Saving Mothers Report.

- Theme 2: Implementation of Training Programmes and In-Service Education for Health Care Professionals

The results indicated that registered midwives reported that the existence and implementation of training programs and in-service training for the health care professionals. There were insufficient training for programmes like ESMOE, BANC in other hospitals for different reasons which included shortage of staff. The few midwives that were trained found it problematic to train others. The registered needed to be trained in ESMOE so that obstetric emergencies may be better managed thus saving the lives of pregnant women.

- Theme 3: Knowledge on Implementing Recommendations for the Saving Mothers Report When Providing Care in Maternity Units

It was indicated that the newly qualified health professionals seemed to have no sufficient knowledge, confidence and competence in the implementation of recommendations for the Saving Mothers Report during the provision of maternal care. The results indicated that in-service training was offered to improve the knowledge and skills of health professionals.

- Theme 4: Suggestions Related to Effective Implementation of Recommendations for the Saving Mothers Report in Maternity Units

The registered midwives came up with suggestion on how the recommendations can be effectively implemented. It was suggested that ESMOE can be prioritized by providing more staff to curb shortage, and that BANC audits can be improved by including them in the operational manager's performance management agreement.

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Active management of third stage of labour was recommended for strengthening of PNC, thus preventing postpartum haemorrhage. The results from the analysed data of the study gave rise to phase 2 of the objectives of the study which constituted the development of the strategy.

7.3.1.3 Phase 2a: Strategy Development

- Develop the strategy to enhance the effective implementation of recommendations on the Saving Mothers Report by health workers in maternity units of Limpopo Province, South Africa.

The researcher developed the strategy to enhance the effective implementation of recommendations on the Saving Mothers Report by health workers in maternity units of Limpopo Province, South Africa in order to assist with the reduction of maternal mortality. The strategy was developed using the Strategy Development Process in conjunction with Ernestine Wiedenbachs' Prescriptive theory (Guillot, 2013; George, 2011). The steps in the strategy development process were followed. The first step was Analyse which correlate with realities in Ernestine Wiedenbach's Prescriptive Theory. The realities and how they affect the implementation of recommendations were analysed. In the second step of the process, Decide the purpose was identified and the matrix was developed in mapping how to go about Designing the Strategy, which refers to the prescripts according to Ernestine Wiedenbach's Prescriptive Theory.

The researcher used the realities in Ernestine Wiedenbach's Prescriptive Theory. The researcher identified the internal and external factors which affect the implementation of the recommendations for the Saving Mothers Report associated with the agent, the recipient, the means, the framework and the goal. The factors as positives and negatives were categorised into strengths, weaknesses, opportunities

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and threats and BOEM was used to develop the strategy and it included building on strengths, overcoming the weaknesses, exploring the opportunities and mitigating the threats. The researcher undertook validation of the developed strategy. The last step of the strategy development process which is Act, was not done in this study, only validation was done.

7.3.1.4 Phase 2b: Validation of the Developed Strategy

- Validate the strategy to enhance the effective implementation of recommendations on the Saving Mothers Report by the health workers in the maternity units of the Limpopo Province, South Africa.

The developed strategy to enhance the effective implementation of recommendations on Saving Mothers Report was validated in two districts of the Limpopo Province, Capricorn and Waterberg. Those hospitals and clinics from each district used during the main study were selected. Twenty (20) respondents who comprised of two (2) MHCMs, six (6) operational managers and twelve (12) registered midwives were selected. The respondents were given checklists to go through for a week before the researcher made an appointment to collect the checklists. The results of validation indicated that the respondents agree with the researcher that the developed strategy was acceptable, feasible, suitable and applicable to the maternal health care services. The results also indicated that if the developed strategy could be implemented as recommended, it can enhance the effective implementation of the recommendations for the Saving Mothers Report thus leading to the reduction of maternal mortality rate in Limpopo Province.

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7.4 Recommendations

7.4.1 Recommendations for Registered Midwives

- Collaborate with other stakeholders like lay counsellors and home-based care givers to educate women on the dangers of using traditional medicines and spiritual healers only to lower the viral load when HIV positive.
- Create awareness platforms to inform all pregnant women about Mom-Connect and register them.
- Suggest that Mom-Connect to add content on obstetric emergencies and family planning to information provided to pregnant women so that they may space their children to avoid complications and report early at health care facilities when having problems.
- Midwives to implement Batho-Pele principles and display positive attitudes by warmly receiving them and involving them women when caring for them. It is believed this will would encourage women to present themselves to health facilities, to access all information so that recommendations for the Saving Mothers Report may be implemented on time.
- To study further on maternal health matters so that they may keep up to date with new developments, thus improving their competency.

7.4.2 Recommendations for Operational Managers

- Advise the operational managers to work together with chiefs and ward counsellors to educate women on safe practices with regard to maternal health issues and change the women's beliefs and reliance on traditional medicine and spiritual healers.

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- Encourage the operational managers to monitor the midwives under their supervision to ensure that recommendations for the Saving Mothers Report are implemented during maternal health care provision.
- Ensure that staff under their supervision are trained on ESMOE and monitors their competence.
- Advise them to include conduct and include BANC audits at their facilities to ensure that midwives implement the recommendations for the Saving Mothers Report in their practice.
- Help them draw schedule for regular drills to enhance competence of staff in managing the obstetric emergencies to save lives and reduce maternal mortality rate.
- Encourage them to do regular audits on records so that identify gaps in maternal services rendered at their facilities.
- Encourage to give support talks to the midwives in everyday practice to keep them motivated in their work.
- Advise them to motivate for debriefing sessions for staff after dealing with a maternal death.

7.4.3 Recommendations for District MHCMs

- Conduct unscheduled visits to the health facilities for BANC audits so that the midwives are found practicing what they do every day.
- Schedule regular support visits to health facilities so that they prepare what they would like to be helped with.
- Keep open communication between them and the health facilities so that staff at facilities feel supported.

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- Ensure that debriefing services are available to staff when needed.
- Motivate for additional midwives at the facilities according to the workload handled at a facility.
- Integrate departmental projects in such a way that operational mangers and registered midwives will have time to implement recommendations for the Saving Mothers Report as directed.
- Ensure that health facilities have enough drugs as required.
- Motivate for purchasing of additional ambulances and to dedicate others for maternity services only.
- Motivate for upgrading of security services in all PHC facilities.
- Motivate for upgrading of infrastructure of health facilities and building of maternity homes for those women staying far from facilities with bad roads infrastructure.
- Ensure that health facilities have equipment and supplies for the effective implementation of recommendations for the Saving Mothers Report.

7.4.4 Recommendations for the Provincial Department of Health

- Budget for training of midwives available and identify qualifying candidates with interest in midwifery for training.
- Train more midwives for both basic and advanced midwifery to address shortage of human resources. Approve that enrolled nurses can train as midwives to improve number of midwives as soon as possible.
- Advertise, hire and place operational managers on permanent posts so that they may be empowered to take decisions and be accountable for their units.

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- Provide incentives for operational managers on acting posts to motivate them to be committed to their work.
- Purchase more ambulances for the maternity services to reduce the response time.
- Make provision for admission of pregnant women staying far from health facilities just before due dates.
- Include conduction of drills in the performance management agreement for operational mangers.
- Emphasize the utilization of maternity guidelines in the training of doctors and midwives.

7.4.5 Recommendations for the National Department of Health

- Make an addition of reminder for appointment for follow-up for women on mom-connect.
- Make budget available for purchasing of simulation equipment for regular practicing of drills for ESMOE for competence of midwives.
- Provide computers to all health facilities and upload recommendations and maternity guidelines electronically to be readily accessible to midwives.
- Introduce electronic record keeping system for maternity wards so that women's information can be readily available and send to other health facilities.

A copy of the study will provided to the provincial office of Department of Health for them to communicate it to the NDoH, district managers and registered midwives at health facilities so that all can be aware of the developed strategy.

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7.4.6 Recommendations for Further Research

This study was conducted to identify interventions by district maternal health care managers in facilitating the implementation of recommendations for the Saving Mothers Report, explore challenges faced by registered midwives in the implementation of recommendations for the Saving Mothers Report and develop the strategy to enhance effective implementation of Saving Mothers Report.

Further research needs to be conducted on:

- Pregnant women's knowledge on their responsibilities during pregnancy.
- Women's behaviour as contributory factor to maternal mortality.
- Perceptions of pregnant women on their safety during pregnancy.
- The response time for the EMS in maternity services.

7.5 Limitations of the Study

The study included the MHCMs from all districts though the MHCM from Vhembe district did not take part in the study. The study also included registered midwives and operational managers from one (1) hospital per district, and postnatal mothers from two (2) clinics per district. Permission acquiring was a challenge as the researcher had to get permission from the province, each district and each hospital before data collection. A lot of time was required for data collection as most of the time registered midwives were busy due to shortage when the researcher went for data collection. The recommendations will be forwarded to the provincial office, although there are also recommendations for the national office.

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7.6 Conclusions

The purpose of this study was to develop the strategy for the effective implementation of the Saving Mothers Report as the researcher identified a gap that regardless of the recommendations for the Saving Mothers being started in 1999 and being reviewed every three years, the maternal mortality rate did not reduce significantly. The objectives of the study included to identify the interventions by district MHCMs in facilitating the implementation of the recommendations for the Saving Mothers Report, exploring the challenges faced by registered midwives in the implementation of recommendations for the Saving Mothers Report, exploring the views and perceptions of women on care they receive during pregnancy, labour and postnatal period and to develop the strategy for the effective implementation of recommendations for the Saving Mothers Report. Mixed methodology was used in the study. Qualitative discussion of findings was done, supported by quantitative strand of results.

The strategy was developed using the strategy development process contextualised within Ernestine Wiedenbach's Prescriptive Theory as the theoretical framework of the study. Validation of the study was done with twenty participants who responded to a checklist. The results of the validation indicated that the participants agreed that the developed strategy was acceptable, feasible, suitable and applicable to the midwifery practice and could enhance the effective implementation of recommendations for the Saving Mothers Report, thus reducing the maternal mortality rate.

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ETHICS CLEARANCE CERTIFICATE

RESEARCH AND INNOVATION
OFFICE OF THE DIRECTOR

NAME OF RESEARCHER/INVESTIGATOR:
Ms KE Mothapo
Student No: 11618168

PROJECT TITLE: **Enhancing Effective of Recommendations for Saving Mothers' Report in Maternity Units of Limpopo Province, South Africa.**

PROJECT NO: **SHS/16/PDC/01/2804**

SUPERVISORS/ CO-RESEARCHERS/ CO-INVESTIGATORS

NAME	INSTITUTION & DEPARTMENT	ROLE
Prof MS Maputle	University of Venda	Supervisor
Dr HN Shiluvane	University of Venda	Co-Supervisor
Prof L Netshikweta	University of Venda	Co-Supervisor
Ms KE Mothapo	University of Venda	Investigator - Student

ISSUED BY:
UNIVERSITY OF VENDA, RESEARCH ETHICS COMMITTEE

Date Considered: April 2016
Decision by Ethical Clearance Committee Granted
Signature of Chairperson of the Committee:
Name of the Chairperson of the Committee: Prof. G.E. Ekosse

UNIVERSITY OF VENDA
DIRECTOR
RESEARCH AND INNOVATION
2016 -05- 03
Private Bag X5050
Thohoyandou 0950

UNIVERSITY OF VENDA
DIRECTOR
RESEARCH AND INNOVATION
2016 -05- 03

University of Venda
PRIVATE BAG X5050, THOHOYANDOU, 0950, LIMPOPO PROVINCE, SOUTH AFRICA
TELEPHONE: (015) 962 8304/8313 FAX (015) 962 9050
"A quality driven financially sustainable, rural-based Comprehensive University"

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ANNEXURE B

REQUEST TO LIMPOPO PROVINCE DEPARTMENT OF HEALTH TO CONDUCT THE STUDY

Box 267
Tholongwe
0734

29th June 2015

The Director General
Dept of Health and Social Development
Polokwane
0700

RE: REQUEST FOR PERMISSION TO CONDUCT A STUDY

Sir/Madam

I, **Mothapo Kobela Elizabeth**, am presently doing a PhD degree at the University of Venda. I am presently engaged in a research study entitled. "**Strategy to enhance the effective implementation of Saving Mothers' recommendations in maternity units of Limpopo Province, South Africa**". I intend to conduct this study at the hospitals of Limpopo Province in different districts. The study is conducted under the promotion of Prof M.S. Maputle and Dr N.H. Shilubane. The study has been approved by the **Ethics Committee of the School of Health Sciences, University of Venda**. The purpose of this study is to develop an effective strategy to enhance the implementation of the Saving Mothers Report recommendations in the Limpopo Province. Ethical considerations will be adhered to.

Hoping that the request will be favourably considered.

Yours faithfully

Mothapo Kobela (Mrs)

Signature of the researcher: ..... **Date:** .....

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ANNEXURE C

APPROVAL FROM THE LIMPOPO PROVINCE DEPARTMENT OF HEALTH TO CONDUCT THE STUDY

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH

Enquiries: Latif Shamila

Ref:4/2/2

Mothapo KE
UNIVERSITY OF VENDA

Greetings,

RE: Enhancing effective of recommendations for Saving Mothers' Report in Maternity Units of Limpopo Province, South Africa

The above matter refers.

1. Permission to conduct the above mentioned study is hereby granted.
2. Kindly be informed that:-
   - Research must be loaded on the NHRD site (http://nhrd.hst.org.za) by the researcher.
   - Further arrangement should be made with the targeted institutions, after consultation with the District Executive Manager.
   - In the course of your study there should be no action that disrupts the services.
   - After completion of the study, it is mandatory that the findings should be submitted to the Department to serve as a resource.
   - The researcher should be prepared to assist in the interpretation and implementation of the study recommendation where possible.
   - The above approval is valid for a 3 year period.
   - If the proposal has been amended, a new approval should be sought from the Department of Health.
   - Kindly note, that the Department can withdraw the approval at any time.

Your cooperation will be highly appreciated.

Head of Department

Date 30/05/2016

18 College Street, Polokwane, 0700, Private Bag x9302, POLOLKWANE, 0700
Tel: (015) 293 6000, Fax: (015) 293 6211/20 Website: http/www.limpopo.gov.za

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ANNEXURE E

REQUEST TO CHIEF COMMUNITY LIAISON OFFICERS (CCLOS) OF LIMPOPO PROVINCE HOSPITALS TO CONDUCT THE STUDY

The Chief Community Liaison Officer

Hospitals of Limpopo Province

RE: REQUEST FOR PERMISSION TO CONDUCT A STUDY

Sir/Madam

I, **Mothapo Kobela Elizabeth**, am presently doing a PhD degree at the University of Venda. I am presently engaged in a research study entitled. "**Strategy to enhance the effective implementation of Saving Mothers' recommendations in maternity units of Limpopo Province, South Africa**". I intend to conduct this study at your hospital. The study is conducted under the promotion of Prof M.S. Maputle and Dr N.H. Shilubane. The study has been approved by the **Ethics Committee of the School of Health Sciences, University of Venda**. The purpose of this study is to develop an effective strategy to enhance the implementation of the Saving Mothers Report recommendations in the Limpopo Province. Ethical considerations will be adhered to.

Hoping that the request will be favourably considered.

Yours faithfully

Mothapo Kobela (Mrs)

Signature of the researcher: ..... **Date**: .....

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ANNEXURE F

APPROVAL FROM THE DEPARTMENT OF HEALTH, CAPRICORN DISTRICT, TO CONDUCT THE STUDY

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH

Ref:4/2/2

Enquiries: Latif Shamila

Mothapo KE
UNIVERSITY OF VENDA

Greetings,

RE: Enhancing effective of recommendations for Saving Mothers' Report in Maternity Units of Limpopo Province, South Africa

The above matter refers.

1. Permission to conduct the above mentioned study is hereby granted.
2. Kindly be informed that:-
   - Research must be loaded on the NHRD site (http://nhrd.hst.org.za) by the researcher.
   - Further arrangement should be made with the targeted institutions, after consultation with the District Executive Manager.
   - In the course of your study there should be no action that disrupts the services.
   - After completion of the study, it is mandatory that the findings should be submitted to the Department to serve as a resource.
   - The researcher should be prepared to assist in the interpretation and implementation of the study recommendation where possible.
   - The above approval is valid for a 3 year period.
   - If the proposal has been amended, a new approval should be sought from the Department of Health.
   - Kindly note, that the Department can withdraw the approval at any time.

Your cooperation will be highly appreciated.

Head of Department

Date 30/05/2016

18 College Street, Polokwane, 0700, Private Bag x9302, POLOKWANE, 0700
Tel: (015) 293 6000, Fax: (015) 293 6211/20 Website: http/www.limpopo.gov.za

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ANNEXURE G

APPROVAL FROM THE DEPARTMENT OF HEALTH, WATERBERG DISTRICT, TO CONDUCT THE STUDY

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH
WATERBERG DISTRICT

REF: 4/3/3
ENQ: NKGODI D.R (PA TO THE DISTRICT EXECUTIVE MANAGER)
CELL NO: 079 791 4966.
DATE: 24/11/2016

TO: Ms. MOTHAPO K.E.

RE: PERMISSION TO CONDUCT RESEARCH: YOURSELF.

The above bear's reference:-

1. The office of the Acting District Executive Manager, hereby confirms receipt of your request to conduct a research on enhancing effective implementation of recommendations for Saving Mother's Report in Maternity Units of Limpopo Province, South Africa
2. Permission is hereby grated as per approval by the HOD.
3. You are further requested to notify this office on when you are going to start with the research and make sure that there is no action that disturbs service delivery.

Your support and cooperation in terms of the above will be highly appreciated.

ACTING DISTRICT EXECUTIVE MANAGER
WATERBERG DISTRICT

24/11/2016
DATE

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ANNEXURE H

APPROVAL FROM THE DEPARTMENT OF HEALTH, VHEMBE DISTRICT, TO CONDUCT THE STUDY

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OFHEALTH
VHEMBE DISTRICT

Ref: S5/6
Enq: Muvari MME
Date: 03 November 2016

Dear Sir/Madam

PERMISSION TO CONDUCT A STUDY: MOTHAPO K.E

1. The above matter bears reference
2. Your letter received on the 02/11/2016 requesting for permission to conduct a study is hereby acknowledged
3. The District has no objection to your request as the Province has already granted permission through the HOD.
4. Permission is therefore granted for the study to be conducted within Vhembe.
5. You are however advised to make the necessary arrangements with the facility concerned.
6. Wishing you success in your studies

.....
DISTRICT CHIEF DIRECTOR

04/11/2016
DATE

Private Bag X5009 THOHOVANDOU 0950
OLD parliamentary Building Tel (015) 962 1000 (Health) (015) 962 4958 (Social Dev) Fax (015) 962 2274/4623
Old Parliamentary Building Tel: (015) 962 1848, (015) 962 1852, (015) 962 1754, (015) 962 1001/2/3/4/5/6 Fax (015) 962 2373, (015) 962 227

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ANNEXURE I

APPROVAL FROM THE DEPARTMENT OF HEALTH, SEKHUKHUNE DISTRICT, TO CONDUCT THE STUDY

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH
SEKHUKHUNE DISTRICT

REF : 4/2/2
ENQ : Mashiane P.N
Tel : 015 633 2352

DATE : 05 December 2016

TO : ST. RITAS HOSPITAL
MOGANYAKA CLINIC
MARBLE HALL CLINIC

FROM: HUMAN RESOURCE UTILIZATION AND CAPACITY DEVELOPMENT

SUBJECT: APPROVAL FOR PERMISSION TO CONDUCT RESEARCH AT ST. RITAS HOSPITAL, MOGANYAKA CLINIC AND MARBLE HALL CLINIC

1. The above matter bears reference.
2. The Head of Department has granted approval for Mothapo K.E to conduct research in your institution. Mothapo K.E is doing PHD degree at the University of Venda. The tittle of her research is **"Enhancing the effective implementation of Recommendations for Saving Mothers' Report in Maternity units of Limpopo Province, South Africa".**
3. The student will present herself, scope and schedule of her work in your institution during the assumption of research conduct.
4. Hope the matter is clear and understandable.

08/12/2016
Date

District Executive Manager
Mrs. Maepa M.L

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ANNEXURE J

APPROVAL FROM THE DEPARTMENT OF HEALTH, MOPANE DISTRICT, TO CONDUCT THE STUDY

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH
MOPANI DISTRICT

Ref: S4/2/2
Enq: Mohatli IE
Tel: 015 811 6543

To Mrs Mothapo K.E
BOX 267
THOLONGWE
0734

Re: PERMISSION TO CONDUCT RESEARCH IN MOPANI HEALTH FACILITIES: YOURSELF

1. The matter cited above bears reference
2. This serves to respond to the request submitted to research on the topic: **"Enhancing effective implementation of recommendations for saving mothers' report in maternity units of Limpopo Province, South Africa"**.
3. It is with pleasure to inform you about the decision to permit you to conduct research in the facilities within Mopani District.
4. You will be required to furnish hospital and PHC authorities with this letter for purposes of access and assistance.
5. You are further advised to observe ethical standards necessary to keep the integrity of the facilities.
6. The Mopani District wishes you well in your endeavour to generate knowledge.

District Executive Manager
Date: 22/03/2017

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ANNEXURE K

APPROVAL FROM THE DEPARTMENT OF HEALTH, MANKWENG HOSPITAL, TO CONDUCT THE STUDY

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH

MANKWENG HOSPITAL

Ref: S5/3/1/2

Enq: Lehlokoa M.J.

From: HR Utilization and Capacity Development

Date : 31 August 2016

PERMISSION TO CONDUCT RESEARCH AT MANKWENG HOSPITAL: MOTHAPO K.E

1. The above matter has reference.
2. This is to confirm that Mothapo K.E has been granted permission to conduct research on **"ENHANCING EFFECTIVE IMPLEMENTATION OF RECOMMENDATIONS FOR SAVING MOTHERS REPORT IN MATERNITY UNITS OF LIMPOPO PROVINCE, SOUTH AFRICA** at Mankweng Hospital".
3. She will be conducting research as from September 2016
4. Attached please find her approval letter from Provincial Office, Research ethics clearance certificate and Research Proposal.

Thanking you in advance

Chief Executive Officer

01/09/2016
Date

Department Of Health
Mankweng Hospital
Reciever NKIWE
2016 -09- 01
Office No. 108
Tel: 015 286 1018
LIMPOPO PROVINCE

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ANNEXURE L

APPROVAL FROM THE DEPARTMENT OF HEALTH, KGAPANE HOSPITAL, TO CONDUCT THE STUDY

Johannes.Selatlha <Johannes.Selatlha@dhsd.limpopo.gov.za> 11/29/16

to me

Dear Mrs. Kobela,

Permission is hereby granted for you to conduct a study in our Maternity unit as requested.

You can come on any day(s) of your choice except on Thursday: which is our very busy High Risk clinic day.

Please ensure confidentiality of records, and do not interfere with service delivery during the conduct of your study.

I apologize for delayed response to your request.

Kind Regards,

Dr JM Selatlha
Senior Clinical Manager & Acting CEO, Kgapane Hospital
Office Tel. 015 328 7801
Switchboard: 015 328 7800
Fax: 015 328 4248
Cell: 083 626 8605
Fax2Mail: 086 215 4943

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ANNEXURE M

APPROVAL FROM THE DEPARTMENT OF HEALTH, TSHILIDZINI HOSPITAL, TO CONDUCT THE STUDY

TSHILIDZINI HOSPITAL ETHICS COMMITTEE

Memorandum of understanding

Tshilidzini Hospital Ethics Committee with MOTHAPO KE at their meeting resolved to sign a Memorandum of Understanding after the two parties have agreed on the following information:

1. Reasons for making a research at Tshilidzini hospital.
My study involves all five districts of the Limpopo Province. Tshilidzini hospital is one of the big hospital in Vhembe district.
2. What will be the benefit of the entire hospital community out of your findings?
The strategy will be developed to enhance the implementation of Saving Mothers recomendations, thus decreasing the maternal death rate
3. Who to meet in conducting your research
The professional nurses working in maternity units.
4. What do you do with your findings
Develop a strategy for improvement and inform the department of Health Limpopo province for improvement of services.
5. We will require the hard copy of your research
It will be made available.
6. We do not anticipate any information to be divulged to all types of media without the knowledge of the Ethics Committee and Hospital Board.
7. Memorandum of understanding should be signed by both parties.

Signed by: [signature] 2016-11-02
[signature] 2016/11/02.

02/11/2016
Date:

MOTHAPO KE. [signature]
Researcher

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ANNEXURE N

APPROVAL FROM THE DEPARTMENT OF HEALTH, VOORTREKKER HOSPITAL, TO CONDUCT THE STUDY

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH
WATERBERG DISTRICT
VOORTREKKER HOSPITAL

Ref: S5/3/1/2

Enq: Seema M.A

Date: 30 August 2016

PERMISSION TO CONDUCT RESEARCH AT VOORTREKKER HOSPITAL: MOTHAPO K.E

1. The above matter has reference.
2. This is to confirm that Mathapo K.E has been granted permission to conduct research on **" ENHANCING EFFECTIVE IMPLEMENTATION OF RECOMENDATIONS FOR SAVING MOTHERS REPORT IN MATERNITY UNITS OF LIMPOPO PROVINCE, SOUTH AFRICA"** at Voortrekker Hospital.
3. She will be conducting research as from September 2016.
4. Attached please find her approval letter from provincial office, research ethics clearance certificate and research proposal

Thank you in advance

Chief Executive Officer — Date: 31/08/2016

LIMPOPO PROVINCIAL GOVERMENT
VOORTREKKER HOSPITAL
DEPARTMENT OF HEALTH
31 AUG 2016
PRIVATE BAG X2485 MOKOPANE 0600
TEL: 015 409 1700 FAX: 015 409 1857
CEO'S OFFICE

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ANNEXURE O

APPROVAL FROM THE DEPARTMENT OF HEALTH, JANE FURSE HOSPITAL, TO CONDUCT THE STUDY

2017/2/14
Maternity ward
Please accomodate
as PC + attached
approval from
provincial
office

BOX 267
THOLONGWE
0734
06TH FEBRUARY 2017

THE CHIEF EXECUTIVE OFFICER

JANE FURSE HOSPITAL

RE: REQUEST FOR PERMISSION TO CONDUCT A STUDY

Sir/Madam

I, Mothapo Kobela Elizabeth presently doing PhD degree at the University of Venda. I am presently engaged in a research study entitled. **"Enhancing the effective implementation of Recommendations for Saving Mothers' Report in Maternity Units of Limpopo province, South Africa"**. I am intending to conduct this study at your hospital. The study is conducted under the promotion of Prof MS Maputle and Dr NH. Shilubane. The study has been approved by the Ethics Committee of the School of Health Science, University of Venda. The purpose of this study is to develop the effective strategy to enhance the implementation of Saving Mothers recommendations. Ethical considerations will be adhered to.

Attached please find the provincial approval and the district approval.

Hoping that the request will be favourably considered.

Yours faithfully

MOTHAPO KOBELA (MRS)

Telephone number: 0836201856

Email: kobelamothapo626@gmail.com

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ANNEXURE P

INFORMATION SHEET

Introduction and background

Good Day

My name is Kobela Elizabeth Mothapo. I am a student at the University of Venda, conducting the study "Enhancing the effective implementation of recommendations for the Saving Mothers Report in maternity units of Limpopo Province, South Africa" as partial fulfilment of the requirements of my Doctor of Philosophy (HEALTH).

The main aim of this study is to develop a strategy to enhance the effective implementation of Saving Mothers' recommendations maternity units of Limpopo Province, South Africa. I am inviting you to participate in the study.

The interview will last for about an hour. If you agree to take part, I will ask you a question in relation to the Saving Mothers' recommendations. We will have a conversation about the implementation of the Saving Mothers' recommendations. My role as a researcher is to listen and understand your point of view, and not to pass judgement. If you fill uncomfortable with answering some of the questions, feel free to express your discomfort; you will not be penalised.

Confidentiality

The information that you give will be kept confidential. No names will be used when transcribing the interviews. I undertake that all information provided by you will be used only for the purpose of the study. Everything that you will say will be treated as private and confidential and no-one will know you answered the question apart from the researcher. The answers given by participants will be combined and analysed according to common themes and categories and the combined information will be in the form of a report.

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Consent

Ethical clearance had been obtained from the School of Health Sciences Higher Degree Committee, University of Venda Higher Degree Committee, and University of Venda Ethics Committee. Permission to carry out the study was sought from the Limpopo Provincial Department of Health, as well as the Hospital management. I will request you to sign an informed consent form that indicates your consent to participate in the study and to record the interview. If you are willing to consent, the researcher will appreciate your participation and the information you will give.

Benefits and Risks of Participation

Please note that participation in this study is voluntary and there will be no direct benefits to anyone who participates. There will be no penalties if you want to withdraw from the study or if you do not want to answer some of the questions if they are violating your rights. However, I would really appreciate it if you share your thoughts and feelings in relation to the questions asked.

Recording the Interview

I would like to ask permission to audio record the interview because it is not possible to write down all your answers quickly enough to capture all the important information. I might misrepresent your responses to some of the questions that you will be asked if a recording is not done. It is important for you to know that the digital voice data and notes will remain confidential and your identity will not be disclosed. I am only interested in your honest responses to the questions.

Recordings and digital data of the interview will be listened to only by the researcher and the co-coder and will bear no names of the interviewees. The information will be analysed and organised into a report according to themes. The recordings and digital data files will be kept in a locked safe. In accordance with the national requirements the voice recordings and digital data will be destroyed two years after the publication of the research findings.

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Contact Details

I will be happy to answer any question or to offer clarity about any issues you may have during this study. This study had been approved by the Research Ethics Committee of the University of Venda. If you have any questions about your rights or any aspect of the study or further questions about the research or interview, please contact the researcher.

Mothapo K.E.

Cell: 0836201856

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ANNEXURE Q

CONSENT FORM

I,....., consent to participate in the research project on the "**Strategy to enhance the implementation of Saving Mothers' recommendations maternity units of Limpopo Province, South Africa**". The full explanation about the research was given to me, including the benefits of the study. I understand that my confidentiality and privacy will be taken care of by the researcher. I also understand that the information collected from me will only be shared among people concerned with the study. I understand that I can terminate my participation in the study at any time without any intimidation. I understand that there is no personal gain or reward that will be given to me by the researcher for participating in the study. I confirm that I was not forced or coerced into participating in the study, but doing it on my own free will.

Participant's Signature: ..... **Date:** .....

Researcher's Signature: ..... **Date:** .....

Researcher's contact: 0836201856

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ANNEXURE R

QUESTIONNAIRE FOR PATIENTS

ID						
A.	**DEMOGRAPHIC INFORMATION**					
A1	**Age (years)**	<20		**A2**	**Marital Status**	Single
		20-29				Married
		30-39				Widowed
		≥40				Divorced
A3	**Parity: How many times did you get pregnant including the present one?**	1		**A4**		Employed
		2				Unemployed
		≥3				
B.	**HEALTH SEEKING BEHAVIOUR**					
B1	**How far do you stay away from the health facility?**					<5km
						5-10km
						>10km
B2	**When you felt sick during pregnancy what did you do?**					Wait & see if it gets worse
						Seek medical care
						Consult elders
						Consult traditional healer

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C.	PERCEPTION OF MATERNAL CARE RENDERED DURING PREGNANCY SD-Strongly disagree; D-Disagree; A-Agree; SA-Strongly agree	SD	D	A	SA
C1	The medical care I received during my pregnancy was perfect.				
C2	Nurse treated me in a very friendly and courteous manner.				
C3	Doctors treated me in a very friendly and courteous manner.				
C4	I was given antenatal card on the first visit to the health facility				
C5	My pregnancy was confirmed on my first visit to the health facility				
C6	My pregnancy was timed on my first visit (Estimated delivery date)				
C7	I was examined on my first visit to the health facility				
C8	My blood pressure was taken on all my visits to the health facility				
C9	My mid-upper arm circumference was measured				
C10	My weight and height was measured at every visit				
C11	I was counselled and voluntary tested for HIV				
C12	My urine was tested				
C13	I was given iron supplementation				
C14	I was given folate supplementation				
C15	I was given calcium supplementation				
C16	I was given information on emergencies				
C17	I was given advice on lactation & contraception - pregnancy				

D.	PERCEPTION OF MATERNAL CARE RENDERED DURING PREGNANCY SD-Strongly disagree; D-Disagree; A-Agree; SA-Strongly agree	SD	D	A	SA
D1	The medical care I received during labour was perfect.				
D2	Nu rse treated me in a very friendly and courteous manner.				
D3	Doctors treated me in a very friendly and courteous				

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	manner.				
E.	PERCEPTION OF MATERNAL CARE GIVEN DURING POSTNATAL PERIOD SD-Strongly disagree; D-Disagree; A-Agree; SA-Strongly agree				
E1	The medical care I received after delivery or postnatal was perfect.	SD	D	A	SA
E2	My blood pressure was taken				
F.	Comments: Is there anything additional you'd like to say about the services you have received in the public health facilities during your pregnancy?				
	.....				
	.....				
	.....				
	.....				
	.....				

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ANNEXURE S

CENTRAL QUESTION FOR DISTRICT MANAGERS

- "What support are you giving to facilitate the implementation of the recommendations by the Saving Mothers Report?"

Probing will be done on:

- Audits on BANC,
- Drills on prevention of obstetric haemorrhages,
- Strengthening of postnatal care, and
- Training on ESMOE.

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ANNEXURE T

CENTRAL QUESTION FOR REGISTERED MIDWIVES

- "What are your challenges in implementing the recommendations of the Saving Mothers Report?"

Probing will be done on:

- Audits on BANC,
- Drills on prevention of obstetric haemorrhages,
- Strengthening of postnatal care, and
- Training on ESMOE.

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ANNEXURE U

VERBATIM TRANSCRIPT

Participants: Registered Midwives and District Maternal Health Managers

Title: Enhancing The Effective Implementation of Recommendations for the Saving Mothers Report in Maternity Units of Limpopo Province, South Africa.

Researcher: Good afternoon. My name is Kobela Elizabeth Mothapo. As already mentioned I am a student of the University of Venda. I am doing the study on Enhancing effective implementation of Recommendations for the Saving Mothers Report in Maternity Units of Limpopo Province, South Africa and this is part requirement for my PhD's degree in Nursing. (Pause)… So, I welcome you to this session and thank you very much for agreeing to take part in this study. Feel free, and please fill for me your consent forms and I assure you that confidentiality will be kept and please note that the participation in this study is voluntary, and there will be no direct benefit to anyone who participate, there will be no penalties if you want to withdraw from the study or if you do not want to answer some of the questions if they violating your rights… However, I would like really to appreciate if you can share your thoughts, experiences and feelings by answering the questions. And… I would like to request your permission to audiotape the interview as it will not be possible for me to write everything as we will be talking quickly. The digital data will be kept in a safe place. Thank you once more. I will also request you to sign the consent form before we start with the interview. I would like to check if you have any question before we continue.

Participant: No, I don't have any questions for now. I think I have understood the explanations.

Researcher: Okay, The main question that I want to ask you is "What are your challenges in implementing the recommendations for the Saving Mothers Report?"

Participant: The recommendations are good, but we face problems when we must implement them. We have so many challenges here that we really get frustrated. Blood for transfusion is scarce and it takes a long time to get access to the blood. I am not saying that we don't get maternal deaths from local but most of the maternal deaths are patients who have been transferred from other hospitals and the reason is that doctors who transfer do not check patients before transfer and patients come with no blood results. We don't know the referring doctors and they do not write all the information so much that the doctor have to

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call back to find out what was done and what was not done. The sometimes don't send patients on time. They sent patients with no results, no sonar done, and we don't know whether not doing because they don't know what to be done or what. Delays are caused as patients need to be checked for things that could have been done at the transferring hospital. The good thing for now is that the doctors at peripheral hospitals manage pre-eclampsia well, they start the treatment before transferring the patient. There are still patients who come being unbooked or late bookers.

Participant: Eish… The recommendations are very ideal to improve maternal health, but we face problems when we are expected to implement them. We experience lot of barriers and challenges here and we really get frustrated. For example, women don't come to facilities on time; then to whom will we accurately implement the recommendations to? We are also so short-staffed in the units even at the primary health care.

Participant: Eish, there is a great shortage of blood. Blood for transfusion is scarce and it takes a long time to get access to the blood. You will be expected to refer a patient for blood transfusion whereas to save life, this could be done from the facility as in the recommendations H number two directs for prevention of anaemia and treatment of haemorrhage.

Participant: Even for those clients with mild anaemia, who needs iron preparations, sometimes medications like Ferrous Sulphate, Folic Acid and Calcium supplements were not available at the clinics. Patients are told/ encouraged to buy for themselves, which they may not buy if they don't have enough money, and they may not report and we will only notice when the woman is not improving on subsequent visit or when the woman presents with complications. So we conclude that the patient never follow the instructions.

Participant: The ratio of registered midwives to patients is 1: 30. Observation of patients is hampered. More staff is needed for us to be able to cope and to provide the care to patients.

Participant: There are no resources for resuscitation. We are expected to act swiftly and the health system is to be strengthened but sometimes you just feel we are running a 24-hour service that does not have all that is needed and we let patients down. At this facility, the blood gas machine is not available and if the blood is taken to laboratory during resuscitation then the results takes too long to be back, which may delay the commencement of correct treatment.

Participant: Other equipment like scan machine and mobile X-Ray machine are also not available sometimes." Sighing. This contribute to delay at the health facility, whereas the situation is the emergency.

Participant: We are expected to provide quality care, however, they do not provide us with necessary materials to work.

Participant: In the unit there are also high risk patients in this very same over-crowded ward who needs to be monitored frequently and they end up complicating due to lack of frequent

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monitoring as midwives will be dealing with the normal deliveries who should be done at clinics. It seems as though the staff at the clinics are inexperienced as the results that they refer the patients with do not tally/ correlate with what is found on arrival to the hospital. I think the clinic staff need to be in-service on referral system. The unit is small.

Participant: We have high risk patients who are referred to the hospital and there are those who are self-referral who will just choose to deliver at the hospital then they cause the unit to have lots of patients. Resulting to some patients being progressed on the benches, as the beds would be occupied and full. Patients are referred with reasons like no delivery pack at the clinic.

Participant: I am not saying that we don't get maternal deaths from local but most of the maternal deaths are patients who have been transferred from other hospitals and the reason is that doctors who transfer do not check patients before transfer and patients come with no blood results. The women from PHC also just come in saying the clinic is not working during the night.

Participant: We don't know the referring doctors and they do not write all the information so much that the doctor have to call back to find out what was done and what was not done to the patient. They sometimes don't send patients on time. They sent patients with no results, no sonar done, and we don't know whether they are not doing that because they don't know what is to be done or what. Delays are caused as patients need to be checked for things that could have been done at the transferring hospital. Even though they do not do all that is required from them, but at least they are able to start the Magnesium Sulphate for patients with pre-eclampsia and they do it well.

Participant: Mmmh, hei!! (Scratching the head) The recommendations are the best, but the implementation is the problem. Like the means of referral is a long process with the arrangement of transport and other logistics. The patient will even complicate further while the doctor is still trying to arrange for a transfer.

Researcher: Can you please tell me about audits on BANC.

Participant: There is no time to really check women and do everything that needs to be done on women when they come for ANC as the clinic will be full and you spend a lot of time with one patient as the others are waiting and they get annoyed. We end up just doing things that we think are more important and because the BANC audits are not really done we get used to working like that.

Participant: We still get unbooked cases. Most of the HIV positive women come being unbooked or booking late and it makes it difficult to manage as they come being in labour even though they know what is expected from them.

Participant: Some patients come being unbooked and being HIV positive, making it difficult to manage during labour. They give reasons as "I was not aware that I was pregnant, especially the

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older women as they are shy to attend antenatal clinic with younger women. How do you then manage such a patient because even if you want to adhere to the protocols they booked late and made it difficult to implement the Saving Mothers Report and there is nobody to apply them on. Some give reasons that they have lost their cards. Some patients still come having delivered at home. Some women still have pica which lead to low haemoglobin and endangering their lives during delivery and postnatal." Sighing!

Participant: Some patients go to the traditional healers before they come to the hospital though they are told at the clinics that they should report to the health institution immediately. At the traditional healers they are given "makgorometsa" which is medication to fasten labour, cause precipitate labour which lead to bleeding and you as a midwife will just be unprepared and surprised. People get prayed for and they think they are healed and stop taking medications like ARVs, then they complicate when they come to deliver and they die.

Participant: We still have unbooked cases who maybe visited the clinic only once or even never and those who deliver at home and only come to the hospital after delivery and when you try and find out why they do that they give reasons that the clinic is far, some say that the nurses at the clinic will just be going up and down and not helping them. They will also tell you that even when you are helped you are talked to like you are a small child and not respected. It is difficult to implement the recommendations as the women come late for you to do what you are supposed to do on them.

Participant: There is low morale of staff as there are complaints about shortage are not attended to. There is also no compliments about the hard work from management.

Participant: There is not much support from management as they do not appreciate the effort put by the staff in this difficult situation. The staff is doing the job, but the performance management system is demoralizing them. People who get rewarded in PMS are not even really performing that well. Management is not supportive to the staff. They are not engaging in the work even when it is very busy.

Participant: Management is trying to support us, especially the hospital management. The district management is not doing enough as far as the PHC concerned as they are not handling deliveries. Even the councilors are aware of the problem.

Participant: The management is giving support to the staff, they even visit other hospitals for benchmarking in order to try and help us.

Researcher: Can you please tell me about ESMOE training and drills on prevention of obstetric haemorrhage.

Participant: ESMOE is a good and helpful training programme that enhances the skills and improves the care of mothers but it is centralised. The staff that is sent there is expected to come back and train others but there is no time to do that as we have a lot of shortage. As such

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some staff members do not get to be trained and they just work. Most of the time we just work to get the work finished without following the correct procedure. I wonder if there is a way that can be used to get the information to all the staff members for the safety of mothers. The information is good from ESMOE, but it does not reach the people. Staff in this unit are really not included in the training. They need to be trained on ESMOE, LINC, BANC and other competencies for patients to be better cared for.

Participant: ESMOE is being trained centrally, at Polokwane. A small number of staff is trained for ESMOE with a view that they must train others, but when they come back they don't give feedback it is difficult for the people to train others on coming back as the ward is busy and the pressure of work make it difficult for practicing, we just want to do the work and finish.

Participant: Some staff members end up not being trained. The information is good from ESMOE, but it does not reach the people. We do not even have a place where we can simulate the training if there is a chance for us to do that. Remember that if you have trained something, but you don't practice it, you forget.

Participant: Patients will be better observed. Staff in this unit are really not included in the training. They need to be trained on ESMOE and other competencies for patients to be better cared for. The skills audit is also not done and that could help in training for the competencies which are lacking.

Participant: Training of staff on ESMOE is really happening here. Most of the staff are ESMOE trained. About 90% and they have knowledge, the only thing that is a problem is shortage of staff and unavailability of equipment for the implementation that is why we still get problems with implementation which lead to loss of women' s lives.

Participant: If every midwife in the unit can be trained on ESMOE then maybe we will be able to prevent maternal deaths better as we would have more insight in our practice and would be more competent.

Participant: We are functioning with skeleton staff and that makes it difficult for the staff to attend training as they should. And even after training you come back but when you must implement there are no resources.

Participant: Newly qualified nurses have only studied at school to pass. They really do not have the experience, the confidence that come with being competent. They must still learn a lot as they are also getting to practice independently after qualifying. Remember they will be doing trial and error with two lives at stake, that too bad. There is shortage of manpower thus making it difficult to mentor newly qualified midwives which lead them to just work without support." Shaking the head !!

Participant: Maternity ward is very challenging, and it needs somebody with more knowledge. Eishhh……. it's really hard for newly qualified midwives. The products of training or newly qualified professional nurses lack skill and knowledge. They have theory in their heads

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but skills uh uh…. Maybe is because they spent less time in the clinical area. They are not conversant with most of the procedures and they are always surprised. The newly qualified midwives are the ones who are not yet competent and they need mentoring but because of shortage it is not always possible, then they feel unsure when they must be left to manage the ward.

Participant: We are trying by all means to put everyone on board by conducting lectures and by giving health education to the women so that they are alert especially because we deal more with the high risk group, but……..hey …… it is tough due to shortage of staff and a large number of patients.

Participant: As you know that there is shortage of staff, emergencies are missed when the ward is full. It will be much helpful if retired staff can be recruited back. Assessment of patients is also not done or not thoroughly done because of overflow of patients. We are just rushing through the work to finish. If necessary materials can be made available, staff be trained as they should be and updated with contemporary information and how to administer anaesthesia. The BANC audits could also make a huge difference in how BANC is done, thus avoiding complications.

Researcher: Can you tell me more about strengthening of postnatal care.

Participant: Mmmhh…. We are so overworked because there is shortage of staff. We cannot even attend ESMOE because there is no one to remain on-duty. If more staff can be hired maybe it will be better. When you go off in the afternoon you are so tired that it is even difficult to walk…. Sighing. Patients are even being taken out to postnatal ward and not checked enough after delivery.

Participant: You know, if the training for ESMOE can be decentralized and mixed al categories of staff, most of the staff will be able to attend as it can be organized at a smaller scale. Our managers should take a lead in making sure that staff is trained and drills are done for the better care of patients. The provision of simulation equipment could highly improve staff competency. It is no use for you to be on-duty if you are not equipped with skills and knowledge. ….Mmmm I think that can be better implemented if it is put into the performance management of managers for evaluation.

Participant: You are just allocated to a particular unit, whether you like it or not. If you request to go out you are told that you cannot go out without somebody coming to that ward, irrespective of whether you are happy or not and remember you cannot be productive if you are not happy. It could also help if guidelines are made available in the ward for referral when necessary.

Participant: The other thing is that not get enough attention is the training of staff working in maternity in the anaethesia administration and care of a patient under anaethesia. I think staff should be trained for that and drills need to be done to make sure that everyone is competent in that field so that all could help when the need arise.

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Reasearcher: I would like to take this opportunity to thank you for participating in this study. I hope the results will help us to develop the best strategy to enhance the effective implementation of the Saving Mothers' report so that the maternal mortality can be reduced.

Participant: Thank you.

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ANNEXURE V

CO-CODER'S REPORT

For: Mothapo K

Date: 2017-06-03

Study: A model to enhance effective implementation of recommendations of the Saving Mothers Report in maternity units in Limpopo Province, South Africa

Independent Coding By: Prof T.M. Mothiba

Method: 8 Steps of Tesch's inductive, descriptive open-coding technique (Creswell, 2014) was used by following the steps below:

- *Step 1* - Reading through the data

The researcher got a sense of the whole by reading all the verbatim transcriptions carefully. This gave ideas about the data segments and how they look like/mean. The meaning emerged during reading were written down and all ideas as they come to mind. The researcher carefully and repeatedly read the transcripts of all the participants and understood them.

An uninterrupted period of time to digest and thought about the data in totality was created. The researcher engaged in data analysis and wrote notes and impressions as they come to mind.

- *Step 2* - Reduction of the collected

The researcher scaled down the data collected to codes based on the existence or frequency of concepts used in the verbatim transcriptions. The researcher then listed all topics that emerged during the scaling down. The researcher grouped similar topics together, and those that did not have association were clustered separately. Notes were written on margins and the researcher started recording thoughts about the data on the margins of the paper were the verbatim transcripts appears.

- *Step 3* - Asking questions about the meaning of the collected data

The researcher read through the transcriptions again and analyse them. This time the researcher asked herself questions about the transcriptions of the interview, based on the codes (mental picture codes when reading through) which existed from the frequency of the concepts. The questions were "Which words describe it?" "What is this about?" and "What is the underlying meaning?"

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❖ *Step 4* - Abbreviation of topics to codes

The researcher started to abbreviate the topics that has emerged as codes. These codes needed to be written next to the appropriate segments of the transcription. Differentiation of the codes by including all meaningful instances of a specific code's data were done. All these codes were written on the margins of the paper against the data they represent with a different pen colour as to the one in Step 3.

❖ *Step 5* - Development of themes and sub-themes

The researcher developed themes and sub-themes from coded data and the associated texts and reduced the total list by grouping topics that relate to one another to create meaning of the themes and sub-themes.

❖ *Step 6* - Compare the codes, topics and themes for duplication

The researcher in this step rework from the beginning to check the work for duplication and to refined codes, topics and themes where necessary. Using the list of all codes she checked for duplication. The researcher grouped similar codes and recoded others were necessary so that they fit in the description.

❖ *Step 7* - Initial grouping of all themes and sub-themes

The data belonging to each theme were assembled in one column and preliminary analysis was performed, which was followed by the meeting between the researcher and co-coder to reach consensus on themes and sub-themes that each one has come up with independently.

❖ *Step 8* - Recoding if necessary

A necessity to recode emerged as some of the themes reached independently were merged.

Table 1: Themes and sub-themes reflecting the experiences of midwives during implementation of the recommendations of the Saving Mothers Report in maternity units in Limpopo Province, South Africa

Main themes	Sub-themes	
1. **Challenges related to implementation of the recommendations of Saving Mothers Report in maternity units**	1.1	Lack of material resources during provision of care guided by recommendations of Saving Mothers Report problematic
	1.2	Description that shortage of midwives lead to lack of adherence to protocols and results in poor management of women
	1.3	Workload due to increased number of admissions blamed for poor management resulting in complications
	1.4	Increased number of admissions and complications blamed on several reasons leading to lack of deliveries conducted at PHC facilities
	1.5	Numerous narratives related to problems associated with the referral system which is experienced at multiple levels outlined
	1.6	Existing maternal deaths result from lack of adherence to protocols and lack of cooperation by women themselves
	1.7	Lack of ANC booking and not booked for ANC lead to difficulty

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		in managing complications
	1.8	Lack of adherence to medical advices by women lead to avoidable complications
	1.9	Existing negative attitudes and practices of health professionals at different levels outlined
	1.10	Existence of several communication problems blamed on several factors experienced during provision of care
	1.11	Women's health seeking behaviour problematic and pose a challenge during provision of care
2. Experiences of midwives during implementation of the recommendations of the Saving Mothers Report in maternity units	2.1	Implementation of recommendations of the Saving Mothers Report a process with problems met at different levels of care
	2.2	Existence versus lack of emergency medical drills conducted
	2.3	Mixed feelings experienced by health care professionals related to existence and participation in emergency medical drills
	2.4	An outline of several factors which lead to lack of team work, staff burnout and absenteeism experienced
	2.5	Lack versus support experienced from hospital management during provision to women
	2.6	Late delivery of investigations results lead to delayed implementation of protocols as outlined in the recommendations
	2.7	Lack of provision of information during ANC blamed for complications occurring during pregnancy, labour, delivery and postnatal period
3. Description of existing training programmes and in-service education for health care professionals	3.1	Lack of ESMOE, LINC and BANK training experienced in other hospitals which is viewed as problematic
	3.2	Existence of ESMOE, LINC and BANK training appreciated by health care professionals and viewed as informative
	3.3	Inability of few ESMOE trained health care professionals to train colleagues problematic
	3.4	Inability in attending existing training programmes blamed on shortage of staff
4. Knowledge related to provision of care to women whilst implementing the Saving Mothers Report recommendations in maternity units	4.1	Existing versus lack of knowledge of relevant resources used during provision of care
	4.2	Existence versus lack of knowledge related to certain aspects during ANC, pregnancy, labour and postnatal care (PNC) outlined
	4.3	Lack versus existence of knowledge related to causes of maternal deaths described
	4.4	Lack of knowledge and confidence experienced from newly qualified health care professionals during provision of care
	4.5	Health education and unit lectures provided aimed at improving knowledge and skills of patients and health care professionals
5. Suggestions related to improvement of adherence to recommendations of the Saving Mothers Report in maternity	5.1	Request to recruit retired health care professionals viewed as way to solve shortage of staff
	5.2	Staff recruitment suggested to solve staff shortages
	5.3	Review of staff allocation protocols suggested in addressing absenteeism, burnout and resignation

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units	5.4	Request to purchase material resources for assisting in execution of better care

Saturation of data were achieved related to the major themes and all sub-themes which is confirmed through identification of more verbatim quotes/excerpts from the transcription provided used in the data analysis and also five themes and more sub-themes that has emerged.

Limitations to interviewing process - Probing and or clarity seeking questions were not asked. The interviews were terminated prematurely and this lead to the researcher missing a lot of information on the problem studied.

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ANNEXURE W

CO-CODER'S CERTIFICATE

QUALITATIVE DATA ANALYSIS

Doctor of Philosophy in Health Sciences

Mothapo K.E.

THIS IS TO CERTIFY THAT:

Prof. Tebogo Maria Mothiba has co-coded the following qualitative data:

Unstructured one-to-one interviews

For the study: **ENHANCING EFFECTIVE IMPLEMENTATION OF RECOMMENDATIONS SAVING MOTHERS REPORT IN MATERNITY UNITS OF LIMPOPO PROVINCE, SOUTH AFRICA**

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

Prof T.M. Mothiba, PhD

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ANNEXURE X

CONFIRMATION BY LANGUAGE EDITOR

CONFIRMATION BY LANGUAGE EDITOR

Prof Donavon C. Hiss

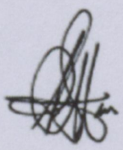
Cell: 072 200 1086 | **E-mail:** hiss@gmx.us **or** | dhiss@outlook.com

18 February 2019

To Whom It May Concern

This serves to confirm that I have edited the language, spelling, grammar and style of the **PhD** thesis by **Kobela Elizabeth Mothapo**, titled: "**Enhancing Effective Implementation of Recommendations for Saving Mothers' Report in Maternity Units of Limpopo Province, South Africa**" The manuscript was also professionally typeset by me.

Sincerely Yours



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