ASSESSMENT OF QUALITY OF MIDWIFERY CARE DURING LABOUR AT MATERNITY DEPARTMENTS OF INTERMEDIATE AND REFERRAL HOSPITAL IN NAMIBIA

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ABSTRACT

Quality of midwifery care can be defined as care delivered by midwives, which is safe, effective, efficient, accessible, acceptable, patient-centred, equitable, and results in a positive pregnancy outcome. This research aims to assess the quality of midwifery care rendered during labour at the intermediate and referral hospital in Namibia. In Namibia, the Ministry of Health and Social Services (MoHSS) in particular, has come up with many interventions aiming to reduce maternal and neonatal mortality and morbidity. Even though these programmes were implemented, the programme reviews conducted by MoHSS in 2016 identified some gaps in the quality of midwifery care and recommended the conduct of a second nationwide Emergency Obstetric and Neonatal Care (EmONC) assessment.

The main objectives of this study therefore were to describe the demographic profile, conclude the standard of midwifery care rendered during the first, second, third and fourth stages of labour by reviewing maternity records and analysing the standard of midwifery care rendered during the first, second, third and fourth stages of labour of the women who gave birth at intermediate and referral hospital from 01 January to 31 March 2018.

The study was a retrospective study with a descriptive quantitative design conducted on 653 maternity records at the above mentioned hospitals. The findings revealed the age group from twenty to thirty-five to be the highest age group that gave birth i.e. (78.6%), while (10.7%) were adolescents and (10.7%) of the women aged above 36 years of age. This study indicated that (95%) of these women attended antenatal care. However, obstetric history indicates that the majority of the women who had delivered 391 (59.9 %), had two to four children, followed by those who gave birth for the first

time 197 (30.2 %), while the lowest were those who had five or more children 65 (10.0%).

Early opening of a partograph could lead to early identification of problems and plans for interventions. This study further shows that 402 (61.6%) partographs were mostly opened with women in the active phase of labour. Few partographs 33 (5.1%) were opened in the latent phase of labour. However, partographs that were opened, the study results revealed that not all were managed according to the WHO guidelines. Poor documentation of midwifery interventions and care was noted, suggesting poor midwifery care. Most of the deliveries 499 (76.4%) were normal vaginal deliveries, followed by 151 (23.1%) who had caesarean section deliveries. The rest had assisted deliveries with one breech delivery. According to the findings of this study it can be concluded that midwifery care rendered during labour at the studied hospitals was of substandard.

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ACRONYMS AND ABBREVIATIONS

AIDS: Acquired Immunodeficiency Syndrome

AMTSL: Active Management of Third Stage of Labour

ANC: Antenatal Care

BP: Blood Pressure

CS: Caesarean Section

DHS: Demographic and Health Survey

EBPs: Essential Birth Practices

ED: Executive Director

EmNOC: Emergency Obstetric and Neonatal Care

EU: European Union

FANC: Focused Antenatal Care

FHR: Foetal Heart Rate

HCPs: Health Care Professionals

HIV: Human Immunodeficiency Virus

ICM: International Confederation of Midwives

LMICs: Low and Middle Income Countries

MaNICare: Maternal and Neonatal Improved Care

MDG: Millennium Development Goal

MMR: Maternal Mortality Ratio

MNH: Maternal and Newborn Health

MoHSS: Ministry of Health and Social Services

MPNDR: Maternal, Perinatal and Neonatal Death Review

NMR: Neonatal Mortality Ration

NVD: Normal Vertex Delivery

QA: Quality Assurance

PARMaCM: Programme for Accelerated Reduction of Maternal and Child Mortality

PMTCT: Prevention of Mother to Child Transmission of HIV

PPH: Post-Partum Haemorrhage

SBA: Skilled Birth Attendant

SCC: Safe Childbirth Checklist

SDG: Sustainable Development Goals

SGA: Small for Gestational Age

SPSS: Statistical Package for Social Science

UREC: University of Namibia Research Ethics Committee

WHO: World Health Organization

WRA: White Ribbon Alliance

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DEDICATION

This thesis is dedicated to my mother **Justina Ndinelao Nghifikwa** for raising me to be the kind of person I am today. My heart just cannot thank you enough mom, for giving me such a strong foundation to grow and be the independent adult I am today. Thank you, mom, for always being there for me.

DECLARATION

I, Jonia Nghifikwa, hereby declare that this thesis titled “Assessment of quality of midwifery care during labour at maternity departments of intermediate and referral hospital in Namibia” is my own work and was written by me. This thesis has not been submitted in any degree or examination in any university.

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CHAPTER ONE

ORIENTATION OF THE STUDY

1.1 Introduction

This chapter provides an overview of quality midwifery of care and discusses the problems around quality of midwifery care nationally and globally. Furthermore, an overview of quality of midwifery care in Namibia is discussed. Finally, an outline of the entire thesis is provided.

1.2 Background

Maternal and neonatal mortality and morbidity have remained a public health challenge in developing countries, particularly in Namibia, despite efforts to improve access and use of maternal health care services universally. Many of the maternal and newborn deaths could be prevented by ensuring access to quality maternal health services, such as antenatal and postnatal care, and skilled attendance during child birth, including emergency obstetric care. Quality of midwifery care can be defined as care delivered by midwives, which is safe, effective, efficient, accessible, acceptable, patient-centred, and equitable and results in a positive outcome for women not only leads to improved outcomes, but also offers a good experience for women and their families (WHO, 2014a). However, care should also be provided by competent, respectful practitioners, who are not only able to carry out specific tasks, but who also have the knowledge to support their practice. It is essential for all midwives to be equipped with knowledge and skills to enable them to render quality of midwifery care during labour for further progress in reducing maternal and newborn deaths (International Confederation of Midwives, 2012).

However, Hulton, Mathews and Stones (2007) believe that poor quality of midwifery care does not just result in mortality, it contributes to acute and chronic clinical and psychological morbidity, with a lasting effect on mothers' and infants' physical and psychological health. According to Kim and Saada (2013); Tura, Fantahun, and Worku, (2013), there is a strong evidence that if births are attended by well-trained healthcare providers, women and neonates have a high chance of survival. Training and equipping all skilled birth attendants is the key indicator for achievement of Sustainable Development Goals (SDG 3) according to Tura, Fantahun & Worku, (2013).

A reduction in maternal and neonatal mortality needs overall improvements in quality of midwifery care rendered throughout labour. Therefore, WHO (2016b) developed universal standards to ensure that midwives are able to perform to agreed, universally accepted, evidence-based and professional standards. The establishment of standards for midwifery practice promotes good quality of midwifery care which, in turn, should help to reduce the high rates of maternal and neonatal morbidity and mortality which prevail in many countries, and particularly in developing countries (WHO, 2016b).

Globally and annually there are an estimated 139 million births and an estimated 289 000 women die during pregnancy, childbirth or after birth (WHO, 2014b). Poor quality of midwifery care is found to be major contributing factor for the fact that an estimated 2.6 million pregnant women have stillbirths, and 2.9 million infants die in the first month of life (Renfrew et al., 2014). Filby, McConville & Portela, (2016) identified barriers, e.g. the following three delays to accessing care from the perspective of childbearing women: delay in the decision to seek care, delay in arriving at a health facility and delay in the provision of adequate care at the facility.

The research presented by delegates from Nepal, Papua Guinea and Afghanistan at the convened session in 2013 by the WHO, International Confederation of Midwives (ICM) and White Ribbon Alliance (WRA), highlighted the shortcomings in the education, training, licensure and regulation of professionals, while also detailing the significant personal challenges who provide midwifery care face (Filby, McConville & Portela, 2016).

The World Health Organization (WHO, 2016b) indicates that the recurrent barriers to the provision of quality of midwifery care in low- and middle-income settings, could be classified as social, economic and professional. Additionally, midwives experiencing difficulties within any of these areas face significant barriers that can prevent them from providing high quality of midwifery care to women and newborns (WHO, 2016b).

Namibia being part of the sub-Saharan region, there are also concerns about quality of midwifery care as maternal and neonatal deaths persist even though more than (80%) of deliveries occur in public institutions and (81.4%) of deliveries are done by skilled birth attendants (Breton-Miller & Miller 2013; MoHSS, 2010). MoHSS implemented the Presidential Commission of Inquiry into Maternal and Neonatal Mortality. The Commission reports that there are several factors impending maternal and newborn health in the country. Furthermore, the commission noted that poor quality of midwifery care during labour was one of those factors that were identified (MoHSS, 2013).

According to the National Demographic Health Survey (NDHS) of 2013, Namibia's maternal mortality ratio is at 385/100,000 live births, a decrease from 449/100,000 live births in 2006-7, while neonatal mortality rate is 20 deaths per 1,000 live births which

is a decline from 24 per 1 000 live births (MoHSS, 2016). However, Namibia's roadmap targeted to achieve SDG three to reduce the maternal mortality ratio from 358 to 200 by 2018 and to reduce the neonatal mortality rate from 20/1000 in 2013 to 10/1000 by 2018 (MoHSS, 2016). In order to improve quality of midwifery care in Namibia, MoHSS in partnership with WHO and the European Union (EU), launched and implemented the road map programme for accelerating the reduction of maternal, neonatal morbidity and mortality (PARMaCM) from 2010 to 2014 (MoHSS, 2013). Even though this programme was implemented, the programme review conducted by MoHSS in 2016 identified some gaps in the quality of midwifery care and recommended the conduct of a second nationwide Emergency Obstetric and Neonatal Care (EmONC) assessment for benchmarking the status and informing planning and resource mobilisation for Maternal and New-born Health (MNH) programming (MoHSS, 2016).

A cross-sectional health facility survey covering (123) one hundred and twenty three health facilities (referral, intermediate and district hospitals, health centres and clinics) selected randomly was conducted between 5th September to 2nd October 2016 (MoHSS, 2016). The survey indicated the possible reasons identified for suboptimal availability of quality EmONC services included low caseload at HC and clinics, lack of essential EmONC medications and equipment, suboptimal functioning of blood transfusion services, low knowledge and skills of maternity care providers, lack of training in EmONC, and lack of clarity of some guidelines (MoHSS, 2016). Therefore, the assessment clearly indicates a need for policy changes and reorganisation of services to accelerate the reduction of maternal and newborn mortality by providing sustainable quality of maternal and newborn care services.

Furthermore, MoHSS (2018a) through its Quality Assurance (QA) division, initiated the Maternal and Neonatal Improved Care (MaNICare) quality improvement collaborative to improve quality care for maternal and neonatal health in the Khomas, Kunene, Kavango, Ohangwena, Omusati, Oshana, Oshikoto, Otjozondjupa and Zambezi regions. This collaborative is focusing on five indicators which are post-partum haemorrhage (PPH), severe pre-eclampsia/eclampsia, partograph, newborn death and perinatal death review management. This initiative is expected to run from July 2019 to January 2021 (MoHSS, 2018a).

1.3 Statement of the problem

According to the MoHSS (2016), report on maternal and newborn care, there is poor quality of midwifery care during labour in health facilities in Namibia. A study conducted by Shikwambi (2014) identified poor assessment of maternal wellbeing, progress of labour and poor record keeping of midwifery interventions and care, suggesting inadequate quality of midwifery care. According to the National Demographic Health Survey (NDHS) of 2013, Namibia's maternal mortality ratio is at 385/100,000 live births, while neonatal mortality rate is 20 deaths per 1,000 live births (MoHSS, 2016). MoHSS (2018b) highlighted that severe staff shortage, resignation of midwives with experience and non-renewal of foreign midwives' contracts affect the quality of midwifery care in Namibia. Although poor quality of midwifery care has been reported around Namibia at study settings, up to date no scientific study was conducted to investigate quality of midwifery care rendered to women during labour at the intermediate and the referral hospital maternity departments. It is against this background that the researcher felt the need to assess the quality of midwifery care during labour in hospitals under the study in Windhoek maternity departments in order to identify and address gaps.

1.4 Research purpose

This research aims to assess the quality of midwifery care at intermediate and referral hospital in Windhoek maternity departments.

1.5 Study objectives

The objective of this study is to:

- Determine the quality of midwifery care rendered during the first, second, third and fourth stages of labour by reviewing maternity records.
- Analyse the quality of midwifery care rendered during the first, second, third and fourth stages of labour.

1.6 Significance of the study

The research is expected to be of primary benefit to women of child bearing age (15-49 years old) in the Khomas region. It is expected to provide information that will lead to an understanding of the type of quality of midwifery care rendered by midwives and received by expected women at the intermediate and the referral hospital maternity departments. In addition, this study may provide some form of baseline data for further and broader research in the hospitals under the study, maternity departments in Windhoek. Furthermore, the study can be a basis for reviewing existing policies regarding provision of services by skilled attendants on delivery, and thereby contribute to the body of knowledge of the nursing profession. Above all, the findings of this study could also assist policy makers and authorities to develop innovative approaches that would be promoting good quality of midwifery care.

1.7 Limitations

The study will be limited to the intermediate and the referral hospital, maternity departments only and therefore its findings cannot be generalised to other hospitals countrywide. However, the findings can be descriptive of what can be found in similar hospitals in Namibia. The recommendations may differ in terms of other hospitals in Namibia, apart from intermediate and referral hospital where the study is conducted. Time is also limited as the researcher is employed full time would therefore not be able to study other hospitals outside Windhoek. Moreover, this study is limited to Windhoek due to financial constraints.

1.8 Delimitation of the study

The study will only be undertaken in the Khomas region, focusing on the assessment of quality midwifery care during labour.

1.9 Outline of the thesis

Chapter 1

This chapter introduces the study, which includes the formulation of the study objectives, statement of the problem and research purpose.

Chapter 2

Chapter 2 presents a review of the literature on quality midwifery care globally and nationally.

Chapter 3

In chapter 3 the methodology of the study is explained, which includes the design, study settings, population as well as data collection process. Validity and reliability along with the ethical considerations are also explained.

Chapter 4

In chapter 4 the study findings are presented.

Chapter 5

Chapter 5 discusses key results and discussions of the study in relation to literature.

Chapter 6

Chapter 6 provides the conclusions and recommendations of the study.

1.10 Summary

Chapter 1 presents the introduction and background of the study and describes the statement of the problem, objectives and purpose of the study. The following chapter highlights the literature review as a secondary research method that supports the primary data collected.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Literature review helps to lay the foundation and provides the context for a new study. In addition, reviewing the literature also helps to identify a conceptual framework or appropriate research methods. This section provides a review of literature that has been published around the globe and in Namibia about the quality of midwifery care. Standards of midwifery care was reviewed as well. The literature review was conducted under the following headings: Global overview of quality of midwifery care; Standards of midwifery care; Improving midwifery care worldwide; Skilled birth attendants; Antenatal Care; Preventable factors influencing quality of midwifery care during labour; and Interventions to promote good quality of midwifery care during labour.

Literature was searched using a systematic method to ensure that all relevant research was included in the review. Whilst a number of databases were searched, the primary databases used were University of Namibia e-resources off-campus and Walden University library. The search was done online through electronic data base: EBSCO HOST, Google Scholar, Pubmed and Bio- med. Furthermore, relevant books found in the University of Namibia library containing information related to midwifery and obstetric care were also used.

2.2 Global overview of quality of midwifery care

Improvements in maternal and newborn health have been important global priorities over the past decade. Good outcomes during pregnancy and childbirth are related to safe, efficient, accessible, acceptable, patient-centred, equitable availability, utilisation

and effective implementation of essential interventions for labour and childbirth (WHO, 2014a). According to global studies, despite significant declines in maternal deaths and increasing rates of facility deliveries, estimates indicate that 289,000 maternal deaths, 2.8 million neonatal deaths and 2.65 million stillbirths occur annually (Sharma, et al., 2015). According to Alyahya et al. (2019), the massive majority (99%) of maternal deaths occur in developing countries, with most of these deaths being preventable. Pregnancy, childbirth, and soon after childbirth are considered high risk periods for the health of mothers and their newborns, especially in developing countries. In low and middle income countries (LMICs), progress in addressing preventable maternal and newborn deaths and stillbirths depends on the improvement of the quality of maternal-foetal and newborn care throughout the continuum of care (Alyahya, et al., 2019). Therefore, it is dynamic that women and their newborn babies have access to high quality maternal care that is adequately equipped and staffed.

One of the contributing factors to maternal and neonatal deaths is poor quality of midwifery care. According to Sharma et al. (2015) (16.5%) of midwives were rated incompetent (had unsatisfactory performance), (72.4%) were competent (had satisfactory performance), and (11.1%) were outstanding (had superior performance). A relatively higher level of unsatisfactory performance (20.1– 29.3%) was observed in rapid initial evaluation, history taking, partograph use, infection prevention, and immediate postpartum care tasks, in descending order.

A study conducted by Simbar et al. (2009), indicated that psychological care during the first stage of labour was provided with lowest compatibility, and assessment of uterine contractions, measuring vital signs, including temperature, pulse, foetal heart assessment and blood pressure (BP) in other stages was provided with a middle quality. The WHO (2014b) emphasises that emotional support of the

mother and her family are principal tasks of perinatal care providers and suggests that appropriate psychological care leads to shorter labour. In addition, Filby, McConville & Portela, (2016) reported that quality of midwifery care was found to be significantly constrained by the lack of continuing education, as well as by apathy and poor motivation among midwives.

As much as Namibia did not achieve MDG goals specifically goal four (reduce child mortality) and five (improve maternal health), similarly Namibia is determined to achieve Sustainable Development Goals (SDG). As Namibia moved into the era of the SDG in 2016/2017, a number of ambitious targets have been set to address the high burden of maternal and child mortality over the five years period of the national development plan (MoHSS, 2018c). However, there is still a need for research on issues concerning quality of midwifery care and how best to implement serious interventions and strategies that are proven to be effective in order to fight poor quality of midwifery care.

A study conducted in three African countries, namely Burkina Faso, Ghana, and Tanzania by Blank et al. (2013), indicated that the level of quality of midwifery care depends on the care providers' motivation. The availability of skilled and motivated providers is central to progress in maternal care. Unfortunately, this study has shown that even well-trained health staff frequently do not perform to the best of their ability, and that differences can be observed between how health providers know a task should be performed and how they actually perform it. The same study revealed that delayed or incorrect decisions may cause either the loss of the mother's or the baby's life, or may cause permanent disability, resulting in long-term consequences for an entire family (Blank et al., 2013).

Gerein, Green, and Pearson (2006); Filby, McConville and Portela (2016) in their studies highlighted that mentoring and coaching practices had fallen away as a result of staff shortages and turnover in critical positions as well as resignations for greener pastures. They further revealed that effects of shortages on maternal healthcare, identified mechanisms through which staff shortages may result in reduced quality of midwifery care including increased workload, increased waiting times, reduced time for the patient and poorer infection control (Gerein, Green, and Pearson, 2006; Filby, McConville and Portela, 2016). Reported nurse-patient ratios in Malawi of 1:50 for maternity were perceived by professionals as too low for safe mother and neonatal care (Gerein, Green, and Pearson, 2006). However, the study done by Gamedze-Mshayisa et al, (2018) in Swaziland, revealed that quality of midwifery care practices from the women's perspective were above average.

It is believed that poor quality of midwifery care has an impact on health of birthing mothers and newborns, although no study was found on assessing of quality of midwifery care in Namibia specifically. However, the combination of nationally representative health system surveys done between April 2006 and May 2010 regarding deliveries and quality of midwifery care from Kenya, Namibia, Rwanda, Tanzania, and Uganda, indicated that more than (40%) of facility deliveries in these African countries occurred in primary healthcare facilities, which scored poorer on basic measures of maternal care quality than secondary care facilities (Kruk, et al., 2016).

A study in Namibia at the Gobabis State Hospital revealed that there was an improvement of average essential birth practices (EBPs) delivered, namely from

(68% to 95%) (Kabongo et al., 2017). The study was conducted six (6) months after the implementation of the WHO Safe Childbirth Checklist Program (SCCP).

2.3 Standards of midwifery care

This part provides an overview of the appropriate use of standards of midwifery practice. Ensuring that midwives are able to perform to agreed, universally accepted, evidence-based occupational and professional standards, is one link in the chain required to ensure that all women and newborns can benefit from skilled care. The establishment of standards for midwifery by WHO (2016a) practice promotes good quality of midwifery care which in turn, should help to reduce the high rates of maternal and neonatal mortality and morbidity which prevail in many countries, and particularly in countries with limited resources. Standards are centred on the women, the newborns and the family and are applicable to all health facilities that offer maternity services. According to WHO (2016b), eight universal standards have been formulated to define the priorities for quality improvement such as evidence-based practices for routine care; management of complications; actionable information systems; functioning referral systems; effective communication; respect and preservation of dignity; emotional support; competent, motivated personnel; and availability of essential physical resources.

Furthermore, Oyetunde and Nkwonta (2014) stated the ICM global standards for midwifery education along with companion guidelines; global standards for midwifery regulation and strengthening midwifery association; and updating and expanding the essential competencies for basic midwifery practice and affirming the evidence base (Oyetunde & Nkwonta, 2014).

Similarly, Kaye (2007); Scheffler et al. (2009); Awases, Bezuidenhout and Roos, (2013) highlighted some of the factors associated with poor quality of midwifery care. These factors are: understaffing, gaps in basic knowledge, inadequate on-the job technical supervision, failure of those trained to pass on knowledge to others, absence of standard management guidelines in the wards and deployment of staff trained in new skills to areas where they do not practise them. Moreover, Gamedze-Mshayisa et al. (2018), identified factors indicating deficiencies in the application of evidence-based maternity care practices, e.g. comfort measures, support during childbirth, client and family involvement and also availability of medical furniture. The study further revealed that patients would not use the facility in future due to bad treatment and poor quality of midwifery care they received from midwives during labour (Gamedze-Mshayisa et al., 2018).

2.4 Improving midwifery care worldwide

Improving maternal health requires action to ensure quality maternal healthcare for all women and girls, and to guarantee access to care for those outside the system. This effort means dedicating needed policies and resources, and sustaining implementation to address the many factors influencing maternal healthcare provision and use. Tunçalp et al. (2015) argue that, although indirect causes of maternal death are increasing by (27.5%) globally, over (70%) of maternal deaths occur as a result of complications of pregnancy and childbirth, like haemorrhage, hypertensive disorders, sepsis and abortion. Complications of preterm birth, birth asphyxia, intrapartum-related neonatal death and neonatal infections together account for more than (85%) of newborn mortality (Tunçalp et al, 2015). Therefore, the time of childbirth and the period immediately after birth are particularly critical for

maternal, foetal and neonatal survival and wellbeing. Quality of midwifery care to prevent and manage complications during this critical period is likely to have a significant impact on reducing maternal deaths, stillbirths and early neonatal deaths.

Based on the current evidence on burden and impact, Tunçalp et al. (2015) explain the following specific thematic areas that have been recommended to improve quality of midwifery care: essential childbirth care, including labour monitoring and action; essential newborn care at birth and during the first week; management of pre-eclampsia, eclampsia and its complications; management of postpartum haemorrhage; management of difficult labour by enabling safe and appropriate use of medical technologies during childbirth; newborn resuscitation; management of preterm labour, birth and appropriate care for preterm and small babies; and management of maternal and newborn infections.

Furthermore, Tunçalp et al. (2015) mention six strategic areas that have been identified for WHO to contribute to ending preventable mortality and morbidity among mothers and newborns. The six strategies are: research; guideline development; standards of care; identification of effective intervention strategies for quality improvement; development of monitoring indicators at global, national and facility levels; and capacity strengthening for quality improvement research, measurement and programming.

Soltani and Sandall (2012), investigated the percentage of non-instrumental vaginal birth and caesarean section rates among selected countries from across the globe. Their study highlighted evidence from a selected sample of countries in each continent, and revealed that African countries had a lower rate of caesarean sections and higher rates of non-instrumental vaginal births compared to other continents. North European

countries showed a moderate rate of caesarean sections with lowest rates being in Netherland and Norway. Other developed countries such as America, Australia and Canada had somewhat higher rates of caesarean sections than the North European countries mentioned. The highest rates of caesarean sections seemed to be practised in Latin American countries and some countries in Asia (Soltani & Sandall, 2012). India and Ethiopia's efforts to improve midwifery care focused on increasing access to institutional care, the expected improvements in maternal and newborn health did not materialise. Despite this effort, India resulted in a significant increase in the number of institutional births, but it was unclear whether this actually resulted in improved maternal health outcomes. Meanwhile, only (10%) of Ethiopian women had facility-based births (Austin et al., 2014).

Another study by Miller et al. (2016) indicated the need of strategies to reduce maternal mortality in LMICs, with efforts to address the direct causes of pregnancy related deaths by increasing skilled birth attendance, promotion of facility births, and assurance of universal access to basic maternal health care. These strategies were partly successful. Above all, globally an estimated 303 000 maternal deaths occurred in 2015, a (44%) reduction from 1990. Over the same period, antenatal coverage increased from (35%) to (52%). Skilled birth attendance in LMICs increased from 57% to 70%. By 2013, facility births accounted for 44% of deliveries in LMICs (Miller et al., 2016).

A study by Ten Hoope-Bender et al. (2014) in Burkina Faso, Cambodia, Indonesia, and Morocco revealed a combination of system changes and initiatives used to achieve sustained reductions in maternal and newborn mortality. The study also a recurrent sequence of events, beginning with the expansion of networks of health facilities, then the scaling up of education and deployment of midwives and reductions in financial

barriers (Ten Hoope-Bender et al., 2014). Moreover, governments responded to quality of midwifery care by improving technical standards, competencies, and procurement of standard equipment.

The experience of the four countries confirm that, when systems are consistently strengthened over a long period of time, investment in midwives is a realistic and effective strategy to reduce maternal mortality (Scheffler et al., 2009). The same study reported the suggestions that funds would be needed to hire healthcare support staff; train the new professionals and support staff; and pay for expenses such as supplies, pharmaceuticals, equipment, and facilities. In addition, incentives for workers are necessary to improve motivation and morale (Scheffler et al., 2009).

Maternal, stillbirths and neonatal deaths and morbidity are major concerns to the government of the Republic of Namibia. Hence, the goal of MoHSS is to reduce maternal mortality ratio to 200 per 100 000 live births and to reduce neonatal mortality ratio to 10 per 1000 by 2020/2021. In achieving this goal, various interventions and programmes have been implemented. In their study, Awases, Bezuidenhout and Roos (2013) identified strategic actions to address the strengthening and performance of professional nurses by building knowledge and competencies through continued professional development, in-service training programmes and clinical specialisation. They also recommended the implementation of the strategies developed above to improve the performance of the professional nurses employed in their institutions (Awases, Bezuidenhout & Roos (2013).

MoHSS (2016) clearly states that Namibia implemented the Road Map for Accelerating the Reduction of Maternal and Neonatal Morbidity and Mortality from 2010-2014. This road map facilitated the: deployment of trained health providers for

EmNOC services; conducting additional training of Skilled Birth Attendants (SBAs); expanding Prevention of Mother-to-Child Transmission (PMTCT) of HIV services; initiating routine maternal death reviews; enhancing referral system; availing medical equipment and ambulances; and construction of new facilities and maternity waiting homes. In addition to that, the Gobabis District Hospital in Namibia initiated a quality improvement (QI) initiative to increase adherence to these (SCCP) targeted (EBPs) (Kabongo, et al., 2017). A checklist programme has been developed to support health workers in low resource settings to prevent avoidable maternal and childbirth related deaths.

Furthermore, MoHSS (2018b) through Quality Assurance (QA), initiated Maternal and Neonatal Improved Care (MaNICare) quality improvement collaborative to improve quality care for maternal and neonatal health in the Khomas, Kunene, Kavango, Ohangwena, Omusati, Oshana, Oshikoto, Otjozondjupa and Zambezi regions. The above-mentioned regions were selected because it was found that high rates of maternal and neonatal mortality and morbidity occurred there. The Collaborative is focusing on five indicators: post-partum haemorrhage (PPH), severe pre-eclampsia/eclampsia, partograph, resuscitation and perinatal death review management. This initiative is expected to run from July 2018 to January 2021 (MoHSS, 2018b).

2.5 Skilled birth attendants

To ensure optimal pregnancy outcomes, all women and babies need access to quality of midwifery care in pregnancy, childbirth and after delivery. This includes skilled birth attendance and provision of basic and emergency obstetric care, for women with complications in pregnancy, childbirth or postpartum. Yakoob et al. (2011) define a

skilled birth attendant as an accredited health professional, such as a midwife, doctor or nurse who has been educated and trained to proficiency in the skills needed to manage pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and newborns.

Skilled birth attendants are communicating efficiently cross culturally in order to provide holistic women centred care and assist pregnant women and their families in making a plan for birth (i.e. health facility of their choice for delivery, partner/family member to be present at birth) and, in case of a complication, how timely referral will be arranged. According to WHO (2004), skilled birth attendants perform the following functions: educate women in self-care during pregnancy, childbirth and postnatal care period; monitor maternal and fetal wellbeing during labour and provide supportive care; identify delayed progress in labour and take appropriate action including referral where appropriate; assess the newborn and give immediate care and identify any life threatening condition in the newborn and take essential life saving measures including active resuscitation.

There is a strong evidence that in births attended by well-trained health providers, there is a strong probability of reducing maternal and neonatal mortality/morbidity (Tura, Fantahun, & Worku, 2013). Training and equipping all skilled birth attendants with mandatory knowledge and skills on maternal and neonatal mortality prevention is a key indicator for achievement of SDGs three (MoHSS, 2018c). According to Kim & Saada (2013) 23 per cent of neonatal deaths could be prevented if all pregnant women could have access to skilled birth attendants who are expert and educated in dealing with normal and abnormal pregnancies and childbirth. Skilled birth attendants should be able to recognise and manage complications in women and

newborn babies, make required referrals and be competent enough to act in any emergency in all settings (Kim & Saada, 2013).

However, a study by Ngula (2005) and Baral et al. (2010) have reported that transportation and distance to the health facilities, staff attitudes towards service users, inadequate numbers of SBAs, service delivery systems and poor physical infrastructure in the health facilities, women's age, parity and education, perceptions of safe pregnancy, place of residence (rural/ urban), gender inequality, cultural and religious beliefs, decision making power, socio economic status of women and geographical barriers including poor communication and road links are associated factors that affect the uptake of SBAs in Namibia, as well as in Nepal. Moreover, their study not only indicate economic, geographic, cultural and religious factors but also salient institutional problems (Baral et al., 2010). This includes staff attrition for several reasons, limited availability of services, minimal staff support and training, lack of medicine and equipment and deficiency in the referral systems. It has also been suggested that political instability and weak governance often change policy and planning that all contributing use of existing health services (Baral et al. 2010).

Participants who delivered all the children in Okakarara hospital agree that though they delivered in the hospital, they also experienced the problems of lack of transport and money. However, they managed by all means to reach the hospital and deliver there (Ngula, 2005).

Another study by Zere, Oluwole, Kirigia, Mwikisa, and Mbeeli (2011) in Namibia, shows that inequality in wealth is found to be one of the major contributors of inequity in access to child delivery by skilled birth attendants. The findings of their study further highlighted the significant role that social determinants play in access to child

delivery services by skilled birth attendants such as inequalities in wealth and education of the mother are seen to be the main drivers of inequities in the health system variable delivery by trained health providers (Zere et al, 2011).

Delivery care by skilled attendants is essential for achieving SDG targets for maternal and newborn health. Therefore, it is advisable that addressing wealth inequalities contributes to improving equity in delivery by skilled attendants and consequently to the achievement of the SDG related to improve maternal and newborn health. It is, however, important to note that redressing wealth inequalities alone cannot be an effective intervention to inequities in access to quality of midwifery care in the absence of interventions that also tackle the other social determinants such as education. According to Zele et al (2011), education can improve the ability of individuals to produce health without relying on health services, by influencing their life style; and increasing the use of health care services through improved knowledge, attitude and practice.

2.6 Antenatal Care

Fekadu et al. (2018) reports that Antenatal Care (ANC) care has been used as a strategy to reduce maternal and neonatal morbidities and mortalities by rendering quality of midwifery care. Additionally, in their study, various approaches and strategies have been implemented to improve the effectiveness of ANC in developing countries of which Namibia is not exceptional (Fekadu et al., 2018). According to Al-Ateeq and Al-Rusaiess (2015), ANC is a careful, systematic assessment and follow-up of pregnant women. Above all, it is a quality of midwifery care that provides health education, counselling, screening, and treatment to assure the best possible health outcomes of the mother and her foetus. The aim of health education

during ante natal care is to provide advice, reassurance and support, to address and treat the minor problems of pregnancy, and to provide effective screening during the pregnancy (Al-Ateeq & Al-Rusaiess, 2015). Moreover, ANC provided the opportunity to detect and treat abnormalities of pregnancy and to deliver preventive health services such as immunisation against tetanus, prophylactic treatment of malaria and HIV testing and counselling leading to PMTCT (Gross et al., 2012).

Many studies identified that antenatal care interventions are likely meant to reduce maternal and child mortalities and morbidities if midwives render quality of midwifery care during ANC services (Fekadu et al., 2018). In addition, numerous studies have shown that women who started ANC attendance early and attended frequently were more likely to be provided with quality of midwifery care during delivery by a skilled attendant compared to those who initiated ANC late and attended only few visits. A recent study by Gross et al. (2012) suggested that women who knew about risk factors were more likely to utilise health facilities for delivery than those without knowledge.

To support quality of midwifery care, WHO (2006) and Beauclair, Petro and Myer (2014) on guidelines for ANC, recommended focus antenatal care (FANC) visits at least four visits for uncomplicated pregnancies with the first visit preferably in the first sixteen (16) weeks of gestational age; the second visit at 20-24 weeks; the third visit is expected at 28-32; while the last visit is expected at 36 weeks of gestational age. However, (WHO, 2006) emphasises that those pregnant women who are faced with complications such as diabetics and hypertension should avail themselves at ANC more than four times in the same period.

It was highlighted that quality of midwifery care during ANC services must be a foundation for pregnant women and should offer maximum protection for pregnant women's health and the wellbeing of the mother and their unborn babies (Hoque, Haaq & Islam, 2011). In addition, in countries wishing to achieve SDG three, FANC should be considered as a focused strategy (Zeidan & Idris, 2018). However, an analysis of DHS from forty-five developing countries showed that women in sub-Saharan Africa start antenatal care considerably later than women from other regions (Houweling, Ronsmans, Campbell, & Kunst, 2007).

The World Health Organisation (2016c) affirms that quality of midwifery care can save lives if such care is initiated at ANC. This document further states that ANC also provides the opportunity to communicate with, and support women, families and communities at a critical time in the course of a woman's life. Furthermore, mothers' and neonates' health can also be improved by providing supplements such as vitamins and iron before and during pregnancy. WHO (2016c) stated further that the mother and the unborn child's health can be therefore improved by providing quality of midwifery care during antenatal visits for rendering services such as screening for infection like sexually transmitted diseases including HIV/AIDS. Through health education, pregnant mothers are made aware that a good diet might prevent some complications, such as infections which could cause preterm deliveries (WHO, 2016c).

According to Fekadu et al. (2018) women who attended ANC were more likely to receive quality of midwifery during all stages of labour since they happen to have better information about benefits of seeking health care services early, such as danger signs and obstetric complications which may arise during labor. Moreover, Fekadu et al. (2018) further affirms that seeking health care services early would make earlier

identification of complications and plan for its intervention timely. Additionally, pregnant women attending ANC have the chance to familiarise to the health facility environment. This may have helped them avoid unnecessary fear and stress that would lead to poor quality of midwifery care (Fekadu et al., 2018).

Diamond-Smith, Sudhinaraset, & Montagu (2016), noted an increasing number of women in sub-Saharan Africa are seeking care for delivery and ANC services in health facilities. In Kenya and Namibia, the countries of focus in this analysis, facility deliveries increased, with the number of births in the last 5 years in a health facility rising to (61.2 %) in the 2014 Kenyan DHS (up from 43 % in 2008–09) and (87.4 %) in the 2013 Namibian DHS (up from 81 % in 2006–07) (Diamond-Smith et al. 2016). Governments and the international community have supported this trend in the hopes that attending ANC and delivering in facilities would give women access to higher quality of midwifery care and reduce adverse maternal and neonatal outcomes.

2.7 Preventable factors influencing quality of midwifery care during labour

2.7.1 Health worker-related factors

Maternal and neonatal mortality and morbidity has remained a public health challenge in developing countries, particularly in Namibia despite the efforts to improve access and use of maternal health care services universally. Majority of these maternal deaths could be prevented by ensuring access to good quality maternal health services, such as antenatal and postnatal care, and skilled attendance during child birth, including emergency obstetric care. According to Tunçalp et al. (2015) to end preventable maternal and newborn morbidity and mortality, every pregnant woman and newborn need skilled care attendants at birth with evidence-based practices delivered in a humane, supportive environment. Likewise, quality of care is

considered a key component of the right to health, and the route to equity and dignity for women and children. According to WHO (2014a) poor women in remote areas are the least likely to receive quality of midwifery care. This is especially true for regions with low numbers of skilled health workers, such as sub-Saharan Africa and South Asia. While levels of antenatal care have increased in many parts of the world during the past decade, only forty-six percent of women in low-income countries benefit from skilled care during childbirth (WHO, 2014a). This means that millions of births are not assisted by trained midwifes or doctors.

Prolonged labour is one of the key roots of low Apgar scores that may lead to neonatal morbidity and mortality in less developed countries. Sometimes health providers do not open a partograph on the first stage of labour or open it late, which will lead to failure to detect prolonged labour. The partograph is a printed chart on which observations in labour are recorded in a graphic format to provide an overview of labour, aiming at alerting midwives and obstetricians to deviation in the labour progress as well as maternal or foetal wellbeing (Orhue, Aziken, & Osemwenkha, 2012).

Since health providers are responsible for opening a partograph, it is crucial that they are able to monitor progress of labour. Poor clinical skills and poor recording of clinical findings on partographs are some contributing factors to maternal and neonatal deaths and illness (Liu et al., 2014). It is also noted that poor intervention, or no intervention at all for a prolonged labour could impact on outcomes of pregnancy. Health providers failing and delaying to refer patients also potentially put the lives of pregnant women and neonates in danger. Similarly, Wagaarachchi and Fernando (2002) outline the main causes for the substandard care as failure of junior staff or nurses to diagnose or refer the case to a senior colleague in time; failure of

consultants to attend on patients when referred; inappropriate delegation of responsibility or poor team work. Liu et al. (2015) insist that unavailability of experts or delay in advocating for assistance and not paying attention to identified problems is another contributing factor from healthcare provider side.

In the study by Aune, Amundsen and Aas, (2014) continuous presence and support of midwives sometimes simply involved being there, spending time with the couple while checking the baby's condition and observing the progress of labour. In the same study the authors mentioned that midwives believed their continuous presence gave them a better overview of the progress of labour, the condition of the foetus and the prospects of a normal birth. Moreover, there was a complex interplay of experiences of mistreatment and lack of support that impact women's childbirth experiences and outcomes.

Another factor identified by Nabirye, Beinempaka, Okene, and Groves (2014) in Uganda outlined the following preventable factors related to midwives' attitudes: lack of job descriptions or role ambiguity among the various health workers, having no role models, lack of supervision and lack of teamwork. Increasing institutional births is an important strategy for reducing maternal mortality and morbidity. However, it is still clear that some women prefer to have home deliveries due to some reasons. Victoria et al. (2020) in their study noted that women in labour were usually not happy with unfriendly and rude attitudes of midwives and this influenced their choice of delivery at the hospital, and others sought delivery services and care from unqualified personnel like Traditional Birth Attendants (TBAs), and relative which results in serious obstetric complications, increasing maternal and neonatal morbidity and mortality. Victoria et al. (2020) emphasized that, bad attitude of midwives is something that has been talked about both in social and print media. Additionally,

another finding that was brought out by the same study is that some attitudes hinder women from institutional deliveries. Women are scared of going to deliver from the health institution if they do not have baby outfit and other requirement for fear of being shouted at by the attending nurses and midwives (Victoria et al., 2020).

2.7.2 Patient-related factors

Fraser, Cooper and Nolte (2016) believe that patient-related preventable factors are when the woman, by doing something or not doing something, causes her own death or the death of her baby. Patient-related factors are those that could have been prevented if the patient availed herself to the health facility earlier. Tunçalp et al. (2015) argue that although organisational framework focuses on the care provided in the facilities, it should be noted that communities and service users have a critical role in identifying their own needs and preferences, and in managing their own health. However, perspectives of women, their families and communities, on the quality of maternity care services influence decisions to seek care and are essential components for creating a demand for, and access to quality maternal and newborn services (Tunçalp et al., 2015).

Tlebere et al. (2007) identified some preventable factors that are influencing the quality of midwifery care and concluded that transport and distance were the biggest problems, particularly in rural areas. Furthermore, factors like pregnant women looking for medical assistance very late during labour, booking late or not at all could have a major impact on the quality of midwifery care they will receive (Velapi & Rhoda 2012). Poverty and ignorance have, in some instances, led to inappropriate health seeking delivery behaviour and contributed to ill health. Lack of transport from home to hospital; not paying attention to early ruptured of membrane; ignoring

danger signs such as antepartum haemorrhage; not complying with follow-up; could also affect outcome of pregnancy negatively (Velapi & Rhoda 2012). However, it might be that women lack information about danger signs in pregnancy.

Jammeh, Sundby, and Vangen (2011), reported on a study conducted in Gambia revealing certain factors related to socio-cultural beliefs for family decision-making. Social factors tend to influence women's likelihood to seek healthcare during pregnancy and labour. In rural areas of Gambia, the decision to seek early delivery at a health centre and/or hospital is usually influenced by mother in-laws. Visiting the hospital early in labour was viewed by most mothers-in-law as unnecessary because they preferred preparing traditional herbs while waiting for established labour. This they believed will make the pelvic bones flexible, thus facilitating quick and safe delivery even without going to the hospital (Jammeh et al., 2011). A similar study findings by Victoria et al (2020), indicate that women still have cultural/traditional and religious beliefs concerning pregnancy and child birth. The same study further revealed that women also delay because they want to perform some traditional activity at home like taking herbal medicine which they cannot do at the health facility. Because of this delay, women end up not receiving care at an early stage and by the time they reach the health facility, they already have severe complications like ruptured uterus (Victoria et al., 2020).

It is worth mentioning a study by Ngula (2005) in Namibia, Okakarara State Hospital reveals a number of socio economic, cultural factors and service related factors act as barriers to utilization of health services. Participants who delivered all the children in Okakarara hospital agree that long distances, lack of transport and money are the main contributory factors for underutilisation of delivery services. Though they delivered in the hospital, they also experienced the problems of lack of transport and

money. However, they managed by all means to reach the hospital and deliver there (Ngula, 2005).

2.7.3 Organisational related factors

Organisational factors are beyond the health workers' control. Health workers depend on healthcare systems, for instance for the provision of adequate equipment, medicine and transport for referral purposes. The major organisational issues include shortage of midwives, lack of advanced equipment and poor infrastructure. One of the preventable factors identified by Nabirye et al. (2014) in Uganda is overworked midwives due to the serious shortages in the hospitals. Midwives work without rest and they frequently do not even have time to attend to their physiological needs as human beings while on duty.

A similar study findings by Victoria et al. (2020) in Zambia, shows that human resources and infrastructure continue to hinder the provision of quality care to women who seek maternal and child health services. Midwives indicated they may have adequate knowledge and skill and equipment may be available to provide the care required but may be understaffed to provide the quality care. Their study further shown that this shortage of human resources creates an increased workload to the existing staff which means that the quality of care being offered may be low and of poor quality (Victoria et al., 2020).

Tunçalp et al. (2015) emphasise that quality of midwifery care for pregnant women and newborns in facilities requires competent and motivated human resources and the availability of essential physical resources. Furthermore, evidence-based practices for routine and emergency care; actionable information systems, where record keeping enables review and audit mechanisms; and functional referral systems between levels

of care should be in place (Tunçalp et al., 2015). In addition, lack of clear guidelines, or protocols in the treatment of conditions such as sepsis, hemorrhage and convulsions are also highlighted (Wagaarachchi & Fernando, 2002).

2.8 Interventions to promote good quality of midwifery care during labour

Most of the maternal and newborn deaths occur at birth or within 24 hours of birth. The World Health Organization, (2018) identifies some approaches that might be helpful to promote good quality of midwifery care, e.g.

- Evidence-based practices for routine care and management of complications;
- Actionable information systems;
- Functional referral systems;
- Effective communication;
- Respect and preservation of dignity;
- Emotional support; and
- Competent, motivated human resources and essential physical resources available.

Improving healthcare providers' knowledge and skills in emergency obstetric care and ensuring that the healthcare facility has essential lifesaving resources, have been identified as important factors that can impact on the high MMR in many African countries (Nsangamay, & Mash, 2019).

De Bruin, Amelink, Buitendijk & Westert (2012) in their study in Netherlands identified some approaches to improve quality midwifery care. Their study provided a framework for developing face valid and feasible indicators (describing the structure, process and outcome) capturing all aspects of midwifery care in a low-risk population. A set of indicators was developed and subsequently adopted by care providers

practicing in primary maternity care. The authors further stated that quality indicators provide the opportunity to measure the initial situation in order to assess the needs, to set realistic goals and to provide a baseline for assessing changes to achieve the same or better outcomes (De Bruin et al., 2012).

Furthermore, De Bruin et al. (2012) emphasised that continuous monitoring of quality indicators might reveal trends in practice and patient care and could lead to steps and initiatives to research and improve midwifery care. They believe that when it is well implemented, a feedback report based on indicator data can trigger professionals and practices to improve their midwifery care. Further, quality indicators are used to inform public or patients about services. Finally, indicators can be used for supervision by inspectorates of healthcare, assessing the standards of health-care services (De Bruin et al., 2012).

In their study in Burkina Fasso, Brazier et al. (2009) identified some interventions to quality midwifery care, for instance project interventions were designed to increase women's use of skilled maternity care before, during, and after childbirth by influencing key determinants of access to care. These interventions were the availability, quality, and costs of services, and information about services. The same authors identified EmONC, upgrading the skills of all maternity care providers through training in routine and emergency obstetric care; addressing gaps in essential obstetric equipment and supplies and strengthening the referral system. In addition, district hospitals were upgraded to enable the provision of anaesthesia and caesarean section delivery (Brazier et al., 2009).

Velaphi & Rhoda (2012) suggested some recommendations that could be implemented in order to promote quality of midwifery care, as follows:

- Implementing plain and inclusive EmONC;
- Classifying pregnant women who are at risk of developing some complications during ANC and promoting clean delivery to avoid infections of mother and newborn;
- Administration of antibiotics to all pregnant women who are experiencing preterm labour;
- Oxytocic drugs be administered to women experiencing postpartum hemorrhage and steroids in preterm labour, with continuous monitoring of women in labour;
- Pregnant women experiencing complications during the antenatal period should be referred to a tertiary institution with advanced technology early (for example pregnancy-induced hypertension and diabetes); and
- Immediate care of neonates with complications during birth, such as neonatal resuscitation and post-resuscitation management and ongoing neonatal care during the postnatal period.

Improving quality of midwifery care is a priority for the MoHSS in Namibia. MoHSS in partnership with WHO and EU, launched and implemented the road map programme for PARMaCM from 2010 to 2014. The first intervention was addressed by the strengthening community level engagement, and this was done through the training and mobilisation of community health workers. The second was addressed by the provision of ambulances to help with the transportation of women, as well as the construction of maternity waiting homes for women who lived far from the hospitals to come closer to the facilities to access services at the time of need. The third matter was addressed through the provision of medical equipment for maternal and child care, training mentoring and supervision of healthcare providers (WHO, 2014c).

Furthermore, a national Maternal, Perinatal and Neonatal Death Review (MPNDR) Committee was set up to oversee the documentation of maternal and perinatal deaths and identify best practices to be shared, as well as challenges and constraints to be addressed (WHO, 2014c).

2.9 Summary

The literature presented in this chapter discusses topics and subtopics related to the study on the assessment of quality of midwifery care during labour in general and in Namibia in particular. In the first place, topics covered are a global overview of quality of midwifery care, standards of midwifery care review, skilled birth attendants and antenatal care. Secondly, it describes preventable factors influencing quality of midwifery care during labour and lastly, it also includes the interventions to promote good quality of midwifery care during labour.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the procedures the researcher adopted during conducting the study. The research design, the population, sampling and sample procedures, the research instrument, data collection and data analysis procedures are discussed.

3.2 Research design

This is a retrospective study with a descriptive quantitative design. In retrospective study the researcher studies events that have already occurred; have been recorded and have their explanation in the past (Houser, 2013; Polit & Beck, 2010). Burns and Grove (2010) argue that descriptive design is the examination and description of phenomenology that happen in reality, offering a precise account of features of specific individuals, situations or groups. This design was adopted for this study because the researcher intended to determine and describe the quality midwifery care rendered during labour at intermediate and referral hospital in Windhoek. In this study, data of events that had already happened to women during labour at intermediate and referral hospital were collected and analysed by auditing the maternity records of all women who gave birth from 1 January to 31 March 2018.

3.3 Population

The population is a group or objects that fit the criteria the researcher is interested in studying (Brink, Van der Walt & Van Rensburg, 2010). In this study the population consists of maternity records of all women who gave birth at intermediate and referral hospital from 1 January to 31 March 2018.

3.3.1 Inclusion and Exclusion criteria

This study included all maternity records of all women who gave birth from 1 January to 31 March 2018 at intermediate and referral hospital maternity departments in Windhoek. Maternity records for private patients were included because private patients were attended too by midwives during the first, second, third and fourth stages of labour. Exclusion criteria covered all maternity records outside the study period.

3.4 Sampling and sample

Sampling refers to the researcher's process of selecting the sample from a population in order to obtain information regarding a phenomenon in a way that represents the population of interest, while sample is a part or fraction of a whole, or a subset of a larger set, selected by the researcher to participate in a research study (Brink, Van der Walt & Van Rensburg, 2012).

In this study sample size was determined by using the systematic sampling formula as indicated in Sekaran and Bougie (2013). Systematic sampling is the random sampling method that requires selecting samples based on a system of intervals in a numbered population (Sekaran & Bougie, 2013). The population of this study consists of maternity records of all women who delivered at intermediate and referral hospital from 01 January to 31 March 2018. All maternity records from 01 January to 31 March 2018 were gathered for sampling purposes. This period was not selected with specific reasons, however the researcher felt that it would be in the best interest of the study findings to gather latest data. In this study the researcher assessed every sixth file maternity record from intermediate hospital and every fourth file from referral hospital. The fact that the researcher assessed every sixth and fourth file is what makes

the sampling systematic because there is an interval system. The table below illustrates how every sixth and fourth files were determined.

IKH	WCH
n= N/ (1+Nxa^2) n= sample size N= total population a= confidence limit 5% or 0.05% n= 1883/ (1+1883x0.0025) =1883 / (1+1883x0.0025) =1883 /1+ (4.7) =1883/6 ≈ 313.8=314 n= 314 (sample size for IHK).	n= N/ (1+Nxa^2) n= sample size N= total population a= confidence limit 5% or 0.05% n= 1362/ (1+1362x0.0025) =1362/ (1+1362x0.0025) =1362/1+ (3.4) =1362/4≈ 340.5 n=341 (sample size for WCH).

3.5 Data collection instrument

This study consisted of an audit tool (checklist see appendix 1) developed by the researcher based on literature on the quality of midwifery care during labour. The checklist was developed in line with WHO (2016b) Standards for Improving Quality of Maternal and Newborn Care in Health Facilities. The checklist includes demographic data (age, gravida, and para, booked, unbooked and mode of deliveries), midwifery care during the first, second, third and fourth stages of labour.

3.6 Validity and reliability

According to Burns and Grove (2010), the validity of an instrument is an indication of how well the instrument reproduces the abstract concept being examined, while reliability refers to the degree to which the instrument can be depended upon to yield consistent results if used repeatedly over time on the same person, or if used by two researchers (Brink et al., 2012).

3.6.1 Instrument validity seeks to ascertain whether an instrument accurately measures what it is supposed to measure, given the context in which it is applied (Brink et al., 2012). In this study, content, internal, and face validity were ensured as follows: A content validity test checks that there are enough relevant questions covering all aspects being studied (Earl, 2013). An expert midwife in midwifery care unit was consulted to check the extent to which the instrument would present the full domain of the content of the phenomenon related to quality of midwifery care and the tool tested 10% of sample before the actual study. Internal validity, the audit tool in this study was pre-tested to confirm whether it would be able to collect data to meet the study objectives. Comments were given that part of the first and second stages of labour was not clearly stated and could not meet the study objectives. Corrections were made accordingly.

3.6.2 Reliability is defined by Polit and Beck (2010) as the degree of accuracy and consistency with which an instrument measures the attribute it is designed to measure. In undertaking this study, reliability of the tool was ensured through pilot testing of the tool and training two data collector assistants on how to use the tool and ensuring that all items in the tool were understood by the trainees who were both registered nurses/midwives. The checklist was checked for completeness, consistency and accuracy.

3.7 Pilot study

A pilot study is the procedure carried out to test a new tool and to check whether it is able to collect the data required to meet the study objectives, and identify problem areas in the tool to be corrected. In addition, it helps in assessing appropriateness of the tool for the target population (LoBiondo-Wood, Haber, Berry & Yost, 2013). In

this study, a pilot study was carried out on maternity records from intermediate hospital which were excluded from the study because changes were made to modify the tool. During the pilot study the researcher checked for any insufficiency in the design of the study. A part of the first and second stages of labour in the tool was not clearly stated and changes were made to clarify the part. The data from the pilot study were not included in the final study.

3.8 Data collection

Burns and Grove (2011) explain that data collection is the procedure of gathering data from the participants. After the researcher got consent from all relevant authorities (Appendix 2 &3), she visited hospitals being researched and handed over a copy of the permission letter from the Ministry of Health and Social Services, as well as from the medical superintendents to the registered nurses in charge and to archivists in the wards. The purpose and the objectives of the research were explained to the ward supervisors and to the clerks. Maternity records from both hospitals involved were accessed with the assistance of the clerks in the archive departments.

The researcher trained two data collectors how to use the tool. The trainees were assessed by conducting a test-retest prior to collecting data with the tool. Test-retest is an estimate of reliability that involves comparing two administrations of the same test to the same records (Dane, 2010). The trainees which are both third year nursing students participated in the pre- and post-test. Test-retest was obtained by allowing trainees to take and retake the test after 2 (two) days and comparing their performances. Each particular score on the first administration was correlated with their scores on the second administration. There was no difference in the first and second scores of all the

records. Therefore, the researcher, together with two assistants assessed the notes from the recorded notes.

The data were obtained by means of the checklist. In this study information was gathered from sampled 653 maternity records of all women who gave birth from 01 January to 31 March 2018. Data were collected in the archive section where maternity records are kept under lock. No maternity records were removed from the section to maintain confidentiality, hence it has taken two weeks (working days) to capture data. It was agreed to collect data only on 65 maternity records per day in order to facilitate quality data capturing. Moreover, the researcher was present during the time of collecting data so that in case the data collectors encountered problems, they could be resolved. The researcher conducted assessment using the questionnaire which contained closed- ended questions. There was no need of verbal communication, neither informed consent to participants since the study was focused on maternity records. The data collection from each record lasted about 20-30 minutes.

3.9 Data analysis

After double data entry, data cleaning was done to check for outliers. Data Analysis was done using Statistical Package for Social Science (SPSS (Version 25). Descriptive statistic and statistical modelling were used in the analysis of data. As a descriptive analysis, distributions of variables were displayed using frequencies and percentages to describe the demographic characteristics of the women who gave birth during the study period. Frequency distribution and percentages were also produced to describe the midwifery care carried out during the first, second, third and fourth stages of labour. The data is illustrated using bar charts, pie charts and tables. A univariate linear regression model was fitted to evaluate the significance of variables. The univariate

analysis was then entered in the multivariable (bivariate) models. In order to determine the significance of variables, 5% level of significance was used in the model.

4. Ethical consideration

Ethical clearance (Appendix 2 & 3) was obtained from the University of Namibia Research Ethics Committee (UREC) and by the Executive Director (ED) of the MoHSS in Namibia. Thereafter permission to undertake the study at the maternity department was sought from medical superintendents of both hospitals. Right to confidentiality, according to Harris, Nagy, and Vardaxis (2014) is the protection of study participants to such an extent that an individual's identity cannot be linked to the information provided to the researcher and is never publicly divulged. All information obtained during the data collection process was kept confidential and not linked to the participants. No names appeared on the tool, only coding.

Burns & Grove (2011) state that breach of privacy can happen when researchers deliberately or accidentally permit an unapproved person to get access to the study's raw material. The information collected is kept private, and no-one else should have access to it. Moreover, it can only be accessed by the researcher and supervisor. The research questionnaires used in the study were kept safe in a locked cupboard until the research report was completed and disposed according to the protocol of the University of Namibia. The researcher and the statistician involved in the analysis process were the only people who had access to the cupboard.

Burns & Grove (2011) also state that the principle of justice includes a subject's right to fair selection and treatment. In this study maternity records were selected because they met the requirements for the study, not simply because they were available.

5. Summary

This chapter highlighted the methodology of the study. The retrospective quantitative research approach employed for conducting this study made it possible to review the maternity records to determine the quality and to analyse the standard of quality midwifery care rendered during the first, second, third and fourth stages of labour to see if they complied with the guidelines and care provided before discharge. The sequence of methodology emphasised the research design, population, sampling, instruments, pilot study, data analysis and ethical consideration.

CHAPTER FOUR

PRESENTATION OF RESULTS

4.1 Introduction

This chapter presents the findings of the study based on the original research objectives which are: to determine the standard of midwifery care rendered during the first, second, third and fourth stages of labour by reviewing maternity records and to analyse the standard of midwifery care rendered during the first, second, third and fourth stages labour.

The results are presented in five parts: part one presents demographic information; part two presents midwifery care on admission; part three presents midwifery care during the first stage of labour; part four presents midwifery care during the second stage of labour; part five presents midwifery care during the third and fourth stages of labour. The distributions of variables are presented by means of a pie chart and/or frequency distribution tables for better understanding.

4.2 Part one: Demographic profile of women

The demographic information obtained pertained to the participants' age, marital status, booking for ANC, obstetric history and mode of delivery. The age range of all the participants in the study was divided as follows: 13-19; 20-35 and 36 years and above. Most births occurred among the age distribution group of 20-35, 513 (78.6 %) while the groups of 13-19 and 36 and above had the same score 70 (10.7 %) respectively. The distribution of the participants according to the age groups is shown in figure 1.

4.2.1 Age groups

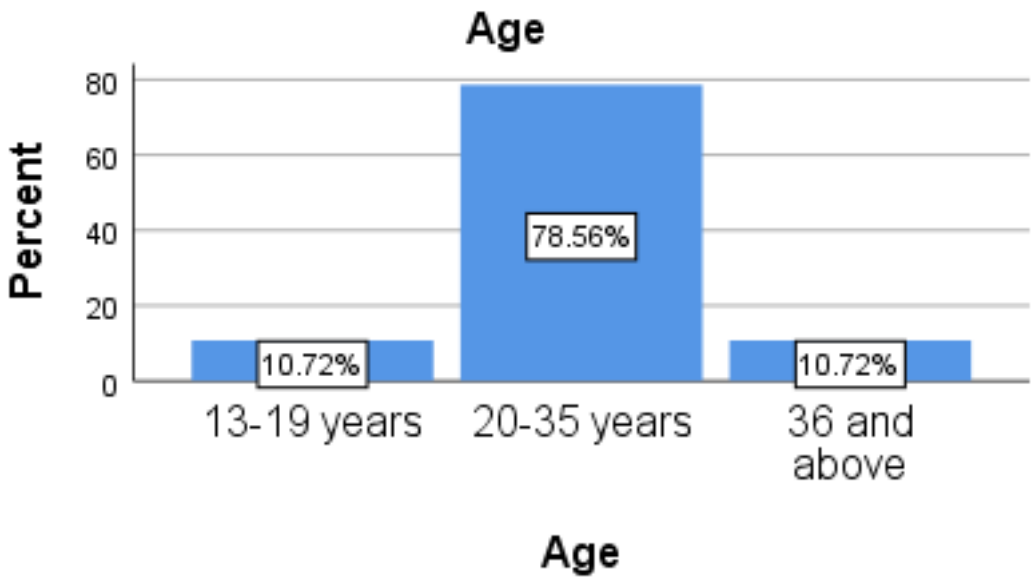

Figure 1 Age groups

The maternity records were categorised according to their marital status, single and married. The single mothers who delivered constituted 558 (85.4 %) while those who were married constituted 95 (14.5 %). These findings are illustrated in table 1.

A total number of 620 (94.9 %) women who delivered attended antenatal care while 33 (5.1 %) did not receive any antenatal care services. Obstetric history was categorised in parity groups: primipara, multipara and grand multipara. Table 1 indicates that the majority of the study participants who had delivered 391 (59.9 %), had two children or more, followed by those who gave birth for the first time - 197 (30.2 %), while the lowest were those who had five or more children - 65 (10.0%).

Table 1 Demographic profile of women

Marital status		Frequency	%
	Single	558	85.4
	Married	95	14.5
	Total	653	100.0
Booked for antenatal care			
	Booked	620	94.9
	Unbooked	33	5.1
	Total	653	100.0
Obstetric history			
	Primipara	197	30.1
	Multipara	391	59.9
	Grande multipara	65	10.0
	Total	653	100.0

4.2.2 Mode of delivery

The research also examined the type of delivery that the women experienced. The chart (Figure 2) on the next page summarises the findings regarding mode of delivery.

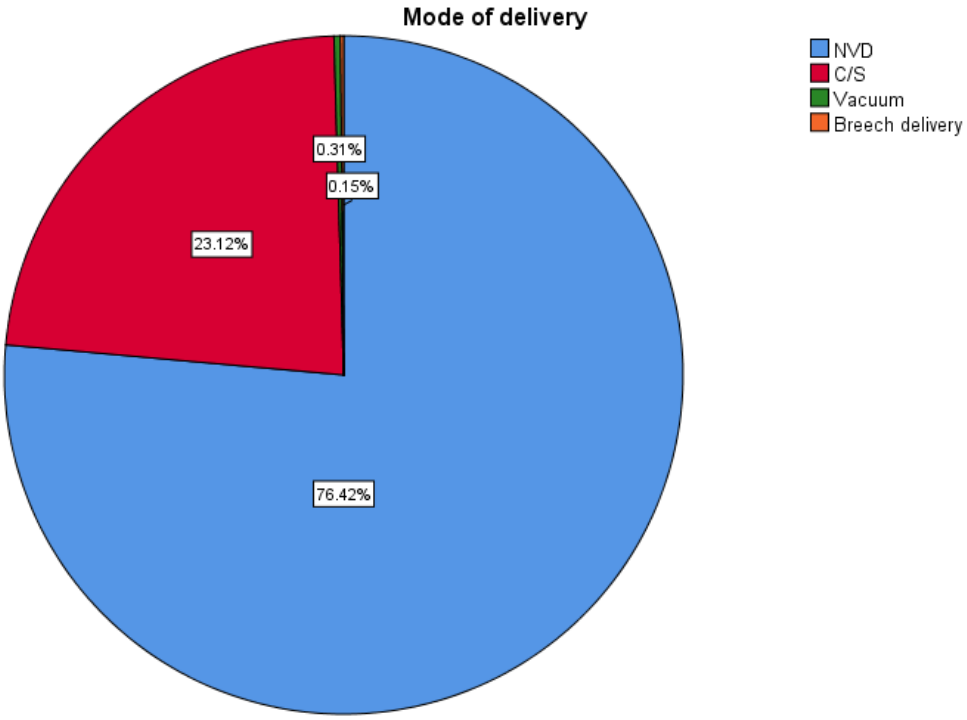

Figure 2 Mode of delivery

Most of the deliveries in this group, 499 (76.4%) were normal vaginal deliveries, followed by 151 (23.1%) who had caesarean section deliveries, while 2 (0.3%) were vacuum extraction during the delivery by a skilled attendant. Only one (0.2%) of those who delivered in the health facilities experienced a breech delivery. No forceps delivery was recorded on the maternity records that were assessed.

4.3 Part two: Midwifery care on admission

This part presents the results on midwifery care rendered during admission. It addresses the study objective that was determining the standard of midwifery care rendered during the first, second, third and fourth stages of labour by reviewing maternity records. Table two on the next page reveals the results of the study based on observations that were done during admission. Moreover, Table 2 reveals that 566 (86.7%) of the admissions were assessed on blood pressure (BP) while 87 (13.3 %) were not recorded, or not assessed. Furthermore, the study shows that out of 653

admissions, the temperatures of 534 (81.8 %) were measured while the temperatures of 119 (18.2 %) were not measured. The study further revealed that the majority of the women - 561 (85.9 %) in the study had their pulse recorded, while 92 (14.1 %) their pulse were not recorded.

Table 2 also shows that urine tests were done for 520 (79.6%) women while for 133 (20.4%) was not indicated whether their urine were tested or not. Out of 653, for 568 (87.0%) foetal heart rates were recorded and for 85 (13.0%) were not recorded. The results indicated that for 530 (81.2%) uterine contractions were counted and 123 (18.8%) uterine contractions were not counted. The results revealed that for 494 (75.7%) vaginal examinations were done on admission and for 159 (24.3%) vaginal examinations were not done.

Table 2 Midwifery care on admission

		Frequency	%
BP	Recorded	566	86.7
	Not recorded	87	13.3
	Total	653	100.0
Temperature	Recorded	534	81.8
	Not recorded	119	18.2
	Total	653	100.0
Pulse	Recorded	561	85.9
	Not recorded	92	14.1
	Total	653	100.0
Urine Test	Recorded	520	79.6
	Not recorded	133	20.4
	Total	653	100.0
Foetal Heart Rate	Recorded	568	87.0
	Not Recorded	85	13.0
	Total	653	100.0

Uterine Contractions	Recorded	530	81.2
	Not Recorded	123	18.8
	Total	653	100.0
Vaginal Examination	Recorded	494	75.7
	Not recorded	159	24.3
	Total	653	100.0

4.4 Part three: Midwifery care during first stage of labour

This part presents the results on midwifery care during the first stage of labour. The first stage of labour constitutes two phases. The first phase is called the latent phase while second phase is called the active phase of labour. As indicated in the table 3 only 33 (5.1%) of partographs were opened and all 620 (94.9%) were not opened on latent phase. The study again revealed that out of 653, only 161 (24.7%) observations were done hourly and 492 (75.3%) files did not indicate whether observations were done or not.

Table 3 Latent phase of labour

Partograph opened in latent phase of labour			
		Frequency	%
	Recorded	33	5.1
	Not recorded	620	94.9
	Total	653	100.0
Observations done hourly			
	Recorded	161	24.7
	Not recorded	492	75.3
	Total	653	100.0

Table 4 Active phase of labour

Partograph opened in active phase of labour

	Frequency	%
Recorded	402	61.6
Not recorded	251	38.4
Total	653	100.0

Contractions monitored half hourly

Recorded	284	43.5
Not recorded	369	56.5
Total	653	100.0

Foetal heart rate monitored half hourly

Recorded	286	43.8
Not recorded	367	56.2
Total	653	100.0

BP monitored four hourly

Recorded	245	37.5
Not recorded	408	62.5
Total	653	100.0

Urine monitored two hourly

Recorded	201	30.8
Not recorded	452	69.2
Total	653	100.0

Vaginal examination done and plotted four hourly

Recorded	238	36.4
Not recorded	415	63.6
Total	653	100.0

The records of women who were managed in the latent and active phase of labour were analysed to find out if clinical observations were recorded according to the MoHSS guidelines (MoHSS, 2009) for the latent phase of labour.

The results in table 4 indicated that partographs were more managed during the active phase of labour than during the latent phase. The study revealed that 402 (61.6%) partographs were opened, however for a total number of 251 (38.4%) nothing was recorded on the partograph part. During the active phase of labour, contractions and fetal feart rate must be monitored half hourly according to (Sellers, 2012). This study indicated that 284 (43.5%) contractions were monitored half hourly while 369 (56.5%) were not monitored because they were not recorded. This analysis revealed that 284 (43.5%) foetal heart rates were monitored half hourly but 367 (56.2%) were not recorded.

Analysis was also done on monitoring BP in the active phase of labour. This analysis shows that 245 (37.5%) BP were checked four hourly while the majority of files indicated that 408 (62.5%) were not recorded. This study indicated that 201 patients (30.8%) urine were tested but 452 (69.2%) were not tested as supposed to be. Out of 653 only 238 (36.4%) vaginal examinations were done and plotted four-hourly while 415 (63.6%) were not done and recorded.

4.5 Part four: Midwifery care during second stage of labour

Table 5 Midwifery care during second stage of labour

		Frequency	%
Total duration of labour hours recorded			
	Recorded	115	17.6
	Not recorded	538	82.4
	Total	653	100.0
BP monitored and recorded			
	Recorded	239	36.6
	Not recorded	414	63.4
	Total	653	100.0

FHR monitored and recorded			
	Recorded	236	36.1
	Not recorded	417	63.9
	Total	653	100.0
Bladder emptied	Recorded	253	38.7
	Not recorded	400	61.3
	Total	653	100.0

The study indicated that out of 653 women who delivered, 115 (17.6%) had their total duration of labour hours recorded and 538 (82.4%) the duration of labour was not recorded. As illustrated in table 5, only 239 (36.6%) women had their blood pressure monitored in the second stage of labour while 414 (63.4%) the BP were monitored. For foetal heart rate 236 (36.1%) were recorded but a proportion of 417 (63.9%) were not recorded. Analysis revealing care of bladder showed that 253 (38.7%) bladders were emptied, while 400 (61.3%) were not.

4.6 Part five: Midwifery care during third stage of labour

During the third stage of labour, oxytocin 10 IU intra muscular injection (IMI) was immediately given to 512 (78.4%) and it was recorded while for 141 (21.6%) it was not recorded. Cord controlled traction were also done on 509 (77.9%) and the tractions were recorded, but for 144 (22.1%) they were not recorded. The same analysis indicated that for 499 (76.4%) their uterus were palpated immediately after the expulsion of the placenta to determine if they were well contracted while for 154 (23.6%) they were not palpated. Table 6 presents the findings.

Table 6 Midwifery care during third stage of labour

Oxytocin 10 IU imi given		Frequency	%
	Recorded	512	78.4
	Not recorded	141	21.6
	Total	653	100.0
Cord controlled traction			
	Recorded	509	77.9
	Not recorded	144	22.1
	Total	653	100.0
Uterus well contracted			
	Recorded	499	76.4
	Not recorded	154	23.6
	Total	653	100.0

4.7 Part six: Midwifery care during fourth stage of labour

Table 7 Midwifery care during fourth stage of labour

		Frequency	%
BP	Recorded	474	72.6
	Not Recorded	179	27.4
	Total	653	100.0
Pulse	Recorded	472	72.3
	Not Recorded	181	27.7
	Total	653	100.0
Temperature	Recorded	380	58.2
	Not Recorded	273	41.8
	Total	653	100.0
Well Contract Uterus			
	Recorded	462	70.8
	Not Recorded	191	29.2
	Total	653	100.0

During the fourth stage of labour, 474 (72.6%) records indicated that blood pressure was measured after an hour of birth, whereas for 179 (27.4%) records indicated that blood pressure was not measured. The same records indicated that for 472 (72.3%) pulse was recorded though for 181 (27.7%) it was not recorded. Out of 653, for 380 (58.2%) temperatures were measured and recorded while for 273 (41.8%), they were not recorded. For 462 (70.8%) the uterus were checked if they were well contracted and the uterus of 191 (29.2%) were not checked. These findings are presented in table 7.

4.8 Summary

This chapter presented the findings from the study assessment of quality midwifery care during labour at intermediate and referral hospital maternity departments in Namibia. The demographic profile of women whose records were reviewed was presented, as well as the care they received during the first, second, third and fourth stages of labour. It can be concluded that midwifery care given during labour varies due to various reasons. Results are presented in figures, chart pies and mostly in tables for easy understanding.

CHAPTER FIVE

DISCUSSION

5.1 Introduction

This chapter presents the discussion of the study findings on assessment of quality midwifery care during labour that were presented in Chapter Four. The discussion focuses on demographic information of the women who gave birth during the study period and the quality care they received during labour.

5.2 Demographic profile of women

5.2.1 Age groups

The results of this study demonstrated that the age group from twenty to thirty-five was the highest age group that gave birth (78.56%) and adolescents that gave birth were only (10.72%). Women aged 36 and above who gave birth constituted a lower percentage, namely (10.72%). The results revealed that the majority of the age groups that gave birth were mature and could make informed decisions for themselves. Informed decisions might lead to good quality of midwifery care. The conclusion is that this age group is capable of commencing ANC early, detecting early problems during pregnancy and presenting themselves to the nearest health facility, unlike the age group consisting of adolescents. On the contrary, Tippawan & Suchonwanich (2014), in their comparison study between adolescents and adults identified highest birth rate in adolescents aged 19 years 58.3 per cent per 1,000 population.

WHO (2006) guidelines for ANC clearly stipulated that all pregnant women should have at least four ANC assessments by or under the supervision of a skilled attendant.

Based on WHO guidelines, it could be concluded that adolescents are at risk. Subsequently, adolescents are prone to poor quality of midwifery because adolescents and young women are at particular risk of delaying pregnancy disclosure and ANC. The findings of this study on the adolescences pregnancy are also supported by another study (Pell et al., 2013), namely, that adolescents and unmarried younger women hide their pregnancies and delay ANC to avoid the potential social implications of pregnancy: exclusion from school, expulsion from their natal home, partner abandonment, stigmatisation and gossip.

Chen et al. (2007) found that adolescents' pregnancies were associated with increased risks of pre-term delivery, very low birth weight, babies being small for gestational age and neonatal mortality, with a general tendency of poorer outcomes in younger teenagers. Furthermore this assumption could be supported by Ganchimeg et al. (2014) who found that adolescent pregnancy was independently associated with increased risks of low birth weight, preterm delivery and severe neonatal conditions, and an increased risk of intra-hospital early neonatal death.

In contrast, older women did not make active efforts to hide their pregnancies. However, they would only directly disclose their pregnancy to close relatives and their husbands who would encourage them to book for ANC. However, in the age group of 36 years and above women might have a tendency of delaying ANC due to a bad experience with the service, or they might think they know what is required of them during pregnancy.

The assumption above is supported by the study of Pell et al. (2013) in Kenya and Malawi, and to a lesser extent in Ghana, revealing that with regard to older multiparous women, health workers confirmed that in some instances, they waited

till the ninth month. Being more accustomed to the pregnancy experience, their priority was obtaining the antenatal card and they were less concerned about monitoring the progress of the pregnancy. However, the same study indicated that multiparous women who had experience previous health problems during pregnancy were likely to initiate ANC earlier (Pell et al., 2013). In general, delaying in seeking ANC services may lead to poor pregnancy outcome.

5.2.2 Marital status

Over the past several decades, rates of out-of-wedlock births have risen. This study reported a higher rate of single mothers with approximately (85%) not married. This is contrary to the study of Markos & Bogale (2014) regarding the marital status of study subjects, namely that (94.5%) of them were married. In their comparison study between mothers aged 20-24 years and adolescents, Ganchimeg et al. (2014) found that adolescents were more likely to be single, less educated and nulliparous.

In their study Young and Declercq (2010) stated that young and single mother tends to receive poor quality of midwifery care due to the fact that they may not get social and financial support from their partners. Additionally, single mothers may seek midwifery care very late which leads them to poor quality of midwifery care. Young & Declercq (2010) claim that infants being small for gestational age (SGA) are more commonly born to partnered women and unmarried women, compared to married women. Small for Gestational Age infants are also more commonly born in unstable relationships compared to stable relationship.

This study did not assess the birth outcomes versus marital status of studied matters, hence the researcher was interested to know which marital status has given more births. This made it difficult to determine the quality of midwifery care rendered

during labour on marital status level. Therefore, the researcher is suggesting that future data collection on marital status should consider distinguishing between married, single mothers with and without partners and their birth outcomes.

5.2.3 Booked for antenatal care

Ante natal care, skilled-delivery care and emergency obstetric care, are key element of the package of services aimed at improving maternal and newborn health. This study has indicated that in the case of antenatal care (95%) of women have attended antenatal care. This analysis revealed the good coverage and it suggests that most pregnant women are exposed to the information regarding ANC. This is correlated with previous studies conducted by Raatikainen, Heiskanen, & Heinonen (2007) relating that in Finland, almost the entire pregnant population (99.8%) attended antenatal care, since it was provided by the state free of charge and was easily accessible.

Regardless of easily accessible and high quality of maternity care, a small minority of pregnant women chose not to use it, according to this study. It appeared that around (5%) of women did not attend at all. This study revealed that regulations at hospitals at issue are in line with the WHO new model of FANC, consisting of at least four visits to a health facility during an uncomplicated pregnancy. However, there was no clinically differential effect of the reduced number of antenatal visits. Observational studies consistently indicated that groups having more antenatal-care visits had lower maternal, foetal, and neonatal morbidity and mortality than those who had fewer antenatal-care visits.

5.2.4 Obstetric history

Previous childbearing experiences have an important part to play in possible outcome prediction of the current pregnancy. Sellers (2018) highlight the following obstetric information that can assist in identifying health problems in pregnancy: gravidity, parity, previous caesarean section (CS), stillbirth or neonatal death, multiple pregnancy and so on. Despite these facts, this study specifically focused on parity of women delivered during the period of the study.

Sellers (2018) further define parity as the number of previous viable births including infants stillborn or alive. The parity in this study is classified into three groups: primipara (a woman who has had one viable pregnancy), multipara (a woman who has had two or more), and grande multipara (a woman who has had five or more viable pregnancies) according to (Sellers, 2018).

It was in the interest of the researcher to find out what group has had more percentage in deliveries because of the association of risks for each group. This study found markedly higher rates (59.9%) for multipara followed by primipara with (30.1 %) and lastly grande multipara with (10.0 %). This means that many deliveries happened to the parity group with less complications. The researcher is of the opinion that the midwifery care that was provided during the study period, could be of good quality due to less complications, even though complications that occurred during that period were not studied.

Christensen and Overgaard (2017) in their comparison study looking at risks of primipara versus multipara concluded that intrapartum complications and the use of obstetric interventions are more common in primipara than in multipara during childbirth. Moreover, primipara have longer labours hours, are at an increased risk of

intrapartum complications and undergo substantially more obstetric interventions, especially assisted vaginal delivery and unplanned caesarean section deliveries (Christensen & Overgaard, 2017). According to Mgaya et al. (2013), grande multipara group is associated with anemia, diabetes mellitus, hypertension, malpresentation, abruptio placentae, placenta previa, post-partum hemorrhage due to the uterine atony, and uterine rupture.

5.2.5 Mode of delivery

Relating to the mode of delivery, this study revealed that (76%) of the records delivered via normal vertex delivery (NVD) while around (23%) were delivered by caesarean section. This reveals that NVD is more common than caesarean sections in the hospitals being studied. This result concurs with a recent study conducted by Pun & Chauhan (2011) in Nepal where the researchers learnt that normal delivery was the common mode of delivery among both groups (77.4% vs. 74.6%). Their study proposed to compare the maternal and neonatal outcome of the teenage mothers (15-19 years) with that of the young mothers (20-24 years).

In addition, this was similar to the results of another study conducted in Iran by Maharlouei et al. (2013). They compared three groups of pregnant women, regarding their preference for CS or vaginal delivery. Of these subjects, 2197 (31.7%) preferred to have CS, 4308 (62.2%) favoured a NVD and 416 (6%) had no idea regarding the route of delivery (Maharlouei et al., 2013). However, a multicountry study by Ganchimeg et al. (2014), indicated that adolescents were at an increased risk of obstructed labour and caesarean sections indicated for cephalo-pelvic disproportion because of the immaturity of their pelvic bones.

Only (0.2%) of the deliveries was breech. In the case of vacuum-assisted vaginal delivery, this study demonstrated that less than one percent of case vacuum-assisted delivery was used, with no forceps instrument delivery at the hospitals studied.

5.3 Midwifery care on admission

It is crucial to assess all pregnant women on admission comprehensively with the aim of detecting complications earlier and managing them accordingly. Identification of complications fundamentally through observation is emphasised and as a result this finding provides a baseline for the need to improve practice and education of midwives.

A high percentage of the women in this study had a comprehensive assessment done on admission. This means that maternal (blood pressure, temperature, pulse, urine test), foetal, (foetal heart rate) and assessment of progress of labour (uterine contractions and vaginal examination) were done on admission. It is worth mentioning the importance of the midwife assessing the psychological, emotional and physical condition of the woman upon admission, as well. Furthermore, this study revealed that the comprehensive assessment of women ranging from (75.7-86.7%) observations were done upon admission. This figure (75.7-86.7%) suggests that at least midwives do what is expected from them upon admission of expecting mothers, but they need to improve on that since all pregnant women are considered as high risks. This study noted low percentage (13.0% - 24.3%) of observations were not done on admission. With this figure (13.0% - 24.3%), one can speculate it could be that patients came in fully dilated on admission, therefore making it difficult to do observations. This could jeopardise maternal and foetal outcome due to poor and substandard care.

5.4 Midwifery care during first stage of labour

According to Nyamtema et al. (2008) the partograph is known as a universal and efficient tool for monitoring and identifying women in need of obstetric intervention. The partograph (Figure 3), as recommended by the WHO is a graphical tool used to monitor the progress of the first stage of labour, thereby preventing prolonged labour (Opoku & Nguah, 2015). In addition, it is recommended for routine monitoring of the first stage of labour to help the birth attendant identify slow progress of labour and prevent prolonged labour and its complications.

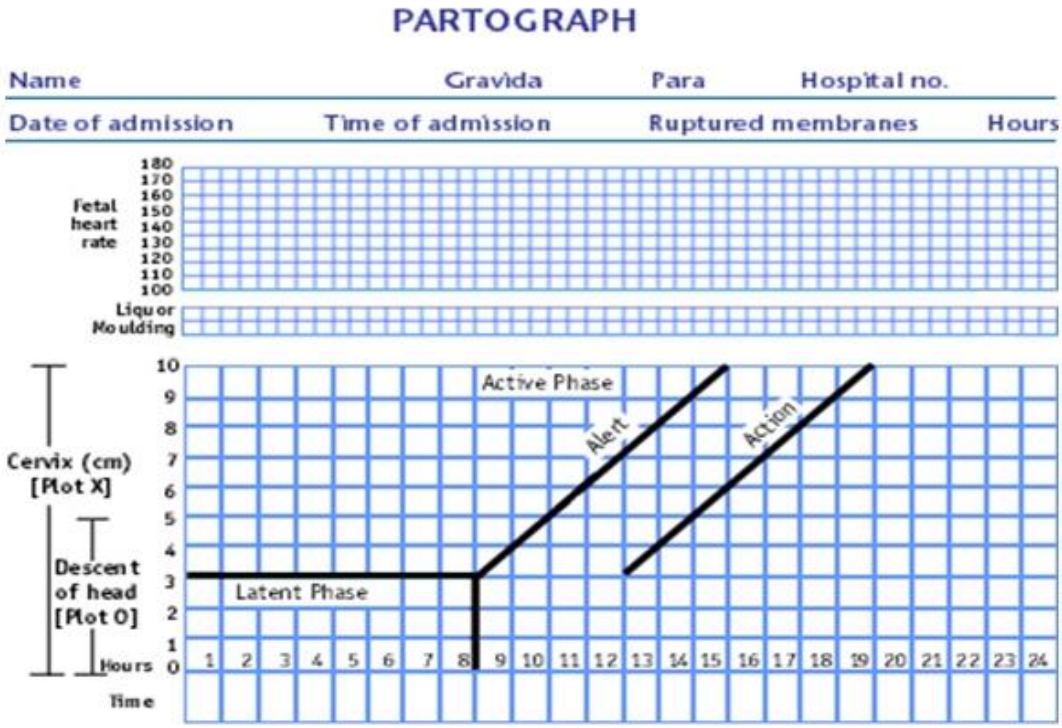

Figure 3 Partograph

In their study Opoku & Nguah (2015) explain that WHO standard protocols of managing partograph include foetal heart rate, maternal pulse and uterine contractions monitored and charted every 30 minutes, cervical dilatation, descent of the presenting part and moulding monitored every four hours and blood pressure monitored every two hours.

With regard to the management of women in the first stage of labour in this study, (5.1%) partographs were opened in the latent phase of labour. This could be low due to the fact that the study did not focus on women who were admitted in labour only. Apart from opening partographs, out of (24.7%) of opened partographs, (75.3%) observations were not done according to WHO partograph protocols. Factors contributing to the underutilisation of the partograph could be that there were various reasons for admission, such as elective caesarean section and medical conditions. However, such women ended up giving birth.

Other factors could be that there were discrepancies between midwives and obstetricians regarding per vaginal examination findings; early plotting before the woman was in an established labour; staff shortage or lack of understanding the skill of recording; lack of commitment by midwives, and ignorance. The poor quality of both maternal and foetal monitoring in this stage could again be associated with excessive workload or lack of equipment. Early opening of a partograph could lead to early identification of problems and interventions. Despite this fact, poor monitoring of the first stage of labour could also lead to foetal distress or prolonged labour not being detected on time, which could result in adverse outcomes.

In contrast, this study revealed that a high proportion (61.6%) of partographs were opened in the active phase of labour. The present study revealed high proportions of unrecorded parameters on the partograph and substandard monitoring of the progress of labour, according to partograph management guidelines. Lack of recording contractions monitored half hourly stands at (56.5%). Of the parameters pertaining to foetal wellbeing, foetal heart rate was recorded according to protocol in more than half of the cases (56.2%). The ability to pick up abnormal foetal heart tracings is crucial to diagnose foetal distress in labour. Therefore, proper charting of foetal heart

rates on the partograph is key to identifying foetal heart rate abnormalities and the early stages of foetal distress. Blood pressure monitored two hourly in this study stands at (62.5%). It is known that blood pressure during the first stage of labour is influenced by the physiological effects of labour itself. (69.2%) urine test was monitored two hourly while vaginal examination done and recorded four hourly stand at (63.6%). Similar findings to this study, from Yisma et al. *(*2013) revealed that only (32.9%), (30.70%) and (20.70%) of the foetal heart rate, cervical dilation and uterine contraction respectively, were recorded according to the protocol for monitoring of these three labour parameters.

Of the studied partographs, poor record keeping, monitoring and supervision of labour were revealed. This is indicative of poor monitoring of parameters on the partograph against standards. This study results are similar to those previously reported in some studies, for example Mathibe-Neke, Lebeko & Motupa, (2013) reported that partographs were audited, and revealed an inadequate recording in relation to observations documented by midwives and doctors. An evaluation of the use of a partograph led to a finding that each of the reviewed partographs was either incomplete or incorrectly filled. These findings seem to declare the inadequate, incorrect or non-use of a partograph, a source for concern. In order to achieve good foetal and maternal outcome, it is extremely important to monitor both conditions during labour.

The differences on when to open the partograph could be due to discrepancies among midwives' principles on the use of a partograph during labour. It seems some midwives believe that the partograph is initiated during the latent phase of labour which is a recommended guideline, but only if the woman is experiencing true labour.

On the other hand, some midwives believe only in opening of partograph when the woman is in the active phase of labour.

The hospitals studied did not adopt modified WHO partographs, hence partographs with latent and active phases were still in use. A modified partograph was introduced that incorporated the removal of the latent phase and defined the beginning of the active phase at 4 cm cervical dilatation, instead of 3 cm. Therefore, the researcher is of the opinion that this could be the contributory factor to the misperception of when to open the partograph. A limitation of this study is that it assessed only the completion of the parameters of the partograph during labour and not whether partograph completion was translated into labour management. Findings from midwifery care in the first stage of labour, provide evidence that shortcomings on management of partograph exist in both hospitals studied.

5.5 Midwifery care during second stage of labour

According to Sellers (2018) the second stage of labour begins when the cervix is fully dilated (ten centimetres) and ends with the delivery of the baby. The duration of this stage is usually shorter than the first stage of labour. Nevertheless, foetal heart rate and blood pressure should be observed and recorded after each bearing down effort to monitor the wellbeing of the foetus and that of the mother. This study discovered that foetal heart rate and blood pressure were not well attended to. Only (36.1%) foetal heart rates were monitored while BP was monitored for (36.6%) only.

The results of this study demonstrated that during second stage of labour, complications could be identified earlier if observations were done according to management of second stage of labour guidelines. Furthermore, results illustrated

poor quality of midwifery care rendered during this critical period. The researcher could be speculates that poor quality of midwifery care rendered during this period could be the contributing factors to high maternal and neonatal mortality and morbidity in Namibia. Maternal and neonatal mortality and morbidity are key words in this study because they are commonly used as an indicator in Namibia's development status and as a measurement of the safety and quality of maternity care services.

Additionally, this study revealed that (61.3%) of the women who delivered, their bladders were not emptied regularly. A full bladder that prevents descent of the foetal head or decreases the strength of uterine contractions should be corrected. Therefore, it is very important for the patient to empty her bladder before starting to bear down. If the patient is unable to pass urine, the bladder must be emptied with an in and out catheter done as a sterile procedure. This study has included all modes of deliveries, caesarean sections too. Low percentage of observations not done could be because some patients delivered by CS, therefore they did not go through the second stage of labour. Another reason could be that some second stages did not last long enough to give room for observations. Again, born before arrival could also be one of contributing factor to low percentage of observations not done on the second stage of labour due to the fact that delivery happened before arrival at the hospital.

The finding from this research indicated that the majority (82.4%) of patients in the second stage of labour had their total duration of labour hours not being recorded. It is very crucial to monitor labour hours because generally, long labour duration is likely to increase the risk of obstetric complications, such as foetal hypoxia. However, some medical doctors at the hospitals in this study believe that as long as the labour is within a normal range and other maternal and foetal conditions are reassuring, a

woman should be allowed to continue the labour process, regardless of prolonged labour.

5.6 Midwifery care during third and fourth stage of labour

According to Aflaifel and Weeks (2012) the third stage of labour begins after the completed birth of the baby and ends at the completed delivery of the placenta. It is the most dangerous time of childbirth for the mother. Generally, the third stage lasts about 5 -15minutes in active management (Seller, 2018). Many of today's midwives and obstetricians were taught that active management of the third stage of labour (AMTSL) is the administration of a prophylactic uterotonic drug oxytocin 10 IU IMI (to help the womb to contract) within one minute of the delivery of the baby (after palpating for the second baby). Cord clamping and placenta delivered by controlled cord traction are the only safe ways to deliver the placenta. These measures reduce the relative risk of Postpartum Haemorrhage (PPH). According to Marshall, Buffington, Beck and Clark (2008), PPH is one of the leading causes of maternal deaths in many countries, accounting for 60% of maternal deaths.

This study revealed the high percentage of women (78.4%) were given oxytocin immediately after birth of the baby. However, it cannot be mentioned that oxytocin was given within a minute after delivery since the midwives did not record the time when the uterotonic drug was given. Furthermore, the study reported that for (77.9%) of women who delivered, the cord controlled contraction method was used. These findings give a clear picture to the researcher that midwives have adopted AMTSL as recommended by WHO. These results are more or less similar to those reported by Farrar et al. (2010) in the UK, claiming midwives (73%) always or usually used AMTSL for vaginal births and (76.4%) of women who delivered, had their uteri palpated to check if they were well contracted or not.

Indeed, care in the third stage of labour could not score (100%) due to various unspecified reasons. Firstly, not all deliveries were vaginally, some were CS. It could be that (21.6%) of the women delivered via CS. Secondly, some women have had home deliveries. This means oxytocin would not be given within one minutes after the birth of the baby. In case of CS, oxytocin would not be given IMI but intra vascular injection (IVI). The same as for the placenta delivery, controlled cord traction is only applicable to vaginal deliveries and not to assisted deliveries.

Although AMTSL has been proposed for the prevention of postpartum haemorrhage, some researchers seem to differ. According to Deneux-Tharaux et al. (2013) controlled cord traction as one component of the AMTSL, has no significant effect on the incidence of postpartum haemorrhage. However, controlled cord traction have effects, namely it reduces the duration of the third stage and the need for manual removal of the placenta. Additionally, women in the controlled cord traction arm reported a significantly lower intensity of pain and discomfort as well as less fatigue and anxiety.

The fourth stage of labour is defined as a period of one hour after birth (Sellers, 2018). It is imperative to observe and record maternal condition and vital signs during this stage such as BP, pulse and temperature. The findings from the present study appear to confirm that (72.6%) BP was done and recorded, pulse was done for (72.3%) while temperature was measured and recorded for (58.2 %). This study further revealed that (70.8%) uterus were palpated to determine if they were well contracted or not. It can be concluded that average quality of midwifery care was rendered extremely during third and fourth stage of labour comparing to other stages of labour. It looks like efforts were more focused on fourth stage of labour with reasons only known to

the midwives. Therefore the researcher is suggesting further research of assessing factors associated with management of different stages of labour.

5.7 Summary

This chapter highlighted and discussed the findings of the study with reference to literature. Although a considerable amount of experience and information on the use of the partograph had been accumulated in the past decades, it seems not to be effectively used in hospitals studied. The study indicated that partographs were managed more on the active phase than on the latent phase of labour. It also revealed that in the second stage of labour foetal heart rate and blood pressure were not well documented. However, in the third and fourth stages of labour the midwifery care scored above fifty percent. The next chapter concludes the study and makes recommendations based upon its findings.

CHAPTER SIX

CONCLUSION, LIMITATIONS AND RECOMMENDATIONS

6.1 Introduction

The research findings of this study are summarised and presented in this chapter. Conclusions are drawn based on these findings. Additionally, recommendations for practice and further research are formulated. This was a retrospective study with a descriptive quantitative design.

6.2 Conclusion

The aim of the study was to assess the quality midwifery care during labour at IHK and WCH Maternity Departments, from January to March 2018. In order to realise this aim specific objectives were formulated that included selecting maternity records in order to describe socio-demographic profiles of women who delivered during the period of conducting the research. Other objectives were to determine the standard of midwifery care rendered during the first, second, third and fourth stages of labour by reviewing maternity records and to analyse the standard of midwifery care rendered during the first, second, third and fourth stages of labour.

The study concluded that women who gave birth is of the ages ranging between 15 to 46 years, with the majority being those aged 20 -35 years. Most of those women, were single and only about (14.5%) were married and one was a divorcee. The majority had attended ANC and only (5.1%) did not attend at all. About (59.9%) of these women had two or more children and (30.1%) had one child while (10.0%) had five children or more. Most of these women had normal vaginally deliveries, the rest had assisted deliveries.

6.2.1 Determine the quality of midwifery care rendered during first, second, third and fourth stages of labour by reviewing maternity records.

The findings from the research revealed that observations were not done comprehensively throughout labour. It was speculated that it could be that delaying of patients coming to hospital on time, staff shortage or staff ignorance could be the reasons. Although a considerable amount of experience and information on the use of the partograph had been accumulated in the past decades, it seems not to be effectively used in hospitals studied. The study indicated that partographs were managed more on the active phase than on the latent phase of labour. It also revealed that in the second stage of labour foetal heart rate and blood pressure were not well documented. It is too early to conclude that the midwifery care given during labour was poor, therefore further research is recommended to investigate factors associated with this practice.

6.2.2 Analyse the quality of midwifery care rendered during first, second, third and fourth stages labour.

It was revealed that more of the partographs (61.6%) were opened in the active phase of labour than in latent phase of labour (only 5.1%). However, most of the opened partographs were not completed. Furthermore, most partographs were not managed according to WHO protocols and guidelines. Early detection and timely intervention of obstetric complications are the most important activities to prevent maternal and perinatal mortality and morbidity. Regarding the third stage of labour, (78.4%) of the women were given oxytocin immediately after birth and in the fourth stage of labour observations were done and recorded above (50%). As a result, quality of midwifery

care that was rendered could be linked to the contributing factors associated with high rate of maternal and neonatal mortality and morbidity in Namibia.

6.3 Limitations

The researcher identified some limitations in the study which are highlighted next. The study was limited to the maternity records of women who delivered from 1 January to 31 March 2018. Again, this study had the limitation of having a retrospective design, therefore its validity could only relate to the studied population. The researcher aimed to assess 655 records, however, only 653 maternity records were sampled for inclusion in the study. The records were stored alphabetically, making it difficult for the researcher to access records of 1 January to 31 March 2018. In fact, it was challenging because the researcher expected records to be stored as per specific month.

Time constraints limited the researcher from including more research places to increase the power of the suggestions and recommendations. Poor record keeping on maternity records was noted by the researcher. As the data were captured from maternity records, there is a possibility that quality of midwifery care that was rendered during the study period did not reveal the reality that had transpired.

6.4 Recommendations

Built on the study findings, recommendations were made (6.4.1) by the researcher with regard to improvement of knowledge and skills of midwifery care during labour. This was done in order to provide quality of midwifery care to pregnant women during the first, second, third and fourth stages of labour.

6.4.1 Recommendation by researcher for in-service training of health care professionals (HCPs) (especially midwives and obstetricians)

- HCPs must be trained on proper monitoring of women during labour in order to minimise the chance of prolonged labour and foetal distress.
- HCPs must also be taught to record parameters according to WHO standard protocols, as appropriate completion of the partograph is key to detecting abnormal progress of labour.
- This study presented evidence that HCPs need more education on the importance and correct usage of the partograph to ensure that all labours are monitored with the partograph as a tool for labour monitoring and management.
- Doctors and nurses should be reminded of the importance of proper record keeping with dates and legible signatures provided all the time, because records can provide evidence in a court of law.
- Skills training should include partograph interpretation and implementation of EmONC guidelines.

6.4.2 Recommendations for clinical practices

- The emphasis should be stressed on the importance of auditing records of inpatients on a continuous basis.
- Health facilities should implement all national maternal and neonatal guidelines.
- All planned programmes related to maternal and neonatal care must be implemented and strengthened.

- Regular audits of maternal and neonatal mortality and morbidity should be done. Data have to be placed in all maternity wards to emphasise the need of improvement.

6.4.3 Recommendations for community (patient-related)

- The community needs to be sensitised through church gatherings, youth gatherings and in the media about the importance of early utilisation of ANC and delivery care services, for the country to have a healthy population.
- The Ministry of Health and Social Services, through the Family Health Division should liaise with the Ministry of Basic Education, Arts and Culture on school health services and provide health education and counselling to teenage women on the importance of early antenatal care, health facility delivery and other reproductive health services.
- The community and pregnant women in particular, need to be educated about danger signs.
- There is a need to empower the health extension workers in the community to identify pregnant women and to encourage them so that they can start ANC as early as possible and deliver at hospital.
- It is recommended that the government implement measures that seek to empower pregnant women financially to ensure they are able to access care in health facilities for antenatal and delivery on time.
- There is a need to strengthen the implementation of partner involvement in Reproductive Health Services including antenatal and delivery services.

6.5. Recommendations for further research by researcher

The researcher recommends further research on the following:

- Outcome of an incomplete or wrongly recorded partograph;
- Assessment of skill level of HCPs on management of partograph;
- Determination of the availability of human and equipment resources within maternity and neonatal units; and
- Identification of the factors contributing to the high rate of maternal and neonatal mortality and morbidity.

6.6 Summary

This chapter presented conclusions, limitations and recommendations arising from the research. The findings were summarised as per the research objectives and the recommendations made for main actors for interventions that would hopefully ensure that HCPs are updated with latest WHO guidelines of antenatal and delivery services on time, in order to reduce the incidences of maternal and neonatal mortality and morbidity in Namibia. Above all, this study results demonstrated the need of the Namibian Government to put more efforts on how to improve the quality of maternity care services in Namibia. Recommendations on areas for future research were also made.

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APPENDIX 1: QUESTIONNAIRE FOR DATA COLLECTION

This questionnaire deals with the: ASSESSMENT OF QUALITY MIDWIFERY CARE DURING LABOUR AT THE INTERMEDIATE HOSPITAL KATUTURA AND WINDHOEK CENTRAL HOSPITAL MATERNITY DEPARTMENTS IN WINDHOEK.

SECTION 1. DEMOGRAPHIC INFORMATION

AGE ☐

MARITAL STATUS: SINGLE ☐
MARRIED ☐
DIVORCED ☐

BOOKED ☐ UNBOOKI ☐

GRAVIDA ☐ PARA ☐

ABORTION ☐

MODE OF DELIVERY NVD ☐
C/S ☐
BREECH ☐
VACUUM ☐

SECTION 2. ASSESSMENT OF QUALITY OF MIDWIFERY CARE DURING LABOUR

A	FIRST STAGE OF LABOUR COMPONENTS OF THE PARTOGRAPH PLOTTED		
	ON ADMISSION	**Recorded**	**Not Recorded**
	Date and time of admission recorded?		
	Reason for admission indicated?		
	Observations done on admission and recorded? BP		
	Temp		
	Pulse		
	Urine test		
	Foetal		
	Uterine contraction		
	Vaginal examination done?		
	Partograph opened in latent phase of labour?		
	Observations done hourly?		
	Partograph opened in active phase of labour?		
	Cervical dilation done and plotted 4 hourly		
	Uterine contraction monitored ½ hourly?		
	Foetal heart rate monitored ½ hourly?		
	Maternal B/P monitoring at least 4 hourly		
	Urination monitored at least every 2 hours		
B	**SECOND STAGE OF LABOUR COMPONENTS OF THE OUTCOME OF DELIVERY RECORDED**		
	Total duration of labour hours recorded?		
	Were BP, FHR monitored and recorded?		
	Bladder emptied?		
C.	**THIRD STAGE OF LABOUR COMPONENTS OF THE OUTCOME OF THE PLACENTA DELIVERY RECORDED**		
	Oxytocin 10iu IMI given		
	Placenta delivered cord controlled traction		
	Postpartum haemorrhage		
	MOTHER CONDITION IMMEDIATELY AFTER BIRTH		
	Oxytocin 10 IU imi given		
	Cord controlled traction		
	Uterus well contracted		
	MOTHER CONDITION AFTER ONE HOUR		
	BP		
	Pulse		
	Temperature		
	Uterus well contracted		

APPENDIX 2: LETTER OF APPROVAL FROM UNAM TO CONDUCT STUDY

UNAM
UNIVERSITY OF NAMIBIA

ETHICAL CLEARANCE CERTIFICATE

Ethical Clearance Reference Number: SON /439/2018 **Date: 28November, 2018**

This Ethical Clearance Certificate is issued by the University of Namibia Research Ethics Committee (UREC) in accordance with the University of Namibia's Research Ethics Policy and Guidelines. Ethical approval is given in respect of undertakings contained in the Research Project outlined below. This Certificate is issued on the recommendations of the ethical evaluation done by the Faculty/Centre/Campus Research & Publications Committee sitting with the Postgraduate Studies Committee.

Title of Project: Assessment Of Quality Of Midwifery Care During Labour At Intermediate Hospital Katutura And Windhoek Central Hospital Maternity Departments In Windhoek

Researcher: JONIA NGHIFIKWA

Student Number: 9524622

Supervisor(s): Dr. L. Lukolo (Main) Ms T. Endjala (Co)

Faculty: School of Nursing
Take note of the following:

(a) Any significant changes in the conditions or undertakings outlined in the approved Proposal must be communicated to the UREC. An application to make amendments may be necessary.
(b) Any breaches of ethical undertakings or practices that have an impact on ethical conduct of the research must be reported to the UREC.
(c) The Principal Researcher must report issues of ethical compliance to the UREC (through the Chairperson of the Faculty/Centre/Campus Research & Publications Committee) at the end of the Project or as may be requested by UREC.
(d) The UREC retains the right to:
(i) Withdraw or amend this Ethical Clearance if any unethical practices (as outlined in the Research Ethics Policy) have been detected or suspected,
(ii) Request for an ethical compliance report at any point during the course of the research.

UREC wishes you the best in your research.

Dr. J.E. de Villiers: UREC Chairperson

Ms. P. Claassen: UREC Secretary

APPENDIX 3: LETTER OF APPROVAL FROM MINISTRY OF HEALTH AND SOCIAL SERVICES TO CONDUCT STUDY

REPUBLIC OF NAMIBIA

Ministry of Health and Social Services

Private Bag 13198
Windhoek
Namibia

Ministerial Building
Harvey Street
Windhoek

Tel: 061 – 203 2537
Fax: 061 – 222558
E-mail: btjivamb@mhss.gov.na

OFFICE OF THE PERMANENT SECRETARY

Ref: 17/3/3 **JN**
Enquiries: Mr. Ben Tjivambi

Date: 28 January 2019

Ms. Jonia Nghifikwa
P.O. Box 7563
Windhoek

Dear Ms. Nghifikwa

Re: Assessment of quality of midwifery care during labour at IHK and WCH maternity departments in Windhoek.

1. Reference is made to your application to conduct the above-mentioned study.

2. The proposal has been evaluated and found to have merit.

3. **Kindly be informed that permission to conduct the study has been granted under the following conditions:**

3.1 The data to be collected must only be used for academic purpose;

3.2 No other data should be collected other than the data stated in the proposal;

3.3 Stipulated ethical considerations in the protocol related to the protection of Human Subjects should be observed and adhered to, any violation thereof will lead to termination of the study at any stage;

3.4 A quarterly report to be submitted to the Ministry's Research Unit;

3.5 Preliminary findings to be submitted upon completion of the study;

3.6 Final report to be submitted upon completion of the study;

3.7 Separate permission should be sought from the Ministry for the publication of the findings.

4. All the cost implications that will result from this study will be the responsibility of the applicant and **not** of the MoHSS.

Yours sincerely,

MR. B.T. NANGOMBE
PERMANENT SECRETARY

"Health for All"