THE QUALITY OF RECORDKEEPING DURING INTRAPARTUM CARE IN LIMPOPO PROVINCE: A MIXED METHOD ANALYSIS

by

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THE QUALITY OF RECORDKEEPING DURING INTRAPARTUM CARE IN LIMPOPO PROVINCE: A MIXED METHOD ANALYSIS

I declare that this thesis is my work and all the study sources referenced have been acknowledged by means of complete referencing.

Furthermore, I declare that I submitted the thesis to originality-checking software and that it is within the acceptable requirements for originality.

I further declare that this thesis was never submitted previously or part of it, for examination at the University of South Africa for another qualification or any institution for a qualification.

06 October 2023

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ABSTRACT

Introduction

Quality medical and nursing care requires detailed recordkeeping, which includes complete and accurate recording. Data sourced from the Ministry of Health indicated that Limpopo Province is the second-highest province in the Republic of South Africa with 215 medicolegal claims by the end of 2021. This study developed strategies to improve the quality of recordkeeping during intrapartum care and to reduce legal claims through improved recordkeeping standards.

The purpose of the study

The study purpose was to evaluate the completeness of the maternity case records and to develop strategies to improve recordkeeping during intrapartum care.

Methodological processes

The researcher applied a sequential explanatory mixed methods design. A systematic sampling was used to select every 10th entry in the maternity delivery register from the 01$^{st\ of}$ January 2021 till 31$^{st\ of}$ December 2021. This sample size is representative of 10% of maternity case records of all the women who delivered in the given period. Non-participant unstructured observations and a checklist were used to collect quantitative data. This study used convenience sampling to select midwives for focus group discussions (n=29) and purposeful sampling to select the medical practitioners (n=14) for in-depth interviews to determine their perceptions and experiences regarding recordkeeping during intrapartum care. The research further applied a Delphi approach that involved twelve (n=12) experts to validate the developed strategies for recordkeeping.

Qualitative data was collected by use of an interview guide for both midwives and medical practitioners.

Data analysis process

The IBM Statistical Package for Social Sciences (SPSS) version 23 was utilised to analyse quantitative data. Thematic analysis was applied to analyse qualitative data at the interpretive level of the study, the integration of the quantitative and qualitative data was accomplished.

Research results

The non-participant unstructured observations of the study established that barriers to quality recordkeeping are existing.

The research results illustrate the gap on completeness and accuracy of the vital signs variables. A total of 58.8% of the variables for medial upper arm circumference (MUAC), 57.4% for body mass index (BMI), 57.2% for height, 55.1% for oxygen saturation, 43% for respiration, 50.2% for urinalysis, 67.7% for blood pressure and 51.2% for pulse rate variables in the maternity case records were not fully completed. The study further indicated that 91% of the guidelines were available. The qualitative findings supported the quantitative results.

Study recommendations

Based on the findings, the researcher developed strategies to improve recordkeeping during intrapartum care in Limpopo Province. The strategies were validated through a Delphi technique with the panel of experts. Finally, recommendations were made to clinical practice, future research and policy making.

KEY CONCEPTS

Intrapartum care; maternity case record; quality; recordkeeping; strategy.

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DEDICATION

The study is devoted to the following special people:

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Hunadi a Phogole a Mamorei, my late mother, you may be gone but not forgotten. My memory of you deserves dedication.

My only sister and brothers, for the faith they had in me. I appreciate your support.

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LIST OF ABBREVIATIONS

ANC	Antenatal care
BANC	Basic Antenatal Care
BMI	Body mass index
CEO	Chief Executive Officer
CM	Centimetre
CMP	Clinical Medical Practice
CTG	Cardiotocography
C/SECTION	Caesarean Section
DH	District Hospital
DoH	Department of Health
ED	Emergency Department
EFM	Electronic Foetal Monitoring
EHR	Electronic Health Record
EMS	Emergency Medical services
EPWP	Expanded Public Works Program
FGD	Focus Group Discussion
FHR	Foetal Heart Rate
GA	Gestational age
HB	Haemoglobin
HIV	Human Immuno-deficiency Virus
HOD	Head of Department
HOF	Head of Fundus
HPCSA	Health Professions Council of South Africa
IV	Intravenous
LNMP	Last Normal Menstrual Period
LWB	Low Birth Weight
MBCHB	Bachelor of Medicine and Surgery
MCR	Maternity Case Record
MCWH	Mother Child and Women's Health
MM	Mixed Methods
MP	Medical Practitioner
MSL	Meconium-Stained Liquor
MSW	Midwifery Support Worker
MUAC	Medial Upper Arm Circumference
NHA	National Health Act
NDoH	National Department of Health

NICHD	National Institute of Child Health and Human Development
NMC	Nursing and Midwifery Council
NPO	Nothing Per Oral
NSM	Nursing Service Manager
PAIA	Promotion of Access to Information Act
PAJA	Promotion of Justice Act
PHC	Primary Health Care
PHD	Philosophy of Doctorate
PMTCT	Prevention of Mother to Child Transmission
POG	Period of Gestation
POPIA	Protection of Personal information Act
PSI	Patient Safety Incident
PV	Per Vaginal
QAM	Quality Assurance Manager
QUAL	Qualitative
QUAN	Quantitative
RH	Regional Hospital
RH	Rhesus Factor
RNC	Royal Nursing College
ROM	Rupture of Membrane
SANC	South African Nursing Council
SBAR	Situation Background Assessment Recommendations
SFH	Symphysis-Fundal Height
SOP	Standard Operating Procedure
SPSS	Statistical Package for Social Science
TB	Tuberculosis
UNISA	University of South Africa
USA	United States of America
WHO	World Health Organization

CHAPTER 1

ORIENTATION OF THE STUDY

1.1 INTRODUCTION

This chapter discusses background of the study, theoretical overview, problem statement, aim, significance, methods, designs, definitions of concepts, theoretical assumptions, data collection and analysis and ethical considerations.

1.2 BACKGROUND TO THE RESEARCH PROBLEM

1.2.1 South African perspective

According to South Africa's National Guidelines for Maternity Treatment (Department of Health [DoH] 2016:29), the DoH recommends that all hospitals should use a standardised maternity case record to document the prenatal, intrapartum, and postpartum care and treatment (DoH 2016:29).

Medicolegal claims, normally meaning claims based on instances of medical negligence or malpractice, have markedly increased in the South African (SA) health sector, skyrocketing since about 2007 (Prinsen 2023:1140). The study further highlighted that recent figures indicate a growth rate of 30% for contingent liabilities, a loss that may occur in future, and 23% for medicolegal claims in the public sector since 2014. These percentages translated to ZAR99.2 billion and ZAR2 billion, respectively, in the 2018/2019 National Treasury Budget Review reporting period. During 2020/2021, >ZAR6.5 billion was awarded in medicolegal claims.

According to South African Nursing Council (SANC) annual report 2019/20 indicated that out of 41 nurses (N=41) charged by the council, 44% (n=18) of the cases were related to midwifery, 32% (n=13) were charges of other professional nurses outside the maternity settings, 17% (n=7) were enrolled nurses whereas 7% (n=3) were enrolled nursing assistants. The statistics depicted that the midwives' charges finalized during the reporting period were more than any nursing category.

Accurate medical record keeping is a requirement of section 27A of the ethical and professional rules of the Health Professional Council of South Africa (HPCSA), registered under the Health Professions Act (Act No. 56 of 1974) and promulgated in Government Gazette R717/2006. The HPCSA annual report 2021/22 reported that the ombudsman received 528 complaints from April 2021 to March 2022, which comprises 35.1% (528/1503) of total registered complaints during this period. There is a 6% increase of complaints referred for mediation compared to the 2021/22 financial year. On average, it takes less than a day from the time a complaint is registered to the time when a request for explanation is sent to the respondent. A total of 88% (467/528) of the complaints received from April 2021 to March 2022 have been finalised, of which 94% (439/467) were finalised within 70 days with a mediation success rate of 94% (441/467), meaning that 6% of the cases were referred for preliminary investigation. A total number of 499 matters were finalised by the HPCSA Ombudsman, of which 93.6% (467/499) were received in the current financial year; 6.4% (32/499) are from the previous financial year. All matters (32) which were outstanding from the 2020/21 financial year were cleared during the 1st quarter of 2021/22 financial year. A total of 97.8% (488/499) of complaints were finalised without requiring a virtual / contact mediation, only 2.2% (11/499) were finalised through virtual / contact mediation.

According to Howarth and Gillespie (2012:1), accurate and good record keeping has an influence on the outcome of medico-legal claims as well as on the outcome of HPCSA investigations against doctors.

Furthermore, the DoH (2016:21), in their recommendations made to the healthcare system, was to provide quality recordkeeping. Moreover, with references to the situation background assessment recommendation (SBAR) referral letter, the document outlines the specifications for the format and content of the healthcare worker's obstetric patient records (DoH 2016:21).

Recommendations were developed by the DoH (2016:21) to address the growing need for the healthcare system to provide high-quality recordkeeping.

The National Health Act (Act 61 of 2003) read in conjunction with procedural regulations pertaining to the functioning of the office of health standards compliance and handling of complaints by the Office of the Ombudsman, emphasised that the person in charge of a

health establishment in possession of a user's health records must set up control measures to prevent unauthorised access to those records. The act further highlighted the importance for access to records (South Africa 2003).

According to Government Regulation R.2488, within the context of midwifery practice, the registered midwife shall retain the records for at least three years and shall produce the records when required to do so. Therefore, it is the responsibility of the midwife to make the audit of the retained records including the maternity case records and to produce the outcome of the audit records in line with the developed audit tools when needed (SANC 1990).

Ngxongo, Sibiya and Gwele (2016:12) supported this notion through recommendations for the application of the Basic Antenatal Care guidelines in pregnant women's antenatal care records to improve documentation.

1.2.2 African perspective

As a reflection by some of the African countries on recordkeeping, in their research on evaluation of records management practices in Nigeria's Abia state, Alegbeleye and Chilaka (2019:18) found that records at the Ministry of Health are not preserved in accordance with best practices. Examples of poor recordkeeping practice included the absence of manuals, regulations, and standards for processing both paper and electronic information. Therefore, they recommended that the Nigerian Health Ministry formulate institutional policies, guidelines, and regulations for records management practices.

Hollis and Ebbs' (2016:3) research conducted in Moshi, Tanzania at Kilimanjaro Christian Medical Centre orthopaedic department on inpatient medical recordkeeping found that the auditing of inpatient files can probably influence recordkeeping and improve clinical practice. The research revealed that there are serious challenges with the inpatient's recordkeeping, and every attempt has been taken both to identify and address the causes of these documentation challenges. However, the recordkeeping challenges could not be fully eliminated until a culture of prioritising recordkeeping was implemented.

According to Fitzgerald, Mlotha-Mitole, Ciccone, Tilly, Montijo, Lang and Eckerle's (2018:75) study conducted in Malawi about hospital paediatric death audit recommended

that ongoing supervision could improve recordkeeping within the nursing and medical professions. Furthermore, the study suggested that death record audits are helpful tools to define the sickest patient group and identify characteristics likely leading to mortality that may be responsive to quality improvement interventions in low-resource settings, where reliable recordkeeping is frequently challenging.

1.2.3 Worldwide perspective

According to Dang, François, Betailler, Seigneurin, Vittoz, Sellier and José (2014:538), patients with better overall medical recording ratings were more likely to be happy with their hospital stay. The reason for their happiness is that the patient's impression of nursing care has a significant impact on satisfaction. The findings clearly shows that clinical patient care and documentation are inseparable. De Marinis, Piredda, Pascarela, Vincezi, Spiga, Tartaglini, Alvaro and Matarese (2010:12) found that the number of barriers including lack of expertise, time, consistent recordkeeping system and writing motivation were listed as some of the difficulties preventing proper recordkeeping. The maternity case records are recognised as a suitable instrument for evaluating the quality of antenatal, intrapartum, and postnatal care. All nursing actions should, therefore, be documented in these maternity case records.

The Nursing and Midwifery Council (NMC 2018a:8) of the United Kingdom views the keeping of clear and accurate records as a crucial component of district nurses' obligations to their patients in support of the conclusions of a study by Griffith (2015:514) on keeping accurate records at Swansea University. Recordkeeping also has a legal dimension as records are essential for defending healthcare practitioners during litigations. Practitioners are protected by complete, current, and readable records that offer solid proof of their interactions with patients. In this way, nurses will demonstrate that they have met the requirements of the nursing and midwifery council legal and professional obligations by setting out how they have discharged their duty of care (NMC 2018b:12).

Irvani, Janghorbani, Zarean and Barhami (2016:4) highlighted recordkeeping as one of the challenges in the implementation of the evidence for intrapartum care at an Iranian hospital in Dubai. According to the perspectives of the medical experts employed by the Iranian maternity services, precise documentation and reporting of normal procedures

and level of care will benefit both mothers and medical personnel. The labour ward staff's persistence in non-evidence-based practices and resistance to modifying fundamental procedures like recordkeeping is reported to be partly due to a lack of innovation from the hospital's administration and leadership.

The study conducted in the United States of America (USA) by Mason, Mayer, Chien, and Monestime (2017:2949) on overcoming barriers to implementing electronic health records in rural primary health care (PHC) clinics, found challenges with information exchange, business education, change management at rural medical practices, and a lack of funding to support the electronic health records (EHRs). The study supported the assumption that it would be desirable if everyone utilised a single, integrated EHR system, and the health information exchange concerns pushed the adoption of appropriate recordkeeping methods between doctors and doctors' assistants.

The United Nations (UN) sustainable development goals (SDG) are a universal political agenda that address for a collective action to achieve a better and more sustainable future for all, solving the social, economic, and environmental issues that hinder global progress towards sustainability intended to be achieved by the year 2030 (United Nations 2015). The United Nations indicated that SDG requires more than 6.9% of an annual rate decline to achieve the sustainable development goal (SDG) target of MMRatio of 70 per 100 000 livebirths by 2030.

Global trends and indications are that safe quality of care in health is considered extremely vital for public healthcare service delivery (Jonas, Crutzen, Van den Borne & Reddy, 2017:149; WHO, 2015). The populations profiles keep on shifting which requires proper planning to respond to rising demands for healthcare services. Therefore, the need for strengthening of the healthcare workforce is even more compelling (Perry, Gallagher & Duffield 2015:1).

Universally, a quarter of maternal deaths occurred during intrapartum, while one third of these deaths occurred in the first 24 hours to six weeks postpartum (Belemsaga et al 2015). It is disconcerting that about 58% of 83 of the surveyed developing and low-income countries were unable to meet the universal healthcare coverage of at least 23 nurses, midwives and physicians required for 80% coverage of essential services.

The latter situation is most observable in SSA and East Asian countries (Bradley, McCourt, Rayment & Parmar 2019).

1.3 STATEMENT OF THE STUDY PROBLEM

Due to increased demands for healthcare systems to deliver high-quality patient care as well as the continual growth in medico-legal concerning maternity care, accurate and complete recordkeeping is essential (DoH 2016:24). The results of the study conducted by the researcher about the factors contributing to perinatal mortality rate in Limpopo Province in 2015 revealed that 75,3% (n=122) of perinatal mortality was related to inadequate usage of maternity case records, neonatal records and partogram by the healthcare professionals and erroneous completion of maternity case records (Maesela 2018:98).

Shihundla, Lebese and Maputle (2016:6), in their study on the impact of increased nurse workload on the accuracy of data documentation at the selected health facilities in Limpopo Province, suggested that monitoring and mentoring of nurses' documentation is necessary to ensure that data are accurately and completely recorded in each health facility as nurses tends to struggle to handle the extra work associated with capturing patient information on the multiple systems utilised at hospitals, which leads to incomplete information.

Recordkeeping is a challenging task for nurses working in public hospitals due to several issues, including a limited time to complete the records, an increase in patient admissions, and a lack of recording materials as stated by Mutshatshi, Mothiba, Mamogobo and Mbombi (2018:5) in a study on the challenges faced by nurses in particular public hospitals in Limpopo Province.

Information management emerged as the challenging issue facing the public health sector in South Africa, this finding is supported by a study conducted in the Free State Province by Malakoane, Heunis, Chikobvu, Kigozi and Kruger (2020:59) on public health system challenges reflecting that information management is a problem in the districts because data capturers in clinics are also expected to do administrative work such as having to assist with the opening of new patient files. During a monthly mortality and morbidity meeting with the midwives, advanced midwives and medical officers working in

the maternity held in Sekhukhune District Office in June 2016, where the researcher shared his study results (Maesela 2018:98). The consensus by the healthcare professionals was reached that the information management including recordkeeping is a challenge in the maternity services. To respond to the recordkeeping challenge, the researcher conducted this study on quality recordkeeping during intrapartum care in Limpopo Province.

1.4 AIM OF THE STUDY

1.4.1 Research purpose

The purpose of the study was to evaluate recordkeeping in the maternity case records and to develop strategies to enhance the quality of recordkeeping during intrapartum care in Limpopo Province.

1.4.2 Research objectives

The objectives of this research were to:

- Establish availability of the maternity guidelines relating to recordkeeping in the Limpopo Province.
- Evaluate the recordkeeping of the maternity case records during intrapartum care in maternity healthcare services in Limpopo Province.
- Determine and describe midwives' perception on recordkeeping of the maternity case records in maternity healthcare services in Limpopo Province.
- Determine and describe the experience of the medical practitioners on recordkeeping of the maternity case records in maternity healthcare services in Limpopo Province.
- Determine and discuss the enablers and barriers for midwives and medical practitioners in implementing recordkeeping in maternity healthcare services in Limpopo Province.
- Develop strategies to enhance the quality of recordkeeping in the maternity case records by midwives and medical practitioners during intrapartum care in Limpopo Province.

1.4.3 Research questions

- Are the guidelines related to recordkeeping during intrapartum care available in the maternity healthcare services in Limpopo Province?
- What is the level of completeness and accuracy of the maternity case records?
- What are the midwives' perceptions on recordkeeping during intrapartum care?
- What are the medical practitioners' experiences of recordkeeping during intrapartum care?
- What are the enablers and barriers for recordkeeping during intrapartum care in Limpopo Province?
- Which strategies can be developed to enhance the quality of recordkeeping by midwives and medical practitioners within maternity case records during intrapartum care?

1.5 SIGNIFICANCE OF THE RESEARCH

The goal of the study is to uphold good standards of recordkeeping, development of manuals to guide midwives and medical practitioners on how to accurately complete the maternity case records to ensure uniformity. The research will further strengthen quality improvement projects to be implemented to improve record keeping practices. The study will improve the record keeping practices of students, junior midwives and doctors while still under training.

1.6 DEFINITION OF CONCEPTS

The following are the key terms in the study:

1.6.1 Intrapartum care

Intrapartum care refers to the care given to pregnant woman from the commencement of true Labour from first stage of labour with delivery of the placenta (Chabeli, Malesela & Nolte 2017:10). In this study, it refers to the period characterized by painful uterine

contractions and variable changes of the cervix, until a substantial degree of cervical effacement and full cervical dilatation.

1.6.2 Maternity case record

The maternity case record refers to a South African record that is standardised as the primary record used for documentation of events during pregnancy. It must be completed at each antenatal clinic visit and should be documented to record the care given to the pregnant woman until the last stage of labour (DoH 2016:29).

1.6.3 Quality

Quality means the measure compared to another measure with reference to how good or bad is (*Oxford English Dictionary* 2015:1217). In this study, quality refers to the completeness and the accuracy of the maternity case records using the developed checklist.

1.6.4 Record

A record refers to the data source that the researcher may access the information from (Polit & Beck 2017:174). This study refers to the policies and maternity case records in all selected facilities.

1.6.5 Recordkeeping

Oxford English Dictionary (2015:1248) defines recordkeeping as a written account of something that is kept so that it can be looked at and used in the future. In this study, recordkeeping refers to accuracy and completion of the maternity case records to enable the continuity of care and to improve communication amongst the healthcare professionals during intrapartum period.

1.6.6 Strategy

Strategies refer to a plan that help achieve specifically stated aims, typically over a long period (Oxford Advanced Learner's Dictionary 2015:1495). In this study, strategies are

proposed actions to be implemented to improve recordkeeping during intrapartum care period in the maternity setting.

1.7 THEORETICAL ASSUMPTION AND PARADIGM

The theoretical framework for this study was adopted from the World Health Organization's (WHO's) recommendations for intrapartum care for a positive delivery experience (WHO 2018b:12). The components, sub-components, and steps to enhance recordkeeping practice throughout the intrapartum care are shown in Figure 1.1.

Component 1 is "structure", which includes the health system. Component 2 is "process", which includes the standard of recordkeeping and has two subcomponents: the significance, experience, and perception of recordkeeping. The two subcomponents were produced through a number of steps. Component 3 "outcomes" (Refer to Figure 1.1) is the result of the process in the form of critical recordkeeping practices and people-centred results.

The contextual interaction theory is adapted for recordkeeping taken from the WHO recommendation on woman-held case notes during pregnancy published on 28 March 2018. The Contextual Interaction Theory from WHO is adapted for recordkeeping in Figure 1.1.

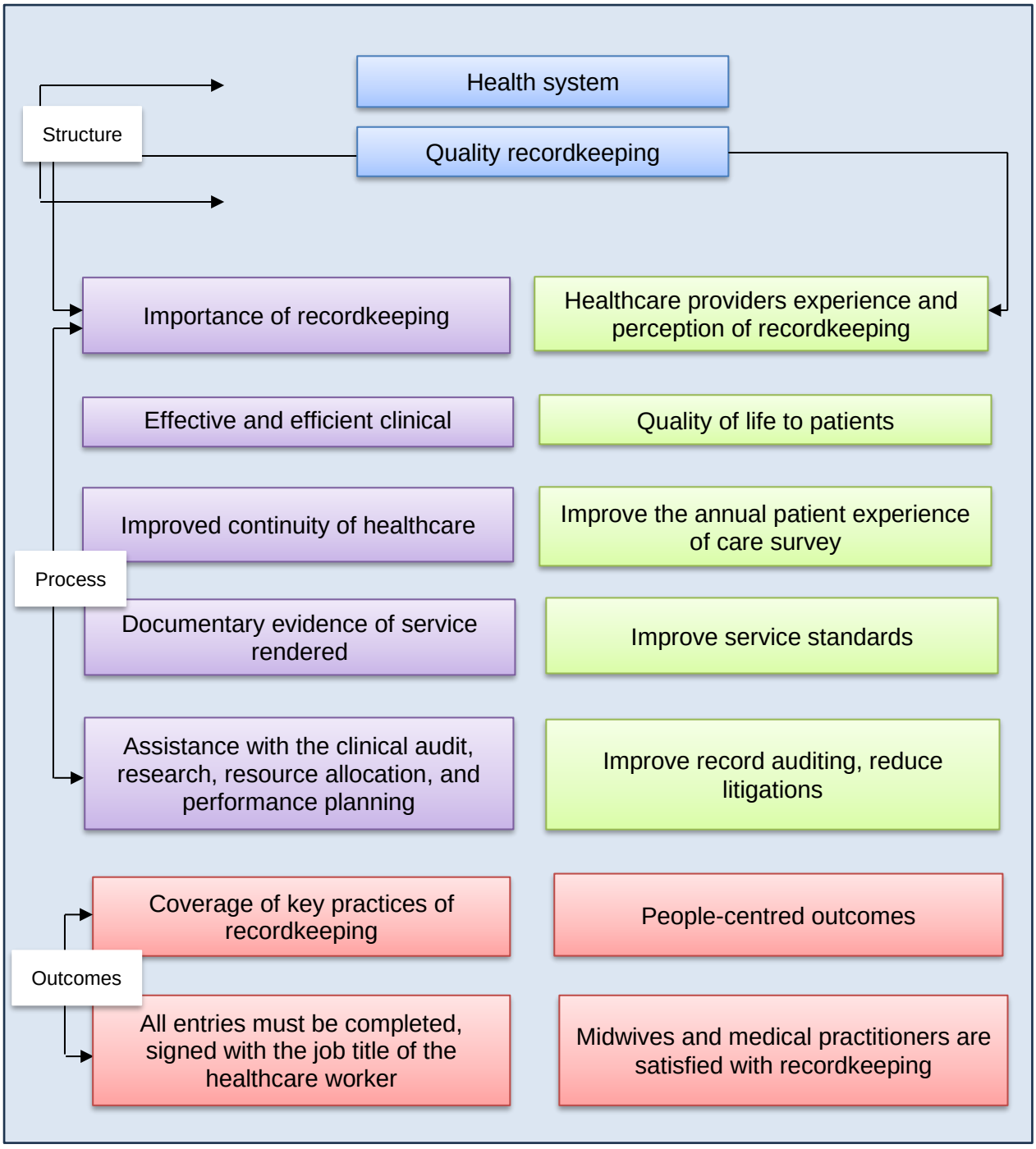


Figure 1.1 Recordkeeping theoretical framework as aligned to HBM

A paradigm is a worldview or a comprehensive viewpoint on the complexity of the universe. The study applied pragmatic approach, which includes maximising the advantages and minimising the disadvantages of each strategy while implementing a mixed methods approach (Fetters, Curry & Creswell 2013:2134).

A research paradigm is “a set of worldviews or guiding principles that direct people's behaviour with reference to the study’s methodology” (Kivunja & Kuyin 2017:26). Thomas

Kuhn initially coined the term paradigm in 1962 to refer to a conceptual framework shared by a community of scientists that gave them a practical model for analysing issues and coming up with answers (Anand, Larson & Mahoney 2020:1652). The term paradigm is derived from the Greek word paradeigma, which means pattern, three-part worldview is what is referred to as a research paradigm. The research paradigm includes the reality, philosophical assumptions regarding the nature of realities in social science, and beliefs and value systems also known as axiology, or what one thinks to be true (Shannon-Baker 2016:319). Philosophical assumptions about principles, values, ideas, beliefs, and notions are referred to as paradigms. When combined, they can help the researcher better grasp the subject of the study (McEwen & Wills 2014:28).

Makombe (2017:3363) argued that when conducting research, it is critical to determine various research paradigms as well as philosophical issues with ontology, epistemology and methodology. Furthermore, the paradigm of the study accommodated a mixed method approach. Ontology of the study was attained by referring to constructed and historical realities about recordkeeping. The epistemological dimension of the study is evidenced in the application of a sequential explanatory mixed methods to realise the methodological aspect of this study. These components can have an influence on how the research is conducted since they show how perceptions, values, presumptions, and the concept of reality and truth are viewed. The chosen paradigm guided the researcher's selection of the design and methodology approach.

1.7.1 Pragmatic worldview

The researchers select a practical approach, anticipating that proper synthesis of qualitative and quantitative approaches would improve the quality of the findings (Soilemezi & Linceviciute 2018:1). Pragmatics use all accessible means to interpret the research problem in the best possible way rather than focusing on the method used (Ivankova, Creswell & Plano Clark 2017:312; Polit & Beck 2021:587).

1.8 RESEARCH METHODS AND DESIGN

This study applied a mixed methods approach. The mixed method research correlates quantitative and qualitative approaches for gathering and interpreting data for a single investigation (Sutton & Austin 2015:226).

The overall plan for responding to the research questions is referred to as the study design, which also includes recommendations for enhancing the study's impartiality (Polit & Beck 2017:743). The sequential explanatory mixed method design involves conducting quantitative research, analysing the findings, and then building on the findings to describe them in more depth using a qualitative approach (Creswell 2014:15; Polit & Beck 2017:585).

The research process was managed in phases. In phase 1, the researcher gathered and analysed quantitative data. In phase 2, qualitative data were gathered and analysed. In phase 3, quantitative and qualitative data were integrated. The last phase of the study, strategies for recordkeeping during intrapartum care were developed and validated by experts using Delphi technique.

In this study, the sequential explanatory mixed methods design was used to address the research objectives and questions in which quantitative and qualitative approaches were used for their practicality, complementary and collaborative purposes in enhancing the validity of the results.

Walker and Avant's eight-stage concept analysis method was used to develop the strategies. It entails choosing a concept, deciding on the goal of the analysis, identifying all concepts' uses, defining attributes, choosing a model case, choosing borderline, related, and opposite cases, determining antecedents and consequences, and defining empirical referents (Walker & Avant 2011:159).

1.8.1 Sequential explanatory design

This study implemented sequential explanatory mixed methods design, involving both quantitative and qualitative approaches. The first phase implied collecting and analysing quantitative data, followed by the second phase, which entailed the collection and analysis of qualitative data (Polit & Beck 2021:594). The first and second phase data collection and analysis led to the third phase of data integration that provided a comprehensive response to the research questions and conclude findings about the recordkeeping (Gray & Grove 2021:394). Sequential explanatory mixed methods design of this study is illustrated in Figure 1.2.

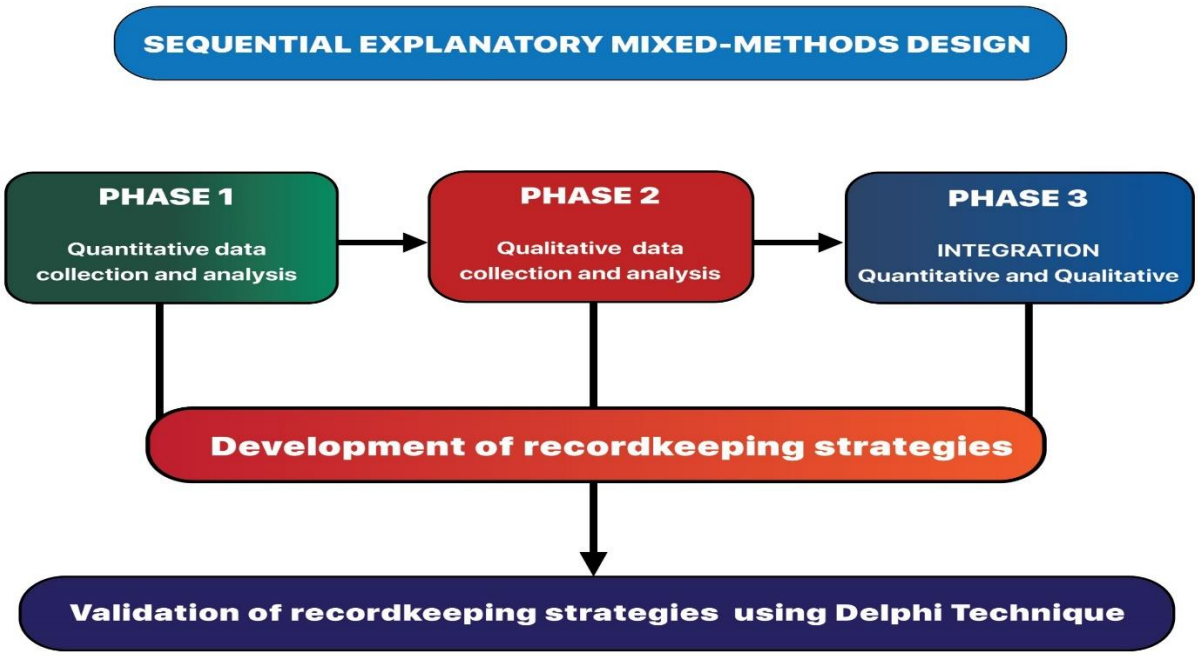


Figure 1.2 Sequential explanatory mixed-method design

1.8.1.1 Retrospective design

Retrospective design implied that data is gathered on a present outcome and then retrospectively linked to previous causes in research known as “retrospective document analysis” (Brink, Van der Walt & Van Rensburg 2018:102). Any form of identification data was removed from the files of these specific healthcare facilities to ensure anonymity. The researcher evaluated the maternity case record for completeness and accuracy regarding recordkeeping and the strategies utilised in these healthcare facilities.

1.8.1.2 Descriptive design

This design’s primary objective is to accurately depict people's traits, situations, and the regularity with which particular things occur and the main objective of this design is to accurately represent people's characteristics, circumstances and the frequency with which specific events occur (Polit & Beck 2017:726).

Quantitative data was collected using non-participant unstructured observations and a developed checklist. A description of the findings was done. The verbal responses from the participants in qualitative phase were transformed into themes to enhance the

reader's understanding to determine and describe the perception of midwives and to establish the experiences of the medical practitioners regarding recordkeeping.

1.8.2 Study setting, population, sampling, and sample size

1.8.2.1 Setting

The study was conducted in seven purposively selected district and regional hospitals in Limpopo Province. All seven hospitals were selected as study sites of Sekhukhune District. A total of five district hospitals labelled as level 1, two were regional hospital labelled as referral hospitals or level 2 were used for the study as the setting for this study.

The selected healthcare facilities are public hospitals situated in one district. The selected healthcare facilities are located within four local municipalities which are Fetakgomo-Tubatse, Makhuduthamaga, Elias Motswaledi and Ephraim Mogale. Sekhukhune district with its local municipalities is displayed in Chapter 3.

1.8.2.2 Population

According to Gray and Grove (2021:60), population is a sizable collection of people or elements that serve as the research's focus or the complete collection of instances that a researcher is interested in (Babbie 2016:116). Populations are not just restricted to people; they may also comprise things like biopsy samples in one lab or medical records at a certain hospital (Polit & Beck 2017:249). In this study, population included the maternity case records, policies and guidelines for recordkeeping, midwives and medical practitioners working in the selected healthcare facilities participating in the study.

Phase 1: Population

The population of phase1 included the non-participant unstructured observations and 2572 (10%) of the total maternity case records deliveries of 25720 for the year 2019 extracted from the maternity registers and available policies and guidelines for recordkeeping in the maternity unit used to respond to objectives 1 and 2 of this study.

Phase 2: Population

The population for phase 2 were of midwives and medical practitioners working in the selected healthcare facilities to provide intrapartum care, Limpopo Province.

1.8.2.3 Sampling method

Sampling method is a technique for choosing individuals, occasions or objects that are typical of the community being researched (Gray & Grove 2021:37).

Phase 1: Quantitative phase

A total of 10% of the maternity case records were selected randomly from seven facilities located in Limpopo Province. In this study, the researcher used systematic sampling which is a basic probability sampling technique. Systematic sampling involves selecting every kth case from a list, such as every tenth (10th) maternity case record in the maternity delivery register from which a random sample will be drawn. The desired sample size is established at some number (n=). The size of the population was known or estimated (N=25720). By dividing (N=25720) by (n=2572), a sample interval (k=10) was established. The maternity case records were reviewed from healthcare facility selected from maternity delivery registers. The researcher evaluated maternity case records on completeness and accuracy of variables using the developed checklists. In this study, non-participant unstructured observations and a checklist were applied to achieve the objectives of this phase. As guided by Ciesielska, Bostrom and Ohlanada (2018:33), the researcher observed the availability of filling room, expanded public works programme (EPWP) guidelines displayed at the strategic areas, level of staffing of maternity units and working conditions. The services of a statistician were used to analyse and interpret the quantitative data on analysis of the information collected.

Phase 2: Qualitative phase

Convenience sampling describes the practice of selecting research participants from among those who are accessible (Polit & Beck 2017:724). This study used convenience sampling to gather the names of all midwives employed in the labour units of two regional hospitals and five district hospitals.

Using a nonprobability selection technique known as “purposeful sampling”, the researcher selected the midwives based on their perceptions on quality recordkeeping during intrapartum care (Polit & Beck 2017:741). Purposeful sampling was further used by the researcher to select the medical practitioners for an in-depth interview to determine the opinions or experiences of all the medical practitioners on the quality recordkeeping during intrapartum care.

The research applied a Delphi approach to gather input from experts to develop strategies. A Delphi process is a technique aimed at determining the level of agreement on certain issues as stated by Stanyon, Goldberg, Astle, Griffiths & Gordon (2017:583).

1.8.2.4 Sampling size

According to Taherdoost (2017:237), a sample size refers to the number of units chosen from which data was gathered from. The sample size for the quantitative phase of this study was 10% (n=2572) of maternity case records (N=25720) of deliveries carried out in from 1st January to 31st December 2019.

Six focus group discussions where twenty-nine midwives (n=29) participated. Fourteen (n=14) medical practitioners participated in in-depth interviews as part of the qualitative phase. Furthermore, a Delphi technique with twelve experts employed by the Department of Health in South Africa participated in in this study to validate the developed strategies for recordkeeping during intrapartum care.

1.9 DATA COLLECTION

The main objective of collecting data is to measure the study variables (Creswell & Creswell 2018:203). Non-participant unstructured observations were undertaken informally to determine the challenges associated with recordkeeping. The researcher established the availability of the maternity policies and guidelines relating to recordkeeping and evaluated the recordkeeping of the maternity case records during intrapartum care using the developed checklist. The checklist was used to assess the variables of maternity case records developed from the National Guidelines for Maternity Care in South Africa (DoH 2016:36). As advised by Polit and Beck (2017:282), a

structured observation instrument in the form of a checklist (Annexure D) was utilised. Open-ended semi-structured focus group discussions and in-depth interviews were conducted. Chapter 3 explains data collection processes in details.

1.10 DATA ANALYSIS

Quantitative data was analysed statistically, and thematic analysis was applied for qualitative data as guided by McCrudden and McTigue (2019:396).

Phase 1: Quantitative

The purpose of quantitative data analysis was to reduce, organize, and give meaning to data (Fouché & Bartley 2017:249). The researcher translated data from the the questions in non-participatory unstructured observations and checklists into excel format with the statistician's assistance. The data analysis and verification were done using the Statistical Package for Social Sciences (SPSS) version 23. Descriptive statistics were utilised to answer the research problem for this phase.

Phase 2: Qualitative

Nieuwenhuis (2017:109) describes qualitative data analysis as an ongoing and iterative process, meaning that data collection, processing, analysis and reporting are interlinked. In this study data were organized into smaller sub-themes and examined for differences and similarities by grouping them into themes. Data preparation, data coding and measurements to enhance the trustworthiness was ensured as described by Nieuwenhuis (2017:114). Chapter 3 of this study details the data analysis process.

1.11 VALIDITY AND RELIABILITY

Validity is the extent to which an instrument measures the attribute of a concept accurately (Creswell & Creswell 2018:286; Fain 2017:240; Hitchcock 2018:157; LoBiondo-Wood & Haber 2018:278). However, measures of validity, which are applicable and discussed in this study in Chapter 3 are face and external validity.

In both qualitative and quantitative research, validity is essential to confirming that the study is measuring what it is intended to measure (Creswell & Creswell 2018:286). Liao and Hitchcock (2018:157) indicated that the validity of the checklist and document analysis should be ensured by developing researcher questions that were in line with the study objectives.

Reliability refers to replicability and stability refers the capacity to consistently duplicate the extend of utilising a comparable technique (Creswell & Creswell 2018:286; Moule, Aveyard & Goodman 2017:412). To ensure reliability, the researcher pre-tested the checklist using five maternity case records to establish the completeness and accuracy of the intrapartum care variables. The maternity case records used as a pilot were not part of the main study. After testing, the checklist was checked for unclear questions, and those unclear questions were resolved to avoid misinterpretation in the main study. The statistician and the supervisor assisted in compilation of the checklist for correctness, accuracy, consistency, and stability.

1.12 TRUSTWORTHINESS

According to Brink et al (2018:110), trustworthiness refers to the methods justifying the reliability and validity in qualitative research. According to Polit and Beck (2017:559), the trustworthiness of the study is attained through compliance to the components of credibility, dependability, confirmability, and transferability. Trustworthiness is discussed in detail in Chapter 3 of this study.

1.13 ETHICAL CONSIDERATIONS

A system of moral principles called ethics is concerned with how closely research practices comply with their social, legal, and professional obligations to study participants (Polit & Beck 2017:727). The researcher was granted ethical clearance from University of South Africa Research and Ethics Committee, Department of Health Studies (Annexure A). A request to conduct the study in seven selected healthcare facilities situated in Sekhukhune District Health was submitted to Limpopo Department of Health Research Ethics Committee through the Head of the Department (Annexure B). Permission was granted by Limpopo Department of Health Research Ethics Committee (Annexure C).

1.13.1 Protecting the rights of participants.

Participants' rights were safeguarded by adhering to the ethical norms of beneficence and non-maleficence, respect, and fairness (Varkey 2021:17). The rights to participants' shared confidentiality, privacy, and anonymity were also considered in this study. The permission form was signed voluntarily by participants and the freedom from harm and the right to protection were considered (Manti & Licari 2018:145) The freedom of self-determination and complete transparency was protected.

1.13.1.1 Autonomy

Polit and Beck (2017:212) explain whether a possible participant may choose voluntarily whether to take part in a study without experiencing negative effects. In this study, the researcher respected the participant's right to decline participation and to revoke consent at any moment. The participants were also made aware of their right to decline to provide certain information and their ability to do so. Participants in the study were neither coerced nor misled into giving their permission by the researcher. Kumar (2014:173) and Kvale and Brinkmann (2015:93) advice the researchers to give a detailed explanation to the participant of the research's objectives, the participant's freedom to take part or decline participation, and the study's potential risks and benefits of the study, the principle of the autonomy was achieved in the study in line with the advice.

1.13.1.2 Principle of beneficence and nonmaleficence

Brink et al (2018:103) remind researchers how crucial it is to safeguard the participants' welfare by acting right and avoiding wrongdoing. The principle of nonmaleficence implies that researchers have a duty to avoid, prevent, or reduce harm (Polit & Beck 2017:139). In phase 1, the study comprised non-participant unstructured observation, document analysis of the maternity case records; no individuals were affected, and no damage was resulted from the de-identification of the information or the usage of the name of the healthcare provider. The midwives and medical practitioners did not face any danger or injury throughout phases 2 and 3, and their involvement was completely voluntary and unassisted.

1.13.1.3 Principle of Justice

The principle of justice relates to Participants' claim to a reasonable selection and treatment, according to Brink et al (2018:103). This principle was applied through random selection of documents for analysis and by providing each midwife and medical officer a chance to participate in the study based on their availability and desire.

1.13.1.4 Adherence to Covid-19 principles

During data collection, participants may be exposed to the Covid-19 infection. To limit infections, the researcher conducted the following infection prevention and control procedures in accordance with WHO standards.

According to WHO (2020:1) participants were instructed to wear their masks, not to touch their eyes, clean their hands with water and soap or an alcohol-based hand rub before and after the discussions and interviews, follow proper coughing etiquettes, which are to cover the nose and mouth with the bent elbow or a tissue when coughing or sneezing, refrain from taking in the study if they were unwell, and seek medical attention when they had a fever. Throughout all stages of data collection, the Covid-19 measurements were applied.

1.14 SCOPE OF THE STUDY

The study scope was to evaluate recordkeeping in maternity case records and to develop strategies to enhance recordkeeping for intrapartum care in Limpopo Province. In these selected healthcare facilities located in the Limpopo Province, the study focused on the non-participant unstructured observations during hospital visits, completion of maternity case records of births carried out in 2019 of each hospital, an in-depth interview with medical professionals and focus groups discussion with midwives.

1.15 STRUCTURE OF THE THESIS

This thesis comprises of eight chapters.

Chapter 1: Orientation of the study

The study provided the background information regarding research problem, description of the study problem, purpose of the study, objectives, study questions, significance of the study, key conceptual terms, paradigm, theoretical and philosophical foundations, study methodology, ethical consideration, scope and structure of the thesis.

Chapter 2: Literature review

The reviewed literature for quality recordkeeping used is presented and deliberated in this chapter. For nursing and medical care content and context, the reviewed literature discussed the scope and trends for recording during intrapartum care.

Chapter 3: Research design and methodology

Research design and methodology to conduct the study on the quality of recordkeeping during intrapartum care in Limpopo province is described. This chapter discussed the rationale for using the mixed methods approach and a sequential explanatory study design. The chapter also discusses in details validity, reliability, trustworthiness, and ethical considerations related to the study.

Chapter 4: Quantitative data analysis and description of the research results

The chapter presented quantitative results of the study. The study findings included non-participant unstructured observations and document analysis using the developed checklist and established availability of the maternity guidelines relating to recordkeeping in the Limpopo Province.

Chapter 5: Qualitative data analysis, presentation and description of the research findings

This chapter presents a description and analysis of the qualitative data. An outline of the data collection and analysis is followed by the findings from the focus group discussions with midwives and in-depth interviews with the medical practitioners.

Chapter 6: Integration of quantitative results and qualitative findings

This chapter presents the synthesis of quantitative and qualitative data with the purpose of integrating gathered from the two phases. Data integration also allows detailed insights based on the present findings.

Chapter 7: Strategies to improve the quality of recordkeeping in Limpopo Province

The chapter details the process followed to develop and validate the strategies to enhance the recordkeeping during intrapartum care.

Chapter 8: Conclusion, limitations and recommendations

Chapter 8 presents the study's conclusions, recommendations, and limitations, based on the interpretation of findings discussed in Chapters 4, 5 and 6. The chapter further provides recommendations for excellent recordkeeping to researchers, educators, and policymakers.

1.16 SUMMARY

This chapter described the orientation of the study, background information regarding the research problem, definition of terms, study purpose, objectives, questions, paradigm, research significance, theoretical and philosophical foundations of the study, research design and method, study settings and participants and ethical considerations.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

The chapter provides literature on recordkeeping during intrapartum care. In this study, literature review concentrated on the key concepts relating to quality recordkeeping during intrapartum care. The literature review includes the significance and patterns of recordkeeping in the context of nursing and medical interventions during intrapartum care. The literature presented reflects on the importance of recordkeeping, potential negative contributory factors to recordkeeping, consequences of poor recordkeeping, current recommendations, and interventions to enhance recordkeeping. The review commenced in 2018, when the researcher's interest in conducting the study was at its peak. The strategy involved the following consultations:

Department of Health Citations, Google Scholar for electronic search, previous Masters and PHD Studies with the same topic of interest (National Electronic Dissertation and thesis (EDT) Portal and UNISA (EDT), articles related to the study topic (CINAHL, PubMed Central) and books requested from Protea Library.

2.2 BACKGROUND REGARDING NURSING AND MEDICAL CARE RECORDKEEPING

Mathioudakis, Rousalova, Gagnat, Saad and Hardavela (2016:370) highlighted that poor recordkeeping does not put the patient at the centre of care, but rather increases medico-legal risks and makes it challenging to track clinical care decisions and care objectives. According to a study conducted in Uganda by Okaisu, Kalikwani, Wanyana and Coetzee (2014:1251) on how to keep good clinical records, it was found that inadequate recordkeeping is a widespread issue in public hospitals despite multiple attempts by nurse management to enhance recordkeeping, as noted in the study findings of many researchers. It is therefore confirmed that a breakdown in communication between healthcare workers may be the outcome of nurses' inadequate recordkeeping techniques.

Ayalew, Kibwana, Shawula, Misganaw, Abosse, Van Roosmalen, Stekelenburg, Kim, Teshome and Mariam (2019:1) conducted a study in Ethiopia on understanding job satisfaction and motivation among nurses in public health facilities and found that human resource management, including recordkeeping, is important for increasing the efficiency of the healthcare system. The study done by Toode, Routasalo, Helminen and Suominen (2015:31) on hospital nurses' working conditions in relation to motivation and patient safety revealed that hospital nurses have frequent one-on-one interactions with patients hence nurses have direct control over the accuracy and security of recordkeeping.

According to Gusar, Lazinica and Klarin (2020:163), in an analysis of differences in job satisfaction, work motivation and level of nursing recordkeeping in two wards, respondents were primarily satisfied with their jobs and reported having a medium level of motivation, but their level of nursing recordkeeping was not satisfactory. However, the frequency of nursing recordkeeping was not proven to be inversely connected with job satisfaction or motivation at work, indicating that neither element had a role in determining the amount of job motivation or satisfaction.

According to research conducted in Turkey, Istanbul by Genctuc, Ay, Demirci, Acamur, Izdes and Bulut (2017:413) on the assessment of the nursing records of patients with cerebrovascular illness in critical care, found that nurses infrequently record their activities and only make observations if something is wrong, This kind of incomplete recording can be an indication that the task wasn't completed.

Kamau (2015:17) reported that recordkeeping may be improved by using an electronic filing technological system for documenting the benefits of EHR systems that are timely set to remind the nurses to graph essential care aspects, generating absolute clinical documentation of a patient’s situation. Furthermore, the study recommended that education in nursing offers the nurse the basic and specific proficient nursing skills for using the clinical decision support (CDS) systems integrated into EHRs. The study recommended a need to manage the challenge of rapid electronic documentation by nurses and doctors to advance the transition from paper to electronic records (Kamau 2015:3).

2.3 OBLIGATORY AND LEGISLATIVE FRAMEWORK GOVERNING NURSING AND MEDICAL RECORDKEEPING

2.3.1 The Constitution of the Republic of South Africa

Chapter 10 of the Constitution Act (Act 108 of 1996), section 195, among others, set the provision for:

- An up-to-date, accessible, and correct information.
- A requirement that the public service is accountable, including recordkeeping, application, standardisation, and archiving procedures for simple retrieval of files (South Africa 1996a).

2.3.2 The National Archives and Records Service Act (Act 43 of 1996), as amended)

Section 13 of the Act is overseeing the accurate administration and maintenance of public documents held in the care of governmental entities, with the terms determined by National Archives and Records Service Act, the Act is empowered to:

- Decide which recordkeeping methods governmental entities ought to employ.
- Permit the transfer of public records into the archived Government or their disposal.
- Establish the terms under which records are permissible for microfilming or electronic reproduction as well as the guidelines for managing electronic records systems (South Africa 1996b).

The National Archives and Records Service includes the acts regulations (Regulation R.1458 of October 2007). The detailed guidelines for how governmental entities should handle their records are contained in Part V: Management of the Government Records (DoH 2007:7).

2.3.3 The Protection of Personal Information (POPI) Act (Act 4 of 2013)

Section 2 of the POPI Act (Act 4 of 2013) (South Africa 2013) objective is to enhance the effectiveness and efficiency of the fundamental human right to privacy provided by the

Constitution Act (Act 108 of 1996) (South Africa 1996a), by protecting the individual's personal information when managed by a responsible and accountable office, subject to reasonable challenges with the following objectives owing to the right to privacy above other rights, especially the right of access to the information and by protecting the important benefits, including the open movement of information within South Africa and across the world.

2.3.4 Promotion of Access to Information Act (Act 2 of 2000)

Promotion of Access to Information Act (PAIA) (Act 2 of 2000), which flows from Section 32 of the Constitution, gives effect to the constitutional right of access to any information held by the State and any information held by any other person, provided that such information is required for the exercise or protection of any rights (South Africa 2000).

The purpose of Section 2 of the Constitution of the Republic of South Africa Act (Act 108 of 1996) (South Africa 1996a) read in conjunction with POPI Act (Act 4 of 2013) (South Africa 2013) gives effect to implement the right to privacy by protecting personal information when it is handled by a responsible party, subject to acceptable constraints that are intended to:

- Striking a balance between other rights, the right of access to information and privacy.
- Safeguarding crucial interests, such as the unhindered exchange of information inside the Republic and across international boundaries.

2.3.5 Regulations setting out the acts or omissions as per the South African Nursing Council

After consultation with the South African Nursing Council and in terms of section 58(1)(i) of the Nursing Act, 2005 (Act No. 33 of 2005), the Minister of Health has made the regulations in the Schedule (SANC 2014, Regulation R.767, as amended). In Chapter 3 of Regulation Section 30, a disciplinary action can be taken against midwife due to failure to keep clear and accurate records of the progress of the antenatal, labour and puerperium and all acts performed in connection with the mother and a child.

Furthermore, the Minister of Health herein, in consultation with South African Nursing Council, and in terms of section 58 (1)(q) of the Nursing Act, 2005 (Act No. 33 of 2005) makes the Regulations in the Section (Section no 2127) which is regulations regarding the scope of practice for nurses and midwives. The regulation 2 (1) (p) and 4(1) (v) indicate the scope of professional nurses and midwives is to create and maintain the concise, complete, accurate and legible midwifery records.

2.3.6 National guidelines for Patient Safety Incident (PSI)

The policy for patient safety incidents emphasises the structured reporting of PSI as it was found that structured reporting is more effective and efficient to manage PSI than random reporting especially when data is captured on an electronic data system (South Africa 2022:33). Therefore, structured reporting is mandated for the South African health sector, employing a variety of predefined forms and templates to collect data on PSIs.

2.3.7 Health Professions Council of South Africa (HPCSA) guidelines on recordkeeping, Booklet 9 of 2016

Any student, intern, or practitioner who signs official patient care documents, such as prescriptions, certificates (except death certificates), patient records, hospital, or other reports, in the course of their professional duties shall do so next to their initials and last name (HPCSA 2016).

2.3.8 National Health Act (Act 61 of 2003)

Section 13 of the National Health Act (Act 61 of 2003) (South Africa 2003), on the obligation to keep records gives effect to the National Archives of South Africa Act (Act 43 of 1996) (South Africa 1996b) and the Promotion of Access to Information Act (Act 2 of 2000) (South Africa 2000), the individual in charge of a health establishment is required to make sure that a health file is created and maintained at that establishment for each client of medical services.

2.4 NURSING AND MEDICAL RECORDKEEPING DURING INTRAPARTUM CARE

As stated by the NMC (2018a:8), “good recordkeeping is an inherent aspect of nursing and midwifery practice and is crucial to the provision of safe and effective care”. It is not a supplement to be added if the situation permits. A crucial component of nursing care for all healthcare professionals is recordkeeping. A high standard of note-keeping is necessary due to the continuous demand for healthcare programs to provide reliable patient care as well as the ongoing rise in medicolegal cases in maternity (DoH 2016:24).

A manual for clinics, community health centres and district hospitals (DoH 2016:21) cited that a long and healthy life for the situation-background-assessment-recommendation (SBAR) documents such as letters of referral, ANC documents, admission and follow-up notes morning and evening handover meetings, a summary of patient discharge referral letters outline the guidelines for the structure and content of the nurse and doctor’s obstetrical patient records. According to the Ideal Clinic, audits of clinical notes in patient records based on these criteria are a crucial part of quality assurance (South Africa 2022:35). Notes and partograms can be evaluated using audit tools. The standards provide a list of headings for clinical records and an explanation of the data that must be included under each item.

As stated by the HPCSA (2016.1), any important document created by a healthcare professional during or after a health assessment, examination diagnosis, or use of health establishment is referred to as a health record. The HPCSA’s (2006:1) ethical rules state in rule 15, any student, intern, or medical professional must sign their name in block letters next to their initials and last name on any official patient care documents, such as prescriptions, certificates other than death certificates, patient records, hospital reports, or other reports when performing their professional duties.

2.5 IMPORTANCE OF RECORDKEEPING

The increasing demand for healthcare programs to provide quality patient care and the significant rise of maternity medicolegal incidents necessitate accurate recordkeeping (DoH 2016:21). The clinical in-patient recordkeeping document explains the requirements for the layout and information contained in a physician's obstetric patient records. These requirements apply to the situation-background-assessment recommendation (SBAR)

referral letter, antenatal clinic, acute admission, follow-up notes, handover communications, and discharge summaries (DoH 2016:21).

Griffith (2016:408) conducted a study in Britain about keeping detailed notes and found that the main aim of keeping records is to have a record of the interventions offered to the mother and child. Records provide a crucial legal function in addition to their therapeutic role, to prove that the midwife and doctor have met their obligations.

The DoH (2016:29) recommends that every pregnant woman coming for ANC services in public health institutions should be provided with the maternity case record. The maternity case record remains the standard national document used to monitor the steps of pregnancy from the first antenatal visit until the discharge summary after delivery.

Furthermore, the record should be completed at each antenatal visit and retained by the mother until delivery, after which it will be kept for a final referral. The maternity case record serves to provide the woman with a record of pregnancy, offer health providers guidelines on history taking, examination, identifying problems during pregnancy and recording of action taken, enable healthcare workers to manage the follow-ups and facilitate recordkeeping (DoH 2016:29).

2.5.1 Recordkeeping

Keeping accurate records is an essential part of a health and social care professional's job, and the Nursing and Midwifery Council has made this a top priority (NMC 2018a:8). A thorough written record outlining every aspect of patient monitoring is vital, not only for the sake of nurse management or care delivery but also for the benefit of the various multidisciplinary teams involved in the patient's shared information. As indicated in the definitions that follow, different writers or works of literature expressed different perspectives on the term “recordkeeping”.

Recordkeeping is a crucial component of nursing care for all healthcare professionals, as stated by Hand (2014:531). With reference to the NMC (2018a:8) notes, “good recordkeeping is an inherent aspect of nursing and midwifery practice and is crucial to the provision of safe and effective care”.

D’Cruz and Rattan (2018:581) state that maintaining records is crucial to providing safe and adequate treatment. Temporal recordkeeping has become more important in an environment of litigation and complaints, but it takes time to do it correctly and cover all the required areas of care. Practitioners have started employing copy-and-paste notes and templates, which, although helpful, have their own drawbacks and issues of their own.

Recordkeeping is an essential part of nursing care for all provided healthcare (Hand 2014:531). According to the NMC (2018a:8), recordkeeping is an essential component of nursing and midwifery practice and is vital to the delivery of safe and effective care.

Ajedunmobi (2020:1) discusses the advantages of good recordkeeping and describes recordkeeping as a professional practice tool that should aid in care technique. Recordkeeping is not a distinctive or optional task that should be done if there is time. Instead, it should be done as soon as a patient has been observed, assessed plan of care was implemented.

According to Nabwami (2018:1), preserving records is a professional practice instrument that should support the delivery of treatment immediately after the patient was assessed or the operation is completed, a record should be prepared. It is crucial that the patient's records contain an accurate record of all therapies and any responses to those interventions.

According to the Royal College of Nursing (RCN) (2017:2), recordkeeping is a vital part of effective communication in nursing and integral to promoting safety and continuity of care for patients and clients. Furthermore, nursing staff need to be clear about their responsibilities for recordkeeping in whatever format records are kept.

Recordkeeping is recording a piece of information in the maternity case records to preserve and advance the safety of the patient (Taiye 2015:1) in the context of this study. This is the appropriate and thorough documentation of all the actions the nurse performed on the mother and the infant for this research.

Nursing documentation is a keyway to figure out how well a patient is being cared for. Either paper is used to keep track of it, or electronic health records are used. To ensure

the safety and quality of healthcare services, nursing documentation must meet the highest standards (Akhu-Zaheya, Al-Maitaah & Hani 2017:1).

2.5.2 Principles of good recordkeeping

According to Jevon and Ewens (2012:25) on recordkeeping, some key factors underpin good recordkeeping, for example, the patient's records should have up-to-date information about his or her health, be authentic, dependable, reliable and be updated as soon as possible after each event that can be recorded.

Furthermore, Jevon and Ewens (2012:25) indicated that the record should be distinctive in a way that prevents text erasure; be timed, be consecutively dated, be signed on original registers, be readable, draw a clear line through any changes, signed and dated; not using or avoiding acronyms; avoid using jargon or slang since not all businesses or organisations will use the same terms; be kept safe and should only be burned in accordance with local regulations; avoid using empty words; speculative assertions, rude or abusive words, and offensive subjective statements. Follow local rules on patient record identification or label each page of the record with the patient's name, date of birth, and hospital identification number; be legible after being scanned or photocopied.

2.5.3 Types of records relevant to obstetric care

According to the DoH (2016:22), the types of records relevant to obstetric care are as follows:

Table 2.1 Types of records relevant to obstetric care

1 Antenatal care notes Following the initial appointment, outpatient notes are taken at each subsequent visit to the antenatal clinic (DoH 2016:22). The ANC notes are intended to ensure that all the pregnant woman's information is recorded. Ngxongo et al (2016:12) indicated that the information previously recorded in the maternity case record is not repeated by the midwife or the doctor. To describe the intervention during the ANC, the progress notes are updated with any additional or crucial information (DoH 2016:22).
2 Acute evaluations not for admission notes DoH (2016:23) states that the clinical details on hospital admission for antenatal/postnatal disorders or when in sign labour are noted in the hospital admission record.

Every pregnant woman consulted by the doctor as inpatient with an acute challenge should be recorded with full admission of admission notes and a discharge plan that has been approved by the right clinician (DoH 2016:23).

3 Admission notes

The DoH (2016:23) highlighted that every pregnant patient should have a nursing care plan when they are admitted in the maternity unit. The plan should include the patient's age, gravidity and parity, gestational age, number of postpartum days, known allergies, social context, delivery history (if postpartum), immediate problem statement, previous medical history, previous obstetric history, and other pertinent information (DoH 2016:23). HIV status if negative, the date of the most recent retest If positive, the most recent viral load, CD4 count, date of treatment initiation.

The DoH (2016:23) showed that rhesus and syphilis status, information about any current medications, and allergy status, details of general examination, details of abdominal examination (minimum requirements when antenatal: height of fundus, number of foetuses, lie, side of the baby's back, presentation, head-above-brim, clinical weight estimation), the height of fundus if post-partum, details of speculum examination, details of vaginal examination.

Furthermore, if membranes ruptured, and the time of delivery are required observations (minimum requirements: blood pressure, heart rate, temperature, respiratory, the dated and signed nursing instructions must be written clearly on the intended ward for admission. The general observations necessary and their frequency are in accordance with the standard nursing care plan.

Frequently, if clinically indicated, the action to be taken if any observations are abnormal diet or fluid requirements as well as IV fluid requirements, if indicated; NPO, if indicated; whether CTG is indicated or not; the frequency thereof, and whether it must be approved by a clinician.

4 Follow-up notes

Follow-up notes should include, the date and time of examination, gestational age, number of days postpartum on that day, clinical problem, rationale for remaining in hospital the following day, treatment plan, and recommended delivery or discharge schedule (DoH 2016:24).

5 Handover notes

The DoH (2016:24) recommended that a transfer of accountability summary must be completed before a following shift takes over the care of an acute obstetric in-patient. This must include the following information: the date on which the decision to transfer care was made; the name and title of the physician who is now taking over the patient's ongoing inpatient care; and, if necessary, a clear indication of who from another discipline or special intervention team needs to be called. A brief description of the present issue, the suggested management plan, the new management plan (if adapted or changed at handover), and when the next clinical review is due. An identification of the patient at high risk of clinical deterioration who will need an immediate reaction if contacted (DoH 2016:24).

6 Intrapartum notes

DoH (2016:24) highlighted the use of clinical notes to complement partograms showing the progression of labour. Additionally, women in a labour ward must be evaluated by a qualified

medical practitioner at least every four hours, and relevant records must be taken in conformity with the clinical situation (DoH 2016:24). According to DoH (2016:24), all patients in latent Labour should have their partogram and any relevant reports completed by an experienced medical practitioner every four hours at the very least. DoH (2016:24) insisted that patients in active labour should have their partogram and any relevant progress reports completed by an experienced healthcare professional every two hours at the very least. High-risk women should see a doctor every four hours at the very least (DoH 2016:24). The patient should be examined as quickly as feasible in circumstances when a professional nurse seeks guidance on a patient needing emergency care. If that individual is involved in another emergency, the second on call or the local protocol must be followed. Every intrapartum memo needs to be signed and dated. Additionally, when CTGs are assessed, they should be signed, dated, and timed, with a pertinent categorization made in the notes and the necessary action taken or suggested (DoH 2016:24).

7 Surgery and invasive procedures notes

Notes from invasive procedures and surgery, such as notes from a delivery process.

The clinical record having surgery and or invasive procedures should include documentation indicating informed consent has been obtained and that the procedure's benefits, hazards, complications, and potential alternatives treatments have been discussed (DoH 2016:25). In the maternity case record, the appropriate pro-forma should be filled out for a cesarean section and/or tubal ligation procedure. For any other surgeries or invasive treatments, a record of the procedure should be established as soon as possible and must contain the following information:

- When the procedure will be performed.
- The name of the operating surgeon(s), as well as the assistant, regardless of whether they were clinical associates, health professionals, or medical students.
- The anesthetist’s name.
- The diagnosis drawn, and the action taken.
- The location and side of any surgical operation that is reported without an acronym.
- An explanation of the results.
- Information about the tissues that were added, removed, or changed.
- Information about the sutures used.
- A precise account of any challenges or obstacles encountered and how they were resolved.
- Direct postoperative instructions, including the location of care.
- The complete signature, dated and timed by the surgeon.

8 Discharge notes

A concise explanation of the management as an inpatient and the recommended future, including a suggested birth plan, should be included in the discharge summary and clinical information noted in the discharge record of a prenatal discharge (DoH 2016:25). Additionally, the notes should contain information for post-delivery discharge, including family planning requirements, referrals for breastfeeding support, and plan(s) for subsequent pregnancies (DoH 2016:25). One such is the pro-forma in the maternity care recommendation for straightforward births, which states that before the patient is stepped down for more care, discharge reports should have been completed at the patient's pinnacle of care (DoH 2016:25).

A fresh admission note should be written when a patient has been released (before birth) and later readmitted (DoH 2016:25).
9 Referral notes Communication from referring hospital should be more specialized levels of care SBAR (DoH 2016:26). It is recommended by the DoH (2016:26) that notes should be made, in the case of a telephonic consultation with a more senior colleague/referral hospital.

2.6 NEGATIVE CONTRIBUTORY FACTORS AFFECTING RECORDKEEPING

Bijani, Sedeghazadeh, Khani and Khashfi (2016:717) conducted a study titled factors influencing nursing documentation from the perspective of nursing staff, they found that fatigue, a high number of patients, a high number of nursing interventions, a lack of ongoing monitoring and evaluation, and a lack of a staff reward system by nursing management were all big factors affecting the documentation of nursing records in hospitals.

Afolayan, Donald, Baldwin, Onasoga and Babafemi (2013:36) concluded the study in Nigeria about the evaluation of the utilisation of the nursing process and the patient outcome in psychiatric nursing had a contrary view that there are benefits of implementing recordkeeping in the nursing process and provision of comprehensive quality patient care and further sets a global standard upon which nursing care can be audited.

The study conducted by Ahn, Choi and Kim (2016:275) in Korea on factors associated with the timeliness of electronic nursing documentation concluded that nursing shifts were a significant factor associated with timeliness, where the incidence of timely nursing documentation was 9.19 times higher in the night shift as compared to that in the day shift. Furthermore, the study found that nurses often consider the documentation of these records as a burden or a task that interrupts patient care. Sufficient time and resources that can support documentation are required to produce high-quality nursing documentation.

The study conducted in Limpopo Province by Mutshatshi et al (2018:5) on recordkeeping revealed that there are challenges experienced by nurses about recordkeeping in selected public hospitals such as:

- Time needed to complete recording forms.
- Patient movement related to increased patient admission.
- Inadequate supply of recording materials leading to incomplete recording.

Another study conducted in China by Wang, Li, Jiang, Dear and Hsieh (2017:433) on records of medical malpractice litigation as a potential indicator of healthcare quality in China, indicated that in most low and middle-income countries, lack of recording and systems is still a major obstacle in measuring the quality of healthcare. Nurses are increasingly being made aware of the role of clinical records in healthcare litigations despite the shortage that they are experiencing, however, nurses must ensure that their notes are 'meticulous' from a legal perspective because an activity that is not documented is considered not done.

A variety of inhibitors were listed as some of the difficulties impacting accurate recordkeeping by De Marinis et al (2010:12). The inhibitors included lack of information, time, reliable recordkeeping mechanisms, continuity and writing motivation. Nursing records are seen as a poor instrument for evaluating the quality of care since they do not capture all of the duties that nurses do.

The study conducted in India by Putul and Mukesh (2015:31) about the documentation of medical records in day-to-day medical practice identified that while physicians acknowledge the importance of the medical record to both patient care and medical education, there is an increasing recognition that the record in our modern method of processing medical data is fundamentally compromised. Medical records should be stored in a secure manner that allows access to authorised personnel only and is protected against unauthorised or inadvertent disclosure. The handling staff should receive periodic training in the participant's shared confidentiality of member information. Medical records are safeguarded against loss or destruction and are maintained according to state requirements. The following challenges are associated with recordkeeping:

- The legibility of the writing.
- Retention and preservation of records.
- Maintenance of participant's confidentiality and privacy of the hospital records.

- Privileged communication.
- Records storage or space.
- Uniformity and utility of the records.
- Poor quality in recordkeeping that includes omitting of space in the records, slang and jargon and the time it takes to retrieve files by the administrators, fear of reporting medicolegal due to medical litigations.

2.7 CONSEQUENCES OF POOR RECORDKEEPING

Dimond (2005:461) reported that inaccurate recordkeeping compromises patient care and makes it challenging for healthcare workers to justify their practice. Lack of clarity, inaccuracies, spelling errors, missing information, and inability to document actions done are among the most prevalent recordkeeping deficiencies.

The study conducted by Tasew, Mariye and Teklay (2019:612) in Ethiopia on nursing documentation practice and associated factors among nurses in public hospitals found that the familiarity with an operational standard of nursing documentation, lack of time and inadequacy of documenting sheets had a significant effect on nursing practice. Furthermore, the study found that out of the 128 (40.5%) participants did not document every care provided to a patient. Most 65 (41.9%) of them reported their reason to be lack of time followed by shortage of documentation sheets, inadequate human resources, lack of motivation from supervisors and lack of obligation from employing institution by 38 (24.5%), 28 (18.1%), 17 (11%) and 7 (4.5%) respectively.

Bazzo, Sieber and Williams (2015:1) recommended that maintaining accurate medical records is essential for providing patients with high-quality care. Consequently, it is vital that medical records are adequately and thoroughly completed. Protecting patients and eliminating medical mistakes that can result in litigation are two benefits of effective medical recordkeeping. But studies done in many nations revealed that the general standard of medical records is subpar.

2.8 RECOMMENDATIONS TO REDUCE POOR RECORDKEEPING

According to the study conducted by Britz (2018:57) regarding medical recordkeeping, the relevant South African, HPCSA should implement a system to ensure that doctors are

trained on the contents of the HPCSA guidance booklets and the updates of these booklets when they are published to ensure the professional and ethical conduct of doctors by improving their medical recordkeeping principles. It is mandatory that the guidelines be adhered to because they are soft law. The study further recommended that the completion of the doctors' records should form part of the licensing standards for doctors to practice medicine in South Africa, to eliminate medical errors and lawsuits arising from poor recordkeeping. This would enhance patient safety and improve the quality of the medical care provided.

Lorenzetti, Quan, Lucyk, Cunningham, Hennessy, Jiang and Beck (2018:36) conducted a study in Canada on strategies for improving physician documentation in the emergency department and identified seven strategies that have been found to increase recordkeeping by physicians in emergency departments (ED) settings. The strategies included.

- Dictation
- Education
- Facilitation
- Reminders
- Structured paper templates
- Audit feedback
- Multi-interventions that combined two or more ways to better documentation and facilitation

The study conducted in Nigeria's Abia state on the evaluation of records management at the Ministry of Health discovered that records in the ministry are not managed in accordance with the best practices and that has a negative impact on recordkeeping (Alegbeleye & Chilaka 2019:18). The study identified various issues which affect records management at the Ministry of Health. The study made the following recommendations to address the issues identified:

- Conduct records audits.
- Develop retention and disposal schedules.
- Develop records management procedures.

- Create a disaster recovery plan.
- Prepare a vital records plan.
- Establish records management policy should also be established to address recording matters.
- Conduct training programs on recordkeeping Ministry of Health workers.

According to Abdulrahman (2015:54), the recommendations were made based on the study's findings in Nigeria about the management of university records as proper appraisal, retention, and disposal of records should be carried out; an adequate filing system should be adopted for filing records; and a need for record managers or officers to retool and re-skill themselves to provide needed and relevant services. The study recommended that to prevent the loss of records, institutions should offer sufficient security and storage options.

2.9 IMPACT OF RECORDKEEPING IN THE MATERNITY CASE RECORD

The National Guidelines for Maternity Care in South Africa recommend that a standardised maternity case record be used by all facilities at all levels of care in order to improve the quality of care for pregnant women (DoH 2016:29). The study done by Ngxongo et al (2016:12) in KwaZulu-Natal, Ethekwini District on assessment of the use of the new maternity case record found that midwives had challenges accessing the maternity case records. The challenges included inadequate supplies of the card, a malfunctioning ordering system, and problems with alternative means of accessing the card. Most of the midwives reported that there was always a shortage of cards in the primary health care (PHC) facilities. This interfered with the provision of antenatal care services when there was no proper document available to use to make a record.

In Delhi State of India, Radhika, Dengri Kumar and Singh (2021:9) on a structured maternity case record to improve the quality of recordkeeping in a tertiary hospital reported efforts to improve the quality of care are challenged by the lack of reliable documentation of data. Hence, concise, structured maternity case records were designed with the aim to bring about an improvement in the documentation of treatment and events related to women in labour from the time of admission till their discharge from the hospital.

The report authored on the basic or minimum recordkeeping standards in the maternity case record recommended that the records should include the date, time using the 24-hour clock and signed (DoH 2016:24). The person's name, designation (and practice number where applicable) should be printed alongside the first entry. Best practice also recommends using a unique identifier such as a professional body number (for example, SANC/HPCSA) adjacent to each entry or in a signature sheet. Furthermore, the report indicated that when a clinical incident has taken place which has resulted in moderate or severe harm, as a minimum. The woman and/or her next of kin should be informed that a clinical incident has occurred and that an apology has been expressed to the woman for the harm that has resulted from the clinical incident. However, it should be noted that an apology is not an admission of liability.

2.10 CONDITIONS ON THE USE OF MATERNITY CASE RECORD

Many South African women receive their prenatal care from private midwives, general practitioners, and obstetricians, according to the DoH (2016:30). Private caregivers and the government service should communicate and respect one another.

According to the DoH (2016:31), all pregnant patients who visit a healthcare institution, whether public or private, should have or obtain a maternity case record (MCR). This MCR or standardised national document, which must be filled out at each prenatal clinic visit and held by the mother until birth before being stored at the location of confinement or final referral, is the main record of the pregnancy. Antenatal clinics are not required to maintain a duplicate copy of the card. The prenatal clinic just must keep a record of attendance with the findings of any special investigations for audit and backup purposes. The maternity case records should always be maintained recent and accurate as it acts as a legal communication tool between the pregnant woman and all levels of care, and the woman can visit at any time.

Women should consult their doctor on their initial appointment as soon as they suspect pregnancy. All healthcare establishments should offer urinalysis for pregnancy test. A prenatal card and first antenatal treatment must be provided to women who visit primary care clinics and are discovered to be pregnant. People who want to end their pregnancies should receive the necessary counselling and referrals (DoH 2016:29).

Letters or cards that summarise all pertinent prenatal care provided up to that moment should be carried by women who are referred from private providers to public healthcare. Reports from ultrasounds are especially helpful since they can determine the exact age of pregnancies. The following information should be included in the MCR:

2.10.1 Initial antenatal visit

2.10.1.1 Confirmation of pregnancy and timing of the first visit

The woman should be encouraged to initiate antenatal care once pregnancy is confirmed. The maternity case record and first antenatal treatment should be provided to the women who visit primary care clinics and are discovered to be pregnant (DoH 2016:30).

2.10.1.2 Importance of the first antenatal visit

At the initial prenatal appointment, a thorough evaluation of gestational age and risk factors can be done. Such assessments do not have to be completed by the end of the second visit. A pregnant woman might be considered "booked" after one visit. Find out, especially from private practitioners, what medical treatment the woman has had thus far in the pregnancy during the initial appointment. If she has previously had prenatal care, ask the provider for information (records), if at all feasible, and treat that as the first appointment (DoH 2016:30).

2.10.1.3 History taking during the first antenatal visit

A midwife is expected to obtain a thorough and pertinent history during the first antenatal visit, which should cover the current pregnancy, previous pregnancies, any complications and their outcomes, medical conditions, including psychiatric issues, and prior operations, familial and genetic disorders, allergies, medication use, alcohol and drug use, use of other substances, use of tobacco and other substances, family and social circumstances, and medical conditions (DoH 2016:30).

2.10.1.4 Physical examination

The DoH (2016:30) highlighted that during the initial antenatal visit, a midwife is expected to perform a general examination that includes measuring the pregnant height, weight, heart rate, mucous membrane colour, and blood pressure, checking for oedema, and palpating the lymph nodes. A systematic examination that includes the thyroid, heart, lungs, heart, teeth, and gums. If the expectant mother has no history of or signs of heart or lung illness, the heart and lung examination may be omitted if there is no staff member on duty at the antenatal clinic who has been trained to do it. Refer the woman to a dentist or dental therapist who has dental issues. Examine the pregnancy, palpate the pregnant uterus, and measure the symphysis-fundal height (SFH) in centimetres (DoH 2016:30).

2.10.1.5 Measurement of mid-upper arm circumference (MUAC)

The MUAC provides helpful information on nutritional status and pregnancy risk during antenatal care (DoH 2016:30). The advantages of MUAC over body mass index include not needing to measure height, using precise scales, not needing the pregnant woman to stand up straight, not requiring any calculations and the fact that MUAC, unlike weight, often does not grow greatly during pregnancy. A MUAC of 33 cm indicates obesity and is linked to a higher risk of pre-eclampsia, maternal diabetes, and the delivery of a child who is bigger than normal. It recommends that taking blood pressure using an adult cuff of a regular size may result in an overestimation (DoH 2016:30).

2.10.1.6 Estimation of gestational age

During the Antenatal first visit, the midwife must indicate on the antenatal card (page 2 of the MCR) how the gestational age was estimated. Unless substantial new information becomes available, the initial gestational age estimation and expected delivery date should be used for the length of the pregnancy (DoH 2016:31).

According to the DoH (2016:31), the last normal menstruation period becomes true if the pregnant woman is certain of her date and the information provided can be corroborated when the midwife is palpating the uterus and symphysis fundal height is measured. The first day of the most recent menstrual cycle must be used to determine gestational age.

Symphysis-fundal height (SFH) measurement is used to estimate the gestational age after 24 weeks if the dates from the last menstrual period are uncertain or incorrect and there is a normal singleton pregnancy. To determine the relevant gestational age from the SFH graph, the measured SFH is plotted onto the 50th centile line (DoH 2016:31).

The DoH (2016:31) depicts that palpation of the symphysis foetal heigh measurement is of insignificant use to estimate the gestational age at less than 20 centimetre and greater than 35 centimetres. Bimanual and abdominal palpation can be useful in the early stages of pregnancy, and at term, palpating the foetal head has considerable utility. Palpation is a delicate, skilled, and experienced procedure for determining gestational age.

Women with SFH measurements less than 24 cm and unsure of dates should get an ultrasound scan to estimate gestational age. Before 24 weeks of gestation, ultrasound measures of the foetus can provide estimations of gestational age that are relatively reliable. Although ultrasound reliability declines beyond 24 weeks, it can still be utilised up to 28 weeks in obese individuals (DoH 2016:31).

2.10.1.7 Comparison between the new maternity case record and previous maternity records

The two nationally standardised maternity case records that have recently been used in South Africa are the green maternity case records and the new white maternity case record. The old green maternity case record has been phased out and has been replaced by the white maternity case record. The similarity between the old and the current maternity case record is that both these maternity case records were standardised cards designed by the National Department of Health (NDoH). They were intended for use throughout pregnancy from ANC until delivery and were to be filled in by the delivery institution on the discharge of the women post-delivery.

Table 2.2 Differences between the two maternity records

Old maternity case record	New maternity case record
Green card.	White booklet.
Structured in line with the traditional approach to ANC as stipulated by the South African Nursing Council (SANC).	Structured in line with the BANC approach to ANC as stipulated by Pattinson (2005).
Does not incorporate the PMTCT program.	Incorporates the PMTCT program.
Selected provinces and districts used the card for intrapartum care only and used their own unique cards for ANC.	Used throughout pregnancy from ANC until delivery.
ANC consultation is recorded in a table.	ANC consultation is recorded in graph format.
Referral letters, feedback notes, and investigation request sheets are stapled onto the card.	No additional forms used; all notes, referral letters and feed-back from referral institutions are written in the cards.
Period of Gestation (POG) Palpation, SFH and Ultrasound measurements are used to monitor the growth of the foetus.	Growth of foetus monitored based on Period of Gestation POG, SFH Ultrasound measurement.
No space is provided for recording HIV test results.	Space is provided for recording HIV test results.
It does not highlight the period of gestation where certain procedures should be performed and assessing the presenting part and monitoring of the foetal heart.	The highlights period of gestation where certain procedures should be performed and assessing the presenting part and monitoring of the foetal heart.
In selected PHC clinics and hospitals the green maternity card was kept in the clinic/hospital as a clinic/hospital-based record and the client is issued with a small carrier card during ANC.	The card is given to the pregnant woman throughout the ANC care period and is only kept in the clinic/hospital after delivery.

2.11 REFLECTION ON LITERATURE PERTAINING TO RECORDING DURING INTRAPARTUM CARE

Bajpayee, Sarin, Chaudhuri, Dastidar, Gupta, Bisht, Joshi, Jeelani, Rathi, Parashar, Verma, Haldar, Sridhar, Gupta, Taneja and Gera (2020:487) conducted the study in India on strengthening the use of partograph in high caseload public health facilities through an integrated quality improvement approach, discovered that both international and national guidelines encourage the use of a simplified partograph to monitor the progress of labour for early identification of complications and to initiate timely and appropriate care. However, despite clear policy guidelines and recommendations, partograph usage is not commonly adopted or practiced because of a variety of variables, including the tool's complexity and the providers' low skill sets.

Mandiwa and Zamawe's (2017:134) study in Malawi on the documentation of the partograph in assessing the progress of labour by healthcare practitioners, reached the conclusion that vital partograph parameters are not well-documented. The conclusion of this study highlighted that recordkeeping is vital to manage poor labour progress and reduce adverse pregnancy outcomes. The findings further recommended that healthcare personnel should attend in-service training on documentation of partograph. The study also made the conclusion that partograph audits and support to midwives and physicians by the management on recordkeeping can influence the quality of care and positive pregnancy outcomes.

Anokye, Acheampong, Anokye, Budu-Ainooson, Amekudzie, Owusu, Gyamfi, Akwasi, and Mprah (2019:6) claim that midwives at St Anthony's Hospital in Ghana utilised partographs during Labour. A lower incidence of birth asphyxia at the hospital was substantially correlated with the usage and completion of partograph. The authors further highlighted that consistent utilisation of a partograph by midwives could lessen birth asphyxia.

Mukisa, Grant, Magala, Ssemata, Lumala and Byamugisha (2019:107) conducted the study at Mulago National Referral Hospital of Uganda on the extent of the use of the partograph and the views of healthcare professionals depicted that the hospital had a poor level of partograph use and completion. The hurdles of partograph documentation and use were discovered to include the length of time needed to document, the heavy workload, the health system supply chain issues, the condition of the mother upon presentation, and the partograph congestion in the hospital. The study conducted by Anokye et al (2019:1) on the use and completion of partograph during labour, is significantly associated with a reduced incidence of birth asphyxia at the hospital. Birth asphyxia and could be reduced if partographs are used and completed by midwives during labour in all cases. The study discussed the documentation of the foetal outcome, condition of a newborn, first and fifth-minute Apgar score.

2.11.1 Foetal outcome

Anokye et al (2019:3) reported in their study on the use and completion of partograph during labour is associated with a reduced incidence of birth asphyxia illustrated that of the 200 client folders reviewed, 174 folders (or 87% of them) included partographs

whereas 26 folders (or 13%) did not include the partographs. Among the 174 maternal folders that included partographs, 139, or 80%, were not fully completed, whereas 35, or 20%, were not completed. The study on the foetal outcome concerning the use and completeness of partograph by Anokye et al (2019:4) is summarised in Figure 2.1 where 188 babies (94%) 94% were born alive while 12 babies 6% were still births. According to the study by Anokye at al, the documentation of the partograph had a success rate of 94% on the foetal outcome.

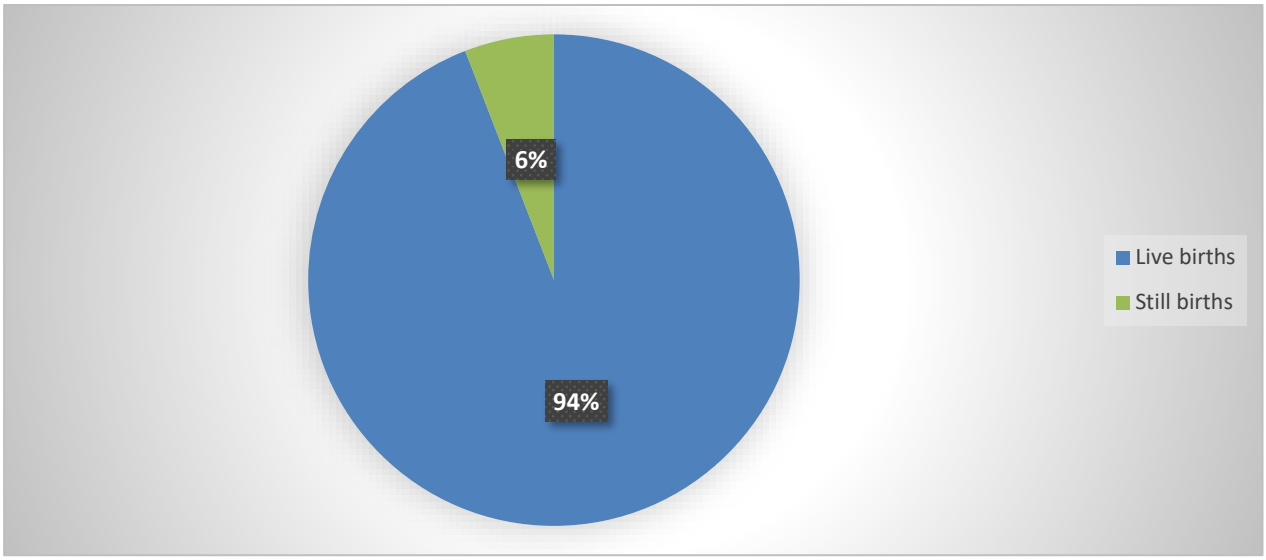


Figure 2.1 Foetal outcome by Anokye et al (2019)

2.11.2 Condition of a newborn baby

According to Anokye et al (2019:4), the condition of a new-born baby shown in Figure 2.2 below shows that out of the 200 live births, 147 babies representing 73.5% were born with no asphyxia while 43 live births representing 21.5% were born with different degrees of asphyxia and 10 babies representing the dead 5.0% died. The monitoring of the use of partograph helps identify asphyxia in babies and prevent death of the newborns associated with asphyxia. More than 70% were born without Asphyxia.

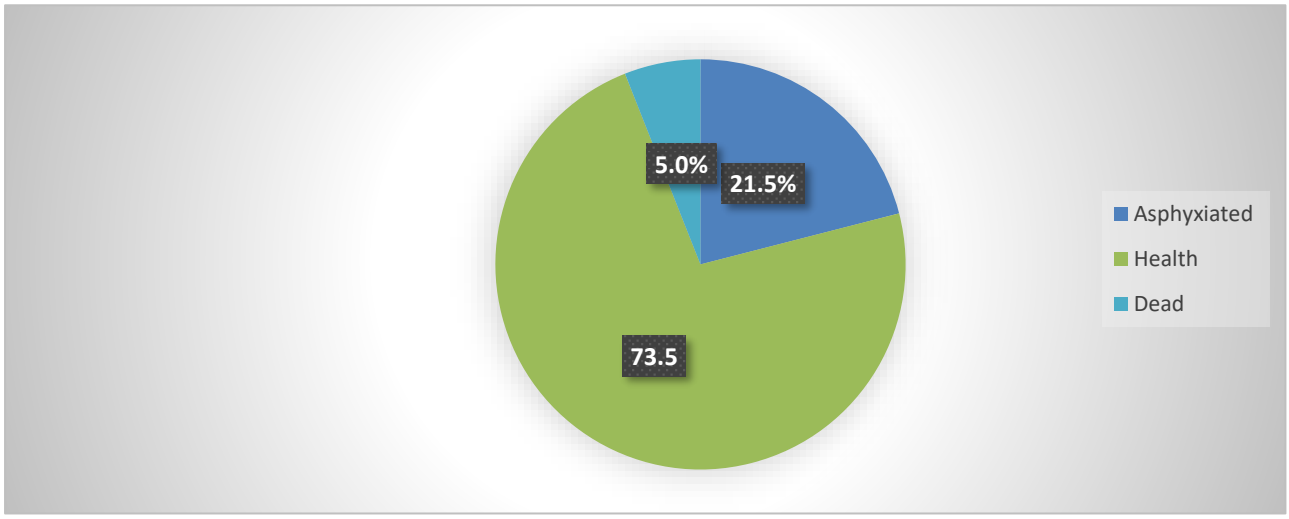


Figure 2.2 Condition of a new-born baby by Anokye et al (2019)

2.11.3 First-minute Apgar score

According to Anokye et al (2019:5), first-minute Apgar score (AS) from Figure 2.3, babies born with an Apgar score of zero at the 1st minute were 12 representing 6%, Apgar score from 2 to 3 were 27 representing 13%, AS from 4 to 6 were 60 representing 30%, and AS 7 and above were 101 representing 51%.

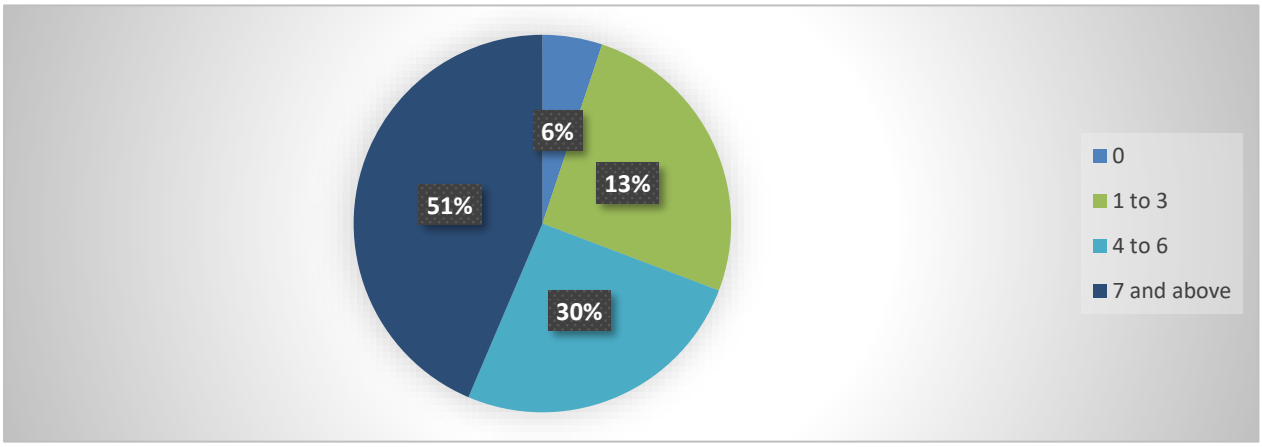


Figure 2.3 First-minute Apgar score by Anokye et al (2019)

2.11.4 Fifth-minute Apgar score

According to Anokye et al (2019:6), from Figure 2.4, babies with an Apgar score of zero at the 5th minute were still at 12 representing 6% and Apgar score from 1st to 3rd at 5th minute were 8 representing 4%, Apgar score from 4 to 6 were 32 representing 16%, and Apgar scores from 7 and above were 148 representing 74%.

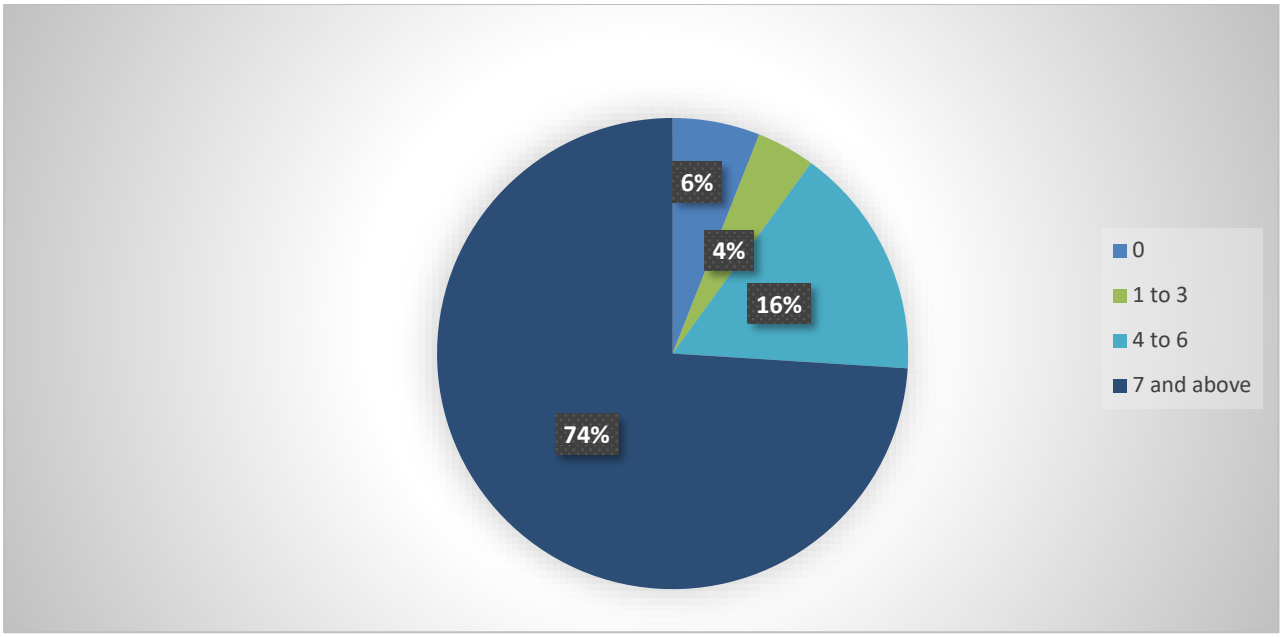


Figure 2.4 Fifth minute Apgar score by Anokye et al (2019)

2.12 SUMMARY

The literature review was discussed, including theoretical and context on nursing and medical recordkeeping. The legislative framework for intrapartum care and records were also deliberated on. The chapter further focussed on the importance of recordkeeping, possible negative contributory factors to the current nursing and medical recordkeeping, consequences of poor recordkeeping. The next chapter deals with the research design and methodology.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

Chapter 3 presents the methodological processes that guided this study which included, research design and methodology, philosophical worldview on recordkeeping, research setting, validity, reliability, trustworthiness, and ethical consideration related to the study.

3.2 RESEARCH DESIGN

A research design is a plan, structure and strategy of investigation so considered as to obtain answers to research questions or problems (Bougie & Sekaran 2016:95; Kumar 2014:95; Prabhat & Meenu 2015:18). The three main research designs are qualitative, quantitative, and mixed methods. The three are not discrete and thus should not be considered mutually exclusive with rigid boundaries (Creswell & Creswell 2018:3). The researcher used a sequential explanatory mixed methods design for the study (Creswell & Creswell 2018:14; Parahoo 2014:81).

There are four types of mixed methods research design, convergent or concurrent, explanatory sequential, exploratory sequential and nested method design. Generally, all these methods (quantitative and qualitative) are used to overcome a weakness in using one method with the strengths of other methods (Johnson & Christensen 2014:660; Leavy 2017:263). For this study a sequential explanatory mixed methods research design was selected.

Such a design is characterised by initially collecting quantitative data and analysis followed by collecting qualitative data (Polit & Beck 2017:312; Subedi 2016:574).

In this study, a mixed methods design was appropriate as the research questions on completeness and accuracy of recordkeeping during intrapartum care, the perception of midwives and experience of medical practitioners could not be responded neither by phase 1 (quantitative) nor phase 2 (qualitative) methods alone. In other words, the study

was mixed in nature. Therefore, the study needed both quantitative and qualitative information. Further, this research design informed the researcher what quantitative results needed further explanation using qualitative tools.

3.2.1 Sequential Explanatory mixed methods design

The sequential explanatory design, according to Creswell (2015:38), has the advantage of allowing two parts of the study to build on one another across two distinct, clearly defined phases. Mcintosh-Scott, Mason, Mason-Whitehead and Coyle (2013:34) emphasised that mixing methods in the study enhances the results in richer data and fosters creative and innovative ways of conducting methodological inquiries. The summary of the integrated findings informed the development of strategies to enhance recordkeeping in Limpopo Province. The sequence of phases started with the quantitative phase which was then explored further in the qualitative phase.

Grove and Gray (2019:30) state that quantitative research is a rigorous and systemic process for generating numerical information about the researched phenomenon. The quantitative phase thus covered data collection and analysis of the documentation of the maternity case records and the availability of the maternity guidelines through non-participant unstructured observation and maternity case review.

Lall (2021:144, Majid 2018:1) highlights that sequential explanatory mixed methods research is useful for strengthening the interview tools in the qualitative phase. To achieve this, the researcher engaged probing during qualitative data collection to seek more clarity during focus group discussions and in-depth interviews. Another value of a sequential explanatory mixed methods approach is its integration component. It has been found to be beneficial in providing confirmation of findings, more comprehensive data, increased validity, and enhanced understanding of studied phenomena (Creswell & Creswell 2018:181).

Creswell and Creswell (2018:11) portray that the researcher should obtained a clearer illustration about phenomenon under study. The researcher achieved clear picture of recordkeeping during intrapartum care in the selected facilities by comparing the findings drawn from quantitative to those obtained from qualitative phase.

According to Gray, Grove and Sutherland (2017:52), a research design incorporates the fusion of inquiry strategies and particular procedures used to direct researchers in carrying out their research. Furthermore, Majid (2018:1) defines the research design as the use of factual-based protocols, procedures, policies, and guidelines that provide the tools and framework for conducting the study.

The quantitative phase thus covered data collection and analysis of the documentation of the maternity case records and the availability of the maternity guidelines through non-participant unstructured observation and maternity case review. The qualitative phase was characterised by data collection using focus group discussions with the midwives and in-depth interviews with the medical practitioners. An interview guide was used for qualitative data collection for focus group discussions (Annexure G) and in-depth interviews (Annexure H). The qualitative phase determined and described the perception of midwives and the experiences of medical practitioners regarding recordkeeping. Furthermore, enablers and barriers for recordkeeping were discussed and strategies for recordkeeping during intrapartum care were developed and validated by the study experts.

3.2.2 Rationale of choosing a mixed method design

The main reasons for choosing the sequential explanatory mixed methods design were best fit to answer the proposed research questions and draw on broader conclusions from the quantitative and qualitative findings (Walker & Baxter 2019:18). The mixed methods approach was used to collaborate quantitative and qualitative data (Polit & Beck 2021:584). McIntosh-Scott et al (2013:34) argued that collecting the quantitative and qualitative data will contribute to an inclusive and comprehensive understanding of the results. A mixed methods approach provides cohesion and quality that is distinct from its quantitative and qualitative components while still remaining mixed in terms of quantitative or qualitative data (Creamer 2016:12). The initial phase of quantitative data collection, analysis, and results (QUAN data and results) serves as a guide for the later qualitative data collection (QUAL data and results), which is utilised to explain the initial quantitative results (Schoonenboom & Johnson 2017:110). A sequential explanatory, mixed-methods research design with a distinct quantitative phase (phase 1) and a distinct qualitative phase (phase 2) was used.

The results of the availability of the maternity guidelines and the quality of documentation of maternity case records were evaluated quantitatively. Quantitative data provides precise measurements as qualitative data would elicit an understanding of the phenomenon (Mayoh & Onwuegbuzie 2013:99).

The aim of using the mixed method approach in this study was to develop and validate strategies guides to be used for recordkeeping during intrapartum care, to ensure the availability of guidelines including maternity case records, evaluate the recordkeeping of the maternity case records during intrapartum care on the perceptions of midwives and experiences of the medical practitioners and enablers and barriers regarding recordkeeping (Parahoo 2014:81). For detail see Figure 3.1 below.

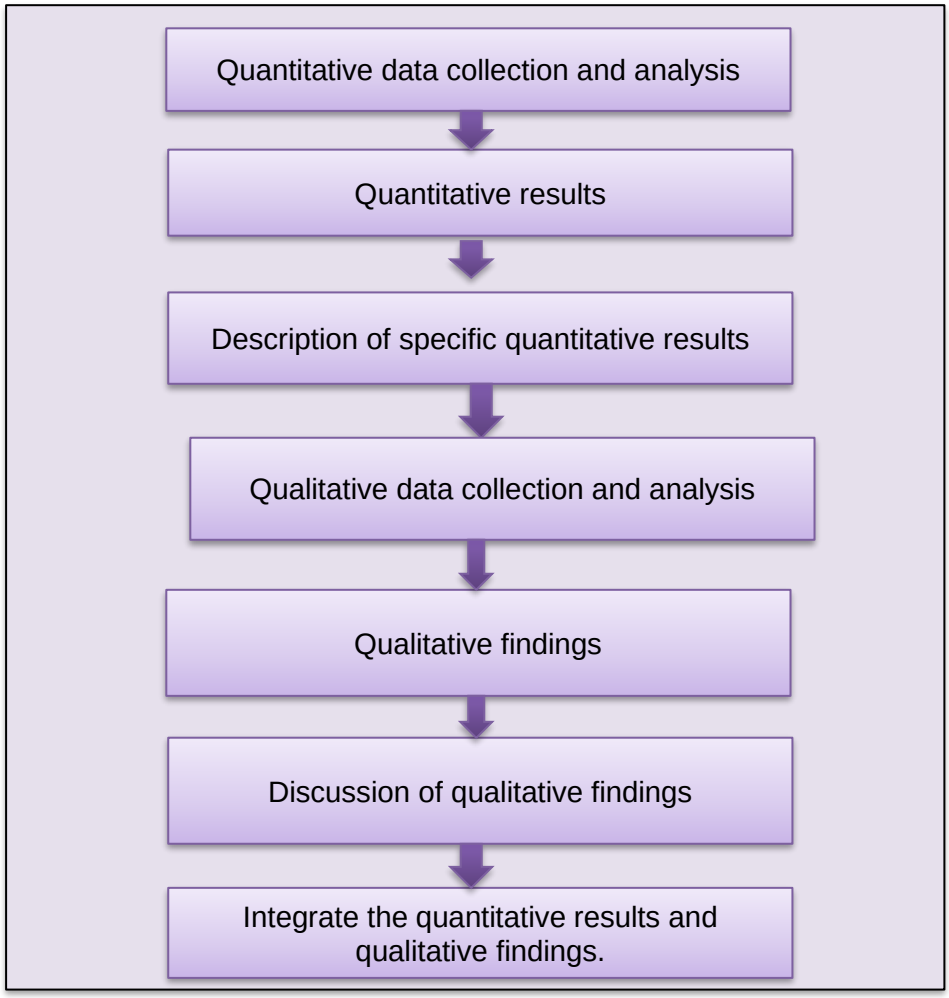


Figure 3.1 Flow chart of sequential explanatory research design

3.3 RESEARCH METHODOLOGY

The research methodology outlined the steps used to conduct the study and provided a response to the research question (Brink et al 2018:187). The study demanded a rigorous or structured design that appropriately resolves the quality, sources of bias, and trustworthiness of data (Kothari & Garg 2019:31).

3.3.1 Mixed methods approach

An investigation using both quantitative and qualitative methods of data collection, and analysis is known as a mixed methods approach (Sutton & Austin 2015:226). According to Terrel (2012:254) and Creswell and Creswell (2018:249).

Polit and Beck (2021:586) indicated that involvement of more than gathering quantitative and qualitative data affirms that data integration gives rise to meta-inferences which is the conclusion developed by integrating inferences from quantitative and qualitative results. A thorough data collection, and analysis procedure is made possible by the complementary nature of qualitative and quantitative methodologies (Bowling 2014:419).

3.3.1.1 Phase 1: Quantitative approach

According to Merriam and Tisdel (2016:24), qualitative research is the act of examining and gaining an understanding of the significance that individuals and groups place on social problems. Polit and Beck (2017:76) further describe quantitative research as a “set of orderly and disciplined procedures used to gain knowledge. Furthermore, a methodical, objective, and formal procedure is referred to as the quantitative research methodology, and it uses numerical data to address a research topic (Gray & Grove 2021:820). In this study, the use of informal non-participant unstructured observations and structured checklist were used to evaluate the availability of recordkeeping guidelines and the completeness and accuracy of documentation of the maternity case records. The services of a statistician were used to analyse and interpret the quantitative data on analysis of the information collected.

3.3.1.2 Phase 2: Qualitative approach

Qualitative research is the investigation of phenomena, typically in an in-depth and holistic fashion, through the collection of rich narrative materials using a flexible research design (Polit & Beck 2017:739). Qualitative research is “a systematic, subjective methodological approach used to describe life experiences and give them meaning” (Grove, Burns & Gray 2013:357). Qualitative research is a means of exploring and understanding the meaning individuals and groups ascribe to social problems (Creswell & Creswell 2018:147; Merriam & Tisdell 2016:24).

According to Basias and Pollalis (2018:94) and Holloway and Wheller (2010:3), researchers utilise a qualitative research viewpoint, observing, conducting interviews, summarising, characterising, analysing, and interpreting events in their real context.

The qualitative phase of this research, the investigator collected qualitative data from the participants by means of key informant interviews (Leavy 2017:135). The researcher collected qualitative data from the midwives through focus group discussions and in-depth interviews respectively. Kallio, Pietilä, Johnson and Kangasniemi (2016:2954) advised that focus group discussions should use the semi-structured interview guide.

The qualitative research approach is investigated in a comprehensive manner and with the narrative material gathered (Polit & Beck 2021:800). Gray and Grove (2021:82), further describe the qualitative design as a rigorous methodology used to explain life experiences, cultures, and social processes from the viewpoint of the individuals involved. The goals of phase 2 of this study was to determine and describe midwives' perceptions and medical practitioners' experiences regarding recordkeeping of the maternity case records.

Furthermore, the study discusses the enablers and barriers that midwives and medical practitioners face when implementing recordkeeping in maternity healthcare services in Limpopo Province. The participants’ responses from the participants were analysed to develop themes.

The research used a Delphi approach to help the researcher gather input from experts to develop strategies. A Delphi process is a technique aimed at determining the level of agreement on certain issues (Stanyon, Goldberg, Astle, Griffiths & Gordon 2017:583).

The Delphi method is a methodical procedure that includes collecting and aggregating expert viewpoints (Polit & Beck 2017:244). The Delphi technique is an interactive procedure to gather and filter conclusions using a series of data gathering and analysis techniques to reach a consensus (Pereira & Alvim 2015:176). The researcher organised online teams meeting with the group of experts to seek consensus regarding the proposed strategies for quality recordkeeping during intrapartum care. Three rounds of sets of interviews and questionnaires were gathered, and each round was improved based on feedback from responders on the one before it. Repeated data collecting and analysis were conducted in round two until agreement was attained.

3.3.1.3 Phase 3: Integration phase

Integration is described as a deliberate process whereby the researcher brings together the quantitative and qualitative findings in a study to create a holistic understanding of a phenomenon being investigated (Fetters & Molina-Azorin 2017:293). Based on the theoretical framework, the integration of quantitative and qualitative results was presented under the following, unavailability of guidelines, evaluation of the recordkeeping of the maternity case records as per guidelines, perceptions of midwives, experience of medical practitioners regarding recordkeeping, enablers and barriers to implement recordkeeping and overall discussion of the integrated findings. The complementarity used in the integration of the findings in this study was displayed using a joint display integration process. This is a visual display of both quantitative and qualitative findings utilising a table or a figure to compare the quantitative and qualitative findings (Guetterman, Fetters & Creswell 2015:555; McCrudden & McTigue 2019:396).

3.3.1.4 Criteria for expert's selection

Hasson and Keeney (2011:1695) recommended ten to eighteen experts panel which comprised participants from different disciplines sampled based on their skills and expertise. The researcher invited twenty (20) experts, but only twelve participated in the validation process. These experts were purposely selected and included the chief

executive officer of the hospital, clinical manager, nursing service manager, two gynaecologists, a midwifery lecturer, quality assurance manager (QAM), and advanced midwife, the maternity unit manager, mother and child manager and a medical officer.

The attributes used to select the experts were, the experts should be more than 18 years old and willing to participate by completing the consent form and the questionnaire, the experts had four years or more in the field of work and had to avail themselves during Microsoft team meetings at least more than once during the round of questions. The experts were the employed by the DoH. Any expert that is less than 18 years, less than four years experienced in the area of work and is not employed by the DoH were excluded from the expert panel.

The information regarding the study was shared with the experts which included the topic, the aim of the study, the background of the problem, the methodology used and the proposed strategies. The experts were asked to evaluate the strategies and to rate them in accordance with the criteria provided for validation. The experts were given two weeks to refine the strategies.

According to Bhasin (2019:1), these are the stages to perform the Delphi methodology procedure:

- **Choose the facilitator**

First, the facilitator should have the research knowledge. Therefore, the researcher should select a group of experts based on the topic being examined. (Bhasin 2019:1). The researcher examined the topic and determined the experts of the study and facilitated these group of experts as he knew the details of the study.

- **Identifying experts**

In this study, the researcher identified the experts and selected one hospital CEO, clinical manager, nursing service manager, midwifery lecture, midwife, and advanced midwife, quality assurance manager, maternity unit manager, a medical officer and two gynecologists and mother and child manager to take part in this research.

- **Defining the problem**

The next step specifies the themes that the investigator is expected to understand using the Delphi technique. The experts needed to be aware of the topics they would be commenting on. As a result, the researcher gave the experts a precise and thorough description of the research problem (Bhasin 2019:1). The researcher presented to these specialists a summary of the integrated findings and questionnaires used in this study to validate the methods for maintaining records throughout intrapartum care.

- **First round process**

To measure the experts' expertise and their viewpoints on the future, the researcher first asked broad questions. The questions could be issued as a poll or questionnaire (Bhasin 2019:1). The researcher sent the letter of invitation (Annexure N) to the experts to participate in validating the strategies for recordkeeping. The researcher and the experts had a virtual interactive team meeting with the identified experts. The goal of the virtual interactive team meeting was to allow the researcher to present the study's findings and to propose participation in the Delphi technique process. A questionnaire with proposed strategies was sent through outlook platform to the experts for scoring and review.

All the experts who consented and participated in this study were invited to a Microsoft teams meeting. The purpose of this meeting was to present the study's findings and outline important fields of the questionnaire and consent form that needed intervention (Stewart, Gibson-Smith, MacLure et al 2017:4). The facilitator encouraged the experts to make contributions to each important field. The contributions made by these experts included reading and completing the consent form (Annexure O) and the questionnaires (Annexure P) for the validation of the developed strategies for recordkeeping during intrapartum care (Stewart et al 2017:4).

The experts' inputs were consolidated into a checklist to reach consensus. The average time for the meeting with the experts was 90 minutes. In this study, the researcher allowed the experts to ask a question related to the questionnaire, consent form and an information guide. The researcher responded to all questions raised by the experts as related to the study. The experts were given two weeks to read the information guide and

submit the consent form and questionnaire to validate the strategies formulated by the researcher.

The checklist was circulated to experts through email. The checklist did not necessitate real recognisable data from the experts to maintain anonymity and participant's shared confidentiality. The experts were given 10 days to finalise and return the questionnaires to the researcher. A courtesy email as a reminder was sent to the selected experts on day 09 with a request to submit the questionnaires to the researcher. The field experts that did not respond on the ninth day were reminded of the submission of the information requested. The experts that did not respond after 15 days were disqualified from taking part in this round. Ten experts ultimately took part in the second round. The level of agreement gained on topics was recorded and the findings were communicated to the participants.

- **Second round process**

The second set of questions should go deeper into the research topic to clarify clear concerns considering the replies to the previous round of questions. It is crucial that these queries be published as a poll, review, or survey. (Bhasin 2019:1). At this stage, the researcher checked the response of the experts related to the completed questionnaires. The researcher analysed the scoring of questionnaires and explained the scores and comments by the experts. The researcher explained to the experts that another round of discussion to discuss the scores and the comments made in the questionnaires will be arranged. The researcher aggregated the response on the questionnaires received from the experts. All the strategies scored more than 70%, however, the experts commented on the developed strategies. The experts were assured that their comments were integrated into the validated strategies. The researcher accepted the field experts and integrated them into refined questionnaires.

- **Third round process**

The final set of questions for the experts focused on providing help for fundamental decision-making. The researcher concentrated on the areas where experts' understanding at this point. Additionally, the researcher wanted to focus on areas where all the experts agree. To get a more precise agreement, you might ask further questions

if necessary (Bhasin 2019:1). In this study, all strategies scored more than 70%. However, there were comments made by the experts for the researcher to consider. The experts' comments were included in the questionnaires and the inclusion of the experts' comments improved the standard of the questions. The experts were requested to evaluate the strategies for their applicability, consistency, and clarity. The experts confirmed that the strategies were clear, consistent, and applicable to recordkeeping during intrapartum care.

The researcher consolidated the experts' validated strategies agreed upon and made conclusions and recommendations to policymakers, future research, and academic institutions for future reference.

3.4 PHILOSOPHICAL WORLDVIEW

A philosophical approach permits the researcher to choose which method to use and why (Chetty 2016:2). While philosophical concepts are mostly ignored in research, according to Creswell and Cresswell (2018:2), they nevertheless have an impact on it and should be acknowledged.

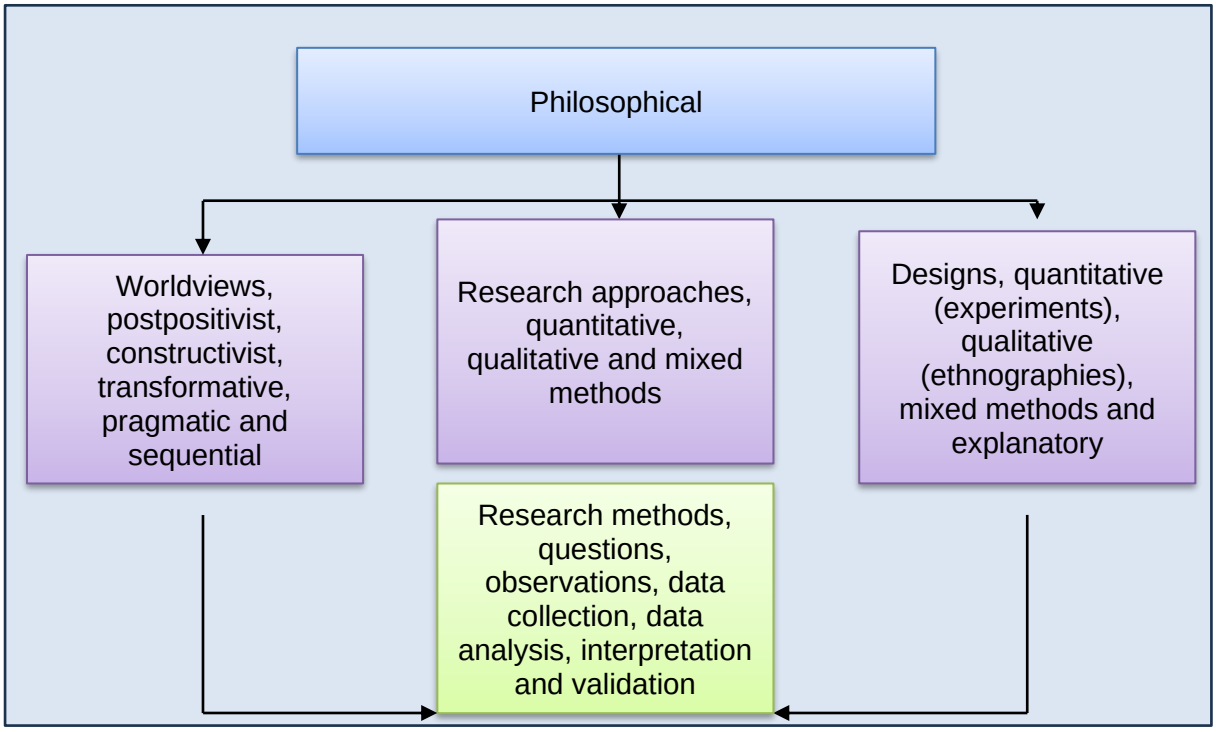


Figure 3.2 Research framework − the interconnection of worldviews, design, and research methods

(Creswell & Creswell 2018:39)

3.5 RESEARCH SETTING

The research was conducted in Sekhukhune District which is located in Limpopo Province as one of the five districts of the province. Sekhukhune district is divided into four local municipalities namely, Ephraim Mogale, Makhuduthamaga; Fetakgomo/ Tubatse; Elias Motsoaledi, Makua (2014:93) indicated that the district is geographically situated South of the Limpopo Province and covers an area of approximately 13264 square metres with 605 villages. Figure 3.3 illustrates the location of the Sekhukhune District local municipalities. The district contains predominantly Sepedi-speaking people. It is further characterised by the commercial farms along the Lepelle River on the edges of its Western border (Makua 2014:93).

Figure 3.3 Sekhukhune District with its local municipalities

(www.municipalities.co.za)

3.5.1 Population

According to Strydom (2017:223), the population is the sum of the individuals, incidents, organisations, or other units related to the study topic. The population refers to the entire group of people or kinds of components with common traits in which the researcher is

interested (Polit & Beck 2021:797). The research was conducted at Sekhukhune District located in Limpopo Province. Sekhukhune District Municipality consists of seven hospitals within four local municipalities All seven hospitals were selected as study sites for this research. A total of five district hospitals labelled as level 1, two were regional hospital labelled as referral hospitals or level 2. All hospital were purposefully selected because most of the women receive maternal care from these institutions. It should be noted that the clinics and community health care centres around Sekhukhune refer their complicated maternal cases to these hospitals.

Phase 1 population consisted of 10% of maternity case records of the deliveries from January to December 2019 and non-participant unstructured observation done during the hospital visit.

Phase 2 population consisted of midwives and medical practitioners working in the maternity unit for six months or more of these selected seven hospitals located in Sekhukhune District, Limpopo Province. Twenty-nine midwives participated in the focus group discussions. In-depth interviews were conducted with twelve medical practitioners and six focus group discussions with twenty-nine midwives working in maternity units. The researcher organised online teams meeting with the group of experts to seek consensus regarding the proposed strategies for quality recordkeeping during intrapartum care.

3.5.2 Sampling

Grove et al (2013:357) define sampling as the process of selecting participants, events, behaviours, or other elements that represent the population being studied. The researcher selected a sample of sites, records, and participants. In qualitative research, the size of the sample is determined by how well the information collected can answer the research question (Moule et al 2017:167).

3.5.3 Sampling technique

The sampling technique is the process of selecting cases, which may include a group of people, events, Behaviours, or other components, to reflect the complete population (Gray & Grove 2021:410; Polit & Beck 2021:261). The authors further explain that

sampling involves selecting a group of people, events, objects or other elements which to conduct a study. Participants are the people who make up the sample (Mohsin 2016:11). Using a sampling approach, a sample is often obtained from a larger population (Creswell 2015:20). The standard distance between sampled elements is called random sampling (Polit & Beck 2017:257).

The total value of 10% of the maternity case records of deliveries that happened in each designated hospital setting in Limpopo Province in 2019 was randomly selected for document evaluation.

As guided by Brink et al (2012: 135), the population was identified as the maternity records selected systematically from the maternity delivery registers from 1st January 2019 till 31st December 2019. The sample size of the accessible population was calculated. According to Limpopo Province DHIS, in the said period, a total number of 25720 women delivered. The researcher applied systematic sampling by selecting every 10th entry from the delivery register, which gave a number of 2572 records. This sample size is representative of 10% of maternity case records of all the women who delivered in the given period. A consecutive identification was assigned to each maternity record extracted and used in the sample, starting with record 1 to 2572.

Convenience sampling describes the process of choosing research subjects from among those who are most easily accessible (Polit & Beck 2017:724). Convenience sampling was used to recruit all midwives of the seven selected hospitals in the Limpopo Province. Using a nonprobability selection technique known as "purposeful sampling," the study selected participants based on their perception of which ones would provide the most useful information (Polit & Beck 2017:741). Purposeful sampling refers to the method where the information is gathered from participants who had been selected because they demonstrated specific characteristics relevant to this specific research (De Vos, Strydom, Fouché & Delport 2012:328). A purposive critical case sampling technique utilised the participants that are representative, knowledgeable, and capable of informing the research problem and phenomenon being studied (Brink et al 2018:127; Creswell & Poth 2018:158). For in-depth interviews, purposeful sampling was used to establish the experience or personal judgment of all the medical practitioners regarding quality recordkeeping during intrapartum care.

3.5.4 Eligibility criteria

Eligibility criteria refer to the characteristics that a component should possess to be a part of the population (Gray & Grove 2021:412).

The following were the requirements for inclusion in the study:

- A total of 10% being a maternity case records of deliveries for the year 2019.
- All midwives who work on maternity for six months or more.
- All medical practitioners who work on maternity for six months or more.
- Midwives and medical practitioners should be 18 years or more and willing to consent and participate in the study.

3.5.5 Exclusion criteria

- All midwives who worked in the maternity unit for less than six months
- All medical practitioners who worked in maternity for less than six months
- All the midwives and medical officers that were not willing to participate even if they meet the inclusion criteria.

3.5.6 Data collection methods and approach

3.5.6.1 Non-participants unstructured observations

The researcher visited the selected healthcare facilities in which quantitative data were collected first and the observational skill of the researcher was also applied to observe the structure of the facilities and guidelines related to the study The observation was undertaken informally in these seven selected facilities by the researcher to examine the challenges related to recordkeeping during intrapartum care. During data collection, the researcher observed the filing system, and supervision working conditions that may affect the recordkeeping and staffing of the health establishment. Issues identified during the observations were written down in the form of the researcher's notes and the researcher did not interfere with the non-participant unstructured observation to reduce study bias.

3.5.6.2 Administration of a checklist

The checklist is the structured data collection instrument used to record observations of a specific phenomenon (Polit & Beck 2021:296). Furthermore, the checklist has a checkbox that is used to observe the availability of the characteristics for recordkeeping (Delport & Roestenburg 2017:202). Checklists are often used to evaluate the success of the implementation of a particular programme or policy (Delport & Roestenburg 2017:202). For evaluation purposes, the information was gathered using a structured checklist that specified attributes that are either completed or not completed in the situation being observed (Delport & Roestenburg 2017:203). The checklist used was consisting of six sections (Annexure D).

The checklist was used to review the quality of recordkeeping on 10% (n= 2572) of the maternity case records. The sampling of the maternity case records was dated from January 2019 to December 2019 from each selected seven healthcare facilities (hospitals) located in Limpopo Province.

The researcher developed a checklist through a review of the literature and utilisation of variables enshrined in the National Guidelines for Maternity Care in South Africa 2016 (DoH 2016:12). The supervisor and statistician assisted in the design of the checklist. Moloko (2021:73) concluded a study on evaluating performance of routine health information system for reproductive health in Tshwane District that using structured data collection tool such as a checklist, allows the researcher to determine the quantitative measurements. The checklist was pre-tested using ten maternity case records from two selected healthcare facilities that were not part of the main study The pretesting of the checklist was conducted from January and February 2021. All seven healthcare facilities (hospitals) are using maternity case records and were all assessed for quality recordkeeping. The pretesting of the study checklist produced limitations and challenges resulting in the final version of the revised checklist for data collection.

3.5.6.3 Interview process

Interviews may be structured, where a particular order is used in asking questions, or unstructured, where no specific order is used for the questions (Peck, Olsen & Devore

2015:320). Focus group discussions with midwives were used to determine and describe the perception of midwives and in-depth interviews were conducted with medical practitioners to determine and describe their experiences regarding recordkeeping during intrapartum care. For focus group discussion, on the day of the interviews, the researcher reported at the facilities at 07:00 as the participants were changing shifts as arranged with the maternity operational manager. The room for focus group discussion was prepared by the operational manager and shift leaders as per arrangement. Midwives were approached and requested to participate in the study. The consent forms were given. Appointments with medical practitioners for in-depth interviews were set and adhered to by the researcher and participants. The interviews were held in a private room organised for that purpose.

3.5.6.3.1 Focus group discussion

Permission to conduct the study was sought from the Health Studies Research and Ethics Committee of UNISA (Annexure A) and the Limpopo Research Committee, District Executive Manager (Annexure B) prior to data collection. The appointments for the focus group discussions with midwives and in-depth interviews with medical practitioners were arranged with the CEO, clinical and nursing service managers of the selected healthcare facilities.

A total of six focus group discussions were conducted with midwives who have been working in the maternity units for more than six months providing intrapartum care. Twenty-nine midwives participated in the focus group discussions. All midwives that participated in the study signed the consent form (Annexure E) before the start of the discussion. Midwives were reminded that they can withdraw at any time without giving a reason. The setting, process, and questions (Annexure K) for focus group discussions were deliberated with midwives to clarify the misconception.

Participant's shared confidentiality and anonymity were maintained throughout the group and none of the midwives have withdrawn from the study. The focus group discussions were audio recorded and lasted between 30 to 45 minutes apiece. The researcher took field notes, which made it possible to gather information on perceptions, contextual settings, behaviours, and nonverbal signals that would not have been adequately captured by audio tape. The recorded field notes helped the researcher remember

contextual elements that could be important during data analysis and offered essential context for understanding the audio-recorded data.

The focus group discussions were conducted in English, but midwives were allowed to respond in Sepedi should they encounter challenges in expressing themselves in English. Throughout the focus group discussion, participants were encouraged to express themselves freely. Participants freely expressed their viewpoints and even openly differed in ideas. The researcher focused on group dynamics including power efforts and hesitancy to express their opinions in public. To guarantee that shy and reserved participants were included, the researcher actively engaged every participant. The researcher controlled the more dominating people with respect as well.

According to this research setting plan, these focus group discussions were planned to be seven, but one healthcare facility opted not to participate due to staff that were affected by Covid-19 and on sick leave. Furthermore, it was indicated that participation in the focus group discussion will affect maternity services negatively hence the participants of the healthcare facility were exonerated from participating in the study. Midwives were expected to complete the shared confidentiality binding form (Annexure I) and submit it to the researcher.

Semi-structured open-ended questions were used for directing all focus group discussions (Annexure K). However, wording differed considerably depending on the narratives required by the participants or the researcher. All the focus group discussions were held during the day especially in the morning before the exchange of day and night shifts.

At each selected healthcare facility, the researcher introduced himself and requested the CEO to allow the focus group discussion to be conducted in a private room within the hospital with midwives in a group. In order to preserve privacy and avoid interruptions, ground rules were established in the area that was determined to be appropriate for the discussion. The ground rules were established and a pictogram of the "do not disturb" sign was also placed outside of the room. Cell phones were put on silent, and landline telephones were diverted to other offices. The purpose of the research, the role of the researcher, and the anticipated time for the interview were stipulated to the participant before the start of each focus group discussion.

By reassuring participants that all data obtained from the interview would be treated confidential and the participants that were involved in the focus group discussions were assured that shared confidentiality will be conveyed to participants only. Additionally, participants were made aware of the necessity to audio-record the session and provided their consent. After the consent form was signed by the participants as well as the researcher, informed consent was obtained.

By expressing interest in what was being discussed and paying close attention throughout the interview, the researcher-built rapport. Midwives were urged to speak freely and also allowed to share their knowledge, skills, experiences, challenges, and recommendations related to recordkeeping during intrapartum care.

Six open-ended questions were developed and used during the focus group discussion and supplementary questions were raised as the participants were responding. more questions came up during the interview. The researcher recorded the midwives' deliberations throughout the discussion session and ensured that information is available to augment analysis should the information get lost. This record was utilised to subsequently transcribe the study material. Semi-structured open-ended questions were used for the focus group discussions (Annexure K).

3.5.6.3.2 In-depth interviews

In-depth interviews were conducted with medical practitioners to determine and describe their experiences with recordkeeping in maternity case records. The medical practitioners scheduled their interviews during the day from 12:00 to 16:00 depending on their availability. The interviews happened in private rooms with the medical practitioners who have been working in the maternity units for six months or more. The researcher was offered the managers' offices that had minimal noise and no employee traffic. The consent form (Annexure E) was signed before the start of the interviews and ground rules were established including putting the phone on silent, making follow-up questions if the participants did not understand, to relax when responding to the question. Medical practitioners were expected to complete the confidentiality binding form (Annexure J) and submit it to the researcher. Semi-structured open-ended questions were used as the

interview guide (Annexure L) for directing all in-depth interviews and fourteen medical practitioners participated in the study.

In addition, the researcher concentrated on the distinctive features of the participants' narrated statements to find and summarise any thematic meaning pertinent to the research topic and study goals (Maguire & Delahunt 2017:3351). Field notes allowed the researcher to document the impressions, environmental contexts and behaviours of the participants. According to the research setting plan, these in-depth interviews were planned to be conducted in seven selected healthcare facilities, but one healthcare facility opted not to participate due to staff that were affected by Covid-19 and on sick leave. Furthermore, it was indicated that participation in the in-depth interviews would affect maternity services negatively hence the participants of the healthcare facility withdrew from participating in the study.

3.5.6.3.3 Delphi technique

The researcher invited twenty (20) experts, but only twelve participated in the validation process. These experts were purposely selected and included the chief executive officer of the hospital, clinical manager, nursing service manager, two gynaecologists, a midwifery lecturer, quality assurance manager (QAM), and advanced midwife, the maternity unit manager, mother and child manager and a medical officer.

3.5.6.4 Data analysis

Creswell (2015:10) states that data analysis is summarising and interpreting the data findings in words to answer the research questions. Quantitative data were analysed by using SPSS 23 version software through the help of the statistician. Qualitative data was analysed through coding, by applying Tech's data analysis steps, where data was organised into themes and sub-themes. The independent qualitative researcher assisted to code the themes and sub-themes of this study. The process for data analysis is discussed below in details.

3.5.6.4.1 Quantitative data analysis

The researcher captured data from the checklists into an excel spreadsheet into the database with the help of the statistician. Later, the statistician used the SPSS statistical program version 23 to analyse quantitative data applying descriptive statistical program (Polit & Beck 2017:356, Fouché & Bartley 2017:249).

Descriptive statistics were used to describe and summarise the data (Lobiondo-Wood & Haber 2018:282). Descriptive statistics allowed the researcher to summarise and describe the use of maternity case records for quality recordkeeping during intrapartum care. The correlations were used to examine the relationships among variables, and the data quality was analysed using descriptive statistics. Data were organised according to frequency distribution, measures of central tendency, and dispersion to give meaning to the findings (Polgar & Thomas 2020:102).

3.5.6.4.2 Qualitative data analysis

Henning, Van Rensburg and Smit (2017:127) refer to qualitative data analysis as a technique that characterises specific objects or observations through reasoning and argumentation as opposed to statistical connections between variables. According to Nieuwenhuis (2017:109), the processes of data gathering, processing, analysis, and reporting are all interrelated. Data coding was done manually by the researcher with the assistance of the supervisor and an independent coder.

Data coding, as defined by Kothari and Garg (2019:116), is the act of allocating numbers or other symbols to response possibilities to the variable questions in order to group them into finite, pertinent, exhaustive, and mutually exclusive categories, each of which has a distinct notion. The codes were grouped into different categories based on their similarities and differences as well as the meaning that emerged from the categories. Based on the phrases from the literature and the data collected from participants, categories were allocated labels. To find out the optimum sub-themes, the categories were combined. Thereafter, sub-themes were then merged to form themes. The qualitative phase's key findings − the themes − were presented. The coding and transcription of this study was concluded by the help of the independent transcriptionist and Coder (Annexure M). According to Gray and Grove (2021:81), themes are ideas relevant to the subject that the researcher unearths throughout data collection and analysis.

Nonverbal cues that might not have been adequately captured through audio-recording to obtain the data were then categorised employing both logical and inductive reasoning, divide into parts, then compare and contrast them by organising them into themes (Brink et al 2018:180; Nieuwenhuis 2017:114).

3.6 ETHICAL CONSIDERATIONS

According to Strydom (2017:114), ethics are defined as a set of moral principles which offer rules and behavioural expectations about the most correct conduct towards individuals or a particular group of people. Ethical considerations were adhered to as part of this study to safeguard the rights of the participants.

The researcher protected the rights of the seven selected healthcare facilities through adherence to the following specific ethical considerations. Ethical clearance to conduct research was granted approved by UNISA Research and Ethics Committee (Annexure A). Request to conduct the study was sought from Limpopo Department of Health Ethics Committee (Annexure B). Approval was granted by the Limpopo Department of Health, Research and Ethics Committee, Head of Department (Annexure C).

3.6.1 Protecting the rights of the participants

The participants were selected freely based on the topic under study. Curtis and Drennan (2013:785) argue that the respondents' rights to informed consent, autonomy, shared confidentiality, privacy, justice, anonymity, and beneficence must be protected throughout the study. These rights are commonly summarised as the ethical principles of autonomy, justice, beneficence and non-maleficence.

3.6.1.1 Informed consent

Informed consent denotes that participants are made sufficiently and precisely aware of the type of data needed from them, the reason for seeking such data, the purpose the data is used, the expectation of their participation in the study and the direct or indirect effect to them (Kumar 2014:93).

According to Nandra, Brockie and Hussain (2020:74) concluded in their study on a review of informed consent and how it has evolved to protect vulnerable participants in emergency care research that maintaining the right to voluntary participation without intimidation, pressure or disadvantage for participants involved is an important obligation for researchers. According to Beins and McCarthy (2012:32), informed consent denotes that the participants should be sufficiently informed about the research and have a good understanding of the facts before they may provide their consent The participants were given a narrative about the expected level of participation along with the fact that their involvement and replays would only be utilised for the research's stated goals (Paez, Mercado, Farber, Morency & Roorda 2017:6672). Participants were duly informed about their rights to participate and withdraw from the study at any time without coercion. Participants were informed that there are no risks associated with participation in this research names or other identifiers were not used in the study.

3.6.1.2 Autonomy

Beauchamp and Weed (2009:26) and Gray and Grove (2021:95) and concluded that research participants should be given the freedom to select willingly whether to participate in the study after knowing about the proposed study, according to in respect to the person's autonomy, Researchers must ensure that participation in the research is voluntary and provided after the participants are fully informed about the research in order to (Bordens & Abbott 2013:200). The participants in this study were not forced to participate in this research, they were given the chance to choose whether to participate.

3.6.1.3 Participants' shared confidentiality and anonymity

Resnik (2016:13) defines confidentiality as the act of putting value to an individual and not revealing information without their permission, this relates to information privacy. According to Pezaro, Clyne and Gerada (2018:481), confidentiality is a mutual understanding between two or more parties, where it is the belief of the sender that his or her information will not be shared, and the promise of the receiver to protect and not disseminate the information shared. Confidentiality is a pledge from the researcher that any provided information will not be publicly shared with others, and they will not be identified in any way (Polit & Beck 2017:223). Throughout this study, the participants' details were kept private. The completed interview materials and the audio recorder were

locked away and only the researcher had access to them. Confidentiality agreements will bind the receiving party during the term of the agreement itself, and typically for a period thereafter, and prohibit the receiving party from using or disclosing confidential information outside of the scope of the relationship. In this study, a determination was made to present the confidentially binding form to be signed by both the researcher and the participants referring to a midwife (Annexure I) and medical practitioner (Annexure H). The participants' confidential details remained protected by identifying participants with codes and the final report on the findings combined responses from all participants without identifying individuals. During focus group discussions, the participants' shared confidentiality cannot be guaranteed as the participants exchange the information during the deliberations.

3.6.1.4 Privacy

Participants were allowed to consent when, where, to whom and to what extent their attitudes, beliefs and behaviour can be shared (Straits & Singleton 2018:493). Adarmouch, Felaefel, Wachbroit and Silverman (2020:27) depict information should be collected in a private space where the discussion cannot be observed or overheard by others. The hospital setting was arranged in the way that there is minimal disturbance and privacy was maintained. The security and privacy of raw data was ensured by keeping reviewed records under lock and key and captured data were password protected. For record reviews, the information in the maternity case records used codes and the findings of non-participant unstructured observations cannot be linked to selected healthcare facilities. In-depth Individual interviews and focus group discussions were conducted in private rooms.

3.6.1.5 Justice

Each research participant should be treated with impartiality, equality, fairness, and justice as suggested by (Dhai & McQuoid-Mason 2016:32). Booyens and Bezuidenhout (2016:441) state that justice means a partaker's right to reasonable action, equity and fairness. The principle of justice was addressed by protecting the anonymity and patient's confidentiality of the study participants and health care facility. By use of pseudonyms and numbering transcriptions.

3.6.1.6 Beneficence

Beneficence refers to the principle of minimising harm and maximising possible benefits (Strydom 2017:116). The researcher ensured the well-being of the participants by protecting them from physical, psychological, emotional, spiritual, economic, social or legal discomfort and harm (Brink et al 2018:103). The study caused no physical harm and emotional harm, and discomfort were prevented by assuring the respondents and participants that information provided would not be used against them.

The participants were informed about their right to withdraw from the study if they feel that the questions of the study were uncomfortable.

3.6.1.7 Scientific integrity of the study

The researcher's scientific integrity should not be controversial and research data should not be falsified or manipulated, and the researcher must have unquestionable scientific integrity (Pera, Van Tonder & Van der Wal 2018:383). Throughout the study, the researcher adhered to all ethical principles and scientific research techniques. They were published exactly as they were collected without any modification.

3.7 VALIDITY AND RELIABILITY

3.7.1 Validity

Validity refers to the measure where the study instrument measures what it is supposed to measure (Pandey & Pandey 2015:21). Angell (2015:758) asserts that knowing if the data collection tool is valid allows researchers to make sure they measure the construct they intended to measure. Validity is a term used to describe how well-founded and unbiased a study's findings are (Polit & Beck 2021:806). Several types of validity tests are used to test the goodness of measures (Bajpai & Bajpai 2014:112). This study used internal, content, face and external validity to measure tests to ensure measurement of the validity of this study.

Internal validity was ensured through the use of checklists developed by the National Guidelines for Maternity Care in South Africa in all the selected healthcare facilities to

obtain quantitative data. For the quantitative approach in the study the developed checklist was assessed by the researcher and supervisor for accuracy for it to measure establish the availability of the guidelines in the maternity unit and evaluate the recordkeeping of the maternity case records is implemented accordingly.

While content validity is concerned with the extent to which the data collection instrument contains appropriate items for the construct being measured and adequately covers the construct domain (Gray & Grove 2021:59; Pietersen & Maree 2017:239; Polit & Beck 2017:310).

The researcher ensured content validity through presenting the data collection tool to the supervisor and the statistician who modified the tool suitable for the study in line with the content under study.

Face validity indicates that the items that are intended to measure a concept do, on the face of it, look like they measure the concept (Bajpai & Bajpai 2014:112). In this study, the first criterion used in the ten reviewed checklists was a face validity test, a repeated check by the researcher whether the questions in the pretested checklists and response options were appropriate to measure the concept which the study intended to measure. The concept, the conceptual framework, quality statements and quality measures defined in the WHO quality standard for obstetric and newborn care (WHO 2016) were the basis for the development of the study checklists, which better ensured that the concept was correctly measured through the reviewed checklists.

External validity refers to whether a study's findings can be generalised in another context other than the study that was conducted (Babbie 2016:524). The main terms in the research were also operationally defined. The questions of the checklist were also reviewed by a statistician to scrutinise the construct validity external validity refers to whether a study's findings can be generalised in other contexts other than the study was conducted (Babbie 2016:691). External validity was enhanced by using a standard data collection tool that had been tested.

3.7.2 Reliability

Reliability refers to the precision and consistency of the study's data (Polit & Beck 2021:801). A tool's reliability is determined by evaluating if it will yield the same results whether used differently at different periods or participants from the same demographic (Heale & Twycross 2015:66).

The reliability of this study was achieved by pretesting the data collecting checklists to reduce inaccuracies in their construction. The checklist was pre-tested using ten maternity case records from two selected healthcare facilities. The maternity case records did not form part of the main study. The pre-testing was an approach to ensure that questions contained in the checklists are well defined, understood and generate the same responses from different of document analysis. The data collection tool was modified after pretesting to remove vagueness and inaccuracies in the instrument that could negatively affect the quality of data collected.

3.7.3 Trustworthiness

Polit and Beck (2017:559) discuss the associated criteria of trustworthiness as being those of credibility, dependability, confirmability, and transferability as described by Gunawan (2015:10) and Lincoln and Guba (1985:290-332). Qualitative research concentrated on data trustworthiness to answer how innovative the qualitative researcher is about the truth of research study’s findings. On the optimal criterion for determining credibility, qualitative researchers frequently disagree. However, it is currently accepted that the most pertinent terms to assess the credibility of research are credibility, transferability, reliability, and confirmability (Kyngas, Kaariainen & Elo 2020:45).

3.7.3.1 Credibility

This is one of the most efficient strategies for creating trust, which then facilitates obtaining accurate information from participants. Additionally, each member has sufficient time to foster trust (Shufutinsky 2020:55). The researcher used the recorded interviews on audiotape, diarized field notes and participants' words while transcribing them. Credibility means the accurate and honest description of a research participant's lived experience (Cypress 2017:257). Credibility is a way of establishing confidence in the

results of a study are believable (Forero, Nahidi, De Costa, Mohsin, Fitzgerald, Gibson, McCarthy & Aboagye-Sarfo 2018:120, Wood, Sebar & Vecchio 2020:460).

This study used different measures to determine the credibility of the research. Persistent non-participant unstructured observation was one of the strategies used to improve the credibility of this research. The prolonged engagement involves a lasting presence in the field and engagement with midwives through focus group discussions and medical practitioners through in-depth interviews. Furthermore, the researcher had a persistent observation of the study theme – the quality of recordkeeping during intrapartum care, during the fieldwork, transcription of in-depth interviews, reading and re-reading transcripts, developing the codes – the themes and sub-themes of the data. The researcher constantly read and reread the data, analysed the data, review the literature, and described the concepts until the final report provided the intended depth of insight into the study. Face-to-face communication was conducted with all in-depth interview medical practitioners to present them with the major themes, findings and conclusions of the in-depth interviews and receive their reflections on the consistency of the findings with their original views.

3.7.3.2 Dependability

Dependability means that the evidence from the study will be consistent and stable such that someone not involved in the research can easily follow by reading the content (Moon, Brewer, Januchowski-Hartley, Adams & Blackman 2016:2). Korstjens and Moser (2018:124) recommends that the researchers should enhance the reliability of their studies by carefully recording the content of interviews, and by checking and rechecking the existence of phenomena.

In this study, the detailed description is provided in the preceding sections about the focus group discussions and in-depth interview setting, participants, process of in-depth interview, transcription, and analysis. In addition, the data analysis followed a standard process and details of the data analysis are presented in the section on qualitative phase data analysis. The qualitative phase data was analysed using themes and sub themes were correlations between concepts and process through constant data comparison.

3.7.3.3 Confirmability and reflexibility

Tolley, Ulin, Mack, Robinson and Succop (2016:37) define conformability “as a way of knowing that, even as a co-participant in the inquiry, the researcher has maintained the distinction between personal values and those of the study participants”. The researcher can document the procedures for checking and rechecking the data throughout the study. Confirmability is concerned with providing evidence that the research's findings are based on the participants' narratives and words rather than potential researcher biases. Haven and Van Grootel (2019:234) argued that the relevancy of the findings should be supported by evidence from the literature reviewed, and the researcher acknowledged all the authors’ viewpoints. The researcher reviewed the literature and acknowledged all the authors by means of proper citation. The researcher maintained a comprehensive description of the study process in the previous sections. In addition, the researcher has preserved the focus group discussion and in-depth interview tape-recorded, the transcripts and planned coded qualitative data for an audit trail at any time.

Reflexivity is a form of critical thinking that involves addressing the issues of identity and positionality by making the researcher’s assumptions explicit and finding strategies to question these (Lazard & McAvoy 2017:160) Cornet and Mavin (2018:377) concluded their study on reflexibility and positionality that the researcher must reflect upon the way research is carried out and explain to the reader how they moved through the research processes to reach certain conclusions, with the aim of producing a more trustworthy and honest account of the research. Reflexibility was achieved by the researcher by detailing the process followed from the study orientation to the conclusion of the study.

3.7.3.4 Transferability

Nieuwenhuis (2017:124), argues that transferability does not imply generalisation of the findings but rather provides the reader with the freedom to decide whether or not the results may be applicable to other circumstances. Qualitative research findings cannot be generalised to other settings, but the findings can be applied to other settings. Therefore, the researcher should aim to provide sufficient descriptive data that the readers can use to evaluate the applicability of the results to other settings (Polit & Beck 2021:296). Applicability is also ensured by obtaining complete field recordings and ensuring that there are enough samples until the data is saturated (Schloemer & Schröder-Bäck

2018:15). In this study, the researcher provided a detailed description of the study's design, setting and participants to allow the reader to draw conclusions about the transferability of the results to other settings.

3.8 SUMMARY

Chapter 3 presented the description of the mixed-methods research design utilised in this study. The research setting, study population, sampling methods, validity, reliability of the study, data collection and analysis processes and ethical considerations. All phases were also discussed, validity and reliability of the research instrument was pretested. Chapter 4 will focus on the data presentation and analysis, and the interpretation of the quantitative results.

CHAPTER 4

QUANTITATIVE DATA ANALYSIS AND DESCRIPTION OF THE RESEARCH RESULTS

4.1 INTRODUCTION

Chapter 4 presents quantitative research results which includes non-participant unstructured observations and the review of maternity case records. The results are presented in the form of tables and figures. Furthermore, the discussion of the results is integrated with literature that either support or refute the findings.

4.2 DATA MANAGEMENT AND DATA ANALYSIS

Data was gathered using a non-participant unstructured observation technique and the review of maternity case records using a checklist.

For document review, 10% of maternity case records were randomly selected from the maternity register for deliveries conducted between 01 January 2019 to 31 December 2019. The researcher reviewed 2572 maternity case records. The data collected were analysed using Statistical Package for Social Sciences (SPSS) Version 23 with an assistance of the statistician (Annexure Q). Quantitative results are presented in tables and figures.

4.2.1 Variables of the checklist

The variables of the checklist used were based on the information obtained from the National Guidelines for Maternity in South Africa (DoH 2016:34).

These variables included the availability of the standard record in the hospital, admission variables included date and time of assessment, the onset of labour, rupture of membrane, visibility of a show, the name of the healthcare worker who assessed the mother during labour, labour history included completeness for spontaneous or induced labour, duration of labour, type of labour, diagnosis of labour, summary of labour,

phase/stage of labour and early warning chart completed, completion of partogram, gravity, parity, immediate vital signs recorded included height, body mass index (BMI), medial upper arm circumference (MUAC), respiration rate, oxygen saturation, urinalysis, pulse rate and blood pressure (BP), Completeness of other body systems, blood results included haemoglobin (HB), rhesus (RH) factor, syphilis, human immunodeficiency virus (HIV), diagnostic apparatus included tuberculosis (TB), challenges related to pregnancy, intrapartum parameters included symphysis fundal height (SFH), gestational, age lie, presentation, level of the head above the brim, the contractions, foetal heart rate (FHR), foetal movements, completeness according to per vaginal (PV) examination included the application of the cervix, moulding observed, caput observed, the colour of the liquor, completeness of pelvic assessment and adequacy, risk factors included maternal risk factors, maternal foetal and labour risk factors, danger signs as risk factors, care plan included maternal, foetal and general management or care included the foetal condition, deceleration, progress of labour (cervical dilatation, cervical length), contractions, maternal condition, management, medication, Intravenous fluid, pain relief, signature and the rank/category of the healthcare provider. Table 4.1 summarises the variables of the checklist for recordkeeping.

Table 4.1 Summary of variables in the checklist

Variable	**Responses**	**Total number of records reviewed (2 572)**
Admission variables	Assessment on admission, the onset of Labour, rupture of the membrane, visibility of a show and the name of the healthcare worker who assessed the mother during labour.	
Labour history	Spontaneous or induced labour, duration of labour, type of labour, diagnosis of labour and a summary of labour. Phase of labour early warning chart completed. Completion of partogram, gravity and parity.	
Immediate vital signs recorded	Medial upper arm circumference, body mass index, height, respiration rate, oxygen saturation, urinalysis, pulse rate and blood pressure.	
Blood results	Haemoglobin, rhesus factor, syphilis, human immunodeficiency virus.	

Variable	Responses	Total number of records reviewed (2 572)
Intrapartum parameters	Symphysis fundal height, gestational age, lie, presentation, level of the head above the brim, the contractions, foetal heart rate, foetal movements.	
Completeness according to per vaginal examination	Application of the cervix, moulding observed, caput observed, the colour of the liquor, completeness of pelvic assessment and adequacy.	
Risk factors	Maternal, foetal, labour risk factors and danger signs as risk factors.	
Care plan	Maternal care plan, foetal care plan.	
General care during intrapartum care	The foetal condition, deceleration, progress of labour (cervical dilatation, cervical length), contractions, maternal condition, management, medication, Intravenous fluid, pain relief, and the category of the healthcare provider.	

4.3 RESEARCH RESULTS

4.3.1 Non-participant unstructured observation

The non-participant unstructured observation was undertaken informally in seven selected healthcare facilities located in Limpopo Province, to examine the challenges associated with recordkeeping by interacting with the staff in the maternity unit while checking the health establishment records. Detailed non-prejudiced, tangible and quality descriptions of the issues identified during the observations were written in the researcher's field notes. Field notes were used to capture observational data on behaviours, environmental contexts, impressions and nonverbal cues that might not have been sufficiently captured either through the checklist. Notetaking was used to provide more in-depth background or assist the observer to recall significant events. The descriptions in the field notes were factual, accurate and thorough, and avoided judgment and trivialities. The date and time of each observation were noted, and everything that the observer believed was relevant was included. Table 4.2 recaps the non-participant unstructured observation recorded. The non-participant unstructured observations during the hospital visits established that barriers to quality recordkeeping exist in the data collection methods.

Table 4.2 Non-participant unstructured observations

Observed variables	Outcome	
Filing system	**Out of seven hospitals observed.**	
	3/7X100=42.8%	Three hospitals' fillings systems were logical and sequential and easy to retrieve the maternity case records.
	2/7X100=28.6%	Two hospital filing systems were messy with maternity case records all over the filing room.
	2/7x100=28.6%	Two hospitals had more than one filing room which makes it difficult to get maternity case records within desired timelines.
	A total of 57.2% of the selected healthcare facilities had challenges with filing system which is makes it difficult for quality recordkeeping.	
Poor supervision of the personnel		
	4/7X100=57.1%	Four hospitals used the services expanded public works program (EPWP) volunteers to be responsible for filing with no supervision.
	2/7X100=28.6%	Other two hospitals, EPWP volunteers are used for filing with minimal supervision.
	1/7X100=14.3%	Only one hospital is using the EPWP with full accountability, responsibility and consistency.
	Poor supervision of the personnel responsible for EPWP accounted to more than 85%. Moreover, the EPWP workers were volunteers assisting the province with administration of records.	
Failure to review the guidelines		
	3/7X100=42.8%	Three hospitals had guidelines that were due for review in the previous six months but were not reviewed.
	2/7x100=28.6%	Two hospitals displayed guidelines that were outdated referring to three years ago.
	2/7x100=28.6%	Two hospitals locked the guidelines in the Operational Manager's office and were unaware that they need to be reviewed.

Observed variables	Outcome		
	A total of 57.2% of the selected healthcare facilities had a challenge in availing and displaying the updated recordkeeping guidelines.		
	Out of seven hospitals observed		
Poor working conditions	1/7X100=14.3%		In one hospital, midwives did not the kitchen and were using the nurses' station as their kitchen.
	2/7x100=28.6%		In two hospitals, midwives used old refrigerators that are not working to store their lunch box.
	2/7x100=28.6%		In two hospitals, there was enough space to accommodate patients and privacy is therefore often compromised.
	2/7x100=28.6%		In one hospital, one doctor was working alone in antenatal, labour including caesarean section and post-natal unit.
	A total of 100% on poor working conditions exist in all the selected health care facilities		
Understaffing of maternity units			
	All the hospitals were operating under severe shortage of midwives and medical practitioners. (7/7) =100%		Understaffing was observed in all seven hospitals. There was shortage of midwives, advanced midwives, and doctors across the seven hospitals. There were no senior or experienced doctors/consultants in these hospitals.
Midwives and medical practitioners' workplace moods and emotions	Midwives	Medical practitioners	There was a feeling of reluctance.
	DH and RH	Participants=MP=	
	DH1=6 6/6x100=100%	MP=4 4/4x100=100%	
	DH2=4. 4/4x100=100%	MP=1--- 1/1=100=100%	
	DH3=5. 5/5x100=100%	MP=3---- 3/3x100=100%	
	DH4 3/3x100=100% DH5=6.	MP=2 2/2x100=100% MP=3	

Observed variables	Outcome		
	6/6x100=100%	3/3X100=100%	
	RH1=5. 5/5=	MP=1 1/1=100=100%	
	All midwives 29/29 (100%) and medical practitioners 14/14 (100%) were feeling reluctant, discouraged, depressed and stressed. These participants were emotionally drained due to shortage of staff in the healthcare facilities.		

4.3.2 Document analysis results

The variables from the National Guidelines for Maternity Care in South Africa (DoH 2016:15) were applied to evaluate the maternity case records. The checklist was used, and it consists of six sections (Annexure D).

4.3.3 Availability of maternity case records.

Table 4.2 represent the variable that assessed the availability of the maternity case records in the hospitals.

Table 4.3 Availability of maternity case records in the hospital

Availability of the maternity case records	Frequency	Percentage (%)
Available	2357	91.6%
Not available	215	8.4%
Total	**2572**	**100.0**%

As illustrated in Table 4.2, the majority of the maternity case records 91.6% (n=2357) were available during intrapartum care with 8.4% (n=125) reflecting that the maternity case records were not available.

4.3.4 Completeness for the variables during admission

The variables for admission during intrapartum care included date and time of assessment, onset of labour, rupture of membranes and visibility of show. Figure 4.1 discussed the results of the study in relation to the completeness for the date and time of

assessment of the mother during intrapartum care, onset of labour, rupture of the membranes, visibility of a show and the name of the healthcare worker who assessed the mother during labour.

Most records 76.5% (n=1968) indicated completeness for the time of assessment and 23.5% (n=604) of the records surveyed during document analysis reflected that the date of assessment was not captured in the maternity case records. Furthermore, the results highlighted that more than the third quarter 76.7% (n=1974) of the maternity case records were recorded and completed for the time of assessment and 23.3% (n=598) of the records were not completed. The completeness for the date for onset of labour was 65.3% (n=1680) where maternity case records were completed during intrapartum care whereas 34.7% (n=892) of the records were not completed. The completeness of the time of onset of labour indicates that 64.8% (n=1667) of the maternity case records were completed while 35.2% (n=905) were not completed. Results further revealed that 63.2% (n=1625) of the maternity case records were completed for the date of onset of rupture of membranes from these selected health establishments while 36,8% (n=947) of the maternity case records were incomplete for the date of rupture of membranes during the intrapartum care.

The completeness of time for rupture of membranes shows that 62.4% (n=1606) of the maternity case records were completed whereas 37.6% (n=966) were not completed. Furthermore, this research found that 63.1% (n=1623) of these maternity case records were recorded for completeness on the date for the visibility of a show during intrapartum care and 36.9% (n=949) of the records were not completed. The variable on completeness on the time for the visibility of a show reveals that 62.5% (n=1607) of the maternity case records were completed and 37.5% (n=965) of the records were not completed during the intrapartum care of the records surveyed regarding the name of the healthcare worker who assessed the mother, 76.7% (n=1927) were completed whereas 23.3% (n=645) indicated that the name of the healthcare worker who assessed the mother was not reflected in the maternity case record.

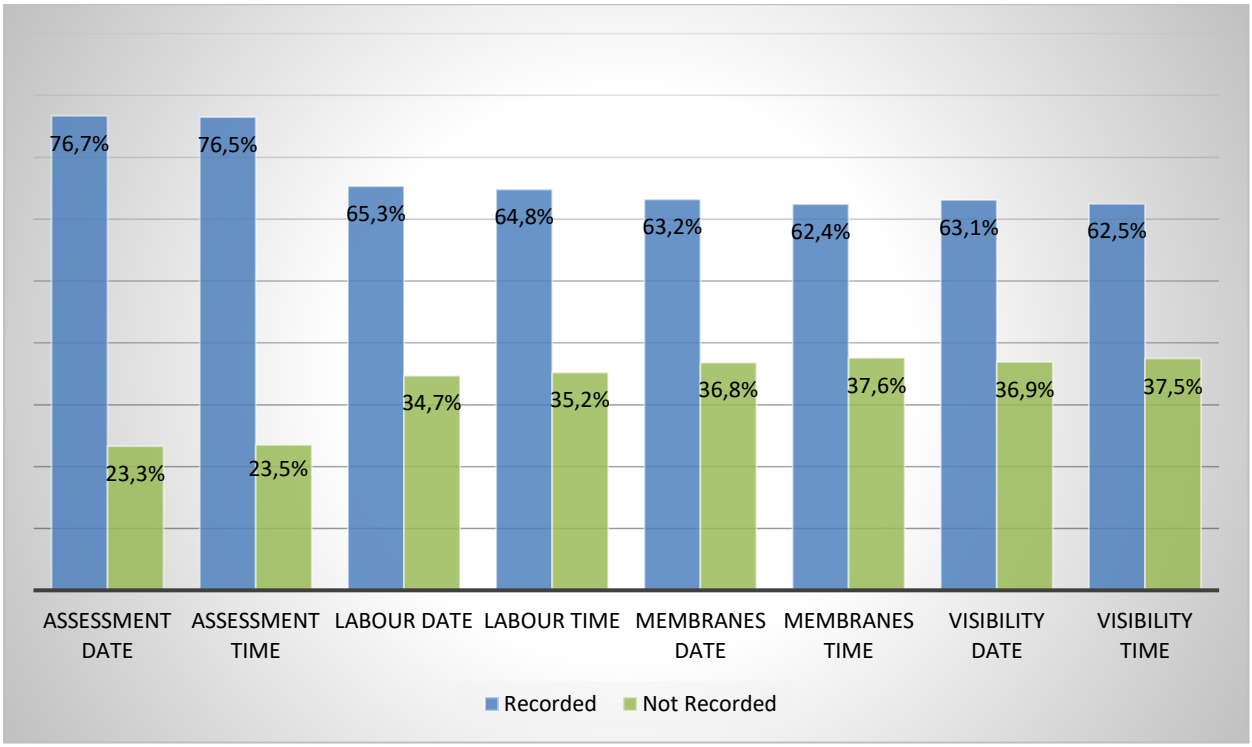


Figure 4.1 Completeness for date and time for admission

4.3.5 Completeness of the labour history variables

The results listed in Table 4.4 illustrates the variables for completeness of the labour history, which included spontaneous or induced labour, duration of labour, type of labour, diagnosis of labour, a summary of labour, phase of labour early warning chart, completion of partogram, gravity and parity.

Table 4.4 Completeness of the labour history variables

Variable	Frequency		Percentage (%)	
	Recorded	Not recorded	Recorded	Not recorded
Spontaneous or induced labour	1576	996	61.3%	38.7%
Duration of labour	1725	847	67.1%	32.9%
Type of labour	1787	785	69.5%	30.5%
Diagnosis of labour	1855	727	72.1%	27.9%
Summary of labour	1945	627	75.6%	24.4%
Phase/stage of labour	1918	653	74.6%	25.4%
Progress of labour	1991	581	77.4%	22.6%
Early warning chart	1022	1550	39.7%	60.3%
Completion of partogram	2003	569	77.9%	22.1%
Gravity	1557	1015	60.5%	39.5%
Parity	1551	1021	60.3%	39.7%

- **Spontaneous or induced labour**

The outcomes of this research show that 61.3% (n=1576) of the maternity case records were completed for spontaneous or induced labour and 38.7% (n=996) were not completed.

Hanley, Munro, Greyson, Gross, Hundley, Spiby and Janssen (2016:8), in their study in Columbia about the diagnosis of labour revealed that there was limited consensus among researchers on the definitions of labour onset. In particular, the study concluded on the commencement of the latent phase is a poorly understood phenomenon whose definition calls for additional study by clinicians. The majority of definitions described cervical dilation and regular uterine contractions as static notions. However, the present emphasis on static definitions of labour onset based on cervical dilatation and regular uterine contractions did not generate the consensus. Furthermore, new studies are recommending the use oof these static notions in their definition of labour onset. The guidelines indicated that labour interventions are associated with more negative childbirth experiences compared to spontaneous onset of labour.

- **Duration of labour**

The completion of the duration of labour showed that more than two-thirds 67.1% (n=1725) of the maternity case records were completed for the variable for the duration of labour whereas 32.9% (n=847) of the records were not completed during intrapartum care.

Lundborh, Liu, Aberg, Sandstrom, Tilden, Stephansson and Ahlberg (2021:13843) discovered that the labour duration was accurately documented for 32.9% (n=847) in both the period of the active first stage of labour and overall labour time from the beginning of the active phase to delivery increased. Additionally, longer labour durations were reported when age was stratified, demonstrating that age is a modifier rather than a confounder (Lundborg, Liu, Åberg, Sandström, Tilden, Stephansson & Ahlberg 2021:13843).

Gu, Wang, Zhang, Schwank, Zhu, Zhang and Qian (2020:8) recommends that obstetric care providers should consider these factors during prenatal counselling. Furthermore, the study suggests that the obstetric care providers to consider the factors that affect the

duration of labour to process and manage childbearing women in limiting unnecessary intrapartum medical interventions and improve women's childbirth experiences (Gu et al 2020:8).

- **Type of labour**

Frequencies show that in most of the maternity case records 69.5% (n=1787) were completed for the type of labour whereas 30.5% (n=785) were not completed.

- **Diagnosis of labour**

The results on completeness for the diagnosis of labour shows that 72.1% (n=1855) of the maternity case records were completed while 27.9% (n=727) of the maternity case records were not completed.

- **Summary of labour**

According to the research details of this study on the completeness of the summary of labour, more than three quarter 75.6% (n=1945) of the maternity case records were reviewed for completeness and 24.4% (n=627) were not completed.

- **Phases of labour**

The study results indicate that the tests that 74.6% (n=1918) were completed in the maternity case records for the phases of labour in the maternity case records whereas 25.4% (n=653) were not completed in the maternity case records during intrapartum care.

- **Progress of labour**

The study results reported that 77.4% (n=1991) were recorded and 22,6% (n=581) were not recorded regarding progress of labour. According to Shimoda, Lishabari, Horiuchi, Shimpuku and Tashiro's (2015:4) study on midwives' intrapartum monitoring process and management that resulted in emergency referrals in Tanzania, discovered that midwives' initial problem identification was determined by the labour progress deviating from the midwife's estimated date and time, the standard line of cervical dilatation, identified lack

of foetal descent as obstructed labour, and analysis of the reasons for poor labour progress (Shimoda et al 2015:4).

- **Early warning charts**

The results reveal that out of 2572 maternity case records reviewed for completeness for early warning charts, 60.3% (n=1550) were found not complete whereas 39.7% (n=1022) were completed.

- **Partogram/graph**

The study results revealed that 77.9% (n=2003) of the maternity case records were documented for completion of partogram and 22.1% (n=569) were not documented for completion of partogram.

- **Gravity**

The completeness for gravity in the maternity case records was 60.5% (n=1557) and 39.5% (n=1015) of the maternity case records were not completed for gravity.

- **Parity**

Lastly, during labour history in this study, the completeness for parity was 60.3% (n=1551) in the maternity case records while 39.7% (n=1021) were not completed for parity.

4.3.6 Completeness for the variables of immediate vital signs

The study results in Figure 4.2 illustrate the variables for completeness for immediate vital signs which include medial upper arm circumference, body mass index, height, respiration rate, oxygen saturation, urinalysis, cardiovascular system and blood pressure. Accurate, documented vital data are a very significant component of intrapartum care They determine which treatment protocols to follow, provide critical information needed to make life-saving decisions, and confirm feedback on treatments performed. Documentation of the vital signs during this study was below 50% of the maternity case record surveyed. The medial upper arm circumference is 41.2% (n= 1059) body mass

index is 42.6% (n=1095), height is 42.8% (n=1100), respiration rate 43.0% (n=1105) and oxygen saturation 44.9% (n=1154). Babu, Das, Lobo, John, Thankachan, Khetrapal, Benjamin-Neelon and Murthy (2021:8) conducted the study in the Republic of India on pregnant women and birthweight in newborns and concluded that the mid upper arm circumference in pregnant women has a direct relationship for the prediction of LBW. All the vital signs are referred in Figure 4.2.

Sharma, Sharma and Singh (2020:2) recommends that all pregnant women should have their vital data, including pulse, blood pressure, temperature, and oxygen saturation, monitored every three to four hours throughout their intrapartum period of labour, according to evidence from the literature, midwives should monitor the vital signs, take note of any deviations, and notify the doctor (Sharma et al 2020:2).

- **Medial upper arm circumference**

The results of this research indicate that more than half 58.8% (n=1513) of the maternity case records were not completed in the space for Medial Upper Arm Circumference (MUAC) whereas 41.2% (n=1059) of the elements in the maternity case records were captured. The mean cut-off value of MUAC for the prediction of LBW is 22.5 cm in our study which falls with the other research which ranges the cut-off values from 19 to 29 (Sahu & Soren 2021:334). It can be taken as a proxy for the nutritional status of the mother and hence, useful for the prediction of the birth weight of the baby. It can be used as an efficient and cost-effective screening tool for LBW (Sahu & Soren 2021:334). The study revealed that 23 cm was the appropriate cut-off value for MUAC for the prediction of LBW, however, a systematic review determined that 22.59 cm should be used instead (Sahu & Soren 2021:334; Tang, Chung, Dong et al 2020: 3104).

- **Body mass index**

As illustrated in Figure 4.2, in more than half 57.4% (n=1477) of maternity case records variables for BMI were not captured and 42.6% (n=1095) were captured as reflected. Lundborg et al's (2021:13843) findings of an effect modification between BMI and maternal age contribute to the body of evidence that supports a more individualised approach in defining labour duration. As aligned to findings of other research, these

results indicate a need for a revised definition of normal and prolonged labour where different maternal characteristics are considered.

The WHO (2018a) reflected on the prevalence of underweight among adults and reports BMI of <18.5 (underweight), 18.5–24.9 kg/m^2 (recommended weight), 25.0–29.9 kg/m^2 (overweight) and ≥30.0 kg/m^2 (obese), with further obesity sub-classes of class I 30.0–34.9 kg/m^2, class II 35.0–39.9 kg/m^2 and class III ≥40 kg/m^2 obesity. Heslehurst, Vieira, Hayes, Crowe, Jones, Robalino, Slack and Rankin (2017:294) concluded made the conclusion that the optimal weight range for Asian populations is 18.5-23 kg/m2, while obesity is defined as greater than 27.5 kg/m2 due to an increased risk of metabolic disorders at a lower BMI (24).

The labour and theatre suites should communicate openly about the requirement for physical handling when women are still in the early stages of labour (Denison, Aedla, Keag, Hor, Reynolds, Milne & Diamond 2018: e65).

- **Height**

As illustrated, the study recorded that 57.2% (n=1471) of the height in the maternity case records were not completed during intrapartum care. Moreover, 42.8% (n=1101) recorded height in the maternity case records.

- **Respiration rate**

According to the results of the study, 43.0% (n=1105) indicated that the respiration rate was completed in the maternity case records during intrapartum care while 57.0% (n=1467) reflected that the respiration rate was not captured.

- **Oxygen saturation**

Data results from this study reflect that 55.1% (n=1418) for variable oxygen saturation were incomplete while 44.9% (n=1154) were completed.

- **Urinalysis**

As reflected by the results, more than half 50.2% (n=1290) of the maternity case records were completed for a urinalysis and 49.8% (n=1282) were not completed during intrapartum care.

The Maternity Guidelines Group published the intrapartum and postnatal care guideline in 2021 from New Zealand Christ Church Hospital and recommended that It is crucial to ensure that the woman in labour is passing urine every four hours and ensure urine output is adequate in order to prevent the effects of a full bladder on the progress of Labour, urine leakage and other complications, frequent check of the catheter should be prioritised if the mother encounters the challenges in passing urine (National Maternity Monitoring Group 2020). Bae, Kim, Choi, Ma and Kim (2017:1062) conducted a study in Korea about the impact of random urine proteinuria on maternal and foetal outcomes of pregnancy: a retrospective case-control found that random urine analysis with proteinuria can be associated with preeclampsia, preterm labour, premature rupture of membrane and intrauterine growth restriction.

- **Pulse rate**

The results of the data collected reveal that 51.2% (n=1318) of the cardiovascular system variables were incomplete for the cardiovascular system but 48.8% (n=1254) of the records were fully completed during intrapartum care in these hospitals.

Ackerman, Plantner, Spatz, Illuzi, Xu, Campbell, Smith, Paidas and Lipkind (2019:11) argue that cardiovascular morbidity in women with hypertensive diseases during delivery hospitalisation was conducted by the researchers in New York City came to the conclusion that hypertensive disorders of pregnancy, particularly preeclampsia and eclampsia with severe features, are significantly associated with cardiovascular morbidity during Increased vigilance, including diligent screening for cardiac pathology in patients with hypertensive disorders of pregnancy, may lead to decreased morbidity for mothers (Ackerman et al 2019:11).

- **Blood pressure**

The outcome findings of this study reveal that 67.7% (n=1742) reflected the completion of the blood pressure in the maternity case records during intrapartum care and 32.3% (n=830) were not completed.

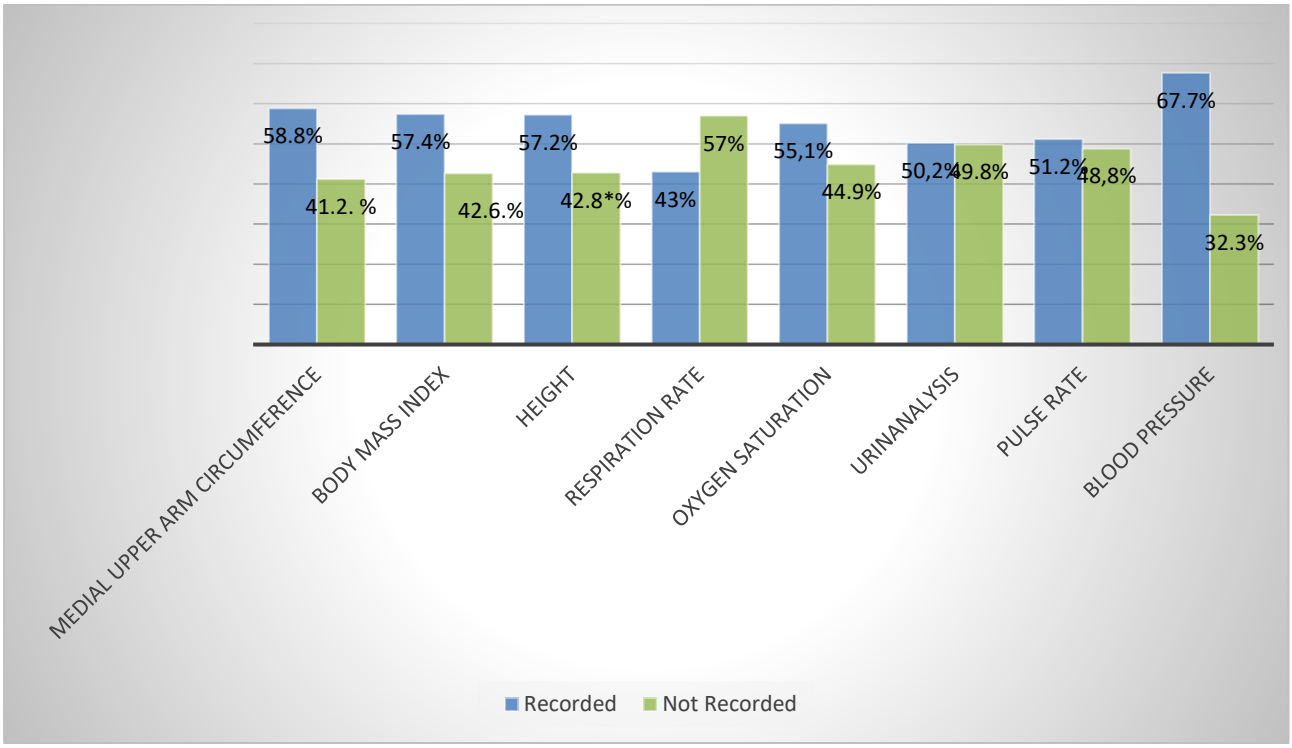


Figure 4.2 Completeness for the variables of immediate vital signs

4.3.7 Other body systems

Table 4.5 indicates that 50.5% (n=1298) of the maternity case records were completed for other body systems and 49.5% (n=1274) were not completed.

Table 4.5 Other systems (endocrine and centra nervous system)

Variable	Frequency		Percentage (%)	
	Recorded	Not recorded	Recorded	Not recorded
Other body systems	1298	1274	50.5%	49.5%

4.3.8 Completeness for the variables of the blood results

Figure 4.3 highlights the variables generated through the recording of blood results that include haemoglobin, rhesus factor, syphilis and human immunodeficiency virus.

- **Haemoglobin**

More than two-thirds 72.8% (n=1873) of the results were captured in the maternity case records for haemoglobin and 27.2% (n=699) were not captured. Young, Oaks, Tandon, Martorell, Dewey and Wendt (2019:47) found in their study that maternal haemoglobin concentrations across pregnancy and maternal and child health and anaemia is a worldwide health challenge for reproductive women.

- **Rhesus factor**

The research results indicated that 73.4% (n=1888) of the variable for the Rhesus factor results were completed while 26.6% (n=684) records were incomplete.

- **Syphilis**

The study presents statistical evidence that 73.6% (n=1893) of the records were completed for syphilis while 26.4% (n=679) were not completed.

Adhikari (2021:22) conducted the study on screening and treatment early in pregnancy is associated with decreased incidence of congenital syphilis, preterm birth, low birth weight, stillbirth, and death. Repeat screening in the early third trimester, between 28 and 32 weeks of gestation, and again at delivery is recommended in women at high risk for syphilis or who live in areas with high syphilis prevalence.

- **Human Immunodeficiency Virus**

The results show that 74.6% (n=1919) were completed and 25.4% (n=653) of the maternity case records were incomplete for HIV status. Moore and Allen (2019:43) conducted the study in Canada about the identification of intrapartum and perinatal HIV exposure and recommended that women who present in labour with undocumented HIV

status should undergo rapid HIV testing. Furthermore, they suggested that if results are positive, intrapartum and infant postnatal antiretroviral prophylaxis should be initiated immediately, pending results of the confirmatory HIV antibody test.

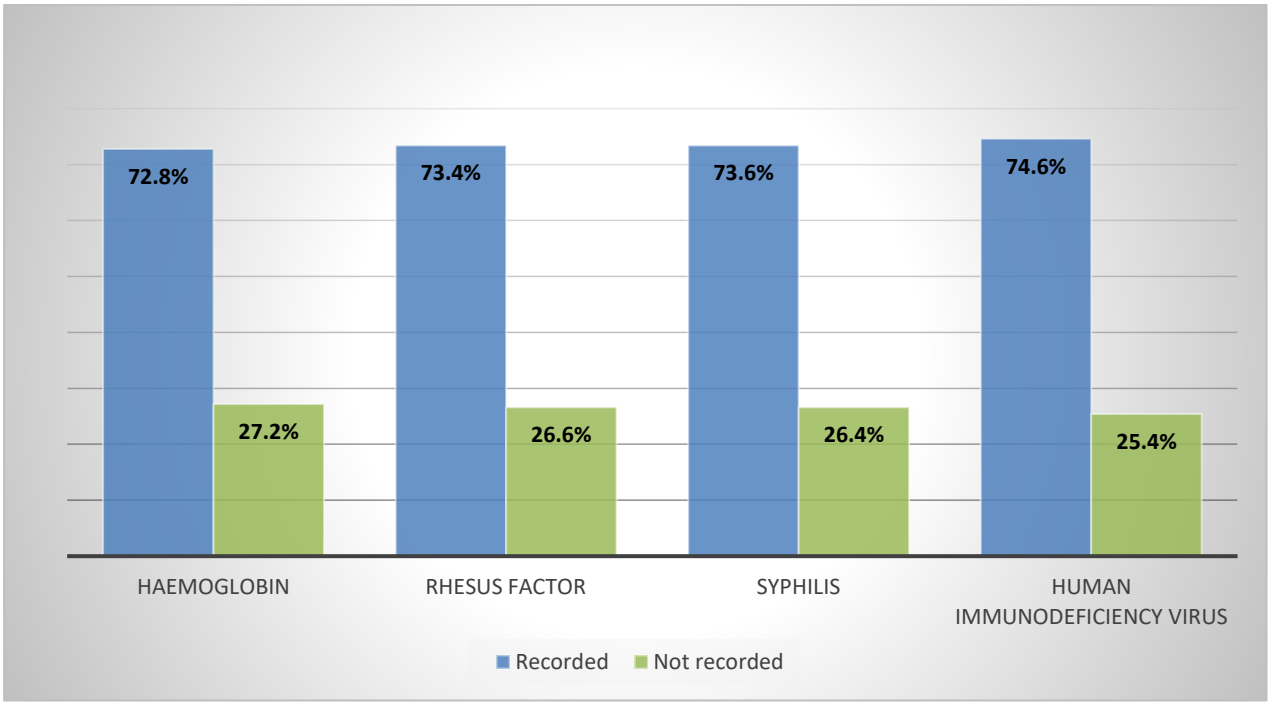


Figure 4.3 Blood results

4.3.9 Completeness for the results of the diagnostic apparatus

Table 4.6, the results of the study variables for completeness of diagnostic apparatus, include Tuberculosis (TB).

Table 4.6 Variables for Tuberculosis

Variable	Frequency		Percentage (%)	
	Recorded	Not recorded	Recorded	Not recorded
Tuberculosis	1924	648	74.8%	25.2%

- **Tuberculosis**

This study's results indicate that most of the maternity case records, 74.8%, (n=1924) were fully completed for tuberculosis whereas 25.2% (n=648) were not completed.

4.3.10 Completeness for the variables of problems related to pregnancy

The research results illustrate the challenges related to pregnancy in Figure 4.4 with more than two-thirds 69.3% (n=1782) of the maternity case records being fully completed as compared to 30.7 (n=790) that were incomplete during intrapartum care. According to the maternity case records variables. The problems during antenatal care were classified under main complaints and were related to, convulsions, bleeding, severe abdominal pains, looking very ill, headaches, severe difficulty in breathing and fever.

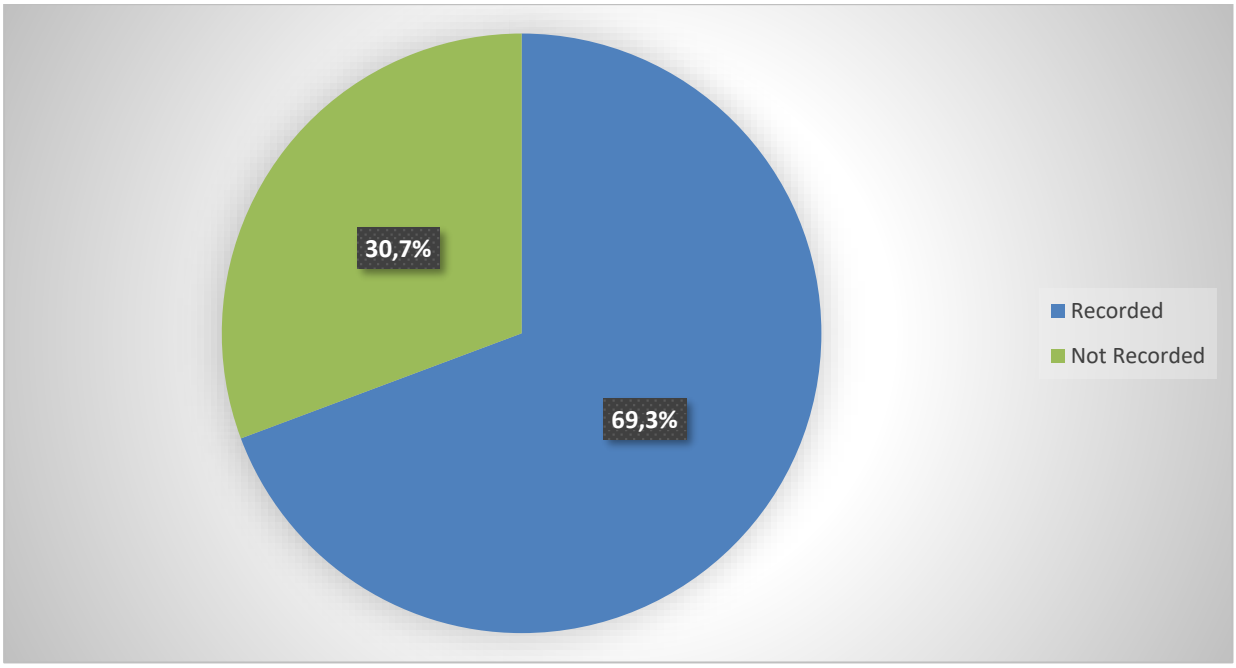


Figure 4.4 Problems related to pregnancy

4.3.11 Completeness for the intrapartum care variables

The summary entailed in Table 4.7 reflects completeness for intrapartum parameters. The variables include symphysis fundal height, gestational age lie, presentation, level of the head above the brim, the contractions, foetal heart rate, foetal movements.

Table 4.7 Intrapartum care variables

Variable	Frequency		Percentage %	
	Recorded	Not recorded	Recorded	Not recorded
Symphysis fundal height	1916	656	74.5%	26.5%
Gestational age	1896	676	73.7%	26.3%
Lie	1954	618	76.0%	24.0%
Presentation	1964	608	76.4%	23.6%
Level of the head above the brim	1740	832	67.7%	32.3%
Contractions	1947	625	75.7%	24.3%
Foetal heart rate	1743	829	67.8%	32.2%
Foetal heart movement	1761	811	68.5%	31.5%

- **Symphysis fundal height**

This study reveals that the completeness of the information regarding symphysis fundal height in the maternity case records is 74.5% (n=1916) and the incompleteness of information is 26.5% (n=656). The study recommended continuing SF height measurement as one of the indicators for referral to an obstetric care unit in clinical practice (Pay, Wiik, Backe, Jacobsson, Strandell & Klovning 2015:8).

- **Gestational age**

Based on results portrayed in Table 4.7, the majority, 73.7% (n=1896) files for gestational variables were completed during intrapartum care while 26.3 (n=676) of the information required in the maternity case records was not completed.

- **Lie**

The results of this study depict that 76.0% (n=1954) for the lie in the maternity case records were completed and 24.0 (n=618) indicated that lie was not completed during intrapartum care.

- **Presentation**

The results of this study illustrate that out of 2572 of files reviewed for completeness, 76.4% (n=1964) were completed while 23.6% (n=608) were not completed.

- **Level of the head above the brim**

Table 4.7 indicate the completeness of the head above the brim 67.7% (n=1740) within the maternity case record while 32.3% (n=832) were not completed.

- **Contractions**

The research outcomes on contractions reflect that 75.7% (n=1947) of the maternity case records were completed but 24.3% (n=625) were not completed.

- **Foetal heart rate**

The review of foetal heart rate variable reveals that 67.8% (n=1743) of the maternity case records were completed during intrapartum care whereas 32.2% (n=829) of the maternity case records were not completed.

- **Foetal heart movement**

Table 4.7 shows that 68.5% (n=1761) of the maternity case records were completed during intrapartum care and 31.5% (n=811) of the maternity case records were not completed during the same period of care.

4.3.12 Completeness for the recording of per vaginal examination

Figure 4.5 reflects the completeness of per vaginal examination which includes the application of the cervix, moulding, caput, colour of the liquor, pelvic assessment, and pelvic adequacy.

- **Application of the cervix**

The results in Figure 4.5 show that most of the maternity case records 74.3% (n=1911) were completed for an application of the cervix while 25.7% (n=661) were not completed during intrapartum care.

- **Moulding observed**

The study outcomes indicate for moulding variables completion at 75.2% (n=1935) were completed for moulding of the foetal head whereas less than one quarter of 24.8% (n=637) were not completed for moulding.

- **Caput observed**

The research outcomes concluded that 74.2% (n=1908) of the variables related to caput were completed and 25.8% (n=664) were not fully completed.

- **Colour of the liquor**

The completeness of colour of liquor variable was at 46.6% (n=1198) whereas 53.4% (n=1374) for maternity case records were found not to be completed.

- **Pelvic assessment**

Figure 4.5 summarises the outcomes for recording for pelvic assessment reviewed during the study determined that 74.5% (n=1915) were completed and 25.5% (n=657) were not completed.

- **Pelvic adequacy**

The research results show that 61.3% (n=1576) were completed for adequacy of pelvic assessment and 38.7% (n=996) of these records were incomplete during intrapartum care.

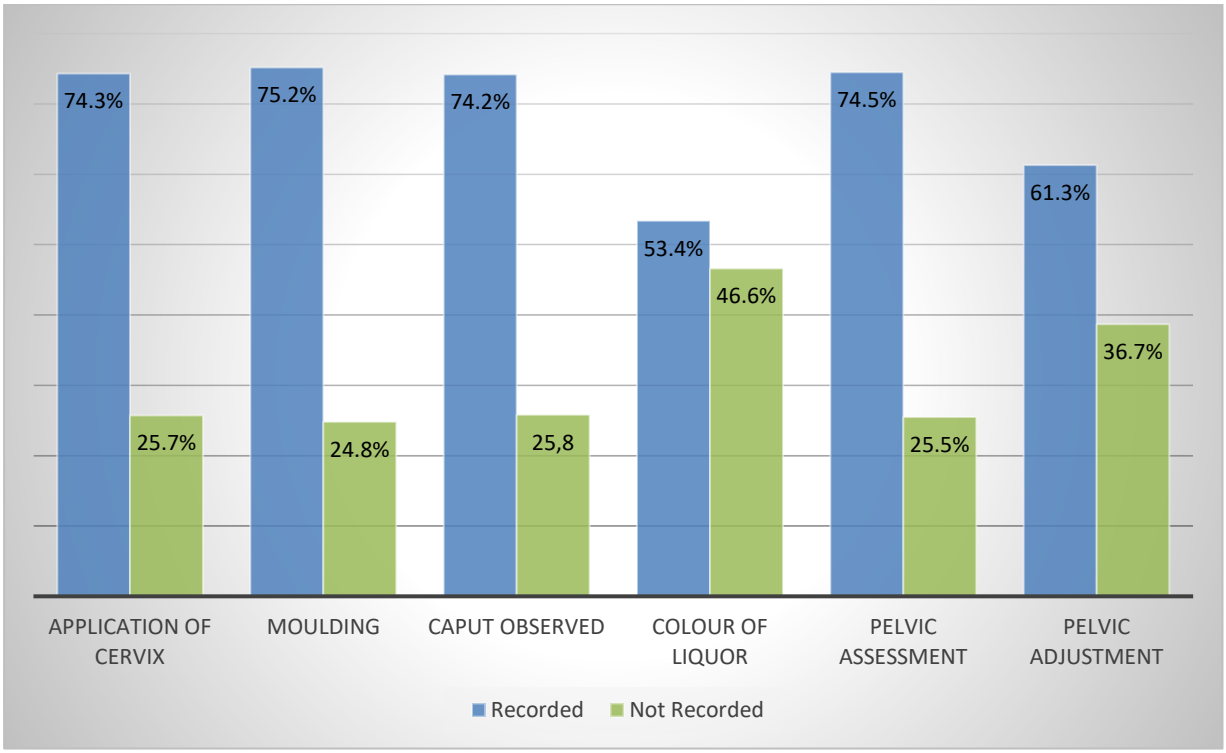


Figure 4.5 Recording of per vaginal examination

4.3.13 Completeness for the variables for risk factors

Table 4.8 reports the research outcomes for the risk factors that included maternal, foetal, labour and danger signs.

Table 4.8 Risk factors

Variable	Frequency		Percentage (%)	
	Recorded	Not recorded	Recorded	Not recorded
Maternal risk factors	1906	666	74.1%	25.9%
Foetal risk factors	1692	880	65.8%	34.2%
Labour risk factors	1760	812	68.4%	31.6%
Danger signs	1722	850	67.0%	33.0%

- **Maternal risk factors**

The research results reflect that out of 2572 maternity case records reviewed for maternal risk factors during intrapartum care, 74.1% (n=1906) were completed and 25.9% (n=666) were not completed during the study.

- **Foetal risk factors**

The study results depict that 65.8% (n=1692) of the maternity case records surveyed were completed for foetal risk factors and 34.2% (n=880) were not completed during intrapartum care.

- **Labour risk factors**

The outcomes of this study illustrate that more than three quarter 68.4% (n=1760) were completed for labour risk factors whereas 31.6% (n=812) were not complete in the maternity case records during intrapartum care.

- **Danger signs as risk factors**

Table 4.8 presents the completeness of danger signs as risk factors, 67.0% (n=1722) out of 2572 records reviewed were completed and 33.0% (n=850) were not completed.

4.3.14 Completeness for the variable of hospital care plan

Figure 4.6 summarises the variables for the completeness of the care plan implemented during the study which included maternal and foetal care plans.

- **Maternal care plan**

The study results reveal that out of 2572 maternity case records surveyed for completeness of maternal care plan, 74.1% (n=1906) of the maternity case records were completed and 25.9% (n=666) of the records were not completed during intrapartum care.

- **Foetal care plan**

Figure 4.6 summarises variables for care plan during intrapartum care by indicating that 73.5% (n=1892) of the maternity case records surveyed were completed and 26.5% (n=680) were not completed.

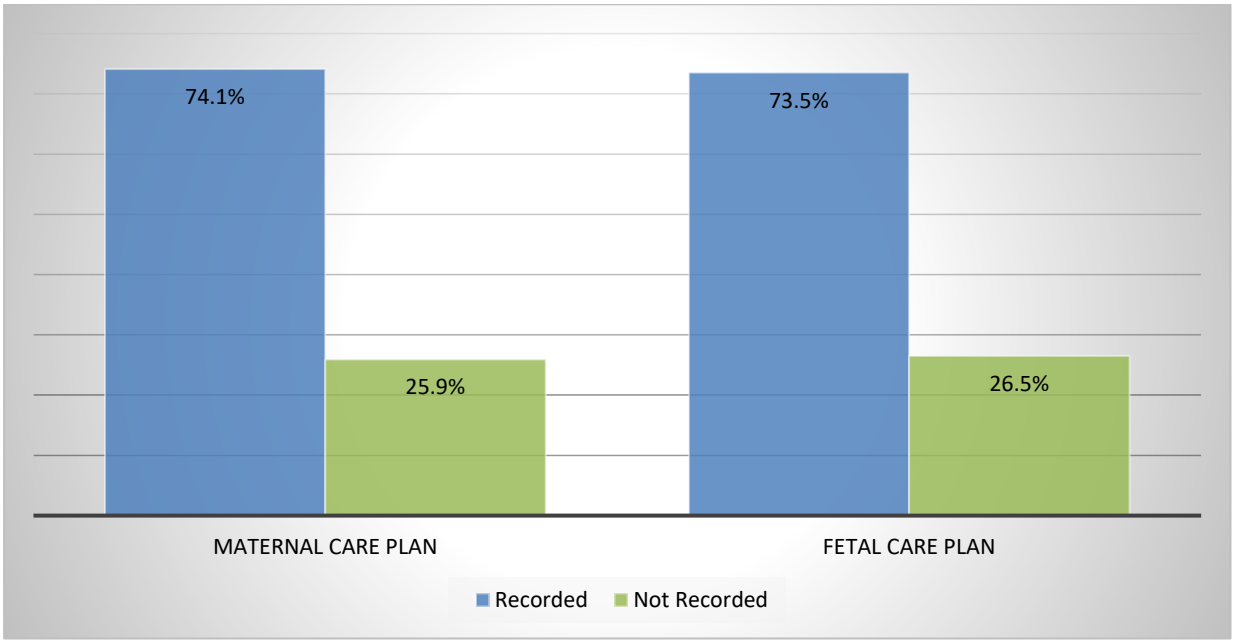


Figure 4.6 Care plan

4.3.15 Completeness for the general management of care during intrapartum care

Table 4.9 illustrates the variables for completeness of general management of care during intrapartum care which includes foetal condition, deceleration, maternal condition, management of medication and intravenous fluid pain relief and the signature of the medical practitioners.

Table 4.9 General management of care during intrapartum

Variable	Frequency		Percentage (%)	
	Recorded	Not recorded	Recorded	Not recorded
Foetal conditions	1889	683	73.4%	26.6%
Deceleration	1328	1244	51.6%	48.4%
Maternal condition	1985	587	77.2%	22.8%
Management/medication/ intravenous fluid	2011	561	78.2%	21.8%
Pain relief measures	2000	572	77.8%	22.2%
Completeness of clinical notes by the medical practitioner	2089	483	81.2%	18.8%

- **Foetal condition**

Table 4.9 displays that 73.4% (n=1889) of the maternity case records were completed for foetal condition and 26.6% (n=683) were not completed.

- **Deceleration**

The results of the study on the variable for deceleration illustrate that more than half 51.6% (n=1328) of the maternity case records were recorded and completed during intrapartum care and 48.4% (n=1244) were not recorded.

According to Cahill, Tuuli, Stout, Lopez and Macones (2018:2) on deceleration area is the most predictable electronic foetal monitoring (EFM) pattern for academic settings, and when coupled with tachycardia, it considerably increases the risk of morbidity in foetal heart rate monitoring prospective cohort research has suggested. The deceleration area is predictive of foetal academia. It is crucial to note that this study was carried out on patients who delivered at or after 37 weeks, which may have limited the generalisability to groups with preterm births (Cahill et al 2018:2). The National Institute of Child Health and Human Development (NICHD) categories were developed using human visual interpretation, which is also crucially how EFM is applied in clinical settings, hence we did not analyse the EFM patterns using computers (Cahill et al 2018:2).

- **Maternal condition**

The outcome of the results on maternal condition as indicated in Table 4.9 concluded that 77.2% (n=1985) of the maternal condition variables were recorded and completed and 22.8% (n=587) were not completed.

- **Management/medication/intravenous fluid**

It was detected that 78.2% (n=2011) of the variables of management of medication and intravenous fluids were completed while 21.8% (n=561) were not completed.

- **Pain relief measures**

In terms of pain relief measures, Table 4.9 indicates that 77.8% (n=2000) of the maternity case records were completed whereas 22.2% (n=572) were not completed.

- **Completeness of clinical notes by the medical practitioner**

Most of the files as illustrated in Table 4.9 displayed that 81.2% (n=2089) of the medical practitioners completes the maternity case records were completed and 18.8% (n=483) were not completed.

4.4 DISCUSSION OF THE QUANTITATIVE RESULTS

With non-participant unstructured observation, data collected reflected a poor filing system, poor supervision of personnel, failure to review guidelines related to recordkeeping in maternity, poor working conditions and understaffing of maternity units.

Table 4.4 reveals that out of 2572 maternity case records reviewed for completeness, 60.3% (n=1550) were found not to be complete whereas 38.7% (n=1022) were completed. The research on improved early obstetric warning scores done in the United Kingdom showed that the advantages of an automated EWS include improved record auditing, a paperless system's environmental advantages, time efficiency, and increased uniformity (Robbins, Shennan & Sandall 2018:9). However, EWS should not substitute clinical evaluation and assessment which culminates in documentation.

The majority of the maternity case records are completed for characteristics of admission during labour as summarised in Figure 4.1, date and time of assessment, 76.7% (n=1974) and 76.5% (n=1968), date and time for onset of labour 65.3% (n=1680), 64.8% (n=1667), date and time of onset of rupture of membranes 63.2% (n=1625) 62.4% (n=1606), date and time for visibility of show 63.1% (n=1623) 62.5% (n=1607). In the study conducted by Alalem, Kafy, Hashim, Aldukkan and Bajahmom (2019:6) on spontaneous versus induced labour concurs with the results of this study by recording that women who had induction of labor were found to have an increased risk of adverse outcomes.

The variables on labour history reviewed for completeness during phase 1 reflected that most of these maternity records were also more than the variables that were not fully recorded except for early warning signs as summarised in Table 4.4. Spontaneous or induced labour 61.3% (n=1576), duration of labour 67.1% (n=1725), type of labour 69.5% (n=1787), diagnosis of labour 72.1% (n=1855), summary of labour (second, third and fourth stage of labour) 75.6% (n=1945), phase/stage of labour 74.6% (n=1918), early warning chart 60.3% (n=1550) were not complete whereas 39.7% (n=1022) were completed., completion of partogram 77.9% (n=2003) progress of labour cervical dilatation 77.4% (n=1991), gravity 60.5% (n=1557) and parity 60.3% (n=1551).

As reported in Figure 4.2, the quantitative results of this study highlighted the incomplete variables or gaps in the maternity case records. The results indicated that more than half 58.8% (n=1513) not in the space for MUAC, 57.4% (n=1477) did not capture the readings of the BMI, 57.2% (n=1471) of the height in the maternity case records were not completed, 55.1% (n=1418) of oxygen saturation were not completed, 55.1% (n=1418) of the maternity case records were not completed for the oxygen saturation, 50.2% (n=1290) completed for a urinalysis, 67.7% (n=1742) reflected the completion of the blood pressure, 51.2% (n=1318) of the maternity case records were not completed for the cardiovascular system.

The blood results history variables had the most part completed variables as depicted in Figure 4.3 and that include haemoglobin, rhesus factor, syphilis, and human immunodeficiency virus. More than two thirds 72.8% (n=1873) results were captured for haemoglobin and rhesus factor, 73.4% (n=1888) were completed, syphilis 73.6 (n=1893) of the records were completed for syphilis, 74.6% (n=1919) were completed for HIV status. The study by Jeffrey, Hewison, Goodwin, Kenyon (2017:282) recommended in-service training of midwives on recordkeeping which concurs with the current study.

As displayed in Table 4.7. all the maternity case records reflected more than two thirds on completeness for Intrapartum parameters which included symphysis fundal height 74.5% (n=1916), gestational age 73.7% (n=1896), lie 76.0% (n=1954) , presentation 76.4 (n=1964) were completed, level of the head above the brim 67.7% (n=1740), contractions 75.7% (n=1947), foetal heart rate 67.8% (n=1743) and foetal movements 68.5% (n=1761). The results indicate that the midwives and medical practitioners improved in

recording the intrapartum variables in the maternity case records. However, more work is needed to improve the accuracy of documenting these variables.

The results further revealed that most of the variables were completed during intrapartum care as illustrated in Figure 4.5. The variables for per vaginal examination included the application of the cervix 74.3% (n=1911), moulding 75.2% (n=1935), caput 74.2% (n=1908), colour of the liquor 53.4% (n=1374), pelvic assessment 74.5% (n=1915) and pelvic adequacy 61.3% (n=1576). These results pertaining to these variables should be taken into consideration by midwives and medical practitioners when assessing and recording the maternity case records. These results can further assist the health establishments to develop their own local protocols, to guide midwives and medical practitioners regarding the recording of per vaginal examination to be performed in labour. According to guidelines for the Intrapartum and immediate neonatal management of meconium-stained liquor between 8% and 25% of all pregnancies over 34 weeks gestation are associated with meconium-stained liquor.

However, in some circumstances, the passage of meconium in utero is associated with significant increases in perinatal morbidity and mortality. The results suggest that the maternity care practitioners in Limpopo should monitor the recording of the colour of the liquor to take action if necessary.

The research findings illustrate that out of 2572 maternity case records reviewed 91.6% (n=2357) were completed during intrapartum care in these selected healthcare facilities. The results reflected that 8.4% of the maternity cases records were incomplete. Other challenges associated with the use of the maternity case records were failure to avail the maternity case records, a lack of formulated policy on resources allocation of maternity case records, shortage of maternity case records, photocopied maternity case records, use of improper material such as schoolbooks and poor infrastructure for the storage of medical records.

According to Chatuverdi, Randive, Raven, Diwan and De Costa (2016:179), in their study conducted in the Republic of India about the assessment of the quality of clinical documentation from the time of admission till the discharge of a woman in labour, found that only 1.9% records documented advice at discharge, 13.8% had postnatal blood pressure and 35.3% documented foetal heart rate. According to Radhika et al (2021:11),

in just 15.8% of deliveries, partograph plotting was found in an observational study of 1479 labouring mothers. Guidelines for excellent practice in the healthcare professions published by the Health Professions Council of South Africa state that patient records should indicate the date and time of the examination (HPCSA 2016:3). In their investigation of public health facilities in the Bale Zone of Ethiopia, Markos and Bogale (2015:3) discovered that partographs were included in 67.3% of the examined medical records, many of which were incomplete.

Melese, Weji, Berheto,and Bekru's (2020:6) research in Ethiopia about the utilisation of partograph during labour concluded that a proportion of utilisation of partograph in the study area was found to be low based on the WHO's recommendation on routine utilisation for all labouring mothers. In their investigation of public health facilities in the Bale Zone of Ethiopia, Markos and Bogale (2015:3) discovered that partographs were included in 67.3% of the examined medical records, many of which were incomplete.

Furthermore, Mathibe-Neke, Lebeko and Motupa (2013:153) conducted the qualitative study in one of the academic hospitals in Gauteng, South Africa on the factors that contribute to the underutilisation of the partograph and concluded that improved knowledge and experience were gained over the past 40 years regarding the use of the partograph. However, the knowledge and experience gained does not appear to be widely applied in developing nations. The study suggested that precise partograph recording and thorough monitoring of women during labour are essential not only for limiting unnecessary medical interventions but also for the implementation of effective interventions. According to the study, frequent workshops and seminars as well as educating midwives on how to use the partograph are essential for ensuring the safety of women during Labour Mathibe-Neke et al (2013:153). It is advised that more studies be done on the results of an incomplete or inaccurately recorded partograph.

4.5 SUMMARY

This chapter presented and discussed the quantitative results of the study. The results demonstrated that 91.6% indicated that the guidelines are available in the selected facilities in Limpopo Province. Moreover, the results showed the gaps on the accuracy and completeness of the maternity case records during intrapartum care. The next chapter presents the qualitative findings of the study.

CHAPTER 5

QUALITATIVE DATA ANALYSIS, PRESENTATION AND DESCRIPTION OF THE RESEARCH FINDINGS

5.1 INTRODUCTION

Chapter 5 presents the description and analysis of qualitative data. The findings are presented through main themes and sub-themes. The chapter also discusses the conclusion based on the considerations of these findings.

5.2 DATA MANAGEMENT AND ANALYSIS

An outline of data analysis, presentation and discussion obtained from phase 2 through in-depth interviews with medical practitioners and focus group discussions with midwives at the participating selected healthcare facilities. Twenty-nine midwives participated in the focus group discussions. In-depth interviews with twelve medical practitioners and six focus group discussions with twenty-nine midwives were conducted. Data was thematically analysed. Themes and correlations between concepts were found throughout the data analysis process through constant data comparison.

The data for this study will be kept for a period of five years in line with the University's research data management policy. Thereafter, the data can be discarded with the approval of the appropriate University official if no query was laid against the study that demanded prolonged keeping of the data.

5.3 STUDY FINDINGS

The findings present the categories of healthcare facilities as the study context, participants' demographic characteristics, main themes, and sub-themes of the qualitative phase of the study. The responses shared are those of the focus group discussions followed by in-depth interviews responses. Participants were coded either DH (representing District Hospital) or RH (representing Regional Hospital) and Participants 1 to 6 to uphold anonymity.

5.3.1 Focus group discussions

- Demographic characteristics

Variables of the participants involved quasi name, gender, age; educational level and years of working experience as reflected in Tables 5.1 to 5.6.

5.3.1.1 Type of healthcare facilities and number of focus group discussions conducted

Table 5.1 Healthcare facilities where focus group discussions were conducted.

Table 5.1 Type of healthcare facility where data was collected.

Healthcare facilities type	Number of the healthcare facilities	Number of FGDs
District hospitals	5	5
Regional hospitals	2	1

Twenty-nine midwives participated in six focus group discussions in these selected healthcare facilities. Table 5.2 illustrates the number of midwives from the District and Regional Hospitals.

Table 5.2 Number of participants per focus group discussion

District hospital	Participants categories	Number of participants
DH1	Midwives	6
DH2	Midwives	4
DH3	Midwives	5
DH4	Midwives	3
DH5	Midwives	6
RH 1	Midwives	5

5.3.1.2 Midwives' demographic characteristics per hospital

Twenty-nine midwives participated in the six focus group discussions. The selected healthcare facilities were coded as DH1, DH2, DH3, DH4, DH5 and RH1.

Table 5.3 Demographic characteristics of focus group per hospital 1 (DH1)

Quasi name	Gender	Age	Education level	Years of working experience
DH1 Participant 1	F	33	Advanced Diploma in Midwifery	08
DH1 Participant 2	F	29	Diploma in General Nursing	06
DH1 Participant 3	M	35	Diploma in General Nursing	12
DH1 Participant 4	F	49	Master's Degree in Nursing	20
DH1 Participant 5	F	25	Nursing Honours Degree	07
DH1 Participant 6	F	58	Diploma in General Nursing	26

The first focus group discussion meeting was conducted with five midwives and one accoucheur reflecting the following attributes, age ranges between 25-58 years, experience in providing midwifery services from six (06) to (26) years, qualified as a general nurse and accoucheur and completed a four-year nursing diploma, which includes general, community, and psychiatry nursing science and midwifery. One participant possessed an Advanced Diploma in Midwifery, Nursing Honours Degree and Master's degree. Table 5.3 illustrates the information related to the first focus group discussion.

Table 5.4 Demographic characteristics of focus group discussion (DH2)

Quasi name	Gender	Age	Education level	Years of working experience
DH2 Participant 1	F	41	Diploma in General Nursing	04
DH2 Participant 2	F	46	Advanced Diploma in Midwifery	21
DH2 Participant 3	F	30	Nursing Advanced Diploma	05
DH2 Participant 4	F	36	Nursing Degree	09

The second focus group discussion meeting was held with four participants with the following characteristics, the participants were all females, with age range between 30-46 years. The participants' experience of providing midwifery services ranged between 04 to 21 years. They were also qualified as general nurses and midwives, completed a

four-year Nursing Diploma, which includes general community, psychiatry nursing science and, two had Advanced Diploma in Midwifery one had a Nursing Degree.

Table 5.5 Demographic characteristics of focus group 3 (DH3)

Quasi name	Gender	Age	Education level	Years of working experience
DH3 Participant 1	F	55	Advanced Diploma in Midwifery	23
DH3 Participant 2	F	47	Advanced Diploma in Midwifery	20
DH3 Participant 3	F	27	Diploma in General Nursing	02
DH3 Participant 4	F	50	Advance Diploma in Midwifery	23
DH3 Participant 5	F	29	Diploma in General Nursing	07

A third focus group discussion was held with five midwives as shown in Table 5.5. The participants were all females with an age range between 27-55 years, had experience in providing midwifery services ranging from 02 to 23 years. They were all qualified as general nurses and midwives they all completed a four-year Nursing Diploma, which includes general nursing, midwifery, community nursing and psychiatry nursing, three had a Diploma in Advanced Midwifery.

Table 5.6 Demographic characteristics of focus group 4 (DH4)

Quasi name	Gender	Age	Education level	Years of working experience
DH4 Participant 1	F	28	Diploma in General Nursing	05
DH4 Participant 2	F	50	Diploma in General Nursing	22
DH4 Participant 3	F	31	Diploma in General Nursing	04

Table 5.6 reflected the fourth focus group discussion which was held with three midwives and displayed the following traits, the participants were all females with an age range between 28-50 years, they had an experience in providing midwifery services ranging from 04 to 22 years, they qualified as general nurses and midwives, they possessed a four-year Nursing Diploma, which included general nursing, midwifery, community nursing and psychiatry nursing.

Table 5.7 Demographic characteristics of focus group 5 (DH5)

Quasi name	Gender	Age	Education level	Years of working experience
DH5 Participant 1	F	30	Advanced Diploma in Midwifery	08
DH5 Participant 2	F	33	Diploma in General Nursing	06
DH5 Participant 3	F	45	Diploma in General Nursing	12
DH5 Participant 4	F	48	Master's Degree in Nursing	20
DH5 Participant 5	F	29	Master's Degree in Nursing	07
DH5 Participant 6	F	53	Advanced Diploma in Midwifery	25

As depicted by Table 5.7, a focus group discussion was held with six midwives with the following features, they were all females with an age range between 29-53 years. They had significant experience in providing midwifery services ranging from 06 to 25 years. They were all qualified as general nurses and midwives with three midwives having completed a four-year Nursing Diploma, which included general nursing, midwifery, community nursing and psychiatry nursing, two midwives had Advanced Diploma in Midwifery and two had Master's Degree in Nursing.

Table 5.8 Demographic characteristics of focus group 6 (RH1)

Quasi name	Gender	Age	Education level	Number of years working in maternity
RH1 Participant 1	F	29	Advanced Diploma in Midwifery	06
RH1 Participant 2	F	39	Advanced Diploma in Midwifery	14
RH1 Participant 3	F	37	Diploma in General Nursing	09
RH1 Participant 4	F	49	Advanced Diploma in Midwifery	19
RH1 Participant 5	F	54	Advanced Diploma in Midwifery	21

As shown in Table 5.8, the sixth focus group discussion was held with five midwives from one Regional Hospital with the following demographic characteristics, participants were all females with an age range between 29-54 years, they had experience in providing midwifery services ranging from 06 to 21 years, they are qualified as general nurses and midwives with all the midwives having completed a four-year Nursing Diploma, which included general nursing, midwifery, community nursing and psychiatry nursing with four midwives have qualification in Advanced Diploma in Midwifery.

5.3.2 Thematic presentation of the findings

The researcher analysed data that led to the emergence of four major themes which are: the perception of midwives regarding recordkeeping, enablers to the implementation of recordkeeping, challenges of recordkeeping and recommendations to improve recordkeeping on the maternity case records during intrapartum care. Table 5.9 illustrates four main themes and sub-themes. The participants were coded with the quasi-name as DH1: Participant 1, DH2: Participant 1, DH3: Participant 1, DH4: Participant 1, DH5: Participant 1, for district hospitals and RH1: Participant 1 for regional hospital etc.

Four main themes and fifteen sub-themes emerged from these focus group discussions regarding the perception of recordkeeping during intrapartum care.

Table 5.9 Major themes and sub-themes for focus group discussions

Main themes	Sub-themes
1 Perception of midwives regarding recordkeeping	1.1 Availability of guidelines 1.2 Good practice in recordkeeping 1.3 Fear of litigation
2 Enablers to the implementation of recordkeeping	2.1 Staff teamwork 2.2 Management support
3 Challenges to recordkeeping	3.1 Inadequate time 3.2 Shortage of staff (midwives) 3.3 Lack of proper skills
4 Recommendations to improve recordkeeping	4.1 Availability of the updated recordkeeping guidelines. 4.2 In-service training 4.3 Monitoring and evaluation of midwives on recordkeeping issues 4.4 Peer review for record auditing 4.5 Proper time management among midwives 4.6 Appoint staff in line with the determining staffing needs 4.7 Apply standardization and archival strategies for easy retrieval

5.3.2.1 Theme 1: Perception of midwives regarding recordkeeping

Midwives shared various perceptions regarding recordkeeping in the district and regional hospitals.

Midwives report that audits are conducted by district managers, ward managers, as well as the midwives themselves. They continued by sharing opinions on auditors' partogram knowledge as well as the audit and feedback.

5.3.2.1.1 Sub-theme 1.1: Availability of recordkeeping guidelines

Midwives expressed diverse perceptions regarding the availability of recordkeeping guidelines. Most of the participants highlighted that recordkeeping guidelines are received by heads of the healthcare facilities. Furthermore, the participants cited that the recordkeeping guidelines are shared with the maternity operational managers and with the staff.

> “In this health establishment, our management receives the guidelines as ordered from Sekhukhune District Health, Limpopo Province.” (DH1: Participant 3)

> “It is noted that the operational manager and her assistant are always receiving the maternity guidelines and ensure that they are shared with the hospital staff.” (DH2: Participant 4)

> “In this hospital, the management ensures that midwives receive an adequate supply of recording material including maternity case records. According to me, nursing should be driven by enthusiasm in understanding the pertinence of recording when implementing nursing activities during intrapartum care.” (DH4: Participant 2)

> “Government is providing the midwives of this institution with the maternity guidelines. we have never run out of the maternity case records. Our Operational Manager will go to extent of calling other facilities requesting the copies of the maternity guidelines and if they are found in another healthcare facility, then, she will go and collect the guidelines. The midwives are always happy with the effort of the Operational Manager’s effort to avail If the maternity guidelines in this facility.” (DH5: Participant 1)

> “The facility has the guidelines that are allocated to the maternity units. The district supply to our facility with the guidelines is always in line with the hospital need.” (DH3: Participant 1).

> “My facility has guidelines for both soft and hard copies. These hardcopies policies and guidelines are placed in strategic areas within the maternity unit. The soft copies are found in the hospital lockers, notice boards of the labour and the SOPs file where midwives can use them as a point of reference.” (DH5: Participant 2)

> “We receive the maternity case records in our monthly maternal morbidity and mortality meetings held in different hospitals. Hospitals with surplus recording material more surplus are sharing the guidelines.” (DH4 Participant 1)

> “Our operational manager receives and shares the soft copies of the maternity guidelines, policies, and protocols using the hospital and personal emails or WhatsApp. The midwives are always encouraged to read the maternity guidelines when their maternity is not busy, they can discuss and share knowledge. The soft copy of the guidelines will be filed in the maternity guidelines file.” (DH3: Participant 3)

Other participants highlighted that the maternity guidelines may be available but there is no time to read them thoroughly.

> “In our facility, there is a challenge of shortage of staff, the midwives are expected to complete other forms and voluminous information related to intrapartum care. Therefore, it is difficult post-delivery daily to go through the maternity guidelines.” (DH4: Participant 1)

> “It takes too much time to write from the admission until the discharge of the mother post-delivery, we do not have time to peruse and make a significant contribution to these guidelines.” (DH2: Participant 2)

Surprisingly, two focus group discussions reported that they were never given recordkeeping guidelines.

> “As midwives, we worry about the availability of policies and guidelines. It is shocking that the hospital has got policies and guidelines about recordkeeping, but no manager takes us into confident that we know about them.” (DH3: Participant 2)

> "We encounter the challenge of shortage of guidelines in this facility, this shortage of these guidelines poses a threat to midwives as not all the information is available for the management of the mother during intrapartum care. The midwives are sometimes compelled to donate money to purchase data to download and papers in the stores to make copies of maternity guidelines. Furthermore, we are having a challenge such as the shortage of stationery in our hospital". During the auditing of the records, the midwives are blamed for failing to follow guidelines of good recordkeeping." (DH5: Participant 3)

> "There are neither recordkeeping guidelines, policies, standard operating procedures (SOPS) nor protocols in our units to be used as source of reference during maternity care of the mothers. It is for that reason that most of the time midwives are not sure of what we should do as they run around." (DH5: Participant 5)

5.3.2.1.2 Sub-theme 1.2: Good practice in recordkeeping

With regard to the good practice in recordkeeping, the midwives shared a common perception or sentiment that it is good to keep good clinical records during intrapartum care although it is sometimes difficult due to the challenges encountered daily.

> "To tell the truth, somehow it is difficult if not impossible to record everything in the maternity case records but as midwives, in this health establishment, we try by all means to keep the records of all the activities that happened during the maternal care including intrapartum care. When gaps are found during record auditing and peer review, they are addressed best to record. It must be noted that recordkeeping is important." (DH2: Participant 3)

> "In this facility, management, we always emphasise a good clinical practice in recordkeeping as a daily integral part of rendering patient care including the completion of the maternal case record, The recordkeeping will assist in adhering to the sequence to do things timeously and reduce delay." (DH1: Participant 4).

Midwives encounter various challenges regarding recordkeeping. The challenges encountered by participants included inadequate time, shortage of midwives and a lack of proper skills. The participants shared the following:

"It is the fact that as midwives, we are unable to complete the whole variables of maternity case records during intrapartum care because of staff shortage. Midwives are trying to keep the record information even if it is a retrospective recording." (DH5: Participant 4)

"Midwives are aware and comprehend that it is important to record for good clinical practice, most do but some do not record as expected, maybe they just overlook these important requirements to record because they are being overworked." (RH1: Participant 1)

"In this hospital, midwives struggle to. The monthly record audit reveals that midwives are unable to improve their monthly recordkeeping audits. There is a shortage of the midwives and advanced midwives hence the priority is on patient care." (DH4: Participant 2)

5.3.2.1.3 Sub-theme 1.3: Fear of litigation

The conditions under which the midwives are working poses a threat of lawsuits midwives reported their fears to the process of legal proceedings. Midwives further depicted they fear to be sued due to the failure document the work done due to shortage of staff, however, there is an influx of patients.

"As a midwife, I am afraid to commit and decide and act by recording the decision in the maternity case record as I may land in the regulatory body (SANC) and be charged with acts or omission accordingly. A charge from the SANC can be a base where the midwife is litigated." (RH1: Participant 4).

"Midwifery is a risky nursing profession. Midwives encounter pressure from patients, family members, hospital management and the community Hospital. New community health nurses resolved not to practice midwifery due to the inflating litigations related to midwifery cases. Dedicated midwives are leaving midwifery sector due to the litigation that led to lose of distinguishing devices." (DH3: Participant 1)

"Midwives are expected to write incident reports, compile the incident preliminary and final investigation related to the patient safety incidents in the hospital set up during litigation, it is a standard rule by the any department to comment to make

the findings and recommendations on midwives' recordkeeping during the report during care. in some incidents, we hear that midwives are requested to give statements under oath during the litigations proceedings midwives." (DH1: Participant 1)

"During litigation, midwives perceive the process as discouraging and causing Low morale which leads to absenteeism and staff turnover which results in a staff shortage. In the situation where there is a staff shortage, mistakes are bound to happen, sometimes mothers deliver the babies alone and midwives feel that it is better not to go to work or even resign rather than writing the incident reports. Litigations are threatening the midwifery sector as it is non-negotiable for midwives to fail recordkeeping their midwifery practice regardless of the challenges they come across." (DH5: Participant 3)

5.3.2.1.3.1 Litigation leads to continuous unresolved conflicts between the midwives

"During the writing of the incident reports in this hospital, midwives write the reports in such a way that it exonerates them from the incident and implicates colleagues and that sometimes leads to conflict between the midwives' colleagues. During the writing of incidents, as midwives, we are forced to lie and falsify the records in fear of losing financial benefits and trying to cover the colleague. Sometimes you sit together to write statements in order to protect the colleague even when you know that your colleague may not protect you next time. Therefore, litigations may perpetuate the conflict between the colleagues due to failure to adhere to proper clinal recordkeeping." (DH4: Participant 3).

5.3.2.2 Theme 2: Enablers to the implementation of recordkeeping

5.3.2.2.1 Sub-theme 2.1: Staff teamwork

The participants' response highlights teamwork to advance recordkeeping during intrapartum care.

"In this hospital, we do not make it an individual's responsibility to do the recording in the maternity case records. Nurses are always seeking a second opinion and we countersign following the confirmation of maternal care. Nurses feel

comfortable working together including recording the maternity case record and that enhances proper and quality recordkeeping." (RH1: Participant 5)

"Midwives are saved by teamwork in recording the maternity case recordkeeping of the patient safety incidents during investigations. Midwives collaborate and work together to benefit the patients and families." (DH2: Participant 1)

"The members of the midwifery team in our hospital healthcare may also have disagreements over the matters related to the quality recordkeeping but it is for the benefits of learning." (DH3: Participant 5)

"According to my opinion, our team members are doing what they are required during recordkeeping and the patients benefit from our teamwork. According to my observation, no patient will be left unattended to, and all the records are also completed during intrapartum care." (DH1: Participant 6)

5.3.2.2.2 Sub-theme 2.2: Management support

In every institution, there are three levels of management: executive, middle, and operational (Jooste 2018:94). Midwives indicated that they enjoy support from the operational management, however the support from the middle and executive is non-existent. Midwives describe working in the maternity unity especially labour ward where intrapartum care takes place as challenging. The support of the middle and executive management is needed. Their response was:

"Management ensures that guidelines are put in the strategic areas where intrapartum care is taking place. The hospital management will place the recordkeeping guidelines on notice section just get the instructions at a glimpse." (RH1: Participant 2)

"I was not going to know to perfect the plotting of the partogram hence there is no time to practice at the college, but management approved that I do a refresher course after the completion of my community service as the professional nurse." (DH3: Participant 3)

> "Of course, if our managers receive an update related to midwifery concepts such as recordkeeping, then they come offer us and we distribute the new information to other staff in the hospital." (DH1: Participant 2)

> "Teamwork is not only observed among the midwives but also from our management. The support from our management is very amazing and that is why we enjoy working and implementing the recordkeeping because of this supportive management." (DH3: Participant 4).

The response from other participants highlighted that currently, hospital management is not empowered to make decisions to support participants on critical issues related to recordkeeping during intrapartum care.

> "There is a poor relationship between the management and the staff which is caused by lack of empowerment from the hospital management regarding recordkeeping, The operational manager and the nursing service manager are new without vast experience in maternity-related challenges." (DH1: Participants 5)

> "If the hospital management needs to address the issues of recordkeeping maternity staff, then quality recordkeeping and care will never be achieved." (DH3: Participant 3)

> "Managers expect the midwives to solve the strategic problems such as availing enough maternity case records. Midwives should solve operational problems such as recordkeeping changes." (RH1 Participant 4)

> "According to me, senior management will fail to address the issues related to midwives' challenges, it could lead to midwives' dissatisfaction and affect the implementation of the recordkeeping in the maternity unit." (DH5: Participant 6).

5.3.2.3 Theme 3: Challenges to recordkeeping

The findings of the study reflected on the challenges associated with recordkeeping. These challenges were failure to avail policies, lack of formulated policy on resources allocation, insufficient time to record in the maternity case record, shortage of skilful and experienced midwives and insufficient midwifery skills. The study further revealed poor

recordkeeping practices, increased litigations globally especially midwifery related cases. The study further highlighted poor management support to midwives.

5.3.2.3.1 Sub-theme 3.1: Inadequate time

> "The variables in the maternity case records are many and I usually take time to complete the maternity case record after the delivery. The writing is too much and sometimes is disturbed by admissions and other deliveries in the unit. We experience more deliveries and we do not keep up with the principles of recordkeeping hence records are completed retrospectively." (RH1: Participant 2)

> "Once upon a time in this hospital, I was on duty with only one enrolled nursing assistant with eight women in labour and three were fully dilated, three were in an active labour stage and two were in the latent labour stage. I decided to ignore the principles of recordkeeping and concentrate on the delivery of these women." (DH 2: Participant 1)

> "As midwives, we experience the challenge in recordkeeping as more than one patient can they arrive in the maternity for admission room being in advanced fully dilated labour. We fail to do proper recordkeeping including the monitoring of labour and plotting of partograph in line with maternity guidelines for recording." (DH4: Participant 3).

> "The frequency of observations during the latent and active labour stage are impacted by the shortage of staff in this hospital. Midwives will not achieve such frequencies if the labour ward is full." (DH3: Participant 1).

5.3.2.3.2 Sub-theme 3.2: Shortage of staff (midwives)

The selected healthcare facilities indicated the gaps from midwives and medical with recordkeeping in these selected healthcare facilities due to shortage of human resources.

In their response, the participants indicated that shortage of midwives leading to long working hours and prioritising patient care than recordkeeping.

> "Shortage of midwives makes midwives to work long hours without breaks and if I feel stressed and exhausted due to a hospital shortage of staff, I just visit the doctor

and consult and take sick leave days and I know that the action deepens shortage and the stress the midwives in the unit." (DH3: Participant 5)

"We are a district hospital that serves three subdistricts where one of the subdistricts does not have even one hospital but one health centre which works 8 hours. We deliver more than five hundred mothers on monthly basis with few midwives. (DH1: Participant 2)

"We only have one advanced midwife in our hospital, and we struggle with recording the sequence of events should the complicated delivery happen." (DH1: Participant 1)

"During the time when we are short staffed, our maximum concentration is on those who are fully dilated to prevent other patients to deliver themselves and recordkeeping is compromised." (DH3: Participant 3)

"Since the Limpopo provincial office has placed the moratorium on posts, midwives resign, and others went on retirement but there was no replacement for those vacant posts. This moratorium leaves a serious shortage in our maternity unit and that threatens the quality of services." (RH1: Participant 5)

"Due to the shortage in our hospital, we only do the shortcuts when we do the assessment of the woman in labour." (DH4: Participant 1)

"Staffing is always posing a threat to our operations; the hospital must prioritise the recruitment of the experienced midwives." (RH1: Participant 3)

5.3.2.3.3 Sub-theme 3.3: Lack of proper skills

Lack of experienced and skilled staff, generally in midwifery and particularly in the labour ward, may pose a challenge to the implementation of recordkeeping guidelines. The findings further reflected numerous bottlenecks towards the implementation of quality recordkeeping.

"Most of the midwives in our hospital have only basic nursing with midwifery qualification. The experience counts a lot in plotting the partograph which is still a challenge." (DH4: Participant 1)

"I have realised that sometimes, inexperienced midwives are delegated to be in charge of labour unit at night when all managers are not in the hospital, the situation may be risky if more than two pregnant can come whilst in an active stage of labour." (DH5: Participant 4)

"We could hardly be given a chance to improve ourselves through skill development act to advance our skill by attending the trainings but, only the top and senior manager are receiving such opportunities." (DH1: Participant 1)

"I observed a serious knowledge gap between the advance midwives and an ordinary midwife due to skill deficit to the junior midwives." (DH5: Participant 2)

"Nursing and midwifery students with limited skills are used to curb the shortage and that is a recipe for recordkeeping failure." (DH4: Participants 2)

"Students are sometimes used in our labour ward at our institution for management of patients from admission to discharge at postnatal care." (DH3: Participant 1)

5.3.2.4 Theme 4: Recommendations to improve recordkeeping

The study recommends management support by availing the guidelines and maternity case records. Furthermore, training to improve midwives' skills on recordkeeping and recruit the midwives and advance midwives in line with the healthcare facilities staffing norms, monitoring, and evaluation of the recordkeeping issues.

Recommendations to enhance recordkeeping were developed based on the impediments observed and voiced out by the participants. The recommendations were.

5.3.2.4.1 Sub-theme 4.1: Availability of the updated recordkeeping guidelines

Participants recommended the availability of guidelines to enhance quality recordkeeping and that policies on recordkeeping to be updated accordingly.

> “I think management should avail the updated guidelines, policies, standard operating procedures in our maternity units from the antenatal, intrapartum and postnatal units, these important documents should also be found in the strategic areas in the maternity units to prevent midwives to panic during emergency.” (DH5: Participant 5)

> “The guidelines should be provided to the midwives in the soft copies. The soft copies can be sent through emails, WhatsApp, and use of the universal serial bus (USB) cable to allow midwives to read through in their spare time to abreast with the content of the guidelines.” (DH3: Participant 3)

> “The operational manager should request these guidelines, policies, (SOPS) or protocols either from other hospitals or Sekhukhune District Health Offices. Following the receipt of these documents, in-service training should follow to empower the midwives for implementation.” (DH4: Participant 2)

This research findings regarding the availability of recordkeeping guidelines (Mutshatshi et al 2018:5). highlighted the challenges in the dissemination of guidelines to different hospitals. Furthermore, the study found that if the guidelines were available and communicated timeously, the hospital clinical audits and quality of the recordkeeping improves (Mutshatshi et al 2018:5). According to Stokes, Shaw, Camosso-Stefinovic, Imamura, Kanguru and Hussein (2016:144), an effective implementation strategy requires flawless guidelines distribution and availability. This study found that midwives are basic units of the maternal healthcare services although they are confronted with patient safety incidents (PSI) originating from clinical negligence and malpractice that result in litigations. The managers should take decisional and managerial roles by supporting the staff to implement the guidelines, work together as teams in order to improve recordkeeping.

5.3.2.4.2 Sub-theme 4.2: In-service training

According to the Nursing Act (Act 33 of 2005), midwives in the maternity units should develop an in-service training plan to discuss recordkeeping matters (South Africa 2005). The study conducted by Surtina and Sunartoin (2021:174) in Metagan supports the effectiveness of midwifery training update.

> “The in-service training will serve as empowerment to the midwives to apply good recordkeeping principles.” (RH1: Participant 1)

> “According to me, every sharing platform in the hospital should be used to discuss the importance of recordkeeping to all nurses and midwives with the purpose of quality healthcare service and improved recordkeeping.” DH2: Participant 3)

5.3.2.4.3 Sub-theme 4.3: Monitoring and evaluation of nurses on recordkeeping issues

The participants of the focus group discussions recommended that there should be a system such as participation of operational, area and nursing service managers are in enhancing recordkeeping.

> “As a midwife, I recommend that operational, area and nursing service managers should monitor the midwives and provide feedback to the midwives on recordkeeping, quality improvement plan should be done by involving midwives for ownership and implementation purpose.” (DH5: Participant 1)

Tamir, Geda and Mengistie (2021:461) highlighted that nurses who were motivated by their supervisors regarding documentation activities were more likely to practice documentation when compared to nurses who were never motivated.

> “I see a serious gap between hospital leadership and midwives in medical recordkeeping practice, management pressurise midwives to keep principles of recordkeeping without addressing the challenges midwives are facing. The challenges of low morale, burnout and absenteeism.” (DH1: Participant 4)

> “Hospital quality assurance coordinators should coordinate and monitor hospital self-assessment regularly to ensure that errors made in recording the maternity case records are identified and corrected. The quality assurance should check if the partograph id fully completed before filing.” (DH4: Participant 3)

5.3.2.4.4 Sub-theme 4.4: Peer review for record auditing

Participants reflected that peer review auditing of the maternity case records will improve recordkeeping and quality of maternal healthcare.

> "Midwives should do peer review to each other using the approved tools developed from quality assurance unit that is aligned to ideal hospital framework. If I am reviewed by my peer, I will take full responsibility to improve because mostly the review becomes objective rather than being reviewed by my supervisor." (DH4: Participant 1)

> "I believe that peer review for record audits performed should be aimed at improving quality of the health services and improved recordkeeping in the maternity. Therefore, the peers should have common objectives rather than pinning down the peers." (RH1: Participant 3)

5.3.2.4.5 Sub-theme 4.5: Proper time management among midwives

Participants also recommended that the healthcare facilities should arrange time management an in-service training workshops for midwives to accommodate recordkeeping during intrapartum care.

> "Time can be managed as the resource, nurses and midwives should treasure and manage time as such, since I learnt to manage time, I am able to plan and execute my daily work and my recordkeeping also improved." (DH5: Participant 1)

> "Clearly midwives routine opposes the time scheduled as the number of the patients coming to hospital are not predictable, the stages of labour of a patient can be disturbed by another patient that comes being fully dilated. As a midwife, I always write even retrospectively to save time to another midwife who will take over during the shifts." (DH5: Participant 1)

5.3.2.4.6 Sub-theme 4.6: Appoint staff in line with the determining staffing needs

Participants indicated that they have increased workload that is associated with shortage of midwives and advanced midwives that impact negatively to recordkeeping of the maternity cases, and as such suggested appropriate appointment of staff.

> "Hospital and district managers should appoint the enough midwives and advance midwives in line with the hospital staffing needs. Failure to appoint midwives in line

with hospital staffing need is a negative risk factor to adherence to good principles for intrapartum recordkeeping." (DH3: Participant 4)

"Personally, I cannot concentrate on writing and make the patient suffer, at any given day I will compromise recordkeeping than patient care." (DH2: Participant 2)

"I wish my hospital would recruit and retain the midwives to come and help the chronic shortage where the nurses at the lower categories (enrolled nurses) are also performing the role of the professional nurses due to shortage." (RH1: Participant 1)

5.3.2.4.7 Sub-theme 4.7: Apply standardisation and archival strategies for easy retrieval

The findings recommend management buy in by supporting midwives and advanced midwives through provision of guidelines on recordkeeping. The focus group participants were of the opinion that guidelines and policies should be updated and be within reach.

"I recommend that my hospital should file the maternity case records according to the same standardisation for easy retrieval purposes should the patient safety incident or litigation arise." (DH1: Participant 3)

"Our hospital should have the SOP and ensure the availability of permanent staff to manage the filing system, EPWP are not permanent hence their supervision is not consistent". (DH3: Participant 3)

5.4 DISCUSSION OF THE FINDINGS OF THE FOCUS GROUP DISCUSSIONS

The study findings depicted different perceptions on the availability of the guidelines. Most of the participants indicated that the guidelines were available in their facilities. However, other participants revealed challenges related to these available guidelines such as no time to read and apply them and a few participants highlighted that they have never seen the guidelines in their hospitals. The study conducted by Mathibe-Neke et al (2013:147) on the use of partograph supports this research by indicating that accurate partograph recordkeeping enables an effective communication between healthcare professionals who manage women in labour. Furthermore, the documentation and recordkeeping have always been integral to midwifery practice.

The participants agreed that they need to adhere to the principles of good recordkeeping. The participants expressed negative perceptions due to fear of litigations. These negative perceptions included lack of commitment, failure to decide or act on the decision taken, a risky midwifery or nursing profession, low morale which leads to absenteeism and staff turnover and continuous unresolved conflicts between the midwives. Maqqadiyane (2020:1039) conducted a qualitative study on midwives' experiences in maternal health litigations at a rural district hospital in South Africa, found that despite the meetings held with state attorneys, most of these cases are not wined by the State attorneys because of multiple unresolved issues, the litigations continue happening. Furthermore, the participants emphasised the importance of staff teamwork to achieve proper and quality recordkeeping as the responsibility of every midwife in the hospitals.

This research findings suggests the rigorous management's role to support, empower and distribute information on recordkeeping. The study revealed poor relationship between the management and the staff which is caused by lack of empowerment from the hospital management and the gap should be bridged by the management to support the midwives.

The research participants referred to inadequate availability of time to complete the maternity case records which were due to a number of variables, which are, minimum staff allocation in the maternity unit and frequency of observations required during the stages of labour. Muyakui, Nuuyoma and Amakugo (2019:56) conducted a qualitative study in Namibia reflecting on the challenges of recording which were more to do with clinical settings, for example, the practica theory gap. Dahab and Sakellariou (2020:12) conducted the study in the United Kingdom on Barriers to Accessing Maternal Care in low-income countries in Africa established that a reliable healthcare system documentation and databases is crucial for accurate recording, monitoring, and evaluation of equitable access to maternal healthcare among vulnerable populations.

Garba and Yahaya (2018:26) refer to recordkeeping as an important primary tool in the practice of nursing. Matlala (2017:54) conducted a study on perceptions of midwives on the shortage and retention of staff at a public hospital in Tshwane District which highlighted poor adherence to recording discipline practice and further found that

midwives are exposed to a risk of litigation due to failure to record while waiting for doctors to decide about a woman's condition.

The study conducted by Mutshatshi et al (2018:5) on recordkeeping and challenges experienced by nurses in selected public hospital, argued that documentation of hospital records should be thorough complete, comprehensive, timely and accurate recordkeeping is good for nursing practice in order to effectively manage of patients.

Genctuc et al (2017:413) conducted a study in Turkey on the examination of the nursing records of cerebrovascular disease patients in intensive care and discovered that nurses document observations only when there are deviations and do not extensively document their activities, which might be interpreted as inaccurate and incomplete work. The study suggested that the challenge of inadequate time to complete the nursing records be discussed by the nurses.

According to Gray, Downer and Capper (2019:37), midwives may experience recordkeeping challenges in maternity care services because of the increased number of nursing interventions to be performed on mothers during stages of labour. Furthermore, the study also revealed that documentation is a time-consuming skill.

According to the study's findings, midwives find it challenging to maintain high standards of recordkeeping throughout intrapartum care due to a shortage of midwives in the maternity wards (Suhaimi, Mulud & Sharoni 2021:77). The shortage of nurses in patient care makes it difficult for nurses to maintain quality of care, including recordkeeping.

Adatara, Amooba, Afaya, Salia, Avane, Kuug, Maalman, Atakro, Attachie and Atachie (2021:6) found that the provision of adequate women-centred midwifery care in rural Ghana presents a variety of difficulties for midwives. Measures include expanding the number of beds and physical space available, making more equipment available which includes recording material.

The study by Salama, Allah and Heeba (2010:172) conducted in Egypt on the partograph: knowledge, attitude, and utilisation by Professional Birth Attendances in Port-Said and Ismailia Cities discovered that the attributes on the partogram were poorly and incompletely recorded. Furthermore, Salama et al (2012:172) discovered that midwives

lack the time to document the maternity case records, including the partogram, unless there were students present in the ward to assist them.

The availability of qualified, dedicated, and talented human resources is a requirement for using enough material resources and equipment, shortage of midwives attributed to staff burnout, absenteeism, and staff turnover was a concern based on participants' responses (DoH 2016:43). The respondents highlighted that shortage of staff attributed to staff burnout, absenteeism, and staff turnover. Kossivi, Xu and Kalgora (2016:262) conducted a study in the Republic of China determining the factors of employee retention depicted that the quality of health service and recordkeeping is affected negatively by human resource shortage.

Lumadi (2014:141) conducted the study on intrapartum clinical guidelines for monitoring and managing a woman during labour found that the birth attendants used the partogram inefficiently, leading to erroneous judgments about the health of the mother and the foetus and the progression of labour. The shortage of staff was raised by most of the participants as a major problem in the labour ward that affects the correct use of the partogram. The problem of shortage was also emphasised by managers that were included as participants during the interview.

WHO (2013:803) stated that personal and professional progress is a deciding factor in staff retention. The findings concur with the research by Kleinpell and Zimmerman (2017:437), who found a lack of skills as the challenge to implement clinical guidelines effectively.

National guideline for filing, archiving & disposal of patient records in primary health care facilities (2017 11) highlighted that hospital records must be stored in a record storage room that adheres to requirements for records storage areas. According to the National Archives and Records Service of South Africa Act, no public record under the control of a governmental body shall be transferred to an archive's repository, destroyed, erased or otherwise disposed of without the written authorisation of the national archivist.

The study by Murphy, Gathara, Mwachiro, Abuya Alivaala and English (2018:72) concluded the findings on lack of proper skills and insufficient skilled that shortage of skilled midwives was narrated as a challenge because the midwives need to have multiple

skills to deal with the challenges when left overseeing the maternity units. it is acknowledged that experienced nurses and midwives are practicing their profession in a welcoming setting.

5.4.1 In-depth interviews

The findings emanated from In-depth interviews conducted with medical practitioners as the participants of phase 2. Participants were coded MP: Participant 1 to MP: Participant 14 to uphold anonymity.

5.4.2 Demographic characteristics of participants

Refer to Table 5.10 for the demographic characteristics of medical practitioners as participants outlining, quasi name, participant gender, participant age; educational background or qualification and years of working experience.

Table 5.10 Demographic characteristics of In-depth interviews (MP) (n=14)

Quasi name	Gender	Age	Qualification	Years of working experience
MP: Participant 1	M	29	MBCHB	03
MP: Participant 2	M	41	MBCHB	11
MP: Participant 3	M	30	MBCHB	04
MP: Participant 4	F	55	Qualified Gynaecologist	22
MP: Participant 5	F	33	MBCHB	05
MP: Participant 6	M	46	Qualified Gynaecologist	15
MP: Participant 7	M	50	MBCHB	14
MP: Participant 8	F	48	Qualified Gynaecologist	20
MP: Participant 9	M	44	MBCHB	12
MP: Participant 10	F	50	Qualified Gynaecologist	23
MP: Participant 11	M	37	MBCHB	06
MP: Participant 12	F	30	MBCHB	02
MP: Participant 13	F	43	MBCHB	16
MP: Participant 14	M	49	Qualified Gynaecologist	17

The gender of the participants were six females and eight males with age range between 29-55, the participants' work experience in providing maternal health services was ranging from 02 to 23 years, all the participants were qualified as medical (general) practitioners and some as gynaecologists having completed their basic degree in medicine Bachelor of Medicine and Bachelor of Surgery (MBCHB).

5.4.3 Thematic presentation of findings

Five themes emerged from the findings. The experience of medical practitioners, involvement in recordkeeping, significance of recordkeeping, perceived barriers on recordkeeping and maintenance of the recordkeeping as reflected in in Table 5.11.

Table 5.11 Developed major and sub-themes

Major themes	Sub-themes
1 Experience in recordkeeping	1.1 Attitude towards recordkeeping 1.2 Professional ethics
2 Involvement in recordkeeping	2.1 Role of the medical practitioners 2.2 Clinical record audit 2.3 Peer review
3 Significance of recordkeeping	3.1 Communication 3.2 Legal requirements
4 Perceived barriers or challenges on recordkeeping	4.1 Shortage of doctors and recording materials 4.2 Poor management support
5 Maintenance of the recordkeeping	5.1 Training and updates of guidelines 5.2 Supervision of doctors 5.3 Staff attrition 5.4 In-service training 5.5 Good documentation 5.6 Management buys in

5.4.3.1 Theme 1: Experience in recordkeeping

The participants expressed a variety of perspectives regarding their experiences of recordkeeping during intrapartum care. The identified sub-themes are discussed below.

5.4.3.1.1 Theme 1.1: Attitude towards recordkeeping

Most participants have a negative attitude toward the recordkeeping. Medical practitioners consider prioritising the delivery of patients than completing the maternity case records.

> "Most of the time, it is anticipated that medical practitioner should complete maternity case record against the influx number of the pregnant women that to be

delivered in the hospital. This creates a dilemma to choose to deliver the patient or complete the maternity case records." (MP: Participant 3)

"It does not help to concentrate on completion of records whilst the patients are receiving help after long waiting time of than 8 hours. I will rather help patients to delivery with the reduced waiting time than concentrating on recordkeeping." (MP: Participant 6)

"We always have a line of mothers due for delivery. Recordkeeping will delay our interventions in fast-tracking the women in labour to the theatre." (MP: Participant 08)

"We are compelled to refine our feelings and demonstrate a positive attitude towards the managers when they emphasise the importance of recordkeeping." (MP: Participant 11)

"If the hospital needs to improve my negative attitude towards recordkeeping, then more doctors should be recruited and retained in the hospital or else, I will not change or I will resign from this hospital." (MP: Participant 1)

Other participants demonstrated positive attitude and shared their experiences on how this recordkeeping helped to enhance the good healthcare rendered to the patients. The importance of training and sharing meeting platforms to discuss recordkeeping was also reflected as follows:

"We normally receive positive attitude from the doctors if we organise training on recordkeeping especially on maternity-related matters." (MP: Participant 10)

"Our M&M meetings discuss the recording of the maternity case records and the meetings started to bear positive fruits because our clinical record audit shows improvement of recordkeeping." (MP: Participant 4)

5.4.3.1.2 Theme 1.2: Professional ethics

Participants believe that professional ethics are compromised within medical practitioners and further suggested that ethical standards and professional principles should be maintained. Participants further acknowledged ethical practice and shared the following:

> “There is an image that the doctor should display and conduct himself. It is important to uphold professionalism and avoid ways that can bring the medical profession into disrepute. There as the medical officer I have to act in an accountable and responsible manner for my actions.” (MP: Participant 2)

> “It is sometimes difficult for me to adhere to professional ethics at all times hence more patients want to see the doctor. I am unable to cope with the professional ethics of recordkeeping as encapsulated in the HPCSA booklet.” (MP: Participant 5)

> “Doctors know that according to Clinical Medical Guidelines (GMC), doctors should record your work clearly, accurately and legibly to protect should your judgment be questioned later.” (MP: Participant 12)

> “My understanding of professional ethics requires the doctor to know that if you work as a manager or a leader in any hospital, I have to in-service or organise in-service training on recordkeeping and my interest should be based on patient safety.” (MP: Participant 3)

> “The community is expecting the certain behaviour from the doctors, and it has expected us to display highest professional ethical conduct. Failure to adhere to the expected professional conduct is regarded and bringing the medical profession into disrepute.” (MP: Participant 6)

According to Gupta and Gupta (2015:318) the study of moral behaviour is known as ethics; a professional group's code of conduct is governed by a set of rules or principles that were created with the welfare of all people in mind. The research by Tiruneh and Ayele (2018:14) in Addis Abeba, Ethiopia, concluded that the practice of the medical practitioners' code of ethics and associated factors was found to be substandard among medical professionals employed in both public and private hospitals in Addis Ababa. This study shared the following findings on the professional ethics of doctors.

5.4.3.2 Theme 2: Involvement in recordkeeping

5.4.3.2.1 Sub-theme 2.1: Role of the medical practitioners

Medical practitioners should be allowed to play their role in recordkeeping and that role was explained below: Various responses related to the role of medical practitioners were tabled as follows:

> "I have to acknowledge as the doctor that recordkeeping is an integral part of our role. Recordkeeping by doctor serves as guidance and information about the assessment and treatment of the patient during his/her stay in the hospital." (MP: Participant 13)

> "We are aware that we need to keep the records with the detailed information, patient's condition, prognosis and plan of treatment to advance the proper recordkeeping." (MP: Participant 10)

> "The senior doctors should play an act of role models to the new doctors and medical interns during completion of medical records including maternity case records during all the stages of labour" (MP: Participant 3).

> "Doctors should be taught the bad principles of recordkeeping such as Doctors should not try to change any completed and if the mistake or error has happened, the doctor must not try to erase it but write a new entry. Doctors must always uphold the integrity of medicine." (MP: Participant 7).

5.4.3.2.2 Sub-theme 2.2: Clinical record audit

While some of the participants in this study disagree with clinical record audits as they perceive that it takes time to complete, and they are to be done when the doctor is off or when they are not on duty because they cannot check the patient and quality check the record. Four participants agreed that the inception of the clinical record is directly proportional to improved care.

> "As we do clinic record audit, mistakes are identified and rectified and to prevent recurrence and evidently care of our patient is improving. Doctors agree that if your record is audited and found that you are doing well in recordkeeping, the morale of the doctor becomes high and will always want to do well." (MP: Participant 2).

> "We always do clinical record audits with the understanding that it is done with the intention of improving recordkeeping and patient care, we always receive reduced

mortality in the maternity unit. Since we started with the clinical record audit three months ago, our maternal death was reduced to zero in the previous quarter while there is a decline of neonatal mortality from six babies in December, two in January and one in February 2021." (MP: Participant 9)

"Clinical record audit forms part of learning good clinical practice, one of my colleagues is good in recordkeeping and hence he is heading the committee of record audit and we always learn from her passion, and I am also improving recordkeeping." (MP: Participant 14)

"The process of clinical record audit encompasses developmental needs; the training needs were approved by the participants approved that training needs to address this specific need shortage. Doctors should be given in-service training to advance their understanding on policies, protocols, and guidelines on recordkeeping." (MP: Participant 6).

5.4.3.2.3 Sub-theme 2.3: Peer review

A peer review is the process where the researcher submits research paper, academic writing or creative concepts for examination by experts in a topic (Darling 2015:2s97). Medical professionals generally reacted favourably to how the reviews were conducted. Others said that the evaluations were being used to harm their colleagues.

"Peer reviews are regarded as a source of motivation. Peer reviews made me know that as a doctor I am not only accountable to the managers, patients and also my colleagues. Being reviewed and constructively criticised by peers always brings motivation to improve recordkeeping." (MP: Participant 8).

"Peer reviews gave me an opportunity to learn, improve and grow as a professional. The peer reviews are so resourceful to us, and we need also to develop a positive attitude towards these peer reviews." ((MP: Participant 11).

"According to me, peer reviews became an eye-opener as it allowed the doctors to have diverse opinions on recordkeeping, it allows the doctors to research on the concept to eliminate personal preconceived ideas." (MP: Participant1).

> "We undertake peer reviews and clinical record audit to allow my colleagues to practice good medical recordkeeping to the highest degree that can be measured against our colleagues in other hospitals". (MP: Participant 2)

Two participants disagree with the conduct of the clinical record audit and indicated that they are worried due to this peer review as they are always vulnerable after peer review.

> "We always vary in terms of the variables to be reviewed during the process and leave us frustrated and confused. Some of the colleagues review their peers subjectively and the feedback is received with negativity. One of the things that contribute to negative feedback is different or clash of ideas in the group." (MP: Participant 2)

> "I have realised that peer review alters interpersonal relations, the week of our peer reviews, some colleagues become tense and serious. During our feedback, they always verbalise that this peer review is ridiculing their performance on recordkeeping therefore it must be stopped as it does not build but do harm." (MP: Participant 10)

5.4.3.3 Theme 3: Significance of recordkeeping

5.4.3.3.1 Sub-theme 3.1: Means of communication

The medical practitioners should make a notation in the patient health record particularly where multiple healthcare professionals are responsible for a patient health care, where the patient's language is a challenge, for them to refer to the recorded version of health interventions. The participants of this study indicated that:

> "Language is a barrier as it also hampers the interaction between medical practitioner and the patient. Sometimes, you get patient who is from Malawi or Zimbabwe who can only speak Chichewa and Shona respectively. It becomes difficult to send the correct message and translate it into writing because you do not know if the information you writing are can pass the legal scrutiny during complaints or PSI." (MP: Participant 5)

> "The challenge is communication is a two-way means where the doctor communicates the instructions to the patient and the patients should carry out the instruction but if we struggle to communicate effectively." (MP: Participant 7)

5.4.3.3.2 Sub-theme 3.2: Legal requirements

According to the HPCSA, a health record is any document created by a doctor during or following a patient consultation and/or examination that contains health information about a specific individual (HPCSA 2016:1). Section 27A of the ethical and professional norms of HPCSA, established under the Health Professions Act (Act 56 of 1974), which were published in Government Gazette R717/2006, also stipulates the necessity of maintaining correct medical records (South Africa 1974).

According to the Act mentioned above Health Professions Act (Act 56 of 1974), it is expected that medical practitioners should be committed to the legal requirements to comply with the principles of recordkeeping, but challenges related to resource allocations hinder the realisation of the implementation of legal frameworks. The verbatim response indicated that.

The participants argued that:

> "As one of the doctors in one of the hospitals, I believe that we have policies, guidelines and the protocols compiled within the legal requirement framework but unfortunately, they cannot be fully implemented due to lack of human and financial resources." (MP: Participant 13)

> "I am committed to implement recordkeeping principles but unfortunately shortage of medical practitioners in this hospital forces me to prioritise patient care rather than to concentrate on patient care" MP: Participant 4).

Medical practitioners believed that the hospital is not doing enough to provide in-service training on recordkeeping to avoid litigations.

> "Some medical practitioners have little knowledge about the legal requirements on recordkeeping. The hospital management is doing too little to empower us the availability of recordkeeping guidelines and policies. I assume that the hospital is

not having policies, protocols, and procedures available for reference." (MP: Participant 2)

"Medical officers need to adhere to the legislative framework provided in the HPCSA prescripts to avoid litigations of maternity-related cases to the maternity unit staff. the lawsuits are also posing a challenge to me as the medical practitioner and I would consider other would consider other specialties but no maternity." (MP: Participant 9).

"In this hospital, there is a lot of shortages of doctors in this, especially in the maternity unit we have only three doctors responsible for caesarean section and complex deliveries. Therefore, quality recordkeeping is a dream that will never be achieved." (MP: Participant 10)

5.4.3.4 Theme 4: Perceived barriers or challenges on recordkeeping

5.4.3.4.1 Theme 4.1: Shortage of doctors and recording materials

A shortage of recording materials at the hospital is regarded as the equipment critical shortage of medical equipment. All the participants agreed that the shortage of doctors is severe but differ on the shortage of recording material.

"An outstanding challenge was the supply of essential maternity case records was noted in this hospital." (MP: Participant 7)

"I think that our hospital is using the staff compliments of the population that was collected 10 years because the shortage of doctors and their turnover is severe. Three months ago, one doctor joined our maternity unit but at the end of the month, the doctor resigned citing the work overload and long working hours due to shortage of doctors." (MP: Participant 4)

The participants had a different view on the shortage of recording material.

"In this institution, we are very much fortunate, we have never run out of recording materials. we always have a surplus of the maternity case records in our maternity unit. For example, we are having more than two thousand maternity case records, these supplies will last for four months." (MP: Participant 4)

> "As we speak, we are doing the copies of the important pages of the maternity case records as we do not have maternity case records in this hospital." (MP: Participant 9).

> "At the end of every financial year, we are told by the management that there is no budget to supply maternity case records and other stationery and we need to request the mothers to bring the exercise books to record the information if they start the ANC and that information will be transmitted to maternity case records once available." (MP: Participant 2)

Some participants highlighted cost implications of the shortage of case records because of poor ordering mechanisms and an unequal distribution of the resources.

> "We donate money to purchase the papers to make copies of the records. Shortage of the recording materials is real and hinder our consistency in good recordkeeping. Management should do proper planning of supplies to the hospital. Hospital managers should order maternity case records with the baseline of the deliveries from the previous years." (MP: Participant 11)

The researcher observed that, in some situations, medical practitioners were able to plan for their antenatal, intrapartum and postnatal activities but such activities were not fully recorded due to the shortage of maternity case records.

5.4.3.4.2 Theme 4.2: Poor management support

In this study, the doctors perceive management support as not actual, and they feel that the doctors survive due to their own effort. Doctors feel that they are not supported by managers.

> "It is noted that our management is not buying in on the training, workshop on recordkeeping of the doctors. There is no management representative in the clinical record audit of the institution besides many invitations. I think the management of the hospital remains a hindrance to the improvement of the recordkeeping." (MP: Participant 1)

> "I perceive the management of this hospital as the only hindrances against change as they are not supporting the operational manager on peer reviews,

recordkeeping will change the quality of care in the hospital. The management should play their role which is to support the staff to implement basic principles of recordkeeping." (MP: Participant 4)

"Management is not seen anywhere unless otherwise there is PSI, complaint or litigation related to the medical practitioners hence as the medical practitioner we believe that we are on our own." (MP: Participant 8)

5.4.3.5 Theme 5: Maintenance of the recordkeeping

Mathioudakis et al (2016:370) specify that a healthcare professional should never attempt to add new notes or remove an entry from a record which implies falsification of recording. The factors cited for supporting the maintenance of recordkeeping that emerged were management support, improved staffing, in-service training, and updating of policies, and doctor supervision.

5.4.3.5.1 Sub-theme 5.1: Training and updates of guidelines

Medical practitioners expressed the variety of views regarding their experience on training and updates of guidelines and policies. The clinical record audits evidently indicated that doctors are not adhering to good recordkeeping practice. Therefore, training on recordkeeping should be planned and executed to empower medical practitioners on improvement of clinical recordkeeping. The following were shared by participants:

"I know how to complete the maternity case records due to the training organised by the maternity operational manager; the doctors submitted the plan to hold recordkeeping on a quarterly basis." (MP: Participant 6)

"Training with a simulation makes us as medical practitioners adhere to our guidelines formulated by the HPCSA on recordkeeping. The demonstration done on recordkeeping of maternity records empower us to upgrade our skills. We appreciate the training as part of our in-service training." (MP: Participant 5).

Other participants indicated that lack of training in their institution caused the institution to have patient safety incidents and complaints.

> “I realised that the community members are raising complaints against the healthcare workers including medical practitioners. The community is perceiving the doctors as failing to adhere to the principles of recordkeeping, it is for that reason that the community is always raising the complaints against doctors believing that they will always have to find poor recordkeeping.” ((MP: Participant 9)

> “Most of the complaints we are managing in the hospital emanate from fellow healthcare workers that are aware that due to lack of training, medical practitioners perform poorly on recordkeeping. The managers should always have the plan to empower medical practitioners to improve their recordkeeping.” (MP: Participant 12).

> “I think that in-service training on recordkeeping should be presented with evidence of the clinical record audit feedback by the committee to the medical practitioners. The clinical record audit should at least have two records, one adhering to principles of recordkeeping and another with poor adherence to recordkeeping principles.” MP: Participant 10).

5.4.3.5.2 Sub-theme 5.2: Supervision of doctors

According to junior doctors, supervision is more of micromanaging, knowing where they are, what they are doing, and when they are going and coming back from lunch as shared below:

> “Supervision is not following me at all times, looking for me everywhere, checking what I am doing, reading my notes in the medical records, I need a supervisor that will check my notes and correct me in front of colleagues in a destructive manner, I have developed a negative attitude to the concept of recordkeeping. I am thinking of leaving this hospital at the end of the year due to this bad supervision.” (MP: Participant 14).

Appreciation for supervision was also highlighted as follows:

> “Supervision is taken seriously in this hospital, you will be as good as your supervisor, if the supervisor hates recordkeeping, you are forced to love it. I feel fortunate because my supervisor has opened the door daily to discuss

recordkeeping. I am also mentoring other doctors according to the way I am mentored by my supervisor." (MP: Participant 3)

"We always have a robust debate on recordkeeping and our supervisor will always lead the ways." (MP: Participant 7)

"I have a good relationship with my supervisee, recordkeeping is discussed in our weekly morbidity and mortality rate. Our maternity staff satisfaction survey on the medical practitioners' interaction with our supervisor is indicative that the satisfaction is very high." (MP: Participant 9).

5.4.3.5.3 Sub-theme 5.3: Attrition of staff

This sub-theme indicated in this study outlines the organisational challenges that medical practitioners are subjected to in the hospitals. Negative experiences related to the impact of staffing emerged in this study:

"The doctors resign on the monthly basis, but it takes more than 12 months to replace the doctors on funded posts. We are overloaded and overworked. Proper recordkeeping is the dream that will never be achieved in this hospital due to shortage." (MP: Participant 11)

"We are two doctors in this hospital, the other doctor is working during the night and working during the day, I am responsible for all rounds in maternity and the performance of the caesarean sections in theatre. I cannot have time to complete all the components of the maternity case record knowing that I have six caesarean sections and doctor's rounds." (MP: Participant 9).

"I can point out that the waiting time for the maternity unit cannot be measured due shortage of doctors and the running of the antenatal clinic in the hospital on Tuesday and Thursday. The shortage of doctors makes the patient spend the whole day in the hospital to be attended to. Shortage of doctors is real." (MP: Participant 6).

"It is always my wish that management should recruit the senior doctors with maternity experience and junior doctors with love to work in maternity. I am always

drained and fatigued because of the shortage of doctors. sometimes I work during the day and at night due to shortage." (MP: Participant 14)

"It is a fact that when we are short-staffed, we push patient queues so that we reduce the waiting time to prevent complaints, complaints or emergencies. We do record later if we can as sometimes, we do not do." (MP: Participant 8).

5.4.3.5.4 Sub-theme 5.4: In-service training

Most of the participants agreed that doctors should require training on their guidelines regarding recordkeeping and asserted that in-service training should be part of the quality improvement.

"Doctors should be given an in-service on Health Professions Council of South Africa guidelines for good practice in the healthcare professions and six ministerial priorities, especially staff attitude. if these two aspects can be coupled will help the doctors to prioritise the recordkeeping and always check their attitude." (MP: Participant 12).

"The HPCSA should strengthen the accumulation of the CPD points by the medical practitioners. The number of CPD points should be a requirement to the medical practitioners annually to ensure that the medical practitioners attend recordkeeping trainings to improve the standard of health". (MP: Participant 7).

The study conducted in Egypt by Nossirier and Abolfotouh (2022:882) on the impact of in-service programs on physician knowledge and skills of growth monitoring suggested that the in-service training of physicians should occur regularly to improve their skills.

5.4.3.5.5 Sub-theme 5.5: Correct documentation

Quality recordkeeping assists in enhancing the maternal care. Medical records are a vital means of communication between all those providing care to the patient. The participants communicated a variety of views regarding good documentation.

> “I developed and adopted correct documentation practice at the start of my medical career and that created the sensitivity and carefulness in managing pregnant women.” (MP: Participant 7)

> “The in-service training and induction I receive at our hospital regarding good documentation provide clear guidance.” (MP: Participant 10)
> “I know what constitute the attributes of correct documentation, for example, each entry should be concluded with the signature, printed name and designation of the person making the entry, as well as a contact number. However, I am unable to maintain the standards of good recordkeeping.” (MP: Participant 3)

> “The department of quality assurance in our hospital has demonstrated to doctors the importance for medical records to be maintained to the highest standards, we can reduce the litigations if we good documentation standards are kept during intrapartum care.” (MP: Participant 2).

5.4.3.5.6 Sub-theme 5.6: Management buy-in

The common reason for the intention to leave the maternity unit by the doctors was poor management, the respondents believed that management did not care about their well-being and believed that they care about the work being done in a study by Chimwaza, Chipeta, Ngwira, Kamwendo, Taulo, Bradley & McAuliffe (2014:3). The same principle was shared by participants as follows:

> “Senior and top management is not buying in but always looks for errors committed by the doctors in the maternity unit.” (MP: Participant 4)

> “Our management is always reacting rather than being proactive. They wait for the worst to the doctors or be investigated by entities before they act on the seriousness of poor recordkeeping.” (MP: Participant 9)

> “Clinical record audits are done in our hospital to improve recordkeeping, but I feel managers are not addressing the challenges identified during the clinical record audit. I regard their clinical record audit as a ‘witch hunt’ activity.” (MP: Participant 7)

5.5 DISCUSSIONS OF THE IN-DEPTH INTERVIEWS FINDINGS

In-depth interviews were conducted with fourteen medical practitioners to determine and describe their experiences regarding recordkeeping in maternity case records. The gender of these medical practitioners were six females and eight males with an age range between 29-55. The participants' work experience in providing maternal health services ranged from 02 to 23 years, all the participants were qualified as medical practitioners having completed their basic degree in medicine. The findings portrayed various experiences of the medical practitioners, several enablers some barriers to recordkeeping in maternity healthcare services in Limpopo Province.

The findings revealed the medical practitioners' attitudes and experiences towards recordkeeping with various reasons attached to their experiences. The negative attitude included the influx of patients who needs completion of all the forms and documents, perceived patient long waiting time, shortage of doctors. Few participants displayed positive attitudes towards recordkeeping. Furthermore, the finding of this study discovered that the medical practitioners were unable to comply with their professional ethics on recordkeeping as encapsulated in the HPCSA booklet.

Malpractice is professional negligence by a healthcare provider in which the treatment provided falls below the accepted standard of practice in the medical community and causes injury or death to the patient, with most cases involving medical error, as also applicable to recordkeeping (Ademe, Demeke & Bekele 2022:119).

The DoH (2016:21) highlighted that clinical notes made by students should be countersigned by an HPCSA registered doctor; when notes are made by an intern, they should either be counter-signed by an HPCSA registered doctor or the name of the HPCSA registered doctor responsible for that intern's supervision at that time must be written in the notes.

Sinni, Cross and Wallace (2011:15) refer that clinical audit is a quality control technique that is described as a systematic procedure to evaluate patient care in comparison to predetermined criteria in order to find areas of practice that need improvement.

The study conducted by Surtina and Sunartoin (2021:174) in Metagan on the effectiveness of midwifery training update on midwife knowledge improvement in midwifery services came to a conclusion that the midwifery update training is effective in increasing the knowledge of midwives that midwives are required to take part in the midwifery update training, a proposition aligned to recordkeeping. Shao, Wu, Guo, Jin, Chen, Zhao, Du and Lu (2018:182) conducted the study in China about the training contents, problems and needs of doctors in urban community health service institutions in China where they recommended that a uniform, rigorous training and evaluation system focus on practicability should be established to promote community health service system in Mainland China.

Magqadiyane (2020:1038) highlighted that training should be ongoing for the medical practitioners to improve their skills in recordkeeping and proposed that ongoing in-service training should be given access to empower clinical staff, which would help them develop their recordkeeping abilities.

Dzomeku, Duodu and Okyere (2021:3) found that the presence of highly skilled midwives and medical practitioners reduces maternal and neonatal mortality rates because of their capacity to diagnose any early complications and intervene appropriately. According to Engetou (2017:1), training is an initial and primary form of human resource capacity. Medical practitioners do not only have to contend with civil claims, but they are also held accountable for unprofessional conduct by the HPCSA by upholding the standards of the profession and protecting the interests of the public (Oosthuizen & Carstens 2015:270).

Joshi, Farberov, Demissie, Smith and Elwyn (2020:943) conducted the study on views on documenting clinical encounters found that out of 116 physicians, half (58) were against the opinion of doing so, supporting the findings of this study on unfavourable doctors' attitudes. According to the study, recording clinical encounters between a patient and a physician is an idea that has received a lot of attention as this will benefit the patients. Even though some doctors agree that patients would probably benefit from listening to recordings, the general attitude is one of reluctance, driven by defensiveness and worries that the recordings may be unfairly distributed.

The findings from the interviews concluded that medical practitioners are aware of their role in supervising, keeping records, implementing clinical record audits and peer review recordkeeping.

In their study conducted by De Villiers, Van Heerden and Van Schalkwyk (2018:852) at the University of Stellenbosch, South Africa on consequences, conditions and caveats: a qualitative exploration of the influence of undergraduate health professions students at distributed clinical training site has provided the understanding into the context awaiting medical interns on entering the workplace's responsibilities. The study further found that work environment stressors such as the fast pace of work including recording, poor supervision, work-life balance may pose a threat to undergraduate professions.

Hexter (2013:9) found that participating in the audit process is an opportunity for doctors to improve patient care in their departments as medical student or junior doctors, and that their efforts will probably be rewarded. The audit department must issue the participant with the certificate of completion, which can include the portfolio to show that participants were aware of and involved in the audit.

The research outcomes showed language as a barrier to communication between the medical practitioners and the patient on recordkeeping. The medical practitioner can be forced to record using the official language including the local language through translation of the maternity case record. The medical practitioners' instructions can be recorded only if the doctor is sure that the patient understands.

According to De Moissac and Bowen (2019:28), the findings of this investigation on the impact of language barriers on the quality of care and patient safety for official languages are in line with research conducted around the world on minority language populations that showed that language barriers are a factor in lower levels of care and patient safety.

The research included recommendations for maintaining recordkeeping, including actions to be taken to enhance medical practitioners' recordkeeping. the interventions that were recommended. changes to the rules, supervision of staffing, in-service training, and management support are all examples of training. The study conducted on Midwives' experiences of performing maternal observations and escalating concerns by Jeffery, Hewison, Goodwin and Kenyon (2017:282) recommended that future training should

emphasise the significance of conducting maternal care and ensuring that the maternity staff is properly trained regarding their duties (Jeffery et al 2017:282).

5.6 SUMMARY

Chapter 5 presented the research findings of the focus group discussions with midwives and an in-depth interview with medical practitioners. The research findings revealed challenges related to the quality of recordkeeping during intrapartum care. This chapter revealed that the major gaps in quality recordkeeping during intrapartum care were mostly due to lack of availability of maternity care guidelines, failure to conduct clinical records audits and peer review, lack of time to complete the maternity case records, poor staffing, negative attitude by the medical practitioners and midwives towards recordkeeping and lack of management buy-in. The findings also pointed out the recommendations and maintenance as measures to address the challenges related to recordkeeping during intrapartum care in Limpopo Province.

CHAPTER 6

INTEGRATION OF QUANTITATIVE RESULTS AND QUALITATIVE FINDINGS

6.1 INTRODUCTION

Chapter 6 provides the integration of the quantitative and qualitative data that were reported separately in chapter 4 and chapter 5. Quantitative data were obtained by use of a checklist and non-participant unstructured observation to establish the availability of the maternity guidelines. Qualitative data were obtained through focus group discussions with midwives and in-depth interviews with medical practitioners. Integration serves as a state of mixing the analysed data from quantitative and qualitative phases. In this study the integration occurred during the interpretation and reporting of the findings. Data sources shared various and independent findings that are compared in this chapter for the purpose of validation, complementarity, and interpretation.

6.2 DATA MANAGEMENT

In this phase, the data collected in quantitative and qualitative methods are integrated.

- **Data management for quantitative phase**

Quantitative data were collected using nonparticipant unstructured observations where the researcher assumed non-participatory role to avoid bias. A checklist was used to review the accuracy and completeness of the variables in the maternity case records and to establish the availability of the maternity guidelines. The researcher transcribed data from the checklists into an excel spreadsheet. The statistician used the SPSS 23 to analyse quantitative data.

Data management for qualitative phase

Qualitative data were collected by use of an interview guide with open-ended questions. The results from the quantitative phase informed the findings of the qualitative phase. Qualitative data for both focus group discussions and in-depth interviews were coded and categorised into themes and sub-themes. The data were analysed through content analysis, then interpreted and presented narratively.

6.2. INTEGRATION PROCESS

The integration of the study refers to the process whereby the researcher gathers the quantitative and qualitative findings in a study to create a holistic understanding of a phenomenon (Fetters & Molina-Azorin 2017:293). Furthermore, the quantitative and qualitative findings were integrated to deliver an explicit understanding of the research problem (Santos, Erdmann, Meirelles, Lanzoni, Cunha & Ross 2017:3).

The sequential explanatory mixed methods design, it is a two-stage design, where the quantitative data are collected and analysed first and informs the next qualitative data selection process followed by the qualitative data collection and analyses to help explain quantitative data (Almalki 2016:288; Shorten & Smith 2017:74).

Onwuegbuzie, Slate, Leech and Collins (2009:14) conducted the study on advanced integration technique and concluded that combining two methodologies has the advantages of complementarity, triangulation, initiation, development, expansion, identification, and enhancement (Creswell & Creswell 2018:348; Delport & Fouché 2017:435).

Integration can happen in three levels which are through methods, merging results and interpretation was applied by the researcher. The researcher organised, analysed, triangulated, and interpreted the quantitative and qualitative data to gain an in-depth understanding of the study findings.

6.2.1 Integration of the mixed methods findings

According to Guetterman et al (2015:560), integration of the quantitative and qualitative data maximises the strength of the mixed methods approach that supports the

development of the new insights. Overall, in mixed methods research the integration can occur at various levels: at design stage of the research like this research employed a sequential explanatory approach by using both the quantitative and qualitative approaches; at the level of methods (Fetters et al 2013:2134). Figure 6.1 illustrates the quantitative and qualitative data integration process.

According to Creswell (2014:228), integration through methods occurs by linking the methods of data collection and analysis. In the current study, the researcher used a mixed methods approach. The quantitative arm of this study involved non-participant unstructured observation and document analysis. The qualitative arm included data collection from midwives and medical practitioners where focus group discussions and in-depth interviews were conducted.

- **Integration of findings through merging**

Merging two data sets in a convergent approach involves combining qualitative and quantitative data using a side-by-side comparison procedure (Creswell 2014:22). Using narrative analysis, the researcher described the quantitative and qualitative findings in a single report. Quantitative findings are reported first, followed by the qualitative findings that confirm or disconfirm statistical results.

- **Integration of findings through interpretation**

The integration of these findings was achieved through “meta inferences” regarding the concept under research. The integration of the quantitative and qualitative findings is illustrated in Figure 6.1.

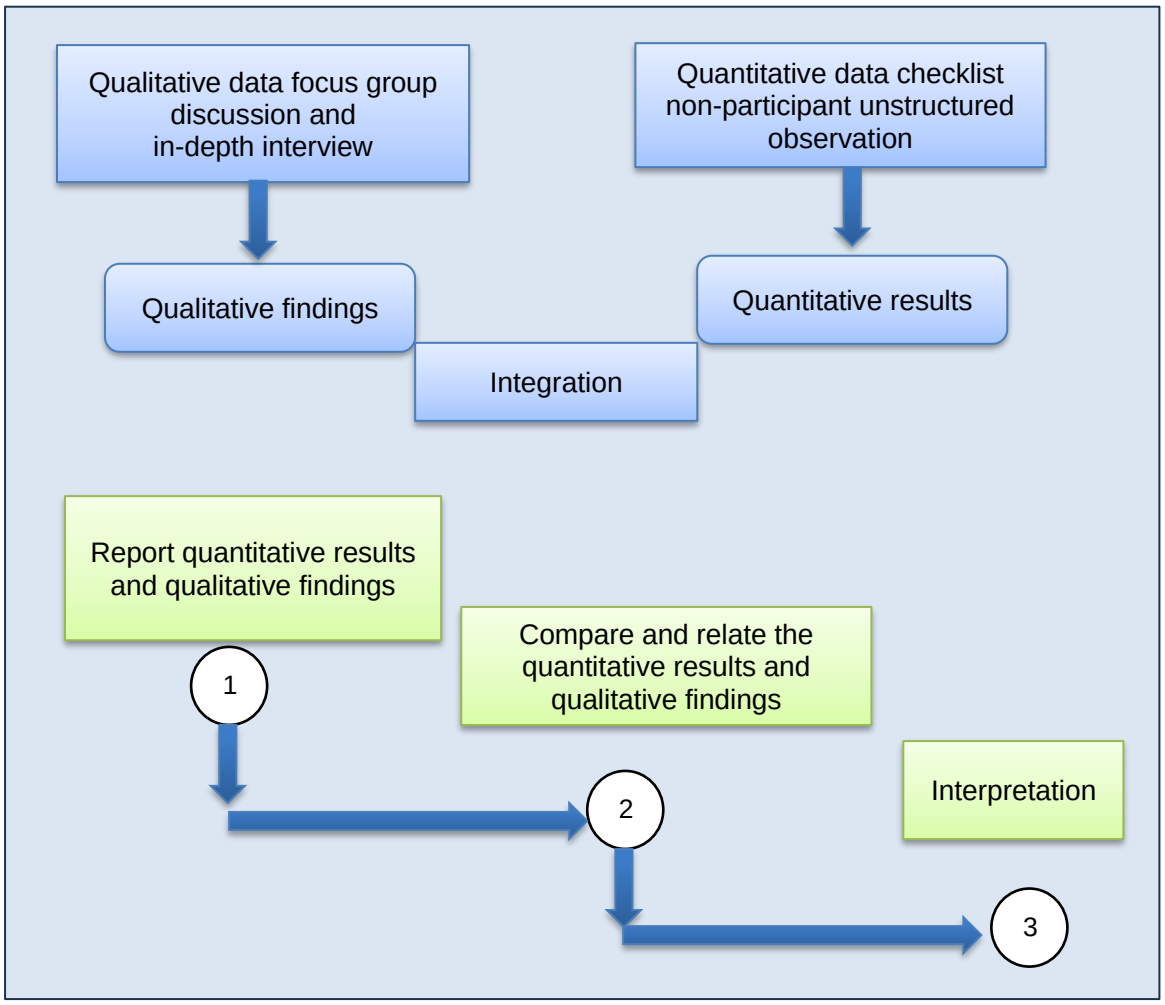


Figure 6.1 Integration of qualitative and quantitative findings

6.3 INTEGRATION OF QUANTITATIVE AND QUALITATIVE FINDINGS

The researcher integrated quantitative and qualitative findings to to address the objectives of the study and the research questions.

6.3.1 Availability of the guidelines

The quantitative results revealed that the majority 91.6% (n=2357) of the maternity case records were available. Qualitative findings reflected the challenges related to the non-availability of the guidelines, the shortage of the recordkeeping materials that compel the staff to donate to make the recordkeeping material available, the frustration of midwives

during the care of pregnant woman during labour as midwives may have skill shortage. The midwives and the medical practitioners portrayed that the availability of guidelines on recordkeeping is essential to implement evidence-based care. The study concluded that availing these guidelines to midwives and medical practitioners will improve recordkeeping and maternal care in Limpopo Province.

This evidence suggests that if guidelines are not available in the clinical setting, recordkeeping is likely to fail. A study conducted in Australia on access barriers to obstetric care at health facilities in sub-Saharan Africa, by Kyei-Nimakoh, Carolan-Olah and McCann (2017:110) found that the barriers to intrapartum care services mainly included lack of human resource and the appropriate skill.

According to Mutshatshi et al (2018:4), on their study about recordkeeping on challenges experienced by nurses found that nurses were able to perform various activities and plan for patient care, but such activities are not completely recorded owing to a lack of recording materials. Figure 6.2 presents the results regarding the availability of the guidelines.

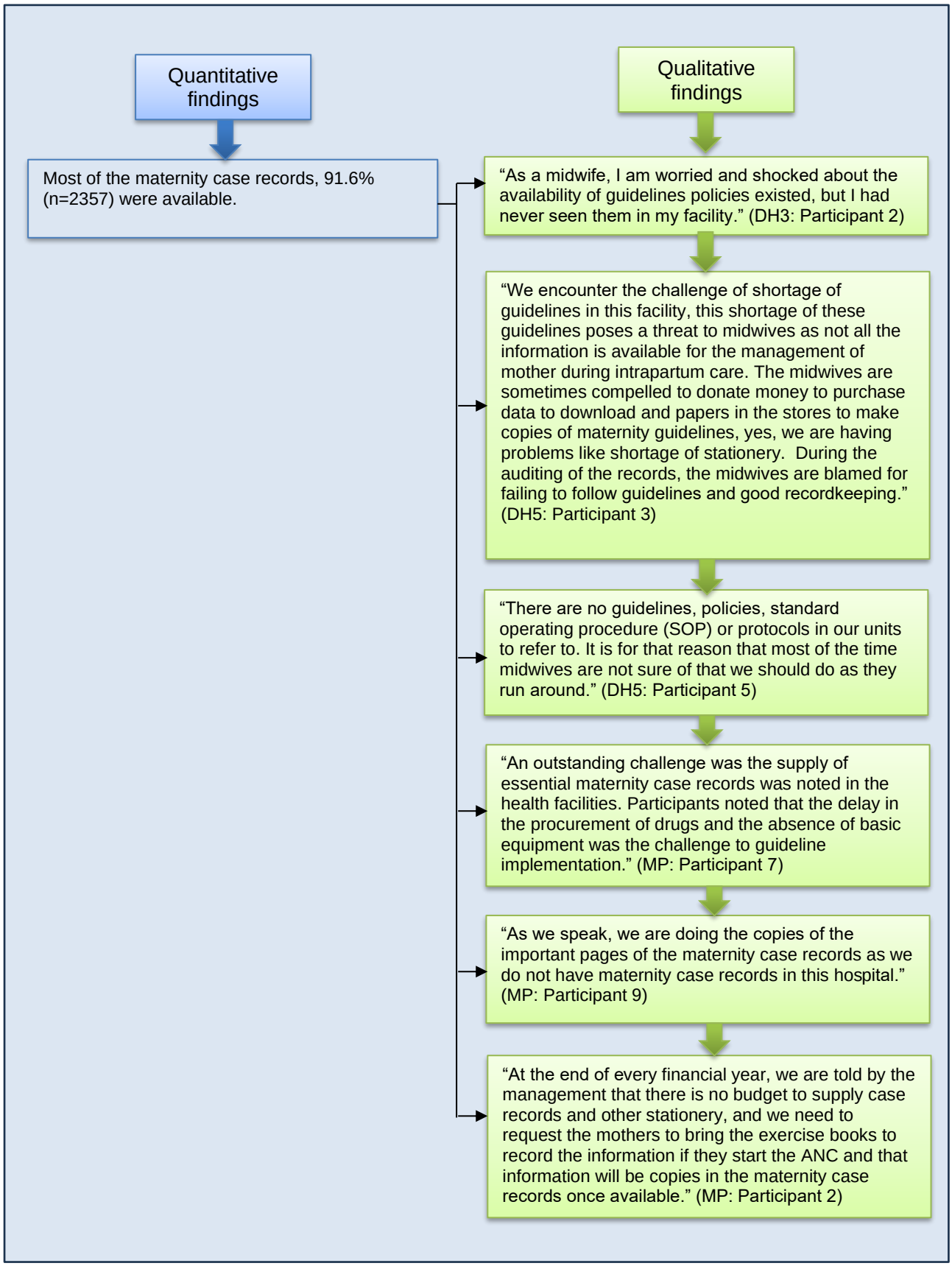


Figure 6.2 Availability of recordkeeping guidelines

6.3.2 Evaluation of the recordkeeping of maternity case records as per National Guidelines for Maternity Care in South Africa (DoH 2016)

The findings of this study highlighted that the overall documentation of the maternity case records is low on the variables for vital signs completion as discussed in Chapter 4. Evidently, no variable entry was fully completed for recordkeeping in the maternity case records. Both results and findings are presented in Figure 6.3.

The study findings highlighted the following variables that were not fully completed: early warning signs, vital signs (MUAC, BMI, height, oxygen saturation, respiration rate, urinalysis, the colour of the liquor, other body systems and deceleration. Midwives and medical practitioners encountered various challenges when practicing recordkeeping. The finding is that missing data or incomplete data arose from common causes as supported by David (2015:6) who highlighted that missing data is characterised by subjective judgments, systemic errors in information production that leads to loss of data and lack of sufficient computing resources. S Another study conducted in Jamaica noted that nurses in Jamaica spend only about 7% of their time on documentation, and perceived documentation as time-consuming and unessential (Ramraj, Goga, Larsen, Ramokolo, Bhardwaj, Chirinda, Jackson, Nsibande, Ayalew, Pillay, Lombard & Ngandu 2018:12).

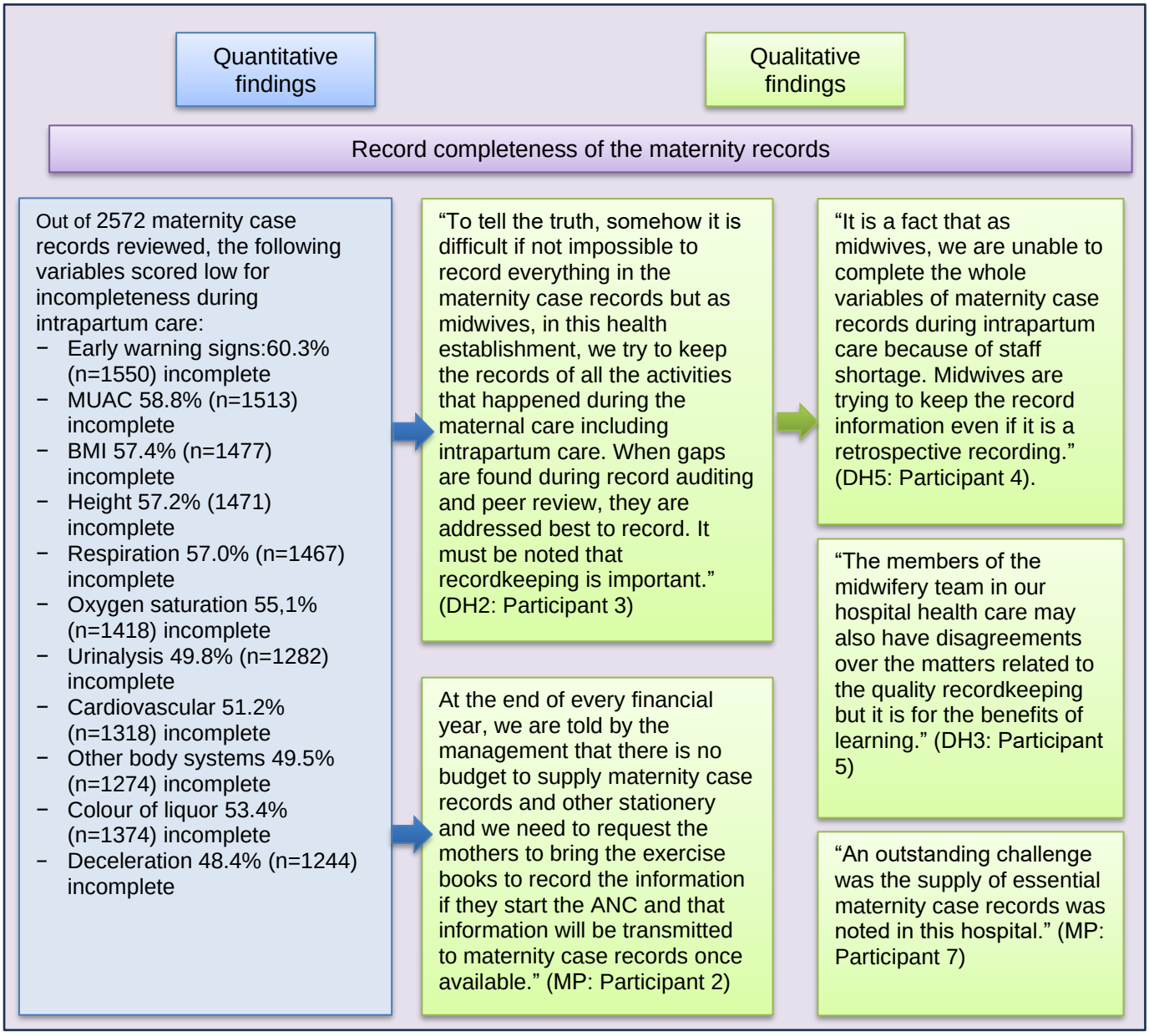


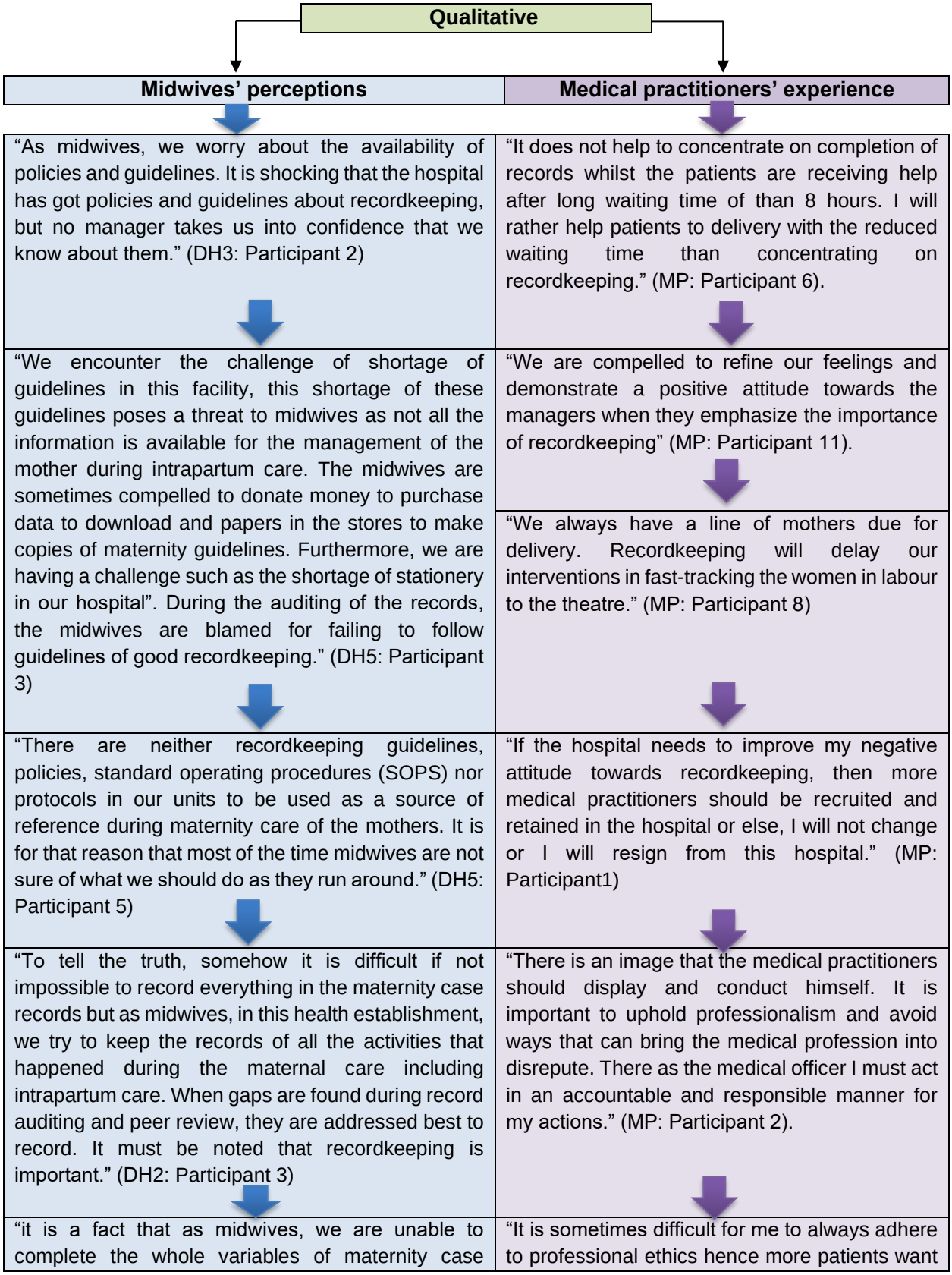
Figure 6.3 Recordkeeping completeness in the maternity case records

6.3.3 Perceptions of midwives and experiences of medical practitioners regarding recordkeeping in the maternity case records

The third objective of this study was to determine and describe the perceptions of midwives regarding the completion of maternity case records.

Midwives shared a sentiment that it is ideal to keep complete clinical records during intrapartum care, but it is not always feasible to adhere to quality recordkeeping due to challenges such as a shortage of staff, lack of standard operating procedures and recordkeeping materials.

Figure 6.4 highlighted the findings of the perceptions of the midwives and experiences of medical practitioners regarding recordkeeping.



records during intrapartum care because of staff shortage. Midwives are trying to keep the record information even if it is a retrospective recording." (DH5: Participant 4).	to see the medical practitioners. I am unable to cope with the professional ethics of recordkeeping as encapsulated in the HPCSA booklet." (MP: Participant 5).
"Midwives are aware and comprehend that it is important to record for good clinical practice, most do but some do not record as expected, maybe they just overlook these important requirements to record because they are being overworked." (RH1: Participant 1).	"My understanding of professional ethics requires the doctor to know that if you work as a manager or a leader in any hospital, I have to in-service or organize in-service training on recordkeeping and my interest should be based on patient safety." (MP: Participant 3)
"In this facility, management, we always emphasize a good clinical practice in recordkeeping as a daily integral part of rendering patient care including the completion of the maternal case record, The recordkeeping will assist in adhering to the sequence to do things timeously and reduce delay." (DH1: Participant 4)	"Doctors know that according to Clinical Medical Guidelines (GMC), doctors should record your work clearly, accurately and legibly to protect should your judgment be questioned later." (MP: Participant 12)
"As a midwife, I am afraid to commit and decide and act by recording the decision in the maternity case record as I may land in the regulatory body (SANC) and be charged with acts or omission accordingly. A charge from the SANC can be a base where the midwife is litigated." (RH1: Participant 4)	
"During the writing of the incident reports in this hospital, midwives write the reports in such a way that it exonerates them from the incident and implicates colleagues and that sometimes leads to conflict between the midwives' colleagues. During the writing of incidents, as midwives, we are forced to lie and falsify the records in fear of losing financial benefits and trying to cover the colleague. Sometimes you sit together to write statements in order to protect your colleague even when you know that your colleague may not protect you next time. Therefore, litigations may perpetuate the conflict between the colleagues due to failure to adhere to proper clinal recordkeeping." (DH4: Participant 3)	
"Midwives are expected to write incident reports, compile the incident preliminary and final investigation related to the patient safety incidents in the hospital set up during litigation, it is a standard rule by the any department to comment to make the findings and recommendations on midwives' recordkeeping during the report during care. in some incidents, we hear that midwives are requested to give statements under oath during the litigations proceedings midwives." (DH 1: Participant 1)	

Figure 6.4 Perceptions of midwives and experiences of medical practitioners towards recordkeeping

Qualitative data from the midwives' perceptions concluded that most of the guidelines were available in their facilities. However, other participants revealed challenges related to these available guidelines such as no time to read and apply them and a few participants highlighted that they have never seen the guidelines. The participants expressed negative perceptions towards recordkeeping due to fear of litigations.

These negative perceptions included lack of commitment, failure to decide or act on the decision taken, a risky midwifery, low morale which leads to staff absenteeism and turnover and continuous unresolved conflicts between the midwives. The medical practitioners' negative 'attitudes and experiences toward recordkeeping with various reasons attached to their experiences.

6.3.4 Enablers of recordkeeping for midwives and medical practitioners' perspectives

The participants, elaborated on the enablers of recordkeeping during intrapartum care. Figure 6.5 illustrates the perceived enablers.

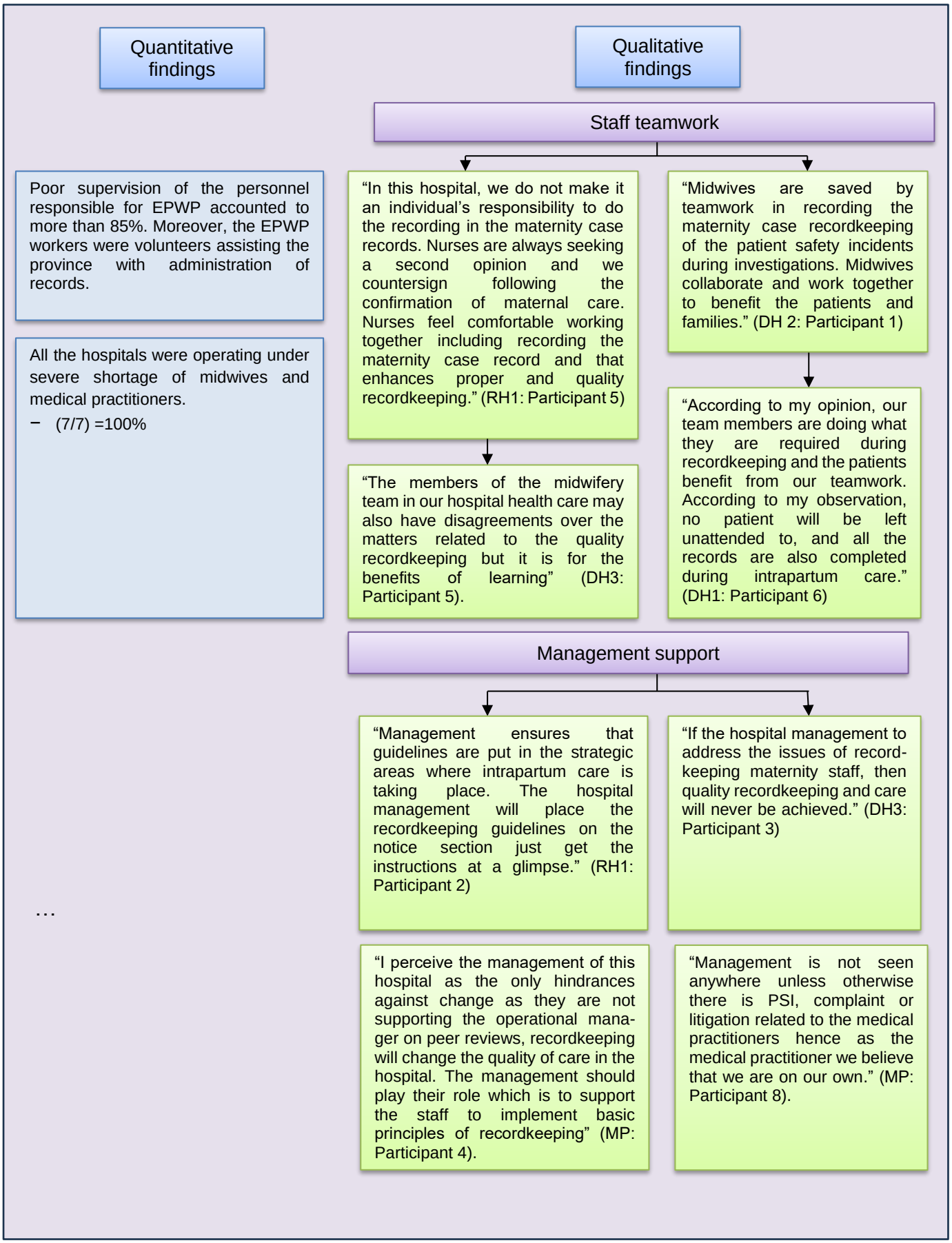


Figure 6.5 Enablers of recordkeeping implementation

6.4 BARRIERS TO IMPLEMENTATION OF RECORDKEEPING

Table 6.1 displays barriers that hamper quality recordkeeping. Some of the barriers to recordkeeping highlighted by participants in this study are depicted by both quantitative results and qualitative findings of the study. The quantitative and qualitative data revealed the challenges related recordkeeping such as incompleteness of the maternity case records and available guidelines such as no time to read and apply them.

Table 6.1 Challenges to Implementation of recordkeeping

Quantitative	**Checklist**	**Non-participant unstructured observations**
	About 30.7% of the maternity case records were incomplete with the challenges including lack of time to complete these records. The study further indicated 27.9% of the maternity case records were not completed during the Document analysis of the maternity case records during the intrapartum care period.	57.2% of the selected healthcare facilities had challenges with filing system which makes it difficult for quality recordkeeping 57.2% of the selected healthcare facilities had a challenge in availing and displaying the updated recordkeeping guidelines. All facilities (100%) reflected working conditions that are not conducive. All the hospitals were operating under a severe shortage of midwives and medical practitioners (7/7) =100%. All midwives 29/29 (100%) and medical practitioners 14/14 (100%) were feeling reluctant, discouraged, depressed and stressed. These participants were emotionally drained due to shortage of staff in the healthcare facilities.
Qualitative	**Focus group discussion**	**In-depth interviews**
	"The variables in the maternity case records are many and I usually take time to complete the maternity case record after the delivery. The writing is too much and sometimes is disturbed by admissions and other deliveries in the unit. We experience more deliveries and we do not keep up with the principles of record-keeping hence records are completed retrospectively." (RH1: Participant 2) "As midwives, we experience the challenge in recordkeeping as more than one patient can they arrive in the shortage of midwives makes midwives work long	An outstanding challenge was the supply of essential maternity case records was noted in this hospital." (MP: Participant 7). "I think that our hospital is using the staff compliments of the population that was collected 10 years because the shortage of doctors and their turnover is severe. Three months ago, one doctor joined our maternity unit but at the end of the month, the doctor resigned citing the work overload and long working hours due to shortage of doctors." (MP: Participant 4).

	hours without breaks and if I feel stressed and exhausted due to a hospital shortage of staff, I just visit the doctor and consult and take sick leave days and I know that the action deepens shortage and the stress the midwives in the unit" (DH3: Participant 5) Since the Limpopo provincial office has placed the moratorium on posts, midwives resigned, and others went on retirement but there was no replacement for those vacant posts. This moratorium leaves a serious shortage in our maternity unit and that threatens the quality of services." (RH1: Participant 5) "Most of the midwives in our hospital have only basic nursing with midwifery qualification. The experience counts a lot in plotting the partograph which is still a challenge." (DH4: Participant 1) "I observed a serious knowledge gap between the advance midwives and an ordinary midwife due to skill deficit to the junior midwives." (DH5: Participant 2) "Students are sometimes used in our labour ward at our institution for management of patients from admission to discharge at postnatal care." (DH3: Participant 1)	"As we speak, we are doing the copies of the important pages of the maternity case records as we do not have maternity case records in this hospital." (MP: Participant 9) "Management should do proper planning of supplies to the hospital. Hospital managers should order maternity case records with the baseline of the deliveries from the previous years." (MP: Participant 11) "At the end of every financial year, we are told by the management that there is no budget to supply maternity case records and other stationery and we need to request the mothers to bring the exercise books to record the information if they start the ANC and that information will be transmitted to maternity case records once available." (MP: Participant 2) "It is noted that our management is not buying in on the training, workshop on recordkeeping of the doctors. There is no management representative in the clinical record audit of the institution besides many invitations. I think the management of the hospital remains a hindrance to the improvement of the recordkeeping." (MP Participant 1) "I perceive the management of this hospital as the only hindrance against change as they are not supporting the operational manager on peer reviews, recordkeeping will change the quality of care in the hospital. The management should play their role which is to support the staff to implement basic principles of recordkeeping." (MP: Participant4) "Management is not seen anywhere unless otherwise there is PSI, complaint or litigation related to the medical practitioners hence as the medical practitioner we believe that we are on our own." (MP: Participant 8)

6.6 DISCUSSION OF INTEGRATED FINDINGS

The integrated findings highlighted the following variables that were not fully completed, early warning signs, vital signs including MUAC, BMI, height, oxygen saturation, respiration rate, urinalysis, cardiovascular system, the colour of the liquor, other body system and deceleration. Midwives and medical practitioners encountered various challenges when practicing recordkeeping principles. This study concluded that making these policies and guidelines available will help Limpopo province in implementing interferences in routine clinical practice for quality recordkeeping. Shortage of recordkeeping guidelines proposed that the implementation is likely to fail.

Furthermore, the evaluation of the recordkeeping of maternity case records findings indicated that the overall completion of the maternity case records on vital signs is low with very few variables being consistent fully completed. Participants highlighted that the maternity case records have got many variables to complete and that poses a challenge to the midwives and medical practitioners during intrapartum care. Midwives and medical practitioners were frustrated by increased workload in the maternity units and the time required to complete the maternity case records.

The midwives indicated that during busy days they defer the documentation to times when the hospital is less busy. Midwives and medical practitioners admitted to not completing some of the variables within the maternity case records because of a lack of time and shortage of staff.

The quantitative results revealed the unavailability of the maternity case records, 18.8% (n=483). Accordingly, it is expected that all pregnant women that presents to a healthcare facility, public or private, should have, or should receive, a maternity case record (MCR) (DoH 2016:29) as the MCR serves as an official communication tool between the different levels of care and health facilities that the client may visit during her pregnancy and should therefore, always be kept up to date.

This study further found that poor health system management affected the medical practitioners negatively and that resulted into improper professional ethics.

The participants' response highlights teamwork and management support on the hospitals to advance recordkeeping during intrapartum care in the facilities. Table 6.1 summarises the responses of participants on teamwork.

A majority of participants explained the importance of teamwork in recordkeeping, Figure 6.4 illustrates the importance of staff teamwork. Participants shared various responses on the management support but predominantly, the midwives felt that the management support is insufficient as highlighted in Table 6.6.

The findings depicted the challenges of shortage of time to document the variables within the maternity case records. The quantitative results portrayed that 30.7% (n=790) of the maternity case records' incompleteness during intrapartum care were related to the challenges of recordkeeping including lack of time to complete the maternity case records. The participants shared the same sentiments that the lack of time to complete records emanated from different barriers, which were shortage of human resource, prioritisation of services sand shortage of the materials such as maternity case records.

Equally, the outcome of the study conducted by Norouzi, Ashktorab, Pazokian and Nasiri (2018:100) on the quality of nursing documentation based on standard criteria in coronary care unit found that several factors such as lack of enough time for documentation of the implemented actions, the priority of care to documentation, the existence of additional forms and documentation, disproportionate number of nurses to patients, lack of incentive systems, job dissatisfaction, and ignorance of correct documentation principles and legal consequences in different studies have been cited as the barriers of correct recording.

In their study, conducted in the Tshwane District by Matlala and Lumadi (2019: e3) on the perceptions of midwives on the shortage and retention of staff found that the midwives expressed their concern about not having an opportunity to attend workshops and symposia. They mentioned the importance of training and refresher courses to enhance their knowledge capacity. The availability of training opportunities was reported as a measure to curb the skill shortage.

The midwives and medical practitioners experienced a loss of motivation at work due to limited support from their superiors, something that contributed to their feeling of demoralisation (Bremnes, Wiig, Abeid & Darj 2018:3). The study by Seidu, Abdulai and

Aninanya (2021:556) revealed that hindrance factors mentioned by participants included a lack of adequate staff, no obligation from the facility and lack of motivation from supervisors.

6.7 SUMMARY

Chapter 6 discussed the integration of both quantitative results and qualitative findings and discussed these findings as aligned to literature. The findings highlighted gaps in the availability and the guidelines, recording of the maternity case records in line with the guidelines, perceptions of midwives and experience of medical practitioners regarding recordkeeping, enablers, and barriers of recordkeeping. Numerous evidence-based suggestions were tabled for implementation including, availability of updated recordkeeping guidelines, continuous Midwives in-service training, monitoring and evaluation of nurses on recordkeeping, peer review for record auditing, proper time management amongst nurses, an appointment of staff in line with the determining staffing needs**,** application of standardisation and archival strategies for easy retrieval of maternity case records. Training and updates of guidelines, peer review, clinical record audit, supervision of doctors and management support.

CHAPTER 7

STRATEGIES TO IMPROVE THE QUALITY OF RECORDKEEPING IN LIMPOPO PROVINCE

7.1 INTRODUCTION

This chapter discusses the strategies developed to improve the quality of recordkeeping during intrapartum care in Limpopo Province. The gaps were identified in providing quality recordkeeping. A summary of the integrated findings from the quantitative and qualitative phases informed strategy development process that was completed through validation.

7.2 LITERATURE REVIEW FOR RECORDKEEPING STRATEGIES

Relevant literature aligned to the focus of the study was reviewed in preparation for the development of strategies. The developed strategies were reviewed and validated for applicability and consistency against the literature-based evidence. Tasew et al (2019:612) conducted the study in Tigray Ethiopia on nursing documentation practice and associated factors among nurses in public hospitals and concluded that nursing care documentation practice was poor. Inadequacy of documenting sheets, lack of time and familiarity with the operational standards of nursing documentation were factors associated with nursing care documentation practice. The same study recommended the provision of a training programme to enhance the knowledge of nurses and familiarise them with the institutional policy regarding documentation.

The study conducted by Tola, Abebe, Gebremariam and Jicamo (2017:5) in Addis Ababa, Ethiopia on improving the completeness of inpatient documents in Menilik11 referral hospital shared findings that concur with the results of the study by Tasew et al. The DoH (2016), in South Africa provides guidelines full implementation and appropriate management of inpatient medical records. Grant (2017:159) conducted the study in Dublin, Ireland on recordkeeping and concluded that skills, expertise, and professional practices associated with the work of records managers are relevant and necessary to manage data.

Dang et al (2014:539), in their study recommended that hospital staff should perform medical records audits and discharge summary structure and content annually because poor recording has a negative consequence on patient safety.

Ahn et al (2016:270) conducted a study in Seoul, Korea on factors associated with the timeliness of electronic nursing documentation and found that documentation by nurses with limited experience is done retrospectively. This shows that new nurses need support to familiarise themselves with various tasks and the overall workflow. A study done by Mahmoud and Bayoum (2014:300) on challenges and enablers of recordkeeping, recommends training sessions on an ongoing basis to address the challenges regarding documentation of medical records. Pirkle et al (2012:566) is of the opinion that, if paper records are used, then physical space needs to be allocated to archive records and a system to retrieve records needs to be implemented, which also posed as a challenge in this study.

7.3 DEVELOPMENT OF THE RECORDKEEPING STRATEGIES

The aim of these strategies was to effectively manage the recordkeeping challenges identified during the study. The strategies were developed through the use of a Delphi procedure with a panel of experts.

7.3.1 Challenges identified in quality recordkeeping

The study identified the following gaps in the quality of recordkeeping during intrapartum care:

- Unavailability of recordkeeping maternity case records in the healthcare facilities in Limpopo Province.
- Poor recordkeeping during intrapartum care.
- Negative perceptions and experiences towards recordkeeping.
- Maternity recordkeeping skills deficit.
- Shortage of skilled and experienced human resources which are advanced midwives and experienced medical practitioners.
- Lack of time to complete the maternity case records.

- Inadequate in-service training.
- Poor monitoring and evaluation of midwives on recordkeeping issues.
- Lack of peer review and auditing of intrapartum care records.
- Lack of standard operating procedures (SOPs) for retrieval and archival of maternity records.
- Inadequate management support.

7.3.2 Significance of the developed strategies

The strategies were developed as attainable, applicable and relevant to improve the quality of recordkeeping during intrapartum care by addressing the gaps identified in the structure, process and outcomes, such as effective and efficient clinical judgment, improved continuity of healthcare, documentary evidence of service rendered and assistance with the clinical audit, research, resource allocation, and performance planning.

These strategies serve to guide midwives, medical practitioners and managers in Limpopo Province to improve recordkeeping during intrapartum care. Furthermore, the strategies aim to assist the policymakers in the implementation of quality recordkeeping during intrapartum care.

7.4 PROCESS OF RECORDKEEPING STRATEGY DEVELOPMENT

Strategy refers to a plan of action for accomplishing one or more goals and objectives (Loh, Long & Spurgeon 2019:31). The results from the integrated findings from data collected through quantitative and qualitative approaches and the reviewed literature, were fundamental in the development of strategies. Concept analysis was integrated in the development of the strategies. With reference to Stewart et al (2017:3), a Delphi technique can be used in those conditions where developed action statements were derived from the literature or research findings.

The aim for the development of recordkeeping strategies was to enhance the quality of recordkeeping during intrapartum care in Limpopo Province. The validation of two rounds of the Delphi technique was carried out by a panel of experts.

The purpose for validation of the developed strategies from experts was to receive collegial and expert agreement about the reliability and validity of the strategies. Even though there is no set standard for the number of rounds to be completed, numerous literature often report conducting between two and four rounds (Sekayi & Kennedy 2017:2755).

7.4.1 Concept analysis of strategy development

Delves-Yates, Stockl and Moore (2018:44) explained the purpose of a concept analysis as to analyse, define, develop and evaluate a concept. Although, there are several methods for conducting concept analysis, all of them have the purpose of determining the defining characteristics of the concept under study. This research explains an analysis of the concept of recordkeeping. Concept analysis method was used by this study to evaluate quality recordkeeping by applying the eight steps of Walker and Avant's (2011:159) concept analysis model, which are, selection of a concept, identification of the aim of the analysis, identification of concept uses, determining attributes of the concept, identifying model cases of the concept, identifying alternate cases of the concept, identifying antecedents and consequences, and defining empirical referents. Below is a schematic presentation of the concept analysis process followed in the development of strategies to improve quality recordkeeping during intrapartum care as illustrated in Figure 7.1.

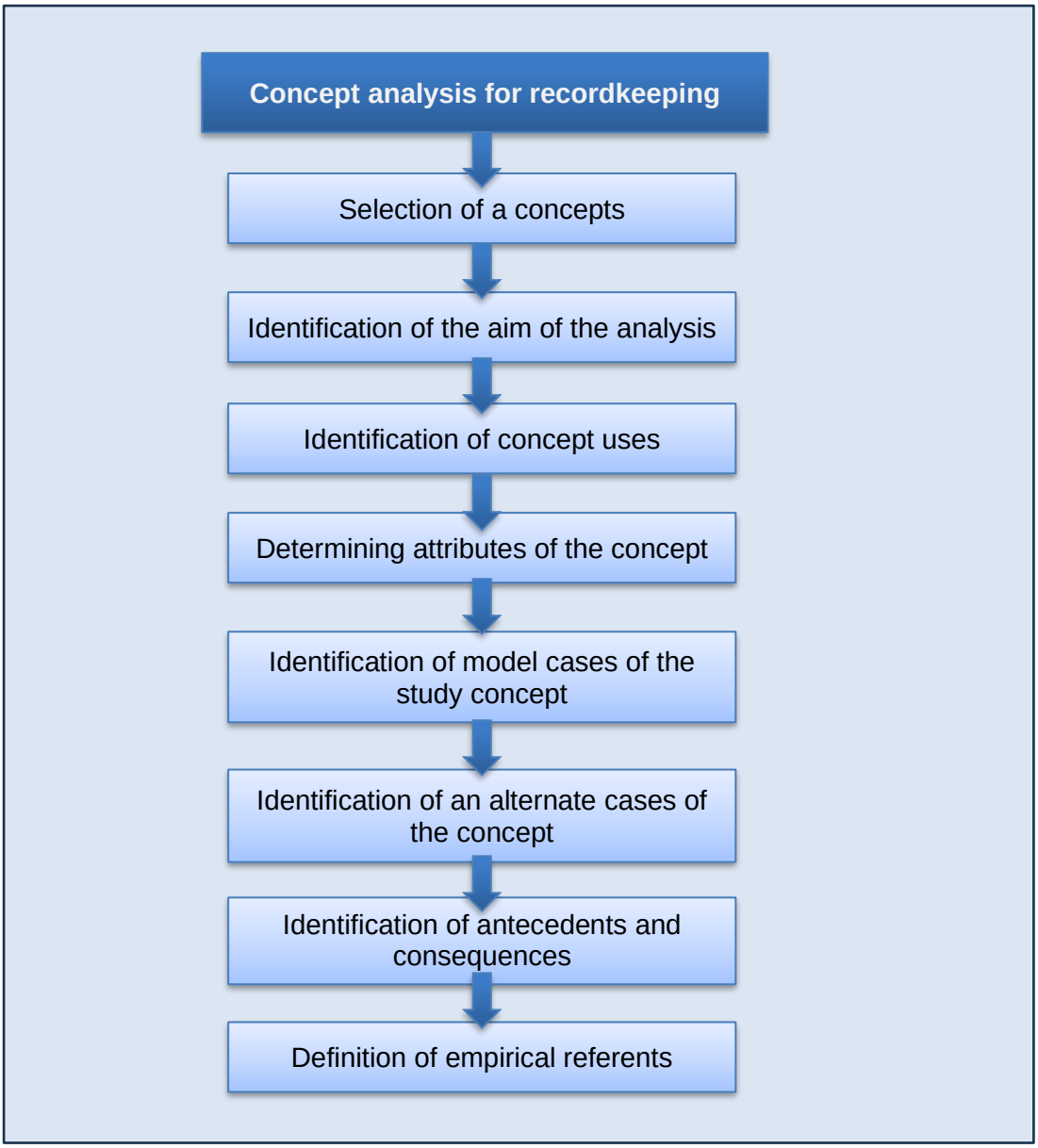


Figure 7.1 Concept analysis for recordkeeping

- **Selection of recordkeeping concept**

According to Walker and Avant (2011:160), “the initial step of concept analysis is to select a concept”. The researcher chose the concept of recordkeeping noting that if the concept is implemented and monitored by all levels of management, quality health outcomes will therefore be achieved and ultimately improve the desired quality of life. Quality recordkeeping is related to the documentation of the maternity case record from antenatal care (ANC) to postnatal care (PNC). D’Cruz and Rattan (2018:582) refer to recordkeeping as an essential component of delivering safe and appropriate care.

- **Identification of the goal of the concept analysis**

The next step of concept analysis is to develop a goal for concept analysis (Walker & Avant 2011:160). In this research, the goal is to understand the importance of quality recordkeeping during intrapartum care.

- **Identification of recordkeeping uses**

During the third step of concept analysis, the researcher defined the significance of recordkeeping as guided by Walker and Avant (2011:161). According to the HPCSA, a health record is any document created by the medical practitioner following assessment that contains health information about a specific patient (Gillespie, Howarth & Cornish 2012:391). Mutshatshi et al (2018:1) refer to recordkeeping as the action of arranging and storing all the documents, records and invoices relating to an organisation's activities. Section 27A of the ethical and professional rules of the Health Professions Council of South Africa, as developed by the Health Professions Act (Act 56 of 1974) and published in Government Gazette R717/2006, also stipulates the necessity of accurate medical recordkeeping (South Africa 1974).

- **Determining attributes of the recordkeeping**

Walker and Avant (2011:161) explain the attributes of the fourth stage for recordkeeping. At this stage, the researcher reflected on the characteristics that distinguish accurate recordkeeping. Numerous research studies conducted have revealed that medical records are often of low quality (Bazzo et al 2015:1). Pirkle, Dumont and Zunzunegui (2012:564) define medical records as initially recorded information that is clear, accurate, comprehensive, meaningful, and maintains patient privacy. Doctors have the misconception that instances with few or no medical records are harder to prosecute, however, Gillespie et al (2012:391) confirms that this is inaccurate, and that the medical protection society (MPS) finds it challenging to defend such cases in South Africa.

- **Identifying model cases of the recordkeeping**

Walker and Avant (2011:163) referred to this fifth stage as a model case that provides an example of recordkeeping for concept analysis. The model case contains the defining attributes of recordkeeping and serves as an example to portray recordkeeping. This model of recordkeeping is applicable to midwifery practice. This model aims to enhance the skills and understanding of recordkeeping during intrapartum care, assist in the training of midwives and medical practitioners, and advocate for the availability and implementation of policies for recordkeeping.

Furthermore, the concept analysis model aims to strengthen the implementation of monitoring and evaluation of recordkeeping procedures. The researcher further incorporated Tesch's eight steps model of content analysis as a form of triangulation to guide the development of the strategies for recordkeeping as follows:

- The attributes for recordkeeping were defined, strategies were developed by the researcher and validated by the field experts.
- The researcher reflected on all the interviews and discussions in no particular sequence. The researcher did not concentrate on any form of information but only on the meaning related to the focus of the study. The opinions were written down as the interviews and discussions were scrutinised.
- The task of going through all interviews and discussions, transcriptions were completed, the emerged topics were grouped together as similar and categorised as main themes and sub-themes.
- Provisional analysis of data was performed from the data material gathered.
- Themes and sub-themes were reflected on and re-arranged accordingly. The rationale behind the organisation and rechecking the data and abbreviating these themes and sub-themes was to find out if new and other codes emerged.
- Descriptive wording was found for main themes with sub-themes, and topics were grouped together to decrease the grouping of themes.
- The conclusion was made on acronyms for every main theme and its sub-themes.
- . Main themes and sub-themes were transcribed and refined.

- **Identifying alternate cases of the recordkeeping**

According to Walker and Avant (2011:163), a borderline case is an illustration of a situation in which the majority of a phenomenon's distinguishing characteristics are present, but there are discrepancies with the model cases with reference to standard of recordkeeping in the context of this study. For example, either midwife or medical practitioner may complete the variables of the maternity case record during intrapartum care but just feel it is unnecessary to write the designation after attaching the signature. The strategies for recordkeeping were developed using Tesch's model of content analysis to regulate the borderline case model of recordkeeping.

A contrary case is one that differs from model cases in that it lacks all of the characteristics that define a model case (Walker & Avant 2011:163) as applicable to quality recordkeeping. For example, midwives and medical practitioners might refuse to complete maternity case records citing lack of supervision as management lacks buy-in, no peer review and no clinical record audit done.

- **Identifying antecedents and consequences**

Walker and Avant (2011:167) found that an antecedent happens on situations as aligned to stage eight of concept analysis. Antecedents, these are events or incidents that happen prior to the occurrence of a concept. In the context of quality recordkeeping to occur, there must first be an acceptance of poor recordkeeping from the midwives and medical practitioners. The consequences are the events or incidents that happen as a result of a concept. During this stage of recordkeeping analysis, the outcomes of poor recordkeeping should be discussed.

Reference is made to Figure 7.2 for the process of the development of strategies for quality intrapartum care.

7.5 PROCESS OF VALIDATION OF THE STRATEGIES

Following the researcher's evidence gathering of the quantitative, qualitative and literature review, the strategies were formulated and validated by the field experts through Delphi technique process. Polit and Beck (2017:725) refer to the Delphi technique as a method to get viewpoints on a topic of interest or concern. The experts responded to three rounds of questionnaires, and the responses scores were aggregated and shared with the group.

The purpose of validating the strategies was to gain collective agreement from experts concerning the strategies' validity and appropriateness for the envisaged context. The goal was to reach consensus. The researcher developed draft strategies based on the research findings and circulated them to the experts for their opinions. Based on the feedback received, the researcher then revised the strategies and circulated them again. The researcher constantly engaged the experts to participate in the validation of the strategies. Finally, the experts reached consensus on the strategies (MacMillian, King and Tully 2016:655).

Aghera, Emery, Bounds, Bush, Stansfield, Gillet and Santen (2018:113) argued that the purpose of validating the strategies is to gain consensus and ensure that they are specific, measurable, attainable, realistic and time bound (SMART). The researcher ensured that neither identifier was revealed neither data would be associated with the field experts. The validation procedure gives participants the chance to reconsider their responses considering the panellists' reactions (Wathen, MacGregor, Hammerton, Coben, Herrman, Stewart & MacMillan 2012:684).

The researcher invited twelve experts who had experience and knowledge of quality intrapartum care. Table 7.1 illustrates the Delphi technique experts and their demographic characteristics.

Table 7.1 Delphi technique experts' demographic characteristics

Number	Gender	Age	Highest qualification	Position	Years of experience
1	Female	40-49 years	MBCHB	CEO	18 years
2	Male	50-59 years	MBCHB	Clinical Manager	7 years
3	Male	50-59 years	MBBS	Gynecologist	5 years
4	Female	40-49 years	MBCHB	Gynecologist	9 Years
5	Female	40-49 years	Degree in Nursing	Nursing Service Manager	22 years
6	Male	40-49 years	Master's in Public Health	Quality Assurance	19 Years
7	Female	50-59 years	Degree in Nursing	Lecturer	6 Years
8	Female	30-39 Years	Degree in Nursing	Unit Manager	12 Years
9	Female	40-49 years	Master's Degree	Mother and Child Health Manager	7 Years
10	Female	50-59 years	Postgraduate Diploma in Midwifery	Advance Midwife	20 years
11	Female	30-39 Years	Diploma in Nursing	Midwife	4 Years
12	Female	30-39 Years	MBCHB	Medical Officer	11 Years

7.5.1 Recruitment of experts and Delphi process of strategy development

Experts panel comprised of skilled and experienced individuals from different work disciplines sampled based on their skills and expertise. The experts were purposely selected and included the CEO of the hospital, the clinical manager, the nursing service manager, two gynaecologists, a midwifery lecturer, quality assurance manager (QAM), an advanced midwife, the maternity unit manager, mother and child manager and a medical officer. These experts have academic qualifications, practical and programmatic experience of four or more years in their field of work. The experts of this study have skills in maternal and child health experience, health services management, record auditing midwifery education were also involved in validation of the recordkeeping strategies.

The experts recruited and invited to take part in the validation were 20. Out of the twenty experts invited through telephone calls and emails to participate in the validation of the strategies, only 12 responded to the calls and emails with the willingness to participate to validate the strategies for this study. The experts were emailed the letter of invitation (Annexure N), the consent form (Annexure O), study objectives, purpose, integrated

results of the quantitative and qualitative findings, the questionnaire (Annexure P) consisted of demographic information of the expert and ten major areas of the developed strategies, interventions, and levels of score. The consent forms were sent to the experts, and they were requested to complete and return them to the researcher.

7.5.2 Delphi process of strategy development

The researcher applied a modified Delphi technique in seeking consensus regarding the proposed strategies for improving recordkeeping during intrapartum care. The interim strategies were developed based on the research findings and circulated to the experts for their opinions for consensus. Based on the feedback received, the researcher revised the strategies and circulated them in three rounds.

7.5.2.1 Round 1: First interaction with the identified experts

The researcher had a virtual interactive team meeting with the identified experts. The goal of the virtual interactive team meeting was to allow the researcher to present the study's findings and to propose participation in the Delphi technique process. A questionnaire with proposed strategies was sent through outlook to the experts for scoring and review. The completed questionnaires with scores and comments were expected from the experts not later than two weeks after the virtual interactive team's meeting. The experts were given a Likert scale as a tool for evaluating the attributes of quality guidelines by indicating the level of agreement as, strongly agree (4), agree (3), disagree (2) and strongly disagree (1). Scores in the questionnaire were rated using a Likert scale. Furthermore, the comments on the intervention were adjusted to the intervention. The interaction between the researcher and experts lasted for an hour and 30 minutes (90 minutes).

7.5.2.2 Round 2: Review of the expert scores and comments

The field experts submitted the response to the questionnaires with the scores and comments for consideration. Stewart et al (2017:4) highlighted that the accepted consensus for the target percentage agreement should be 70% or more on aggregated summative scores of agree and strongly agree on the Likert scale. The summative scores of these developed strategies ranged from 77.1% to 97.1%. The percentages were

obtained based on the frequency of rating and the level of the experts' agreement for each strategic intervention. The consensus specified as being 70 of the overall agreeable percentage, which is the sum of the experts' ratings for "strongly agree" and "agree" responses. The researcher achieved an acceptable aggregated responses rate with inputs from the experts in this round. The interaction between the researcher and experts lasted for one hour and fifteen minutes.

7.5.2.3 Round 3: Finalisation and evaluation of strategies

After the second round, the researcher included the experts' feedback and ranked the strategies based on the Likert scale and further took the maximum mean score as the first strategy in descending order.

The experts were given the checklists after the amendment of the strategies with the inclusion of their comments. The checklists were used to assess whether the strategies were clear, consistent, and applicable.

Data was collected in consecutive rounds 1 and 2 until the agreement was achieved. It was expected from the experts to read the developed strategies, rate each, comment and suggest what should be amended to the strategies.

These experts remained anonymous throughout the process to maintain the ethical consideration of privacy and confidentiality. The researcher analysed the data and adjusted the strategies after each round of the questionnaire completion and the responses were sent back to the experts. The experts were encouraged to re-evaluate their initial response and submit the comments.

The questionnaire was adjusted by the researcher to improve reporting and evaluation, resulting in a rigorous technique. Experts agreed with all strategies and emphasised that all amended and final strategies are aligned with the comments in round 2. The interaction between the researcher and experts lasted for forty-five minutes. Reference is made to Figure 7.2 for the process of the development of strategies for quality intrapartum care.

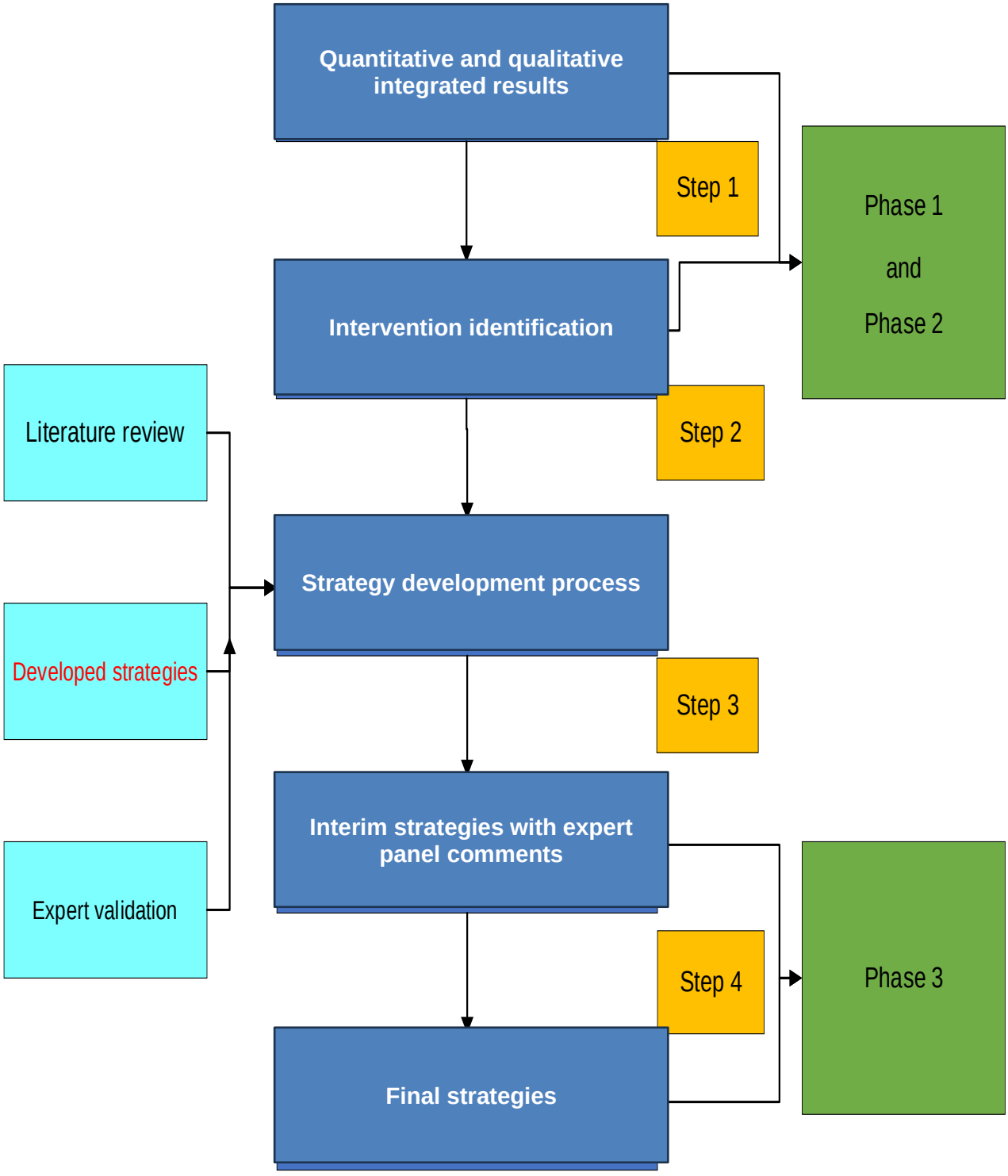


Figure 7.2 Process of recordkeeping strategies validation

7.6 INTERIM STRATEGIES WITH THE EXPERT COMMENTS

Strategies are described as means to carry out plans to deal with specific issues to accomplish objectives or results (Barad 2018:47). In this study, the strategies were developed to be operationalised to address recordkeeping during intrapartum care in Limpopo Province. Literature was reviewed to support the strategies developed. The literature review was done to complement the Tesch model of content analysis for recordkeeping during intrapartum care.

Strategy number 1 which is on training of midwives and medical practitioners, one expert made a comment on the strategy number one on grammatical error. The comment was accepted, and strategy was amended by the researcher.

On strategy number 2 which is on the availability of the guidelines, three experts scored two out of four. The field experts indicated that ordering and requisition of enough maternity case records do not have the impact on recordkeeping.

On strategy number 3 about monitoring and evaluation of recordkeeping procedures, two experts rated this strategy 1 and commented and highlighted that quality assurance should coordinate other units for the formulation of record audit tools to review the existing guidelines.

In strategy number 4, which is appointment of staff in line with the determining staffing needs. The tense was changed from determining to determined and was accepted.

Strategy number 5: Management buy-in and support: no comments were received to amend the strategy.

Strategy number 6 on proper time management among midwives and medical practitioners, no comments were received to amend the strategy.

Strategy number 7 which was on about the application of the standardisation and archival strategies for easy retrieval, the strategy, no comments were received to amend the strategy.

In strategy number 8 about the supervision of midwives and medical practitioners. The supervisor should not give feedback to the supervisee on the recordkeeping expertise, skills, knowledge, and experience acquired. There was a typographical error of not before give and that was corrected during the feedback.

Strategy number 9 on the peer review, no comments were received to amend the strategy.

Strategy number 10 about the clinical audit, no comments were received to amend the strategy.

The researcher considered the response and comments made by the experts by correcting strategy number 8 intervention 1 by removing not. Other grammatical errors were corrected and aligned with the comments of the experts.

7.7 CLASSIFICATION OF STRATEGIES

The developed strategies address the structural, process and outcomes issues. The study structural issues discussed the attributes of the health system whereas the process issues deliberated the importance of recordkeeping, healthcare provider's experience and perception on recordkeeping. Lastly the outcomes strategies elaborated the key principles of recordkeeping and people centredness approach. The strategies are divided into two categories, namely healthcare providers and supervisors and managers.

The strategies to explain the healthcare providers included training, time management, standardisation of archival and retrieval of records, peer review and clinical record audit. Figure 7.3 shares a framework of the strategies for healthcare providers.

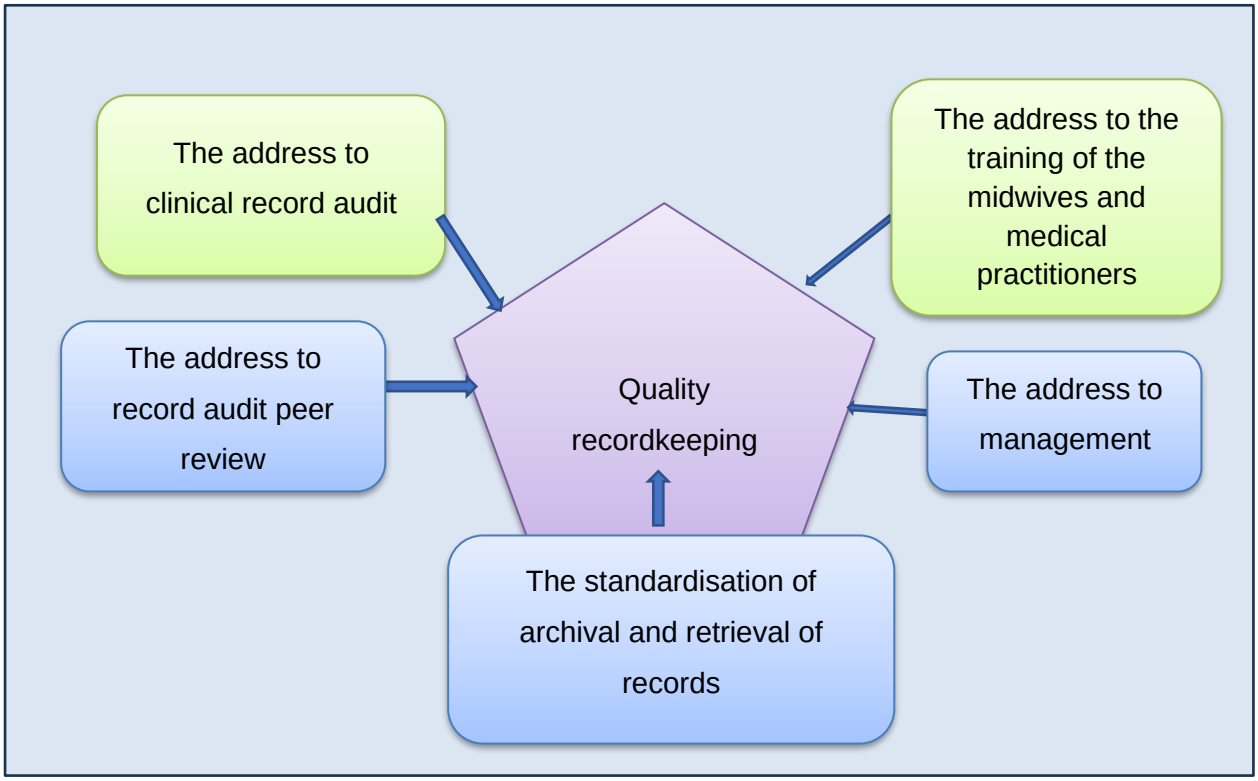


Figure 7.3 Strategic framework for healthcare providers to improve quality recordkeeping during intrapartum care

7.7.1 Strategy to address the training of midwives and medical practitioners with the interventions.

The study conducted in Zimbabwe by Crofts, Mukuli, Murove, Ngwenya, Mhlanga, Dube, Sengurayi, Winter, Jordan, Barnfield, Wilcox, Merriel, Ndlovu, Sibanda, Moyo, Ndebele, Draycott and Sibanda (2015:349) about the onsite training of medical practitioners, midwives and nurses in obstetric emergencies, concluded that effective obstetric emergency training should be conducted within the clinical setting. The study further found that the involvement of a high proportion of relevant staff and the implementation of practice-based interventions will improve recordkeeping. Furthermore, the study identified training of midwives and medical practitioners with other interventions is more likely to bring success of the recordkeeping. The improvement of documentation is the combination of many factors, with the training of the midwives and medical practitioners being used as a vehicle to ensure the quality of recordkeeping during intrapartum care.

Table 7.2 Strategy with interventions to address the training of midwives and medical practitioners.

Strategy	Interventions
Training of the midwives and medical practitioners on recordkeeping	Organize the training sessions (orientation, symposium, formal lecture training, workshop, demonstrations, virtual orientation, simulations).
	Conduct nursing and medical training needs assessment.
	Mobilize the training resources through the identification of appropriate training facilitators.
	Develop and follow the unit in-service training plan for recordkeeping.

7.7.2 Strategy to address midwives and medical practitioners time management.

Midwives and medical practitioners experienced challenges related to recordkeeping challenges during intrapartum care. The study found that completion of the maternity case record is time-consuming and laborious. The interventions identified in Table 7.3 to address time management.

Table 7.3 Strategy with interventions to address midwives and medical practitioners time management.

Strategy	Interventions
Proper time management among midwives and medical practitioners	Customize the workflow for the medical practitioners and midwives.
	Plan and execute daily work according to daily schedule for midwives and medical practitioners.
	Delegate duties to junior midwives and medical practitioners
	Prioritize an update of the maternity case records for every activity by midwives and medical practitioners.
	Assist the Quality assurance program to empower the maternity units in managing the patient waiting time and dealing with the deviation.

7.7.3 Strategy to address the standardisation of archival and retrieval of records.

South Africa (2018) on national guideline for filing, archiving and disposal of patient records in primary healthcare facilities emphasize that provincial and district offices should use this guideline to develop their own provincial or district-specific guideline for filing, archiving and disposal of patient records. The interventions to address the standardisation of archival and retrieval of records are depicted in Table 7.4.

Table 7.4 Strategy with interventions to address the standardisation for archival and retrieval of medical records.

Strategy	Interventions
Apply the standardization and archival strategies for easy retrieval	Prepare enough space for storage of the maternity case records.
	Develop effective record registration/strategy for retrieval purposes.
	Develop the strictest access to the record rooms within the hospital.
	Maintenance of the privacy and confidentiality of the maternity case records be limited to relevant persons
	Develop the SOP for filing, retrieving and archiving of the maternity case records.

7.7.4 Strategy to address the record audit peer review.

Audits need to be performed in accordance with professional standards. The strategy recommended the development of accurate and peer-review assessment criteria. Lalloo, Demou and Macdonald (2015:440) conducted the study in the United Kingdom, University of Glascow on Impact of peer review audit on occupational health report, the study concluded that quality peer review should improve the standard of Occupational Health reports and should be associated with a reduction in customer complaints about reports. Table 7.5 illustrates the intervention for record audit peer review.

Table 7.5 Strategy with interventions to address record peer review.

Strategy	Interventions
Record audit peer review	Develop accurate and comprehensive peer review assessment criteria.
	Motivate midwives and doctors to do and learn from the peer review process.
	Provide training to the peers on methods to be followed during recordkeeping peer review.
	Give constructive feedback and develop an improvement plan.
	Align peer review to the purpose and objectives of the recordkeeping of the unit.
	Allow adequate time for benchmarks on peer review on recommendations before implementation.

7.7.5 Strategy to address the clinical record audit.

Salem, Hazel, Villagracia and Dignah (2015:28) conducted the study in Saudi Arabia, Kind Saudi University on medical record audit in clinical nursing units in a tertiary Hospital, their study concluded that an evaluation of medical records and clinical documentation practices should allow physicians to have an accurate view to compliance for medical recordkeeping. Table 7.6 reflects the interventions for the clinical record audit to improve recordkeeping during intrapartum care.

Table 7.6 Strategy with interventions to address the clinical record audit.

Strategy	Interventions
Clinical record audit	Develop the record audit tool and schedule for intrapartum care.
	Ensure clinical information is completed in maternity case records
	Ensure that notes in the maternity case records are legible, logical and completed without delay.
	Ensure that clinical record audits are aligned with the national guideline.
	Allow medical practitioners and midwives to attend monthly clinical audit meetings.
	Develop quality improvement and sustain improvement for record audit.

7.7.6 Strategy to address supervisors and managers on recordkeeping.

The strategies for supervisors and managers of Limpopo Province intended to improve the quality of recordkeeping during intrapartum care which include the availability of updated recordkeeping guidelines, monitoring evaluation of recordkeeping, the appointment of staff with the staffing needs, management buy-in and supervision of midwives and medical practitioners. Figure 7.4 illustrates the strategies for supervisors and managers.

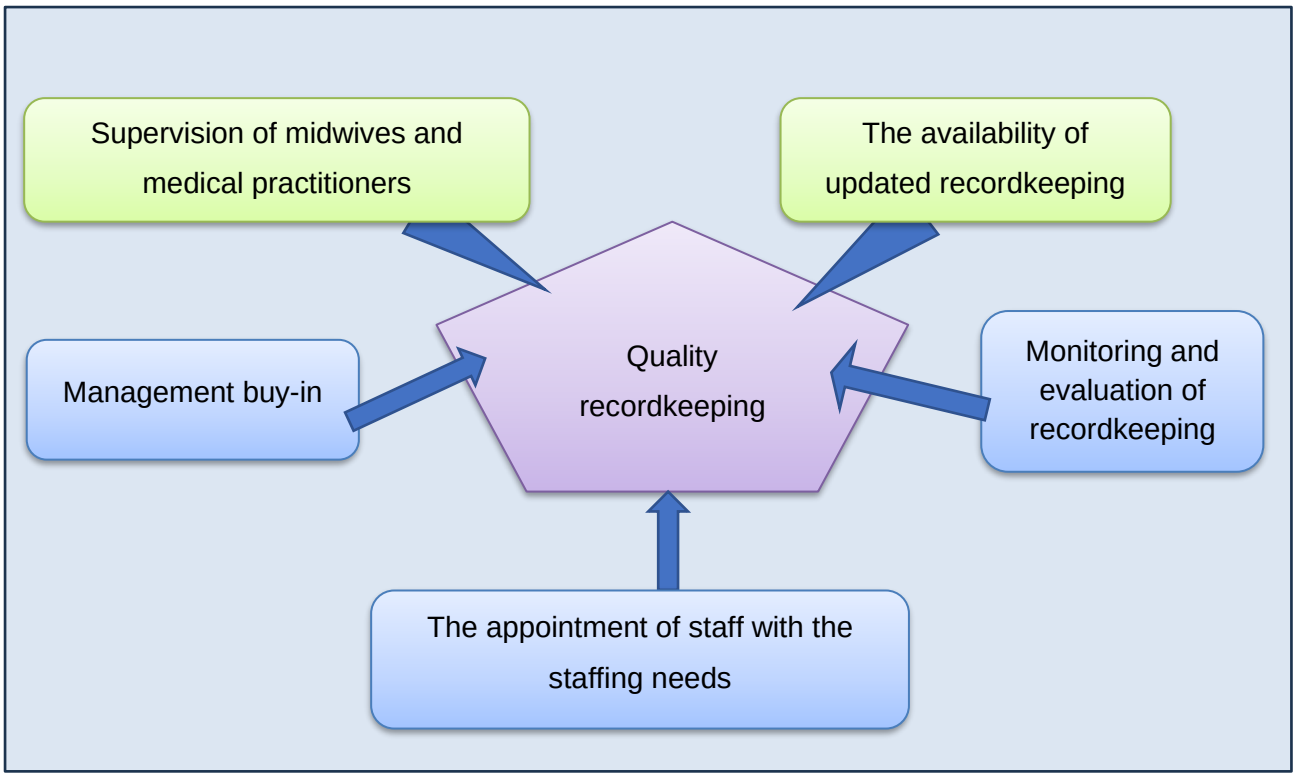


Figure 7.4 Strategic framework for supervisors and managers to improve quality recordkeeping during intrapartum care

7.7.7 Strategy to address the availability of updated recordkeeping guidelines.

Midwives and medical practitioners experience challenges with recordkeeping in public hospitals owing to unavailability of recordkeeping guidelines. This study found that midwives and medical practitioners were not confident to perform intrapartum recordkeeping due to a lack of guidelines. The participants recommended that the management should avail the guidelines at the strategic areas.

Table 7.7 Strategy with intervention to address the availability of recordkeeping guidelines.

Strategy	Interventions
Availability of the updated recordkeeping guidelines	Develop internal communication mechanisms such as emails and WhatsApp groups.
	File the guidelines and make them within reach.
	Place the summarized guidelines in the strategic positions in the units.
	Use the employees as quality assurance and recordkeeping champions to avail the recordkeeping guidelines.
	Order or request enough maternity case records.

7.7.8 Strategy to address monitoring and evaluation of recordkeeping.

Records provide visible evidence of what the midwife and medical practitioner are accomplishing. If they are able to capture the record accurately and completely, they furnish a basis for evaluating healthcare facilities' activities. Table 7.8 outlines the strategy and the interventions to address the monitoring and evaluation of recordkeeping during intrapartum care.

Table 7.8 Strategy with interventions to address monitoring and evaluation of recordkeeping.

Strategy	Interventions
Monitoring and evaluation of recordkeeping procedures	Develop and follow an SOP for recordkeeping.
	Facilitate, formulate, develop and maintain the quality assurance of the tools (checklist and questionnaires) with other units for quality recordkeeping.
	Give feedback to the midwives and doctors on recordkeeping post-clinical record audit in the intrapartum unit.
	Establish the management of midwives and medical practitioners recordkeeping through the application of performance management system.
	Discuss the improvement plan on the challenges of recordkeeping with the midwives and medical practitioners.
	Reward midwives and doctors for good clinical recordkeeping practices implementation.
	Correct and support midwives and medical practitioners for inadequate implementation of recordkeeping.

7.7.9 Strategy to address the appointment of staff with the staffing needs

The health workforce is crucial for the provision of health services to the population. Therefore, the appointment of competent human resources is vital for the provision of quality recordkeeping during intrapartum care. Table 7.9 provides the strategy and interventions to address the appointment of competent staff in line with staffing needs.

Table 7.9 Strategy and interventions to address the appointment of staff

Strategy	Interventions
Appointment of staff in line with the determined staffing needs	Conduct personnel training needs assessment and skill audit to determine the midwives and medical practitioners.
	Adhere to recruitment, selection of midwives, advanced midwives and experienced medical practitioners
	Ensure that healthcare provider-patient ratios are consistent with the approved staffing norms.
	Ensure that maternity managers (operational managers, medical HODs) appointed to management positions have the required qualifications and experience in the sector.
	Implement leadership training on record auditing.

7.7.10 Strategy with interventions to address supervision of midwives and medical practitioners on recordkeeping

Ramaboya, Maputle, Ramathuba, Lebese and Nethsikweta (2020:8) conducted the study on managers' support on the implementation of maternal guidelines in Limpopo Province and found a limited support to the supervision of midwives. The study further found that the limited supervision of midwives had a direct correlation on the implementation of maternal guidelines including recordkeeping. Table 7.10 discusses the strategy to supervise the midwives and medical practitioners on recordkeeping.

Table 7.10 Strategy with interventions to address supervision of midwives and medical practitioners on recordkeeping.

Strategy	Interventions
Supervision of midwives and medical practitioners on recordkeeping	Develop the orientation and induction of junior medical practitioners, medical interns and midwives doing community nursing services on the records used in the maternity unit.
	Develop the reporting supervision plan between the junior medical practitioners and midwives and their supervisors.
	Supervisors to provide feedback to junior colleagues the recordkeeping principles.

7.7.11 Strategy to address the management buy in

Macfarlane (2019:174) indicated that effective clinical governance is important to achieve clear structures and systems, with organizational and clinical administration creating a

caring culture, thus it should be the priority for all maternity care. Table 7.11 shows the strategy and interventions to address the management buy-in.

Table 7.11 Strategies with interventions to address management buy-in

Strategy	Interventions
Management buy-in and support	Develop a plan to address the challenges of low morale, burnout and absenteeism faced by midwives and medical practitioners.
	Mentor and coach by senior managers should junior doctors and community service nurses.
	Create a conducive work environment for midwives and medical practitioners.
	Managers should share the general impact of recordkeeping.
	Management should participate in quality assurance programs including recordkeeping.
	Motivate staff (midwives and medical practitioners) to maintain high levels of principles of recordkeeping.

7.8 FINAL DELPHI TECHNIQUE RANKING ON DEVELOPED STRATEGIES

The final round of the Delphi technique confirmed the strategies. Table 7.12 displays the scores ranking of the final Delphi technique on the developed strategies.

Table 7.12 Final Delphi rankings of the strategies

Strategy	Level of agreement/disagreement							
	Strongly Agree 4	Agree 3	Disagree 2	Strongly disagree 1	Score obtained	Maximum score=48	% Achieved	
	Interventions							Average %
Strategy 1 Training of the midwives and doctors on recordkeeping	9x4=36	3x3=9	0	0	45	48	45/48x100=93.8%	45: 180/192x100=93.8%
	8x4=32	3x4=12	0	0	44	48	44/48x100=91.7%	
	8x4=32	3x4=12	0	0	44	48	44/48x100=91.7%	
	11x4	3x1	0	0	47	48	47/48x100=97.1%	
Strategy 2 Availability of the updated recordkeeping guidelines	8x4=32	4x3=12	0	0	44	48	44/48x100=91.7%	44: 262/288x100=91%
	9x4-36	3x3=9	0	0	45	48	45/48x100=93.8%	
	9x4=36	3x3=9	0	0	45	48	45/48x100=93.8%	
	7x4=28	3x4=12	0	1x1=1	41	48	41/48x100=85.4%	
	9x4=36	3x2=2	0	1x1=1	43	48	43/48x100=89.6%	
	8x4=32	4x3=12	0	0	44	48	44/48x100=91.7%	
Strategy 3 Monitoring and evaluation of recordkeeping procedures	6x4=24	3x3=9	2x1=2	1x1=1	37	48	37/48x100=77.1%	42: 168/192x100=87.5%
	9x4=36	3x3=9	0	0	45	48	45/48x100=93.8%	
	8x4=32	3x3=9	0	1x1=1	42	48	42/48x100=87.5%	
	8x4=32	4x3=12	0	0	44	48	44/48x100=91.7%	
	7x4=28	5x3=15	0	0	43	48	43/48x100=89.6%	
	9x4=36	3x3=9	0	0	45	48	45/48x100=93.8	
	10x4=40	2x3=6	0		46	48	46x48x100=95.8%	
Strategy 4 Appointment of staff in line with the determined staffing needs	7x4=28	5x3=15	0	0	43	48	43/48x100=89.6%	43: 217/240x10=90.4%
	9x4=36	2x3=6	1x2=2	0	44	48	44/48x100=91.7%	
	8x4=32	3x3=9	1x2	0	43	48	43/48x100=89.6%	
	8x4=32	3x3	0	1x1	42	48	42/48x100=87.5%	

Strategy	Level of agreement/disagreement							
	Strongly Agree 4	**Agree 3**	**Disagree 2**	**Strongly disagree 1**	**Score obtained**	**Maximum score=48**	**% Achieved**	
	Interventions							**Average %**
	9x4=36	3x3=9	0	0	45	48	45/48x100=93.8%	
Strategy 5 Management buy-in and support	9x4=36	3x3=9	0	0	45	48	45/48x100=93.8%	45: 270/288x100=93.8:%
	11x4=44	1x3=3	0	0	47	48	47/48x100=97.1%	
	9x4=36	3x3=9	0	0	45	48	45/48x100=93.8%	
	9x4=36	3x3=9	0	0	45	48	45/48x100=93.8%	
	7x4=28	3x4=12	1x2	0	42	48	42/48x100=87.5%	
	10x4=40	2x3=6	0	0	46	48	46/48x100=95.8%	
Strategy 6 Proper time management among midwives and medical practitioners	6x4=24	6x3=18	0	0	42	48	42/48x100=87.5%	43: 213//240=88.9%%
	10x4=4	2x3=6	0	0	46	48	46/48x100=95.8%	
	5x4=20	5x3=15	0	2x1=2	37	48	37/48X100=77.1%	
	10x4=40	2x3=6	0	0	48	3	46/48x100=95.8%	
	8x4=32	3x3=9	0	1x1	42	48	42/48x100=87.5%	
Strategy 7 Apply the standardization and archival strategies for easy retrieval	8x4=32	3x3=9	1x2=2	0	43	48	43/48x100=89.6%	44: 220/240X100 91.7%
	8x4=32	4x3=12	0	0	44	48	44/48x100=91.7%	
	9x4=36	3x3=9	0	0	45	48	45/48x100=93.8%	
	9x4=36	3x3=9	0	0	45	48	45/48x100=93.8%	
	8x4=32	3x3=9	0	2x1=2	43	48	43/48x100=89.6%	
Strategy 8 Supervision of Midwives and medical practitioners on recordkeeping	8x4=32	4x3=12	0	0	44	48	44/48x100=91.7%	42: 126/144X100=87.5%
	9x4=36	2x3=6	1x2=2	0	44	48	44/48x100=91.7%	
	6x4=24	2x3=6	4x2=8	0	38	48	38/48x100=79.2%	

Strategy	Level of agreement/disagreement							
	Strongly Agree 4	**Agree 3**	**Disagree 2**	**Strongly disagree 1**	**Score obtained**	**Maximum score=48**	**% Achieved**	
	Interventions							**Average %**
Strategy 9 Peer review	9x4=36	3x3=9	0	0	45	48	45/48x100=93.8%	46: 275/288X100=95.5
	10x4=40	2x3=6	0	0	46	48	46/48x100=95.8%	
	10x4=40	2x3=6	0	0	46	48	46/48x100=95.8%	
	10x4=40	2x3=6	0	0	46	48	46/48x100=95.8%	
	10x4=40	2x3=6	0	0	46	48	46/48x100=95.8%	
	10x4=40	2x3=6	0	0	46	48	46/48x100=95.8%	
Strategy 10 Clinical record audit	9x4=36	2x3=6	0	1x1	43	48	43/48x100=89.6%	45: 317/336=94.3%
	9x4=36	3x3=9	0	0	45	48	45/48x100=93.8%	
	10x4=40	2x3=6	0	0	46	48	46/48x100=95.8%	
	9x4=36	3x3=9	0	0	45	48	45/48x100=93.8%	
	10x4=40	2x3=6	0	0	46	48	46/48x100=95.8%	
	10x4=40	2x3=6	0	0	46	48	46/48x100=95.8%	
	10x4=40	2x3=6	0	0	46	48	46/48x100=95.8%	

7.9 SUMMARY

Chapter 7 discussed the strategy development process to improve the quality of recordkeeping during intrapartum care in Limpopo Province. These strategies were based on the findings of the study. The next chapter concludes the study. Chapter 8 shares recommendations to practice and further research.

CHAPTER 8

CONCLUSION, LIMITATIONS AND RECOMMENDATIONS

8.1 INTRODUCTION

This chapter provides the study's conclusion, limitations, and recommendations. The main purpose of the concluding chapter of doctoral research is to bring an investigator's argument to a meaningful close, by way of justifying the argument. The study's contribution to improving recordkeeping, limitations, and recommendations to the policymakers, education and research are detailed in this chapter.

8.2 FOCUS OF THE STUDY

This study emerged in support of literature search that revealed the increasing demands for healthcare systems to deliver high-quality patient care as well as the continual growth in medico-legal litigations in maternity healthcare services that arise from poor, inaccurate and incomplete recordkeeping (DoH, 2016). The literature further showed that implementing good recordkeeping principles will increase the quality of life and reduce the increased medicolegal cases in maternity healthcare service in the DoH (2016:24).

The study conducted in 2015 by Maesela (2018:98) in one hospital in Limpopo Province found that that 75.3% (n=122) of the perinatal mortality was related to inadequate maternal case records. The study further found that poor usage of partograms by healthcare professionals and incomplete and erroneous completion of maternity cases are some factors that contributed to increased perinatal mortality in Limpopo Province.

The focus of this study was to evaluate recordkeeping in the maternity case records and to develop strategies to enhance the quality of recordkeeping during intrapartum care in Limpopo Province. The relevant literature review was conducted to assist the researcher to establish a rationale for the research questions related to the research topic.

The researcher used a mixed methods design in which the quantitative data were collected using non-participant unstructured observations and a checklist for the review

of maternity case records to determine the accuracy and completion of the variables in the maternity case records.

Qualitative data was collected by means of focus group discussions and in-depth interviews with twenty-nine midwives and fourteen medical practitioners respectively. The focus group discussions with midwives were conducted in six out of seven selected healthcare facilities. In-depth interviews with medical practitioners were conducted in six out of seven selected healthcare facilities.

Lastly, the researcher developed recordkeeping strategies based on the findings. Using a Delphi method consultation with a panel of twelve experts, the strategies were validated through reaching a consensus.

The objectives of the study were to:

- Establish the availability of the maternity guidelines relating to recordkeeping in Limpopo Province.
- Evaluate the recordkeeping of the maternity case records during intrapartum care in maternity healthcare services in Limpopo Province.
- Determine and describe midwives' perception on recordkeeping of the maternity case records in maternity healthcare services in Limpopo Province.
- Determine and describe the experience of the medical practitioners on recordkeeping of the maternity case records in maternity healthcare services in Limpopo Province.
- Determine and discuss the enablers and barriers for midwives and medical practitioners in implementing recordkeeping in maternity healthcare services in Limpopo Province.
- Develop strategies to enhance the quality of recordkeeping in the maternity case records by midwives and medical practitioners during intrapartum care in Limpopo Province.

Furthermore, the study specifical sought to answer the following questions:

- Are the guidelines related to recordkeeping during intrapartum care in Limpopo Province available in the maternity healthcare services? What is the level of completeness and accuracy of the maternity case records?
- What are the midwives' perceptions on recordkeeping during intrapartum care?
- What are the medical practitioners' experiences of recordkeeping during intrapartum care?
- What are the enablers and barriers for recordkeeping during intrapartum care in Limpopo Province?
- Which strategies can be developed to enhance the quality of recordkeeping by midwives and medical practitioners within maternity case records during intrapartum care?

8.3 OVERVIEW OF THE STUDY

This research employed a sequential explanatory design, which implied the collection, analysis and integration of quantitative and qualitative data. The purpose of the study was to evaluate the quality of recordkeeping in maternity case records which resulted in the development of strategies to improve the quality of recordkeeping during intrapartum care in Limpopo Province. The findings were used to develop strategies for recordkeeping during intrapartum care. The field experts participated in the validation of the developed strategies for recordkeeping. The literature review was used to validate the consistent application of principles of recordkeeping in this study.

During the quantitative phase, the research objectives were to establish the availability of recordkeeping of the guidelines policies in the maternity unit relating to recordkeeping and to evaluate the recordkeeping of maternity case records. The non- participant unstructured observations were noted to make a determination during the hospital visit. A checklist was used to review the recording in the maternity case records as guided by the National Guidelines for Maternity Care in South Africa (DoH 2016:36). A total of 10% (n=2752) of the maternity case records were randomly selected for document analysis in these selected healthcare facilities in Limpopo Province. The quantitative results were analysed with the assistance of the statistician and the supervisor.

During the qualitative phase, data was collected through the participation of midwives in six focus group discussions to determine and describe the perceptions of midwives. In-depth interviews were conducted with medical practitioners to determine and describe their experiences regarding recordkeeping during intrapartum care. The researcher developed quality recordkeeping strategies based on the study findings. A panel of content experts validated the strategies through a Delphi Technique.

The findings of phase 2 were presented in the form of main themes and sub-themes. The quantitative results were integrated with qualitative findings and interpreted accordingly. The strategies were developed to promote quality recordkeeping during intrapartum care. The experts within the field of the study critically validated the strategies. The expert's comments were integrated into the developed strategies to make the final where actions and recommendations were documented.

8.3.1 Key findings

The study concluded with the following findings:

- Unavailability of recordkeeping materials in the selected maternity units, in Limpopo Province.
- Poor adherence to recordkeeping principles during intrapartum care due to fear of litigations, negative attitude, and lack of professional ethics.
- Maternity skills deficit.
- Shortage of skilled and experienced human resources (advanced midwives and experienced medical practitioners).
- Lacking enough time to complete the maternity case records.
- Inadequate in-service training.
- Poor monitoring and evaluation of midwives and medical practitioners on recordkeeping issues.
- Lack of peer review and auditing of intrapartum care records.
- Lack of standard retrieval and archival strategies for maternity records.
- Inadequate management support.

8.3.2 Conclusion on study objectives

The study reflects on the objectives with the following discussion:

Objective 1: Establish the availability of policies in the maternity unit

With reference to the availability of guidelines, in some instances, the guidelines were locked in the operational manager's office, as such, not even being aware that they are due for review. The checklist depicted that 91.6% of the maternity case records were available during intrapartum care. During this phase, midwives shared their perceptions in the focus group discussions on the availability of guidelines whilst medical practitioners reflected the shortage of recording materials as the barrier that hinders the implementation of good recordkeeping during intrapartum care.

The qualitative phase also shared different views on the unavailability of the. recordkeeping guidelines. Some of the study respondents indicated that facilities have a severe shortage of maternity case records toward the end of every financial year.

Based on the difference in quantitative results and qualitative findings, there is a need for the Limpopo DoH to avail guidelines and policies for recordkeeping in all hospitals to address the organisational shortcomings related to recordkeeping.

- **Objective 2: Evaluate the recordkeeping of maternity case records**

Both quantitative and qualitative data concurred that there is generally poor recordkeeping during intrapartum care in Limpopo Province. The quantitative data collected and analysed on vital signs depicted incomplete variables that appeared on the maternity case records.

The qualitative phase revealed that midwives and medical practitioners were knowledgeable about their expectations on recordkeeping but challenges such as attitude, shortage of staff and lack of time hinder the implementation of good principles of quality recordkeeping. The research findings from the qualitative phase were able to validate the quantitative results during non-participant unstructured observations that

found that there were gaps in the implementation of recordkeeping during intrapartum care in Limpopo Province.

- **Objective 3: Determine and describe the perceptions of midwives regarding recordkeeping in maternity case records**

This study objective was realised through the qualitative phase by using focus group discussions. Midwives displayed negative perceptions of recordkeeping based on fear of litigations.

These negative perceptions included lack of commitment, failure to make a decision or act on the decision taken, a risky midwifery or nursing profession, low morale which leads to absenteeism and staff turnover and continuous unresolved conflicts between the midwives.

The qualitative phase revealed that midwives need to be debriefed and ventilate these negative perceptions. The managers should support the midwives to render maternity services including the quality of recordkeeping during all stages of labour, allow peer review of the maternity case records and implement the principles of recordkeeping.

- **Objective 4: Determine and describe the experience of the medical practitioners regarding recordkeeping in maternity case records**

Objective 4 was accomplished through in-depth interviews with medical practitioners. During the qualitative phase of the study, the medical practitioners provided their experiences regarding recordkeeping during intrapartum care. The medical practitioners' negative 'experiences towards recordkeeping were justified through various reasons, for example, the large number of patients waiting to be seen by the medical practitioner who is expected to complete all the forms and documents, shortage of doctors and lack of assistance by managers to deal with compliance to recordkeeping.

Medical practitioners should be reminded of professional ethics on recordkeeping as encapsulated in the HPCSA booklet. The development of an improvement plan for the supervision of medical interns and junior doctors could help in correcting the negative attitude of doctors towards recordkeeping.

- **Objective 5: Determine and discuss the enablers and barriers for midwives and medical practitioners in implementing recordkeeping in maternity healthcare in the province of Limpopo**

Objective 5 was realised through focus group discussions with midwives and in-depth interviews with medical practitioners. The enablers of good recordkeeping for the midwives were staff teamwork and management role to support and empower the midwives to adhere to recordkeeping principles during intrapartum care. This study highlighted that medical practitioners should assume their role to implement peer reviews and clinical record audits as the enablers of recordkeeping.

The barriers identified by the perceptions of midwives in recordkeeping during intrapartum care were ranging from lack of adequate time to complete the maternity case records to human resources shortage including midwives and medical practitioners' insufficient relevant expertise and skills. The challenges associated with medical practitioners in recordkeeping were the shortage of doctors and recording materials, and poor management support.

Enablers to be maintained to advance good recordkeeping during intrapartum care and challenges in the execution of recordkeeping in all health establishments in Limpopo Province.

The study findings highlighted a need for organisational stakeholders to monitor and maintain the enablers of good recordkeeping and the gaps or challenges identified to be addressed to enhance recordkeeping in Limpopo Province.

- **Objective 6: Develop strategies to enhance the quality of recordkeeping in maternity case records by midwives and medical practitioners during intrapartum care in Limpopo Province**

Objective 6 was achieved by integration of the quantitative results and qualitative findings of the research hence the researcher managed to develop strategies and validation of that strategies by the experts to improve recordkeeping during intrapartum care. The adherence to quality recordkeeping can be translated into the provision of quality healthcare to improve quality of life.

Summary: all stakeholders, hospital managers, midwives and medical practitioners identified the need to improve recordkeeping during maternal care and intrapartum care. Strategies were formulated to improve recordkeeping during intrapartum care.

8.3.3 Health Believe Model and its impact on this study

Structural challenges this study encountered included the unavailability of policies and guidelines, unavailability of recordkeeping materials in the maternity unit relating to a maternity skills deficit, poor recordkeeping during intrapartum care, shortage of skilled and experienced human resources and inadequate In-service training.

Process and procedure challenges included poor monitoring and evaluation of midwives on recordkeeping issues, lack of standard retrieval and archival strategies of maternity records, lack of peer review and auditing of intrapartum care records and inadequate management support. The outcome challenges included poor recordkeeping and negative perceptions and experiences towards recordkeeping due to fear of litigations, negative and lack of professional ethics during intrapartum care.

8.4 LIMITATIONS OF THE STUDY

This research was limited to midwives and medical practitioners in one province and one district. The research results cannot be generalised across the whole population of medical practitioners and midwives in the Republic of South Africa.

Moreover, focus group discussions and in-depth interviews were conducted in six healthcare facilities instead of seven due to the withdrawal of one selected health facility. The reason for withdrawal from one selected healthcare was related to Covid-19 challenges such as fear of more infections in the healthcare providers and overburdened maternity services due to health workers being on leave.

8.5 RECOMMENDATIONS

Based on the findings of the study, the following recommendations were made to the practice:

8.5.1 Availability of recordkeeping materials

Maternity case records and audit tools such as checklists should be available for the midwives and medical practitioners to use. In general, the availability, and appropriate allocation, of resources will improve the accountability of the midwives and medical practitioners in recordkeeping. There is consensus displaying serious challenges with midwives and medical practitioners' skill recruitment and retention. Therefore, policymakers should avail policies, maternity case records and human resources to meet these challenges of recordkeeping.

8.5.2 Adherence to recordkeeping principles during intrapartum care

The study identified that there are gaps related to adherence to proper recordkeeping that should be addressed through clinical record auditing and peer review. Midwives and medical practitioners should perform peer reviews, capture the outcomes of the recordkeeping to instil the culture of proper recordkeeping. Managers should develop, monitor, and evaluate the recordkeeping quality. Corrective counselling should be given to practitioners who continue with non-adherence to good practice of the princes to recordkeeping.

8.5.3 Address the fear of litigations and negative attitude towards recordkeeping

Staff attitude is one of the six key priorities that the Minister of Health of South Africa came up with in the National Strategic Plan (DoH 2011:22) in order to improve the quality

of care of patients. Midwives to take responsibility for working on their negative attitude, as a positive attitude or a good response informs the client that the practitioner is concerned about their wellbeing.

8.5.4 Maternity skill deficit

Limpopo Province Department of Health (DoH), should recruit and deploy experienced midwives, medical practitioners, advanced midwives, and gynaecologists to their hospitals to meet the requirement of quality of recordkeeping and care, reduce litigations and provide quality healthcare during intrapartum care.

8.5.5 Shortage of skilled and experienced human resources (advanced midwives and experienced medical practitioners)

The DoH should reinforce the community health nurses and medical interns' mentorship programmes and recruit and deploy competent and experienced mentors to hospitals and ensure regular supportive supervision for ongoing quality improvement.

8.5.6 Time management to enhance recordkeeping

The study also recommends that hospital management arrange time management workshops for midwives and medical practitioners so that they can manage their time accordingly to accommodate recordkeeping during intrapartum care. There should always be active follow-up and mentoring of these midwives and medical practitioners after they have attended workshops related to the documentation of information at their respective hospitals.

8.5.7 In-service training

The hospital managers should develop their own training programmes on recordkeeping. Part of the hospital orientation and induction should include recordkeeping, especially in the maternity units. In-service training programmes should accommodate the recordkeeping of maternity case records. Monthly clinical record audits, peer reviews and giving feedback to the midwives and medical practitioners on recordkeeping should form part of the community nursing service midwives and medical interns. Peer review should

be included in the hospital programs to audit records and give feedback on recordkeeping. Advanced midwives and experienced doctors should follow the strategies of training such as lecturing, demonstration and simulations for recordkeeping to mentor and coach the community service midwives and medical interns. Continuity of professional development is recommended to practitioners registered with SANC to engage in learning activities to maintain and improve their knowledge, skills, attitudes and professional integrity in order to keep up to date with new science, innovation and health care developments, and to practise safely, ethically, competently, and legally within their evolving scope of practice.

8.5.8 Monitoring and evaluation of midwives on recordkeeping issues

Groves, Mitchell, Henderson, Jeffrey, Kelly and Nulty (2015:1737) conducted the study entitled “they told me what I did wrong; but didn’t give me any feedback”’ and recommended that all midwives and supervisors be given in-service training on partogram use and on auditing and giving feedback. This study recommends that managers and peers should monitor and evaluate the issues emanating from recordkeeping and address them. The study recommends that the issues such as training and updates of guidelines, supervision of doctors, improving staffing, and Inservice training should be planned to include an agreement on the implementation of the monitoring and evaluation process.

8.5.9 Peer review and auditing of intrapartum care records

Peer review has been a mainstay of medical quality assurance programmes. The study recommends that midwives and medical practitioners develop the procedure to assess the quality of documentation for recordkeeping during intrapartum care as this process requires no additional expenditures.

Auditing of medical records is viewed as an important practice for improving the documentation of maternity case records (Lumadi 2017:e5). This study recommends that auditing of maternity case records should be planned and be done regularly to improve recordkeeping of the maternity case records during intrapartum care.

8.5.10 Process to retrieve and archive strategies for maternity records

South Africa (1996b) highlighted that it is the responsibility of administrative employees working at reception to manage patient records into the filing system after the designated person has consolidated all patient records used for the day. Each record must be checked against the day's patient registration list to ascertain the return of each record to reception. The study recommends that the provincial office should develop the protocol for filing of the maternity case applicable to all healthcare facilities in Limpopo Province. The study further recommended that the Maternity registers and maternity case records should be kept under lock and key in all the healthcare facilities and stored in the designated patient record storage room. The future of safe and sound recordkeeping is dependent on electronic health records; therefore, Limpopo Province Department should implement the use of electronic health records in healthcare facilities. All electronic records must be saved and backed up as stipulated in the standard operating procedure of the specific health information software applications in use at the healthcare facility.

8.5.11 Adequate management support

Management buy-in, ongoing support and supervision of policymakers of midwives and medical practitioners should work together to establish a system that will contribute to good recordkeeping practices. Therefore, District hospital Managers, Regional hospital managers, monitoring and evaluation (M&E), quality assurance (QA), and mother and child healthcare should work together to develop integrated policies to enhance clinical recordkeeping. Operational managers and senior managers should comprehend the stresses midwives and medical practitioners work under and refrain from increasing pressure by encouraging midwives and medical practitioners through positive feedback and constructive criticism.

Limpopo Province should preserve an enthusiastic and passionate cohort of midwives and medical practitioners by creating debriefing sessions or opportunities where midwives and medical practitioners could share their feelings about barriers to recordkeeping during intrapartum care.

The managers should develop improvement plans for every clinical record audit, share the outcomes, and assign responsibilities to achieve good recordkeeping.

Any information on changes in policy on maternity guidelines related to recordkeeping should be appropriately and timely disseminated to the stakeholders.

8.5.12 Recommendations for further research

The study was conducted in one district of Limpopo Province hospitals which cannot be generalised to the whole Province. The outcome of the recordkeeping analysis provided a clear explanation for the definition of content analysis related to recordkeeping. The identified defining attributes, antecedents, and consequences can be further confirmed and utilised to formulate potential recordkeeping strategies. Future research is required and will assist to advance our understanding of the scope of the study.

8.6 CONTRIBUTION OF THE STUDY

It was substantial to conduct research about quality recordkeeping during intrapartum care in Limpopo Province. Adherence to the developed strategies will assist the stakeholders to achieve quality recordkeeping and decrease possible litigations in Limpopo Province.

8.7 CONCLUSION

The study revealed poor recordkeeping systems in the hospitals and missing variables and gaps that appeared during the completion of the maternity case records, especially on vital signs. Midwives agree that these negative perceptions included lack of commitment, failure to make a decision or act on the decision taken, a risky midwifery or nursing profession and low morale which leads to absenteeism and staff turnover and continuous unresolved conflicts between the midwives which were the hindrances to achieve quality recordkeeping during intrapartum care. The findings revealed the medical practitioners' negative attitudes and experiences toward recordkeeping. The role of management should be to create a positive work environment, which can be evident through the improved and positive staff attitude.

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Internet source

www.municipalities.co.za - Sekhukhune District with its local municipalities (accessed on 14 July 2020).

ANNEXURES

ANNEXURE A: Ethical clearance certificate from the University of South Africa

UNISA university of south africa

COLLEGE OF HUMAN SCIENCES RESEARCH ETHICS REVIEW COMMITTEE

11 November 2020

NHREC Registration # :
Rec-240816-052
CREC Reference # :
44439121_CREC_CHS_
2020

Dear P.C Maesela

Decision:
Ethics Approval from 11 November 2020 to 31 October 2024

Principal Researcher(s): P.C Maesela (email: 44439121@mylife.unisa.ac.za)

Supervisor: Prof JM Mathibe-Neke (email: mathijm@unisa.ac.za)

Title: The quality of recordkeeping during intrapartum care in Limpopo Province: A mixed method analysis

Degree Purpose: PhD Public Health

Thank you for the application for research ethics clearance by the Unisa College of Human Science Ethics Committee. Ethics approval is granted for three years.

The ***High-Risk application was reviewed*** by College of Human Sciences Research Ethics Committee, on **November 2020** in compliance with the Unisa Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment.

The proposed research may now commence with the provisions that:

1. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.
2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the College Ethics Review Committee.
3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the

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PO Box 392 UNISA 0003 South Africa
Telephone: +27 12 429 3111 Facsimile: +27 12 429 4150
www.unisa.ac.za

confidentiality of the data, should be reported to the Committee in writing, accompanied by a progress report.

5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.
6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data require additional ethics clearance.
7. No fieldwork activities may continue after the expiry date **(31 October 2024).** Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.

Note:

The reference number - **44439121_CREC_CHS_ 2020** *should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.*

Yours Sincerely,

Signature :

Dr. K.J. Malesa
CHS Ethics Chairperson
Email: maleskj@unisa.ac.za
Tel: (012) 429 4780

Signature :PP

Prof K. Masemola
Executive Dean : CHS
E-mail: masemk@unisa.ac.za
Tel: (012) 429 2298

University of South Africa
Preller Street, Muckleneuk Ridge, City of Tshwane
PO Box 392 UNISA 0003 South Africa
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ANNEXURE B: Request for permission to conduct the study at Sekhukhune District health care facilities: Limpopo Province

PO Box 1115
APEL
0739
06 April 2020

Head of Department
Department of Health
POLOKWANE
0700

Sir/Madam

REQUEST TO CONDUCT STUDY

I am Maesela Phogole Crawford a research student pursuing the philosophy of doctorate in Public Health at the University of South Africa (UNISA) and currently employed by the Office of Health Standard Compliance (OHSC) as Deputy Director for the Complaints Assessment Unit. My student number is 44439121.

I hereby request to conduct a study in Limpopo Province specifically in seven Sekhukhune District Hospitals. The title of my study is **THE QUALITY OF RECORDKEEPING DURING INTRAPARTUM CARE IN LIMPOPO PROVINCE: A MIXED METHOD ANALYSIS.**

The aim of this study is to explore recordkeeping of the maternity case records during intrapartum care will be to raise the consciousness related to the completion of maternity case records, perception and experience of midwives and medical practitioners working in maternity healthcare services in Limpopo Province.

My supervisor is Professor Johanna Mathibe-Neke and her contacts details are (012) 429 6443 or email jmathibn@unisa.ac.za.

Your positive response will be highly appreciated.
Yours faithfully

Maesela Phogole Crawford
Student No: 44439121
0647623560/0129427845

ANNEXURE C: Permission granted to conduct the study in Limpopo Province

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

Department of Health

Ref : LP-2020-09-011
Enquires : Ms P N Motimele
Tel : 015-293 6028
Email : Kurhula.Hlomane@dhsd.limpopo.gov.za

Phogole Crawford Maesela

PERMISSION TO CONDUCT RESEARCH IN DEPARTMENTAL FACILITIES

Your Study Topic as indicated below;
The Quality of recordkeeping during intrapartum care in Sekhukhune District: Limpopo Province.

1. Permission to conduct research study as per your research proposal is hereby Granted.
2. Kindly note the following:
    a. Present this letter of permission to the institution supervisor/s a week before the study is conducted.
    b. In the course of your study, there should be no action that disrupts the routine services, or incur any cost on the Department.
    c. After completion of study, it is mandatory that the findings should be submitted to the Department to serve as a resource.
    d. The researcher should be prepared to assist in the interpretation and implementation of the study recommendation where possible.
    e. The approval is only valid for a 1-year period.
    f. If the proposal has been amended, a new approval should be sought from the Department of Health
    g. Kindly note that, the Department can withdraw the approval at any time.

    Your cooperation will be highly appreciated

Dr Ramalivhana NJ — Date: 02/02/2021

ANNEXURE D: Checklist for quantitative data collection

1 Is the standard record used (Maternity Case Record) in the Hospital?	Yes	No

2 FOR ADMISSION

Is the following information documented at labour initial assessment of the maternity case records?

2.1 Date, time of assessment	Yes	No
2.2 The name of the healthcare worker who assessed the mother	Yes	No
2.3 Date and time of onset of labour, rupture of membrane and bleeding	Yes	No
2.4 Immediate vital signs recorded: Medial Upper Arm Circumference (MUAC), Body Mass Index (BMI), Height, respiration rate and oxygen saturation	Yes	No
2.5 Results: (Haemoglobin (HB), Rhesus factor, Syphilis, Human Immunodeficiency Virus (HIV) and Tuberculosis (TB)	Yes	No
2.6 Problems related to pregnancy are recorded	Yes	No
2.7 General examination of the mother: including vitals Cardiovascular System (Pulse rate), urinalysis, medial upper arm circumference)	Yes	No

3 ABDOMINAL EXAMINATION

Is the following information recorded in the correct space?

3.1 Fundal Height (SFH)	Yes	No
3.2 Lie	Yes	No
3.3 Presentation	Yes	No
3.4 Gestational age	Yes	No
3.5 Level of the head above the brim	Yes	No
3.6 The contractions	Yes	No
3.7 Foetal Heart rate	Yes	No
3.8 Foetal movements	Yes	No

4 VAGINAL EXAMINATION

Is the following information completed correctly in the maternity case record.

4.1 Application of the cervix	Yes	No
4.2 Moulding observed	Yes	No
4.3 Caput observed	Yes	No
4.4 Colour of liquor	Yes	No
4.5 Pelvic assessment	Yes	No

5 PHASES OF LABOUR

Is maternity case record is documented fully during intrapartum care?

5.1 Phase/stage of labour	Yes	No
5.2 Vital signs done, respiration rate and oxygen saturation done according to the phase of labour	Yes	No
5.3 Risk factors (Maternal. Foetal and labour and danger signs)	Yes	No
5.4 Maternal care plan	Yes	No
5.5 Foetal care plan	Yes	No
5.6 Diagnosis of labour	Yes	No
5.7 Clinical notes following sequence throughout the Maternal care	Yes	No
5.8. Summary of labour (second, third and fourth stage of labour).	Yes	No
5.9 Early warning chart completed	Yes	No

6 MONITORING OF LABOUR USING PARTOGRAM/GRAPH.

Is the following information recorded during monitoring of labour using Partogram/graph?

6.1 Partogram completed during intrapartum phases of labour	Yes	No
6.2 Name, gravity, parity, gestation, spontaneous or induced labour, age, risk factors, time of rupture of membranes (ROM), pelvis, and duration of labour	Yes	No
6.3 Type of labour	Yes	No
6.4 Duration of labour	Yes	No
6.5 Foetal condition	Yes	No
6.6 Deceleration	Yes	No
6.7 Progress of labour (Cervical dilatation, cervical length)	Yes	No
6.8 Contractions	Yes	No
6.9 Maternal condition	Yes	No
6.10 Management/ medication Intravenous fluid	Yes	No
6.11 Pain relief	Yes	No
6.12 Signature and the rank of the health care provider	Yes	No
6.13 Clinical notes completed by the medical practitioner	Yes	No

ANNEXURE E: Consent form for focus group discussion

I, _____ (participant name and surname), confirm that the researcher asking for my consent to take part in this research. The researcher has told me about the nature, procedure, potential benefits and anticipated inconvenience of participation.

I have perused and consented to participate in the focus group discussion of the study as explained on the Information page. I was given enough opportunity to ask questions and am prepared to participate in the study without coercion or under compulsion.

I understand that my participation is voluntary and that I am free to withdraw at any time without penalty. Moreover, I am aware that the findings of this study will be processed into a research report, journal publications and/or conference proceedings. The shared confidentiality will be emphasised be assured as the participants will exchange information during focus group discussions. I agree with the recording of the focus group discussion.

I have received a signed copy of the informed consent agreement.

Participant's name and surname _____ (print name)
Participant's signature _____ Date
Researcher's name and surname _____ (print name)
Researcher's signature _____ Date

ANNEXURE F: Consent for in-depth interview

I, _____ (participant name), confirm that the person asking my consent to take part in this research has told me about the nature, procedure, potential benefits and anticipated inconvenience of participation.

I have read (or had explained to me) and understood the study as explained in the information sheet.

I have had sufficient chance to ask questions and am prepared to participate in the study.

I understand that my participation is voluntary and that I am free to withdraw at any time without penalty (if applicable).

I am aware that the findings of this study will be processed into a research report, journal publications and/or conference proceedings, but that my participation will be kept confidential unless otherwise specified.

I agree to the recording of the focus group discussion or in-depth interview.

I have received a signed copy of the informed consent agreement.

Participant's name and surname _____ (print name)
Participant's signature _____ Date
Researcher's name and surname _____ (print name)
Researcher's signature _____ Date

ANNEXURE G: Information guide for focus group discussions

TITLE: THE QUALITY OF RECORDKEEPING DURING INTRAPARTUM CARE IN LIMPOPO PROVINCE: A MIXED METHOD ANALYSIS

Dear Participant

My name is Phogole Crawford Maesela and I am doing research under the supervision of Professor Johanna Mathibe-Neke. Professor Mathibe-Neke is Professor in the College of Human Sciences, Department of health studies. My study is towards achieving Doctor of Philosophy in Public Health at the University of South Africa. You are therefore invited to participate in a study entitled: “The quality of recordkeeping in intrapartum care in Limpopo Province.

WHAT IS THE PURPOSE OF THE STUDY?

The purpose of this study is to explore recordkeeping in maternity case records and to develop strategies to enhance the quality of recordkeeping during intrapartum care in Limpopo Province.

DID THE STUDY RECEIVE THE RESEARCH ETHICAL CLEARANCE?

This study received an approval from the Research Ethics Review Committee of the University of South Africa. A copy of the approval letter can be obtained from the researcher to verify the veracity of the study.

WHY ARE YOU INVITED TO PARTICIPATE IN THE STUDY?

You are chosen to participate in this study because you are the midwife working in this hospital and midwives will be participating in the focus group as all midwives who consented to participate will participate in the study.

WHAT IS THE NATURE OF MY PARTICIPATION IN THIS STUDY?

The study involves semi-structured interviews. Questions will be asked to determine and describe the perception of midwives regarding recordkeeping in maternity healthcare services.

WILL THE INFORMATION THAT I CONVEY TO THE RESEARCHER AND MY IDENTITY BE KEPT CONFIDENTIAL?

You have the right to remain anonymous and maintain that your name or designation is not recorded anywhere and that no one, apart from the researcher will know about your involvement in this research. Your name will not be recorded anywhere and no one will be able to connect you to the answers you give. Your answers will be given a code number or be given a false name and you will be referred by code the false name to in this way in the data, any publications, or other research reporting methods such as conference proceedings.

IS THERE ANY NEGATIVE OUTCOME FOR ME IF I PARTICIPATE IN THE RESEARCH PROJECT?

It is not anticipated that you can receive any negative sanctions to participate in this study but if some questions feel personal or uncomfortable, you are not obliged to answer.

WILL THE PARTICIPANT BE REIMBURSED/PAID OR GIVEN ANY INCENTIVES FOR PARTICIPATING IN THIS STUDY?

There will be no reimbursement/payment or any incentives to be given to the participants in this study.

WHAT ARE THE BENEFITS OF TAKING PART IN THIS STUDY?

There are no direct benefits, but the information collected will improve recordkeeping in Limpopo Province in general and Sekhukhune District in particular.

CAN THE PARTICIPANT WITHDRAW FROM THIS STUDY AFTER HAVING AGREED TO PARTICIPATE?

Participation in this study is voluntary and under no circumstance are you forced to participate. If you decide to participate in this study, you will be given an information page to keep and a consent form to complete and sign. You are not coerced to participate in this study and you can withdraw at any time or stage without the obligation of giving a reason to do so.

HOW WILL I BE INFORMED OF THE FINDINGS/RESULTS OF THE RESEARCH?

If you are interested in the final research results/findings, you may contact the researcher at the following details +27647623560 or 4443912@mylife.unisa.ac.za or phogolemaesela@gmail.com.

Should you have concerns about the way in which the research was conducted, you may contact Prof Johanna Mathibe-Neke at 012 429 6443 or via email: mathijm@unisa.ac.za. Contact the research ethics chairperson of the higher degree ethics committee of UNISA at HSREC@unisa.ac.za.

Thank you for taking your time to read this information page and for participating in this study.

Warm regards

Phogole Crawford Maesela
44439121
+27647623560

ANNEXURE H: Information guide for in-depth interviews

TITLE: THE QUALITY OF RECORDKEEPING DURING INTRAPARTUM CARE IN LIMPOPO PROVINCE: A MIXED METHOD ANALYSIS

Dear Participant

My name is Phogole Crawford Maesela and I am doing research under the supervision of Professor Johanna Mathibe-Neke. Professor Mathibe-Neke is Professor in the College of Human Sciences, Department of health studies. My study is towards achieving Doctor of Philosophy in Public Health at the University of South Africa. You are therefore invited to participate in a study entitled: “The quality of recordkeeping in intrapartum care in Limpopo Province

WHAT IS THE PURPOSE OF THE STUDY?

The purpose of this study is to explore recordkeeping in maternity case records and to develop strategies to enhance the quality of recordkeeping during intrapartum care in Limpopo Province.

DID THE STUDY RECEIVE THE RESEARCH ETHICAL CLEARANCE?

This study received an approval from the Research Ethics Review Committee of the University of South Africa. A copy of the approval letter can be obtained from the researcher to verify the veracity of the study.

WHY ARE YOU INVITED TO PARTICIPATE IN THE STUDY?

You are chosen to participate in this study because you are the medical practitioners working in this hospital. All medical practitioners who consented to participate and will be allowed to participate in the in depth interviews as all midwives will participate of this study.

WHAT IS THE NATURE OF MY PARTICIPATION IN THIS STUDY?

The study involves semi-structured interviews. Questions will be asked to determine and describe the perception of midwives regarding recordkeeping in maternity healthcare services.

WILL THE INFORMATION THAT I CONVEY TO THE RESEARCHER AND MY IDENTITY BE KEPT CONFIDENTIAL?

You have the right to remain anonymous and maintain that your name or designation is not recorded anywhere and that no one, apart from the researcher will know about your involvement in this research. Your name will not be recorded anywhere and no one will be able to connect you to the answers you give. Your answers will be given a code number or be given a false name and you will be referred by code the false name to in this way in the data, any publications, or other research reporting methods such as conference proceedings.

IS THERE ANY NEGATIVE OUTCOME TO ME IF I PARTICIPATE IN THE RESEARCH PROJECT?

It is not anticipated that you can receive any negative sanctions to participate in this study but if some questions feel personal or uncomfortable, you are not obliged to answer.

WILL THE PARTICIPANT BE REIMBURSED/PAID OR GIVEN ANY INCENTIVES FOR PARTICIPATING IN THIS STUDY?

There will be no reimbursement/payment or any incentives to be given to the participants in this study.

WHAT ARE THE BENEFITS OF TAKING PART IN THIS STUDY?

There are no direct benefits, but the information collected will improve recordkeeping in Limpopo Province in general and Sekhukhune District in particular.

CAN THE PARTICIPANT WITHDRAW FROM THIS STUDY AFTER HAVING AGREED TO PARTICIPATE?

Participation in this study is voluntary and under no circumstance are you forced to consent to the participation. If you decide to participate in this study, you will be given an information page to keep and consent form to complete and sign. You are not coerced to participate in this study and you can withdraw at any time or stage without obligation of giving the reason to do so.

HOW WILL I BE INFORMED OF THE FINDINGS/RESULTS OF THE RESEARCH?

If you are interested in the final research results/findings, you may contact the researcher on the following details +27647623560 or 4443912@mylife.unisa.ac.za or phogolemaesela@gmail.com.

Should you have concerns about the way in which the research was conducted, you may contact Prof Johanna Mathibe-Neke on 012 429 6443 or via email on mathijm@unisa.ac.za. Contact the research ethics chairperson of the higher degree ethics committee of UNISA at HSREC@unisa.ac.za.

Thank you for taking time to read this information page and for participating in this study.

Warm regards

Phogole Crawford Maesela
44439121
+27647623560
Participant's name and surname _____ (print name)
Participant's signature _____ Date
Researcher's name and surname _____ (print name)
Researcher's signature _____ Date

ANNEXURE I: Shared Confidentiality binding form for focus group discussion

Dear Participant

You are kindly invited to participate in the study mentioned below. You are assured that any information you provide to the researcher as a participant will be kept private and confidential. However, it must be noted that the principles of shared confidentiality will be applied as Participants will exchange the information during focus group discussions. Personal information will be protected at all costs and will not be divulged. By signing this document, you will be authorising the researcher to involve you, as a participant for a research study, ensuring shared confidentiality the of information collected.

Title of the study

The quality of recordkeeping during intrapartum care in Limpopo Province: A mixed method analysis.

The purpose of the research

The purpose of this study is to explore recordkeeping in maternity case records and to develop strategies to enhance the quality of recordkeeping during intrapartum care in Limpopo Province.

Regards

Participant's name and surname _____
Participant's signature _____
Researcher's name and surname _____
Researcher's signature _____
Date _____

ANNEXURE J: Confidentiality binding form for in-depth interview

Dear Participant

You are kindly invited to participate in the study mentioned below. You are assured that any information you provide to the researcher as a participant will be kept private and confidential. Participants' personal information will be protected by all costs and will not be divulged. By signing this document, you will be authorising the researcher to involve you, as a participant for a research study, ensuring the confidentiality of information collected.

Title of the study

The quality of recordkeeping during intrapartum care in Limpopo Province: A mixed method analysis.

The purpose of the research

The purpose of this study is to explore recordkeeping in maternity case records and to develop strategies to enhance the quality of recordkeeping during intrapartum care in Limpopo Province.

Regards

Participant's name and surname _____
Participant's signature _____
Researcher's name and surname _____
Researcher's signature _____
Date _____

ANNEXURE K: Interview guide focus group discussion

My name is Phogole Crawford Maesela and I am doing research under the supervision of Professor Johanna Mathibe-Neke. Professor Mathibe-Neke is the Professor in College of Human Sciences, Department of health studies. My study is towards achieving Doctor of Philosophy in Public Health at the University of South Africa. You are therefore invited to participate in a study entitled: “The quality of recordkeeping in intrapartum care in Limpopo Province: A mixed methods analysis”.

Consent

The researcher will like the participant to take few minutes to read the information attached on the consent form before the decision is made to participate voluntarily.

Ground rules during the interviews

The following rules should be adhered to during the interview:

- Indicate to the participants that you Intend to learn from them as the experts when coming to the issue related to quality recordkeeping of maternity case records during intrapartum care.
- No answer is correct or incorrect to the questions asked just the perceptions encountered during recordkeeping on maternity case records.
- All the comments are equally important.
- Do not wait for the researcher to point you as this is the discussion, if the participant has got something to say, just say it.
- The cell phones and any electronic devices that can cause distraction should be put on silence and leave the room silently in case you need to take a call.
- Lastly, ensure shared confidentiality amongst the participants.
- Minimise the movement during the focus group interviews.
- Everyone should speak audibly and clearly during the discussion.
- Request the participants to add other ground rule to enhance maximum participation.
- Let the participants ask questions before the interview and answer them objectively.

GUIDING QUESTIONS

1 In your own words, share with me your involvement regarding recording in the maternity case record?
2 Please share your knowledge regarding policies, guidelines or regulations regarding recordkeeping that you know of or have access to?
3 Kindly explain the extend of challenges/barriers of recordkeeping of maternity case record during intrapartum care?
4 According to your opinion, what are the enablers of recordkeeping in the maternity case record during intrapartum care?
5 According to your opinion, what is the significance of recordkeeping in the maternity case record during intrapartum care?
6 Any comment that the participants would like to share with the researcher related of recordkeeping of maternity case record during intrapartum care.

Thank you very much for participating in this discussion.

Yours sincerely

Phogole Crawford Maesela

ANNEXURE L: Interview guide for In-depth interviews

My name is Phogole Crawford Maesela and I am doing research under the supervision of Professor Johanna Mathibe-Neke. Professor Johanna Mathibe-Neke is the Professor in College of Human Sciences, Department of Health Studies. My study is towards achieving Doctor of Philosophy in Public Health at the University of South Africa (UNISA). You are therefore invited to participate in a study entitled: “The quality of recordkeeping in intrapartum care in Limpopo Province: A mixed methods analysis”.

Consent

The researcher would like to request the participant to take few minutes to read the information attached on the consent form before the decision is made to participate.

GUIDING QUESTIONS

1. What is your involvement in recordkeeping of the maternity case records during intrapartum care?
2. Please tell me your experience on the completion of the maternity case records
3. Please share your knowledge regarding the policies, guidelines or regulations regarding recordkeeping that you know of or have access to?
4. According to your opinion, what is the significance of recordkeeping in the maternity case record during intrapartum care?
5. Are there any barriers and challenges to the implementation of recordkeeping in maternity case record during the pre-operative care details?
6. What do you think will sustain of recordkeeping of the maternity case record during intrapartum care?
7. Any other information you would like to add regarding this discussion?

Thank you very much for giving us this information.

Yours sincerely

Phogole Crawford Maesela

ANNEXURE M: Letter from transcriptionist and coder

Enquiries: Dr Peter Sethole Contact
Details: 0720702660
Email: petersethole@webmail.co.za

To: University of South Africa Supervisor:
Professor JM Mathibe-Neke
Contact details: jmathibn@unisa.ac.za or (012) 429 6443

Student: Mr Phogole Maesela
Student Number: 44439121
Student Email address: 4439121@mylife.unisa ac.za
Telephone number: 0647623560

Dear Sir or Madam

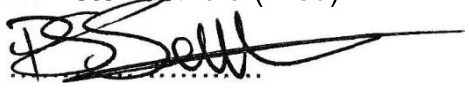
I am writing this report to confirm that I supported the investigator (Mr Phogole Maesela) with transcribing the qualitative data analysis. The intention of the qualitative data analysis was to provide an account of the spoken words by midwives and medical practitioners for the research.

Research goal

The research's goal is to evaluate recordkeeping in maternity case records and to formulate strategies to improve the standard of recordkeeping during intrapartum care in the province of Limpopo.

Yours sincerely

Dr Peter Sethole (D.ed)



Signature

ANNEXURE N: Expert letter of invitation

2344 Kenneth Street
Pretoria West View
Andeon Extension 39
Pretoria
0001

Reference
Hospital Managers
Maternity Practice Managers,
Academic Managers
Quality Assurance, Managers
Mother and Child health Manager
Hospital Administrator

INVITATION TO PARTICIPATE IN A STUDY ON EVALUATING THE SYSTEMS FOR THE QUALITY OF RECORDKEEPING DURING INTRAPARTUM CARE

I, Phogole Crawford Maesela, a PhD student (Student number 44439121) with the University of South Africa (UNISA) invite you to take part in the study in your capacity as a Hospital, Maternity Practice, Academic Quality Assurance, mother and child health Managers and Hospital Administrators.

The purpose of this study is to explore recordkeeping in maternity case records and to develop strategies to enhance the quality of recordkeeping during intrapartum care in Limpopo Province.

As an expert, your participation involves the validation of the proposed strategies to improve recordkeeping during intrapartum care. The strategies were developed based on literature and findings from quantitative and qualitative data collected from the review of the maternity case focus group discussion meeting and in-depth interviews with the midwives and medical practitioners.

As an expert, you will be requested to attend a virtual meeting through the Microsoft teams, where the researcher is expected to present the research findings and discuss

the proposed strategies with you. The exact time and date will be set between you and the researcher. The time for the meeting will depend on the deliberations between the researcher and the experts. Post the meeting between the researcher and the experts, a questionnaire comprising of the proposed formulated strategies to improve recordkeeping will be sent to you for completion. The purpose of completing these questionnaires is to validate the proposed formulated strategies to ensure they are specific, measurable, achievable, relevant and time-bound. The validation process could involve two or more rounds of validation. Therefore, you could be requested to complete the questionnaire more than once.

Participation as an expert is voluntary and therefore, no remuneration will be given for participating in the study. There are no known or unknown risk associated with this study and no risks are anticipated as you participate. you are not coerced to participate in this study and as an expert, you can withdraw from the study at any time when you do not feel comfortable.

The knowledge gained from the study would assist the health care facilities in Limpopo Province and in other districts with a similar context to improve recordkeeping during intrapartum care. Your participation in this research will be highly appreciated as your contributions will go a long way in improving the quality of recordkeeping during intrapartum care for decision-making.

Yours sincerely

PC Maesela Signature _____

Public Health PHD Student (4443912)

University of South Africa (UNISA)

ANNEXURE O: Expert consent form

What is the intention of the research?

The research is conducted by Phogole Crawford Maesela as part of the study to achieve a PHD in Public Health at the University of South Africa (UNISA). Therefore, you are invited to take part in this study in your personal capacity as the gynaecologist, medical practitioner, midwifery lecturer, quality assurance manager, mother and child health manager, midwife, advance midwife and operation manager for the maternity unit. The purpose of this study is to explore recordkeeping in maternity case records and to develop strategies to enhance the quality of recordkeeping during intrapartum care in Limpopo Province. The research is aimed at developing strategies to enhance the quality of recordkeeping in the maternity case records by midwives and medical practitioners during intrapartum care.

The research has collected quantitative data using a checklist for Document analysis in the maternity case records and also used non-participant unstructured observations to establish the availability of policies in the maternity unit relating to recordkeeping and evaluate the recordkeeping of maternity case records. The qualitative data was collected from the midwives and medical practitioners to determine the perception of midwives and the experience of medical practitioners regarding recordkeeping in the maternity case records. Data has been analysed and integrated to develop the final findings.

What is the expectation if I agree to participate in this study?

As a participant, the researcher will request you to attend virtual teams meeting where the researcher will present the findings of the study, followed by the completion of a survey form consisting of proposed strategies to improve reproductive health data management. The purpose of completing the questionnaire is to validate the developed strategies to ensure they are practical, applicable and valid. The validation process will involve one or two sessions (rounds) of validation with the experts. You will be expected to complete the questionnaire more than once. The strategies were developed based on the literature reviewed and findings from quantitative and qualitative data collected and analysed through document analysis, non-participant unstructured observation, midwives and medical practitioners from health care facilities in Limpopo Province.

What are the benefits of this research?

This research does not have any monetary benefit to you as a participant. However, your views, opinions, ideas and comments on the developed strategies will contribute to the researcher in generating final developed strategies that would be acceptable and valid, relevant for improving the quality of recordkeeping during intrapartum care.

What are the risks of this research?

This research process anticipates no predictable risks to you. You are not obliged to answer any question that makes you feel uncomfortable. However, should you feel psychologically affected by this procedure, kindly feel free to talk to me at any time.

Can I withdraw from this study even after having agreed to participate?

Participation in this study is voluntary and under no circumstance are you coerced to consent to the participation. If you decide to withdraw from the participation, there are no penalties all information provided will be treated in a confidential manner and your name will not be reflected anywhere.

What to do if I have questions as the participant

Should you require any further information or want to contact the researcher about any aspect of this study, please contact Phogole Crawford Maesela at +27647623560 or 4443912@mylife.unisa.ac.za or phogolemaesela@gmail.com.

If the participant has concerns about the way in which the validation process has been conducted, you may contact Prof Johanna Mathibe-Neke on 0124296443 or via email on mathijm@unisa.ac.za. Contact the research ethics chairperson of the research ethics committee of UNISA at HSREC@unisa.ac.za if you have any ethical concerns.

Declaration by the participant

_____ voluntarily consent to participate in the research mentioned above. The background, purpose, risks and benefits of the study have been explained to me. I also understand that I may withdraw from the study at any time without penalties. I know that my participation in the study will be acknowledged, although my identity will be withheld.

_____ _____

Participants' signature Date

_____ _____

Witness Date

Declaration by investigator I, Phogole Crawford Maesela, declare that: I explained the information in this document. I encouraged the participants to ask questions and allocated enough/adequate time to respond to the raised questions. I am also satisfied that the participant understands all aspects of the research, as discussed above. No interpreter was used as all participants understand English as the medium of communication.

_____ _____

Signature of investigator Date

ANNEXURE P: Expert questionnaire

STUDY TITLE: QUALITY RECORDKEEPING DURING INTRAPARTUM CARE IN LIMPOPO PROVINCE: A MIXED METHODS ANALYSIS

Dear Expert

A guide to answering the questions

1. Read the statement or question carefully to ensure you understand.
2. Kindly answer demographic questions and other questions about your level of agreement, type X in the column you selected.
3. Write your comments about each strategy in the spaces provided below.

Section A: General information			
Demographic information			
No	**Question**	**Option**	**Response**
1	What is your gender?	Male	1
		Female	2
2	Which year category do you belong?	20-29	1
		30-39	2
		40-49	3
		50-59	4
		60-69	5
		70+	6
3	What is the highest educational qualification?	Doctoral Degree	
		Master's Degree	
		Honours Degree	
		Bachelor Degree	
		National Diploma	
		Higher certificate	
4	Please indicate your specific field of work		
5	Number of years in your field of work		

PROPOSED STRATEGIES TO IMPROVE RECORDKEEPING DURING INTRAPARTUM CARE

1. Indicate your level of agreement or disagreement with the following statements below by inserting an X in the column labelled either 1, 2, 3 or 4 using the indicated Likert scale.

SECTION B: The questions in this section intend to determine your level of agreement or disagreement with the proposed strategies for improving recordkeeping during intrapartum care

Major area	Interventions	Strongly agree 4	Agree 3	Disagree 2	Strongly Disagree 1
Training of the midwives and medical practitioners on recordkeeping	Organize the training sessions (orientation, symposium, formal lecture training, workshop, demonstrations, virtual orientation, simulations).				
	Conduct nursing and medical training needs assessment.				
	Mobilize training resources within the hospitals through the identification of appropriate training facilitators.				
	Develop and follow the unit in-service training for recordkeeping.				
Availability of the updated recordkeeping guidelines	Develop internal communication mechanisms such as emails, WhatsApp groups				
	File the guidelines and make them to be within reach				
	Place the summarised guidelines in the strategic positions in the units				
	Use the employees as quality assurance and recordkeeping champions to avail the recordkeeping guidelines.				
	Order or request enough maternity case records.				

Major area	Interventions	Strongly agree 4	Agree 3	Disagree 2	Strongly Disagree 1
Monitoring and evaluation of recordkeeping procedures	Develop and follow an SOP for recordkeeping.				
	Develop the tools (checklist and questionnaire)for recordkeeping.				
	Give feedback to the midwives and medical practitioners on recordkeeping post clinical record audit in the intrapartum unit.				
	Manage recordkeeping through the performance management development system (PMDS) of the midwives and medical practitioners.				
	Discuss the improvement plan on the challenges of the recordkeeping with the midwives and medical practitioners.				
	Reward midwives and medical practitioners the for good clinical recordkeeping practices implementation.				
	Correct and support midwives and medical practitioners for poor implementation of recordkeeping.				

Major area	Interventions	Strongly agree 4	Agree 3	Disagree 2	Strongly Disagree 1
Appointment of staff in line with the determining staffing needs	Conduct personnel training needs assessment and skill audit to determine the midwives and medical practitioners.				
	Adhere to recruitment, selection of midwives, advanced midwives and experienced medical practitioners are prioritised.				
	Ensure that health care provider-to-patient ratios are consistent with the approved staffing norms.				
	Ensure that maternity managers (Operational managers, Medical HODs) appointed to management positions have the required qualifications and experience in the sector.				
	All managers have gone through leadership training including record auditing.				
Management buy-in and support	Develop a plan to address the challenges of low morale, burnout and absenteeism faced by midwives and medical practitioners.				
	Mentor and coach by senior managers to junior medical practitioners and community service nurses.				
	Create a conducive work environment for midwives and medical practitioners to implement recordkeeping.				

Major area	Interventions	Strongly agree 4	Agree 3	Disagree 2	Strongly Disagree 1
	Share the general impact of recordkeeping with midwives and medical practitioners.				
	Benchmark with institutions practicing good recordkeeping.				
	Participate in the quality assurance programs. .				
	Motivate the staff including midwives and medical practitioners.				
Proper time management amongst midwives and medical practitioners	Customise the work to be in line with the process flow.				
	Plan and execute of daily work and factor in the unexpected.				
	Delegate the junior midwives and medication practitioners to activities related to recordkeeping.				
	Update the records of every action taken.				
	Manage the patient waiting time and deal with the deviation.				

Major area	Interventions	Strongly agree 4	Agree 3	Disagree 2	Strongly Disagree 1
Apply the standardization and archival strategies for easy retrieval	Prepare enough space for storage of the maternity case records.				
	Develop effective record registration/strategy for retrieval purposes.				
	Develop the strictest access to the record rooms with the hospital.				
	Maintain the privacy and shared confidentiality of the maternity case records be limited relevant persons				
	Develop the SOP for Filing and retrieving and archiving of the maternity case records.				
Supervision of Midwives and medical practitioners on recordkeeping	Develop the orientation and induction to junior medical practitioners, medical interns and midwives doing community nursing services on the records used in the maternity unit.				
	Develop the reporting supervision plan between the Junior medical practitioners and midwives and their supervisors reporting by supervisors.				
	Provide the feedback by the supervisor to the supervisee on the recordkeeping expertise, skills, knowledge and experience acquired.				

Major area	Interventions	Strongly agree 4	Agree 3	Disagree 2	Strongly Disagree 1
Peer review	Develop an accurate and comprehensive peer review assessment criteria.				
	Motivate midwives and doctors to do and learn from the peer review process.				
	Provide training to the peers on methods to be followed during recordkeeping peer review.				
	Give constructive feedback and develop an improvement plan.				
	Align peer review to the purpose, and objectives of the recordkeeping of the unit.				
	Allow adequate time for benchmarks on peer review on recommendations before implementation.				
Clinical record audit	Develop the record audit tool and schedule for intrapartum care.				
	Ensure that all the clinical information is captured in the maternity case records.				
	Ensure that notes in the maternity case records are legible, logical and completed without delay.				

Major area	Interventions	Strongly agree 4	Agree 3	Disagree 2	Strongly Disagree 1
	Ensure that clinical record audits are aligned with the national guideline.				
	Allow doctors and midwives to attend monthly clinical audit meetings.				
	Develop quality improvement and sustain improvement for record audit.				
	Summarize or feedback to the midwives and medical practitioners on the results of the clinical record audit.				

THANK YOU FOR PARTICIPATING IN THIS STUDY

Comments

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COMPILED BY RESEARCHER: PHOGOLE MAESELA

44439121

ANNEXURE Q: Letter from statistician

Date: 01 June 2022

Name of the Statistician: Mr C Collen

College: Human Studies, Health Studies

TITLE OF THE STUDY: THE QUALITY OF RECORDKEEPING DURING INTRAPARTUM CARE IN LIMPOPO PROVINCE: A MIXED METHODS ANALYSIS

Dear Professor JM Mathibe-Neke

I Collen Makomane confirm that assisted the student Phogole Crawford Maesela, 44439121 to analyse his thesis quantitatively and descriptively as a qualified and professional statistician. The data collected using a structured checklist was analysed, described and summarised by changing and consolidating data collected into the visual graphs.

The method of analysis allowed the investigator to organize the information in the manner in which it has meaning. The presentation of descriptive statistics and the information were grouped in variables and described in words.

The data were summarized using STATA Statistical Package for the Social Science (SPSS) version 23. The analysis allowed the researcher to group the variables for interpretation from the checklist

Email: cmakomane@gmail.com

Signature 

Date: 01 June 2022

ANNEXURE R: Letter from language editor report

TO/FOR: Mr Phogole Crawford Maesela
15 September 2023

Dear Sir/Madam

SUBJECT: Language services

This is to certify that the PhD Thesis entitled: *The quality of recordkeeping during intrapartum care in Limpopo Province* by Phogole Crawford Maesela has been copy-edited, and that unless further tampered with, I am content with the quality of the thesis in terms of its adherence to editorial principles of cohesion, clarity of thought and precision.

Kind regards

Mmagonkahloleng Makua-Ramogayana

ANNEXURE S: Letter from technical editor report

158 Mount Augusta Drive
Midlands
MIDSTREAM
22 November 2023

e-mail: piet.rinacoetzer@gmail.com

TO WHOM IT MAY CONCERN

STUDENT: PHOGOLE CRAWFORD MAESELA
STUDENT NUMBER: 44439121

DOCTOR OF PHILOSOPHY

TITLE: THE QUALITY OF RECORDKEEPING DURING INTRAPARTUM CARE IN LIMPOPO PROVINCE: A MIXED METHOD ANALYSIS

This is to certify that the above thesis has been technically edited according to Tutorial Letter MNUALLL/301/0/2023 of the Department of Health Studies, Unisa.

Mrs EC Coetzer

ANNEXURE T: Originality Turnitin report

Phogole Crawford Maesela

FINAL TURNITIN REPORT ON QUALITY RECORDKEEPING

ORIGINALITY REPORT

28%	25%	9%	11%
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