BIRTH PREPAREDNESS AND COMPLICATION READINESS AMONG PRIMIGRAVIDA WOMEN ATTENDING ANTENATAL CLINIC AT NAKURU COUNTY HOSPITAL, KENYA

BY:

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DECLARATION

Declaration by the candidate

This thesis is my original work and has not been presented for examination in any other University. No part of this thesis may be reproduced without prior written permission of the author and or Moi University.

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Dedicated to my husband, children and to my mentors.

ABSTRACT

Background: Birth preparedness and complication readiness (BP/CR) promotes maternal healthcare service utilization to ensure safe motherhood by reducing the three-delay. Delay in seeking care, delay in reaching the health facility and delay in receiving timely care which are associated with poor maternal outcome for example antepartum or postpartum haemorrhage. Recognizing the crucial role in reducing maternal and neonatal deaths, the world health organization in 2001 promoted and recommended the birth preparedness and complication readiness interventions as a fundamental component of antenatal program and integrated management of pregnancy and childbirth.

Objectives: This study sought to describe and explore birth preparedness and complication readiness among primigravida attending the Nakuru county hospital antenatal clinic. The specific objectives were: to explore the status of birth preparedness among primigravida women, to determine the level of birth preparedness in their family, and to determine birth preparedness in Nakuru facility county hospital during antenatal period.

Methods: A descriptive cross-sectional study design using quantitative and qualitative methods. The target population was primigravida women aged 15-49 years who were attending antenatal clinic at Nakuru county hospital and nurse managers and in charges attending to these women. A sample of 262 primigravida women and six key informants were interviewed. The health belief model theoretical framework was used to categorize the variables for the study. Systematic sampling technique was used to select participants. Descriptive statistics was used to generate frequencies and proportions. The dependant variable was birth preparedness. The Chi square test was used to test the association of the independent and dependent variables at 95% confidence interval. Logistic regression was used to describe the relationships between variables. Qualitative findings comprised of coding of major themes using NVIVO 8 software into subthemes and themes respectively.

Results: Majority of respondents were aged 18-25 years 82%. 90% of the respondents had transport available. Those who had identified mode of transport and had identified the facility to deliver were 90%. Majority of the women had low knowledge on danger signs during pregnancy were 21%, 86% during labour and 66% during postpartum. Those who had arranged for blood through the relatives were 23% and those who had blood in the blood bank were 5.6%. BP/CR was significantly associated with age with an odd ratio (OR 0.39, 95% CI 0.219- 6.96) and level of education with an odds ratio (OR 0.486, 95% CI 0.284-8.31). From the qualitative analysis three themes emerged including resources the need to improve infrastructure to handle emergencies and complication at the facility, health information and staffing.

Conclusion: The study revealed low level of knowledge on danger signs, low levels on awareness on need of blood among pregnant women attending antennal clinic. There is need to improve laboratory services and avail a high dependency unit to manage complication. Provide trained staff to handle obstetric emergencies complications.

Recommendation: There is need to come up with strategies to improve the knowledge of danger signs among pregnant women. Women need to be sensitized on need to arrange for blood through relatives. There is need for a 24 -hour working laboratory services and high dependency unit and trained personnel to handle obstetric emergencies.

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ABBREVIATIONS

AIDS	Acquired Immunodeficiency Syndrome
ANC	Antenatal Clinic
BP/CR	Birth Preparedness and Complication Readiness
FP	Family Planning
HBM	Health Belief Model
HIV	Human Immunodeficiency Virus
ICD	International Classification of Diseases
IREC	Institutional Research and Ethics Committee
JHPIEGO	Johns Hopkins Program for International Education in Gynaecology and Obstetrics
KDHS	Kenya Demographic Health Survey
KII	Key Informative Interview
KNBS	Kenya Bureau of Statistics
KNH	Kenyatta National Hospital
MCH	Maternal Child Health
MDGS	Millennium Development Goal
MMR	Maternal Mortality Rate
NCRH	Nakuru County Referral Hospital
PMTCT	Prevention of Mother to Child Transmission
SA	Southern Asia
SBA	Skilled Birth Attendants
SDGs	Sustainable Development Goals
SPSS	Statistical Package for the Social Science
SSA	Sub-Saharan Africa
UN	United Nation
UNFPA	United Nation Population Fund
WHO	World Health Organization

OPERATIONAL DEFINITION OF TERMS

Birth preparedness: The process of planning for normal birth by identifying the place of birthing, arranged for transport, saved money for hospital expenses and identified a birth attendant.

Complication readiness: The action needed in case of obstetric emergency

Birth preparedness and complication readiness (BP/CR): The process of taking a series of steps prior to birth to ensure that a pregnant woman is prepared for normal birth and complication.

Awareness: To have information required during pregnancy knowledge on danger signs antenatally, intrapartum and postpartum.

Primigravida: A woman who is pregnant for the first time.

Maternal mortality: Defined in the Tenth International Classification of Diseases (ICD), as "the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes" (WHO, 2004).

A late maternal death: Defined as "the death of a woman from direct or indirect causes more than 42 days but less than one year after termination of pregnancy" (WHO, 2004). Maternal deaths are subdivided into two groups:

- **Direct obstetric deaths**: direct obstetric deaths are those resulting from obstetric complications of the pregnancy state (pregnancy, labour and the puerperium), from interventions, omissions, incorrect treatment, or from a chain of events resulting from any of the above.
- **Indirect obstetric deaths**: indirect obstetric deaths are those resulting from previous existing disease or disease that developed during pregnancy and which was not due to direct obstetric causes, but which was aggravated by physiologic effects of pregnancy.

Maternal mortality ratio (**MMR**): Is defined as "the ratio of the number of maternal deaths during a given period per 100,000 live births during the same time- period" is the most widely used measure of maternal deaths. This measure indicates the risk of

maternal death among pregnant and recently pregnant women. It reflects a woman's basic health status, her access to health care and the quality of services that she receives (Graham and Airey, 1987).

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CHAPTER ONE

INTRODUCTION

1.1 Introduction

The chapter presents the background, problem statement, justification of the study, research questions, broad objective, and specific objectives.

1.2 Background

Birth Preparedness and Complication Readiness (BP/CR) is an approach that aims at raising awareness at the personal, family and the community level creating a stronger demand for quality health services. Since pregnancy is perceived as an ordinary event, most families do not plan for birth nor do they expect an emergency (WHO, 2006). Birth preparedness is one of the elements of focused antenatal care (WHO, 2006). When a pregnancy complication arises, some families are unprepared and while gathering funds, finding transportation and reaching the appropriate health facility, time is usually wasted and, in many cases, it is too late (Markos & Bogale, 2014). Thus, it is imperative that all women and their families are equipped with adequate information about the danger signs of pregnancy complications and what actions should be taken. In addition, building or strengthening networks in the community is essential in order to ensure timely referrals and establish reliable transportation options (Paula, 2005).

A birth preparedness plan includes identification of the following elements by the pregnant woman. The desired place of birth, the preferred birth attendant, the location of the closest appropriate care facility, funds for birth-related and emergency expenses .It also involves a decision-maker during birth process, a birth companion, support in looking after the home and children while the woman is away, transport to a health

facility for the birth, transport in the case of an obstetric emergency and identification of compatible blood donors in case of emergency (WHO, 2006). The World Health Organization (WHO) recommends that pregnant women should have a written plan for birth and for dealing with unexpected adverse events, such as complications or emergencies, that may occur during pregnancy, childbirth or the immediate postnatal period, and should discuss and review this plan with a skilled attendant at each ante-natal assessment and at least one month prior to the expected date of birth (WHO, 2006).

The level of education is very important in analysing the decision of whether to seek care at the health facility or not (Caulfield et al., 2016). Lack of knowledge of the recognition of danger signs and complications are less perceived severity of pregnancy-related problems and are among the factors that can extend the time to decide in seeking health care (Caulfield et al., 2016). In developing countries, more than 60% of women have been given the knowledge on danger signs during Antenatal care (ANC)-visits (Caulfield et al., 2016). The danger signs are not the actual obstetric complications, but symptoms that are easily identified by non-clinical personnel.

Danger signs of pregnancies are a warning signs that women encounter during pregnancy, child birth and postpartum. It is important, to know this warning signs for women and health care providers to rule out serious complications and initiate treatment immediately (Akililu Solomon, 2015). Danger signs of pregnancy are mainly classified into three categories, during pregnancy severe vaginal bleeding, swollen hands/face and blurred vision (Markos & Bogale, 2014). Major danger signs during labour and childbirth include severe vaginal bleeding, prolonged labour (>12

hours), convulsions and retained placenta. Major danger signs during the postpartum period include severe vaginal bleeding, foul-smelling vaginal discharge, and fever (Markos & Bogale, 2014). Birth preparedness promotes maternal healthcare service utilization to ensure safe motherhood by reducing the delay in deciding to seek care, reaching the health facility and receiving timely care (Markos & Bogale, 2014). Recognizing its crucial role in reducing maternal and neonatal deaths, the WHO recommended and promoted BP/CR intervention as a fundamental component of the antenatal program (2001).

The global standard for maternal and neonatal care issued by WHO recommended that all pregnant women should have a written plan for birth and for dealing with unexpected adverse events in deliveries or immediately after birth (2006). This plan should be discussed with the skilled attendant at each antenatal visit or at least one month before delivery. BP/CR interventions have therefore been embraced with varied implementation by many African countries_(JHPIEGO, 2001). The BP/CR matrix delineates the roles of mothers, their partners, other family members, healthcare providers and community members involved in pregnancy, childbirth and the postpartum period. The birth-preparedness package promotes active preparation and decision-making for delivery by pregnant women. A birth plan is expected to assist women in making choices that would contribute to good pregnancy outcome_(JHPIEGO, 2001). If BP/CR is successfully implemented, it is anticipated that there will be an improvement to the maternal and neonatal health outcomes.

Maternal mortality remains a public health issue all over the world and is of great significance to the health burden in many developing countries. The WHO estimates that in developing countries around 300 million women suffer from pregnancy and

childbirth-related short term or long-term morbidities (Acharya, Kaur, Prasuna, & Rasheed, 2015). Maternal mortality occurs from risks that are related to pregnancy and childbirth as well as from poor availability and quality of health services (Agbodohu, 2013).

The global distribution of maternal mortality was high in the two regions,sub-Saharan Africa and Southern Asia, that accounted for 83.8% of all maternal deaths. Nearly 73% of all maternal deaths between 2003 and 2009 were due to direct obstetric causes whereas deaths due to indirect causes accounted for 27.5% of all deaths from known causes (Say et al., 2014). Hemorrhage was the leading direct cause of maternal death worldwide, representing 27.1% of maternal deaths. Hypertension was the second most common direct cause worldwide 14.0%. Maternal mortality due to sepsis was 10.7%, abortion accounted for 7.9%, and embolism and other direct causes accounted for the remaining 12.8% of global deaths (Say et al., 2014).

The purpose of this study was to assess the status of BP/CR and associated factors among primigravida women in Nakuru county hospital.

1.3 Problem statement

Sustainable Development Goal (SDG) three aims to ensure healthy lives and promote well-being for all at all ages (Callister & Edwards, 2017). In Kenya, the maternal mortality ratio remains high at 362 maternal deaths per 100,000 live births for the seven-year period preceding the survey (KDHS, 2014). Nakuru county has a maternal mortality ratio of 374 maternal deaths per 100,000 (UNFPA, 2014). There are interventions in safe motherhood for the birth preparedness strategy, for example

identification of means of transport and saving money for the same but often women are faced with delays in seeking care (Gacheri, 2018). According to (Thaddaeus & Maine 1994) maternal deaths occur due to three delays: delay in deciding to seek appropriate care, delay in reaching an appropriate health facility and delay in receiving immediate and appropriate care once at a facility. These delays can be reduced if pregnant women are prepared for birth and complications.

Maternal health is recognized by the constitution of Kenya as a fundamental right and it is vital to ensure that every pregnancy is wanted, every birth is safe, every new-born is healthy and no mother dies while giving life (The Government of Kenya, 2010).

Despite the fact that BP/CR is an essential strategy for reducing maternal mortality and morbidity, the status has not been well studied at different levels in the study area. Poor utilization of BP/CR has led to the failure of women to recognize danger signs and when complications occur, it takes time to obtain the care needed (Mark & Bogole, 2014). Therefore, this study sought to address the individual, family and hospital gaps related to BP/CR among primigravida women attending ANC in Nakuru county hospital.

1.4 Justification

Ensuring all women give birth with the help of a skilled birth attendant and access to emergency obstetric care has been identified as the most crucial intervention for reducing maternal and new-born deaths. Pregnancy and childbirth involve significant health risks.

Findings from this research will enable the county to know the status of BP/CR and associated factors among primigravida women in Nakuru county-level five hospitals.

The findings will also give recommendations on the strategies that can be put in place to solve the challenges related to maternal mortality in the county. The findings will eventually help to contribute to achieving the SDG to reduce the global Maternal Mortality Ratio (MMR) to less than 70 per 100,000 live births. It is hoped that the results of the study will provide valuable information for the design of possible programs, and policy interventions to improve maternal and neonatal health and serve as baseline information for further studies.

1.5 Scope of the study

The study assessed the status of BP/CR and its associated factors in Nakuru county hospital, Kenya.

1.6 Limitation

The study design was cross-sectional which does not provide strong evidence on the direct cause and effect relationship between BP/CR practice and the explanatory variables. The study was focused on one health facility covering a small proportion of women.

1.7 Broad objective

To assess determinants of BP/CR among primigravida in Nakuru County Hospital, Kenya.

1.7.1 Specific objectives

1 To explore the status of BP/CR among primigravida attending antenatal clinic in Nakuru County Hospital, Kenya

2 To determine the level of BP/CR during the antenatal period in the family

3 To assess determinants of BP/CR during the antenatal period in Nakuru County Hospital

1.8 Research Question

What is the BP/CR among primigravida women attending antenatal clinic at Nakuru County Hospital, Kenya?

1.9 Theoretical Framework

This study employed the health belief model. **(**French et al., 1992) asserts that The Health Belief Model (HBM) was developed as an attempt to explain the decision of an individual with respect to preventive health care. Personal beliefs influence on a person's health choices and behaviour. Further, (Calnan, 1984, Champion & Skinner, 2008) purposes that this model explains that health behaviour is determined by an individual's beliefs and perception about health problems and illness, and available resources address these problems.

The researcher adopts the health belief model so as to understand the thoughts of the women, behaviours and knowledge with regard to birth preparedness in Nakuru county hospital. The HBM mainly builds on the following four components, which make theoretical constructs for the exploration of the perception of women in this study.

The model postulates that the likelihood of behaviour (e.g. BP/CR) is predicted by (1) the individual's perceived threat towards the problem (severity of and susceptibility to the problem), (2) perceived seriousness (3) the perceived net benefit of adopting the behaviour (if the perceived benefit outweighs the perceived barrier), and (4) perceived barriers .These components together assess the women's

understanding of risks and explain decisions on health behaviour (Champion & Skinner, 2008, Hayden, 2009).

Perceived susceptibility: Every pregnant woman is at risk of unexpected and unpredictable life-threatening complications that could lead to death or injury to herself or her infant (Hayden, 2009). Women's perceived susceptibility of maternal health complications reflects their sense of risk – namely, their internal calculation of how likely they are to suffer complications. This means how much risk a person perceives he/she has (Hayden, 2009). Women predominantly from rural Nepal do not consider regular check-ups until there is a serious complication in pregnancy and childbirth (Suwal, 2008). Recognizing a danger sign brings about the realization of the need for care. Women may be aware of the risk but it does not guarantee that they will act for biomedical care. It is essential to see to what extent women see the risks, how they confront the problems related to pregnancy and obstetric complications. The greater the risks are perceived as susceptible, the greater the likelihood that they will seek care (Hayden, 2009). A study conducted in Nepal by (Thapa & Niehof, 2013) stated that women's perception of low-risk pregnancy is related to non-use of available contraceptive methods. (Suwal, 2008) mentions that health facilities are in place but women in the rural areas found it difficult to make decisions to utilize them. This study intends to look at how women recognize the problem and how they respond to the risks. The perception of increased susceptibility does not always lead to behavioural change. Other physical barriers, traditional practices and social norms should be considered (Hayden, 2009).

Perceived seriousness: If an individual does not see a health problem as risky or threatening, there is no stimulus to act. Perceived feeling about the seriousness of risk includes evaluation of both the medical consequences, including pain, disability,

death and social consequences such as the impact on work, family and social relations (Hayden, 2009). Perceived threat explains a women's belief about the seriousness, and how severe it can harm her. To decide on whether to seek medical care or not, one must believe in both susceptibility and severity, so health choices can be weighed. Perceived severity of these complications includes maternal and new-born death, as well as preterm birth, pregnancy is a risk, and there is a 10-15 percent chance of unexpected complications (Van den Broek & Falconer, 2011). For safe motherhood, the government of Nepal has developed the birth preparedness strategy, which is the process of planning for a normal birth during pregnancy and prevention of obstetric emergency (Brunson, 2010). This includes antenatal care check-up, money-saving, identification of delivery place, identification of blood donors in case of emergency. However, this strategy has not been implemented effectively in Nepal. One of the strong factors leading to this is the people's perception of childbirth as a natural phenomenon that does not require preparation (Brunson, 2010). Another factor is the deeply rooted traditional belief and practices of home delivery. Another one is the previous experience of access to health care facilities, which may be experienced to be difficult in terms of distance, cost and time. After analysing the impacts and the severity of each case, the person tends to act according to priorities. It is necessary to understand a woman's knowledge, education level, any formal and informal training of health and education that may have an impact on the perception of risk related to pregnancy and childbirth that make them decide to put it as a priority. Moreover, it is equally important to recognize how the woman explains her experience with other diseases in general. This can help get an insight into how concerned a person is for health care and for the diseases that might be usually contracted (Hayden, 2009).

Perceived benefits: A person's belief in giving importance to certain health actions decreases the risk of potential complications. A person tends to decide and adopt a healthy practice, when s/he believes that the decision they are taking would benefit them (Champion & Skinner, 2008, Hayden, 2009). When a person perceives a threat, whether these perceptions lead to behavioural change will be affected by the person's belief with respect to the perceived benefits of the various measures available to reduce the threat (Hayden, 2009). Perception of the risk of pregnancy and obstetric complications are examined by assessing whether women decide based on the benefits. The perceived benefit of a positive childbirth outcome (maternal and new-born survival) reflects the end goal for BP/CR. People tend to adopt healthier behaviours when they believe that the new behaviour will reduce the chances of developing a disease and illness (Hayden, 2009). Moreover, women may be ready to deal with a barrier if they feel there would be a beneficial outcome in the end. Therefore, the perception of barriers, and the role of women in this barrier is an important point to take into consideration.

Perceived barriers: The last concept of HBM explains that decisions on health action are influenced by perceived barriers to change. Perceived barriers to seeking timely care include an inability to reach facilities and afford treatment, mistrust of the health system, and socio-cultural context that affect a women's decision-making to seek emergency obstetric care, considering the perceived threat of complications. When an individual evaluates an obstacle on his / her way of determining health behaviour, the decision could not be made. Perceived barriers play a significant role in the behavioural outcome (Hayden, 2009). Demand-side barriers perceived by women on decision making are lack of knowledge on biomedical care, distance of health facilities and cost of health care, or high influence of an emic view of problems,

traditional belief and practice, family and social restriction on the roles and decision-making power of women (Ensor & Cooper, 2004). Fear of pain and embarrassment are also common issues women perceive as barriers in seeking health care (Mullany, 2006). Supply-side barriers include the availability of service and insufficient supply of quality care (Ensor & Cooper, 2004).

The perception of women is different in different ethnic groups and so is women's decision-making power within their household (Simkhada et al., 2006; Suwal, 2008). It is important to consider this factor in the study to understand the ethnic background as a barrier to a particular group of women to make decisions on birth preparedness and childbirth, such as the decision on the place of delivery (Shrestha et al., 2012).

More recently, other constructs have been added to the HBM thus, the model has been expanded to include cues to action and self-efficacy in 1988. Where cues to action explain how a person's attitude and behaviour is influenced by what triggers a specific action. These cues are any events, people or things that make people decide on certain health behaviour. In this study, women could be helped by the information of the specific programs of health education, mass media campaign (radio, television), midwives and health workers. Therefore, it is necessary to determine if these cues are influencing the perception of women. On the other hand, there is self-efficacy comes about when an individual own belief to do something regarding health and behaviour. In this study women's understanding of self-efficacy is essential to distinguish. Self-efficacy is greatly affected by education, role in the family, and the social construction of women's power of decision making for household matter, a financial issue or health care. Women's decision is largely influenced by her husband or mother

in law, or negotiation between husband and wife often takes place before taking the decision on seeking health care (Mullany, 2006).

1.10 Conceptual framework

The conceptual framework for this study was adopted from the theoretical framework in the health belief model discussed above (French et al, 1992)

The factors to be studied were grouped into sociodemographic, family and facility

Figure 1: Conceptual Framework

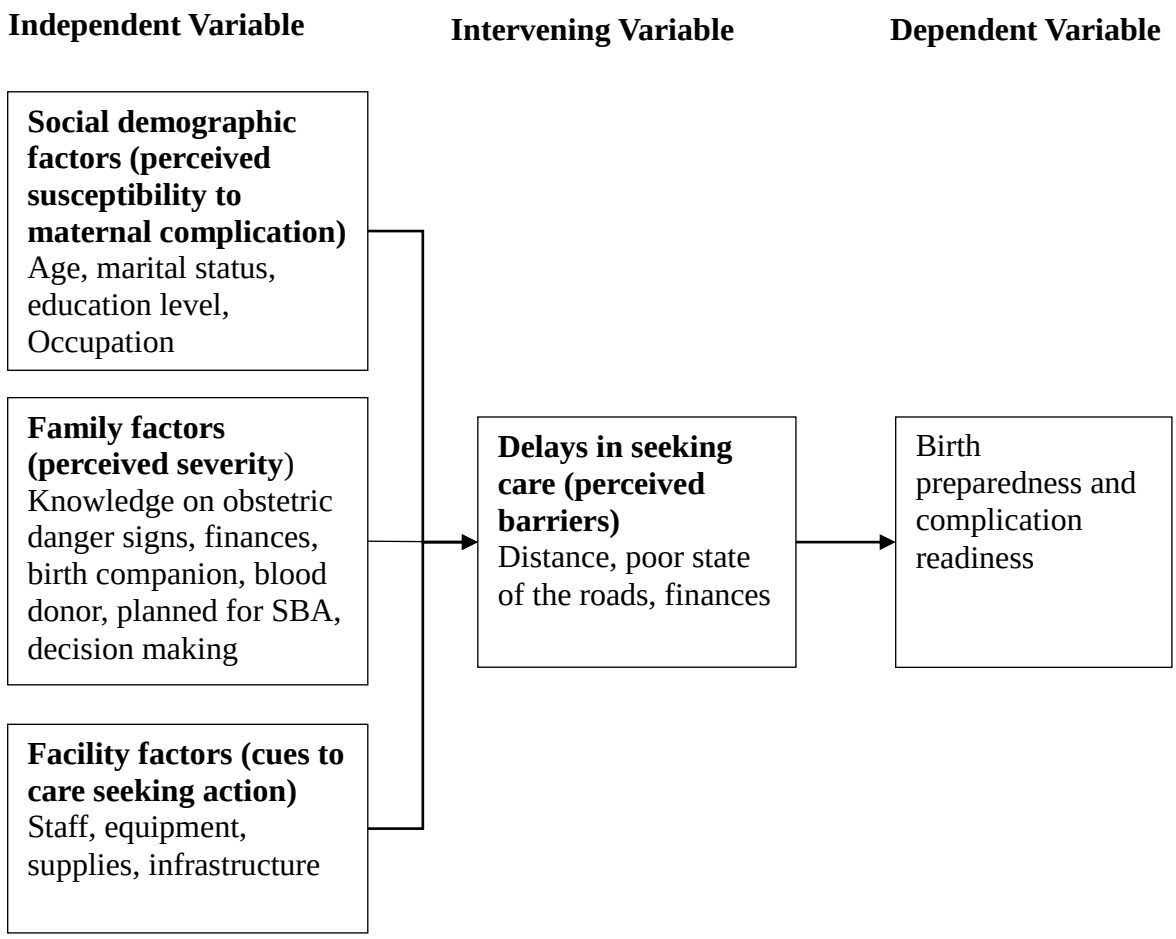

Figure 2: Conceptual Framework

Source: (Researcher 2018)

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents a literature review of BP/CR and factors associated with BP/CR at individual, family and health facility levels as discussed from the scientific literature.

2.2 Background on maternal health and mortality

Maternal health refers to the health of women during pregnancy, childbirth and the postnatal period. Each stage should be a positive experience, ensuring women and their babies reach their full potential for health and well-being (WHO, 2019).

Every pregnancy and birth is unique. Addressing inequalities that affect health outcomes, especially sexual and reproductive health and rights and gender, is fundamental to ensuring all women have access to respectful and high-quality maternity care (WHO, 2019). The Sustainable Development Goals (SDGs) offers an opportunity for the international community to work together and accelerate progress to improve maternal health for all women, in all countries, under all circumstances. SDG targets for maternal health include 3.1, aiming for an average global ratio of less than 70 deaths per 100 000 births by 2030, and 3.8, calling for the achievement of universal health coverage. These cannot be achieved without reproductive, maternal, new-born and child health coverage for all (WHO, 2019).

Improving maternal health is one of WHO's key priorities, grounded in a human rights approach and linked to efforts on universal health coverage. WHO advocates for health planning where women's values and preferences are at the centre of their

own care. Meaningful engagement and empowerment of women, families, communities, and providers is essential for quality improvement initiatives.

Promoting health along the whole continuum of pregnancy, childbirth and postnatal care is also crucial. This includes good nutrition, detecting and preventing diseases, ensuring access to sexual and reproductive health and supporting women who may be experiencing intimate partner violence (Wagner et al., 2016).

Maternal health is a big issue and is central to sustainable development. Each year, about 210 million women become pregnant and about 140 million new-born babies are delivered the sheer scale of maternal health alone makes maternal well-being and survival vital concerns (Wagner et al., 2016). Maternal health is key to sustainable development and to future generations.

Maternal mortality is widely acknowledged as a general indicator of the overall health of a population, the status of women in society, and the functionality of the health system. High maternal mortality ratios are thus markers of wider problems of health status, gender inequalities, and health services in a country (Miller et al., 2016)

Globally maternal mortality ratios in 2010 were estimated at 287 000 maternal deaths, a decline of 47% from levels in 1990 (WHO, UNICEF, UNFPA, & World Bank, 2012). Sub-Saharan Africa (56%) and Southern Asia (29%) accounted for 85% of the global burden (245 000 maternal deaths) in 2010 (WHO, UNICEF, UNFPA, & World Bank, 2012). In Eastern Asia, Northern Africa and Southern Asia, maternal mortality has declined by around two-thirds. However, the maternal mortality ratio (the

proportion of mothers that do not survive childbirth compared to those who do) in developing regions is still 15 times higher than in the developed regions (WHO, UNICEF, UNFPA, & World Bank, 2012). In Kenya the maternal mortality ratio remains high at 362 maternal deaths per 100,000 live births for the seven-year period preceding the survey (KDHS, 2014).

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Table 1: Women lifetime risk of dying from pregnancy-related complication (Day, 1998)

Region	**Risk of dying**
Africa	1 in 16
Asia	1 in 65
Latin America & Caribbean	1 in 130
Europe	1 in 1,400
North America	1 in 3,700
All developing countries	1 in 48
All developed countries	1 in 1,800
Division of reproductive health (Technical support) WHO CH-1211 Geneva 27	

The Sustainable Development Goal 3.1 states that by 2030, the global (MMR) should be reduced to fewer than 70 maternal deaths per 100,000 live births, with no country having a maternal mortality rate of more than twice the global average. (Jolivet et al, 2018).

The WHO has a vision of universal health care however due to inequalities in health systems, pregnant women in developing countries have higher risk of mortality and morbidity (August et al, 2015) Data generated by the WHO indicate that more than half a million women are dying each year from the complications of pregnancy and childbirth, with the vast majority of these deaths occurring in the developing world (WHO, UNICEF, UNFPA, & World Bank, 2012). BP/CR is a relatively common strategy employed by numerous groups implementing safe motherhood programs. The global Safe Motherhood Initiative was launched in 1987 in Nairobi Kenya with the goal of reducing maternal mortality by 50% by the year 2000 (Starrs, 2006). Many

interventions were put in place of which the training of Skilled Birth Attendants (SBA) and risk screening at antenatal care were widely adopted (Starrs, 2006).

In many societies in the world, cultural beliefs and lack of awareness inhibit preparation in advance for the delivery of the expected baby (Markos & Bogale,2014). Since no action is taken prior to the delivery, the family tries to act only when labour begins. Most pregnant women and their families do not know how to recognize the danger signs of complications. When complications occur, the unprepared family will waste a great deal of time in recognizing the problem, getting organized, getting money, finding transport and reaching the appropriate referral facility (Markos & Bogole, 2014).

2.3 Birth preparedness and complication readiness strategies

BP/CR is defined as the process of planning for normal birth, anticipating the actions needed in case of an emergency (JHPIEGO, 2001).

BP/CR is a comprehensive strategy aimed at promoting the timely utilization of skilled maternal and neonatal health care and aiding women, households and communities in decision making (JHPIEGO, 2001). The key elements include: knowledge of danger signs during pregnancy, labour and post-partum: plan for where to give birth: plan for a birth attendant: plan for transportation and plan for saving money. In addition, a potential blood donor and a decision-maker need to be identified. The demand level, BP/CR promotes the use of a skilled provider at birth through increasing demand and improving access to a hospital facility (JHPIEGO, 2001).

BP/CR is a critical strategy with ambitions of promoting the timely utilization of skilled maternal and neonatal health care. (JHPIEGO, 2001) Johns Hopkins Program for International Education in Gynaecology and Obstetrics (JHPIEGO) developed the (BP/CR) matrix to address these three delays at various levels. The levels include the pregnant woman, her family, her community, health providers, health facilities, and policy-makers during pregnancy, childbirth, and the postpartum period (JHPIEGO, 2001).

The concept of BP/CR includes knowing danger signs, planning for a birth attendant and birth-location, arranging transportation, identifying a blood donor, and saving money in case of an obstetric complication (JHPIEGO, 2001). This is because every pregnant woman faces the risk of sudden and unpredictable complications that could result in death or injury to herself or to her infant. According to WHO, maternal deaths occur due to some common reasons; delayed decision of seeking care, delay in reaching care and receiving care when it is too late (Thaddeus & Maine, 1994).

These factors have led to concerns, unsupportive policies, gaps in services, and also lack of community and family awareness about maternal and new-born health issues. Focused antenatal care (FANC) service should discuss components of the birth plan which include: place of delivery, possible movement close to chosen place for delivery, type of delivery, skilled attendant, transportation funds, birth companionship, what items to prepare, support during and after birth (partner involvement), recognition of danger signs during pregnancy, choose of decision-maker, identification of blood donor and donation of blood before onset of labour and psychological preparedness for surgical intervention (Promise, 2010). Decisions and

preparation for intrapartum care are processes that occur over time, yet they are often viewed from a static perspective.

The role of BP/CR in improving the use and effectiveness of key maternal and neonatal services is through reducing delays in deciding to seek care in two ways. First, it motivates people to plan to have a skilled provider at every birth (Carroli, Rooney, & Villar, 2001).

If women and their families make the decision to seek care before the onset of labour, and they successfully follow through with this plan, the woman will reach care before developing any potential complications during childbirth, thus avoiding the first two delays completely. Secondly, complication readiness raises awareness of danger signs thereby improving problem recognition and reducing the delay in deciding to seek care (Carroli, Rooney, & Villar, 2001). Planning for blood donors is also important because women giving birth may need blood transfusions in the event of haemorrhage or caesarean section (Carroli, Rooney, & Villar, 2001).

A study on acceptability and sustainability of FANC in Kenya showed that, providers inform clients about the progress of the pregnancy during the first visit and advise clients more in the fourth visit about supplies to have on hand (Harriet, Birungi & W. Onyango, 2006).

On the other hand, studies done in Ethiopia revealed that primigravida women were well informed on all the components of BP/CR than the multiparous women (Hailu et al., 2011). The study also revealed that only a few of pregnant women were well prepared for delivery, obstetric complication through the identification of a trained birth attendant, identification of a health facility, arrangement for transport, identification of a blood donor and saving of money for emergencies (Hailu et al,

2011). Although studies have assessed many of the components of the birth preparedness plan, these studies did not find out whether the respondents had made ready their layette (baby's and mothers warm clothing after birth) which is also another important component of the birth preparedness plan (Hailu et al, 2011). Another study on women satisfaction with hospital-based intrapartum care revealed that the emotional support, encouragement and good communication health provider's give client before labour and delivery led to less pain relief, have an intervention-free labour and birth, higher perception of control, and be more satisfied with their intrapartum care (Khitam, Insaf, Caroline, & Debra, 2014).

According to research done in Ethiopia, respondents had a high knowledge of birth preparedness and complication readiness but low knowledge on danger signs knowledge was measured using the ability to recognize three or more danger signs, in pregnancy and delivery (Mihret & Mesganaw, 2008). Findings from Koupela district in Burkina Faso indicated that more women knew about the birth preparedness and complication readiness plan and could even give details of the plan including mentioning at least five danger signs of pregnancy, the need to deliver with a skilled attendant, most women save money for delivery, but had fewer concrete plans for transportation (Moran et al, 2006).

The principle and practice of BP/CR in resource-poor settings has the potential of reducing maternal and neonatal morbidity and mortality rates through a better understanding of the issues pregnant women face, their impact on preparedness for birth and complication, and the midwives expected role (Morara, 2016). The government of Kenya has recently begun taking an increasingly visible role in national efforts to reduce maternal mortality through the introduction of free maternity services. Important steps to increase access to skilled obstetric care

nationwide by removing financial barriers to care through the free maternity provision policy which was introduced in 2013. As a result, more women are expected to deliver at health facilities nationwide. The “Beyond Zero” Campaign, launched in 2013 by Kenya’s First Lady under the slogan, “No woman should die while giving life,” is aimed at strengthening emergency services for mothers and children by providing fully equipped mobile clinics to the counties with the highest burden of maternal mortality(Initiative et al., 2018).

Pregnant women who do not have adequate and appropriate information about pregnancy and childbirth would be ill-equipped to make choices that will contribute to their own wellbeing (Gebre, Gebremariam, & Abebe, 2015).

Delay in responding to the onset of labour and such complications has been shown to be one of the major barriers to reducing mortality and morbidity surrounding childbirth. Information on how to stay healthy during pregnancy and the need to obtain the services of skilled birth labour, and on recognizing danger signs for pregnancy-related complications and to take appropriate steps to ensure safe birth and to seek timely skilled care in emergencies is important (Moran et al,2006).

2.4 Status of birth preparedness and complication readiness globally

Table 2: Status of birth preparedness and complication readiness globally

	Country	Level of birth preparedness	Reference
Developed countries	Canada	70% prepared for birth 93% identified SBA "Being prepared and educated increases success in everything we do. Having knowledge is empowering and enabling."	(Aragon et al., 2013)
	USA	100% prepared for birth 100% identified SBA	(Brooks, 2017)
Middle-income countries	Thailand	78.5% prepared for birth 86.8% identified SBA 74.7 knew danger signs	(Kiataphiwasu & Kaewkiattikun, 2018)
	India	32% prepared for birth 82% identified SBA 2.7% planned for blood donor	(Nimavat, Mangal, Unadkat, & Yadav, 2016)
	Nepal	32.2% Prepared for birth 8.4% utilized the five components	(Kaphle, Kunwar, & Acharya, 2013)
Developing countries	Ethiopia	43.3% prepared for birth 25.5% of women identified an SBA 2.3% identified potential blood donor	(Ajibola, et al, 2015) (Hailu, Gebremariam, Alemseged, & Deribe, 2011).
	Nigeria	33.4% were well prepared 34,2% identified SBA 11.9% identified blood donor	(Ebere Ogonna, 2018)
	Kenya	70.5 %were prepared for birth	(Omari, Afrane, & Ouma, 2016)

2.5 Factors associated with birth preparedness and complication readiness

Even though BP/CR is essential for further improvement of maternal and child health, little is known about the current magnitude and influencing factors.

2.5.1 Individual factors

The following factors have been shown to influence BP/CR, education, age, marital status, employment and parity (Kiataphiwasu & Kaewkiattikun, 2018).

Maternal education is a strong predictor in preparation for birth and complication. A cross-sectional study on birth preparedness among slum women in Indore city (India) found that literacy, availability of ante-natal services, literate husband, better knowledge about maternal/newborn danger signs suggestive for seeking referral were associated with being well prepared (Siddhartha A, et al 2010).

A cross-sectional study on the impact of birth preparedness on pregnancy outcomes in Kakamega County Kenya revealed that birth preparedness was higher among literate women and those who had been given advice on BP/CR during antenatal follow up with an (Odds Ratio 3,789) (Hudson & Gatongi, 2016).

A study at Kenyatta National Hospital (KNH) in Kenya found that the level of education positively influenced birth preparedness (Mutiso, Qureshi & Kinuthia, 2008).

A study on BP/CR among women in Tanzania found that women with primary education and above were twice as much likely to prepare for birth and complication compared to those with no formal education (Urassa et al, 2012).

A study on BP/CR among expectant mothers in Ghana revealed that age, parity and marital status play an important role in the utilization of maternal care services (Agbodohu, 2013).A study on BP/CR among pregnant women in Thailand revealed that predictive factors for good BPCR were high education, high income, multiparity and extended family with (OR 2.09)(Kiataphiwasu & Kaewkiattikun, 2018).

A study on BP/CR among primigravida women revealed that registration with first check-up within the first trimester and at least four antenatal check-ups were good indicators for BP/CR at 98.1% (Patil et al., 2016).In a study in Uganda, parity, age of spouse, education level, occupation of the spouse, presence of pregnancy complications and the anticipated mode of delivery were associated with having a birth plan (Tima, et al, 2015).

A study on the assessment of the factors influencing BP/CR among pregnant women; a case study of selected health facilities in Eldoret, Kenya showed that those with planned pregnancies were twice likely to be prepared for complications than those with unplanned pregnancies (Morara, 2016).

A study on BP/CR among the recently delivered women revealed that those whose spouses were employed were two times prepared than those with spouses who are not employed (Bintabara et al, 2015). A study on factors affecting BP/CR in Ethiopia

revealed that women who are employed were more likely to be prepared than those who are not employed (Debelew, Afework, & Yalew, 2014).

2.5.2 Family factors

The following family factors have been shown to affect BP/CR, decision making, women's financial status (Geleto et al, 2018).

The pregnant woman is vulnerable during this time of her life and the availability of social support is very crucial for her general wellbeing and that of her baby as well. A gainfully employed spouse is expected to give her the needed financial support. Those who live in the family house usually have their siblings, mothers, mothers-in-law and cousins available to give the necessary support when a pregnant woman needs someone to accompany her to the hospital or to do her marketing and cooking for her when her health does not permit her to do it herself.

According to the White Ribbon Alliance for Safe Motherhood (2010), at the point of emergency, much of the time is taken by a mother and her family to understand the seriousness of the circumstance. Most of the pregnant ladies and their families are not able to notice early the signs of complications, what to do and where to get help. Emergency signs are not genuine obstetric complications, but rather signs that are easily recognized by non-clinical staff. The danger signs in pregnancy include, severe vaginal bleeding, swollen hands and face, blurred vision.

In many societies in the world, lack of awareness inhibits preparation in advance for the delivery of the expected baby. Since no action is taken prior to the delivery, the

family tries to act only when labour begins. When complications occur, the unprepared family will waste a great deal of time in recognizing the problem, getting organized, getting money, finding transport and reaching the appropriate referral facility. Information, education and counselling during ANC visits play a vital role in the prevention of maternal death. These create an awareness of the sequence of events from late recognition of danger signs, through delays in seeking and receiving care. An appropriate programme such as BP/CR can improve maternal health and pregnancy outcomes.

A study on strategies for helping families prepare for birth revealed that Socio-economic status of the family is associated with being prepared for delivery, which is husbands with regular income. However, if the husband is reported as the only decision-maker regarding health issues, the odds of a woman being prepared for childbirth are reduced (Tima, et al., 2015).

A study on assessing BP/CR intervention in Rewa District of Madhya Pradesh revealed that a very low proportion of women discuss with family members about a birth preparedness plan except for the place of birth and the husband and in-laws play a dominant role in decision-making (Nandan, 2008).

A study on high ANC coverage and low skilled attendance in Tanzania revealed that husbands and elders in the Maasai and Watemi communities play key gatekeeping roles in women's reproductive health and are principally responsible for deciding where women deliver. However, husbands are not encouraged to participate in routine

ANC and do not receive messages about safe delivery during PMTCT sessions (Magoma, 2010).

A study on perception of gaps among women, husbands and family members about intentions for the birthplace revealed that women are more likely to give birth at a health facility when their families agree with the birthplace. However, in rural areas of Tanzania, women are often marginalized from the decision- making (Shimpuku et al., 2017).

A study on knowledge, attitude and practice of BP/CR amongst pregnant women showed that there was a statistically significant association between the respondent's marital status, educational status, history of stillbirth, number of children to the practice of BP/CR (Ebere Ogonna, 2018).

A study on risk factors for maternal mortality in a tertiary hospital in Kenya revealed that despite the woman’s weaker role in decision-making in African settings, education has a strong influence for both the mother and her spouse in obtaining and understanding the benefits of good health and being able to make appropriate decisions during pregnancy (Yego et al, 2014).

A study on barriers to access and utilization of emergency obstetric care at health facilities in sub-Sahara Africa, a systematic review revealed that several studies showed that women usually lacked decision-making autonomy and they were required to obtain permission from family members, including their husband, in order to access health services when they experienced obstetric complications (Geleto et al., 2018).

2.5.3 Health facility factors

The following health facility factors have been shown to influence BP/CR, skills, knowledge, shortage of staff, shortage of supplies and poor infrastructure (Geleto et al, 2018).

A study on assessing BP/CR in Rewa District of Madhya Pradesh revealed that there was a gap in the skills and knowledge of health care providers whereby less than 50% were competent in diagnosing and in the management of the complication. Lack of specialized personnel and essential supplies affected the quality of services (Nandan, 2008).

A study done on birth preparedness among women in Tharaka Nithi, Kenya revealed that shortage of staff compromised the quality of time with the clients to guide them on birth preparedness (Gitonga et al, 2014).

A qualitative study of women and health providers' attitudes and acceptability of mistreatment during childbirth revealed that health worker shortages have led to women being mismanaged during labour, as there is not enough staff to provide quality care (Soubeiga et al, 2014).

A systemic review of literature on barriers to access and utilization of emergency obstetric care at health facilities in sub Sahara Africa revealed that lack of emergency obstetric care services and supplies, shortage of trained staff, poor management of emergency obstetric care provision, cost of services, long waiting times, poor referral practices, and poor coordination among staff led to the third delay (Geleto et al, 2018).

A study on maternal mortality in the Siaya district in the western region of Kenya, (Rogo et al., 2001) identified problems of understaffing, lack of equipment and

essential drugs and supplies as well as low standards of quality of care and record-keeping.

Shortcomings in teamwork among health personnel contribute to ineffective communication and interruption of care for patients (WHO, 1999); and failure to adhere to institutional protocols as reasons for the low quality of care.

A study on mistreatment of women during childbirth revealed that poor provider altitude, women behavior and health system constraints led to mistreatment of women in this study, both women and providers blamed mistreatment during childbirth on a disempowering health system where providers are overworked and facilities are understaffed and overcrowded (Bohren et al., 2017).

A study of determinants factors and magnitude of BP/CR revealed that inadequacy of skilled attendants, poorly motivated staff, inadequate equipment and supplies, weak referral system and procedural guides compromised the quality of care (Bogale, 2015).

Fear of pain and embarrassment are also common issues women perceive as barriers in seeking health care (Mullany, 2006). Supply-side barriers include the availability of service and insufficient supply of quality care (Ensor & Cooper, 2004).

Health providers and facilities should be prepared to attend to births and ready to manage complications, this is because every pregnant woman faces the risk of sudden, unpredictable complications that could end in death or injury to herself or to her infant (Tunçalp et al, 2017).

A study on direct observation of respectful maternity care in five countries revealed that there were many delays in decision-making reported - whether to perform a caesarean-section (CS) or assisted delivery, or whether to call another provider in for a consultation - as well as delays in taking action, for instance waiting while other clients are attended, or for other providers to arrive. Comments related to some cases where the newborn did not survive suggest that neglect and delays in care were a contributing factor (Rosen et al, 2015).

Seven observations noted delays in starting resuscitation for an asphyxiated newborn; sometimes supplies were at another location, a specialist was needed, or the provider was delayed in identifying the need for resuscitation (Rosen et al, 2015).

2.6 Gaps in the Literature Review

In several studies the respondents had not identified a blood donor. A study on BP/CR among pregnant women done in Southern Ethiopia revealed that a few women had identified a blood donor (Hailu et al, 2011). A study was done in Jamnagar district Gujarat India revealed that 2.7% of the women had planned for blood donor (Nimavat, Mangal, Unadkat, & Yadav, 2016). A study on BP/CR among pregnant women in southern Ethiopia revealed that 2.3% of the pregnant women had identified potential blood donor (Hailu, et al, 2011).

In several studies the knowledge on danger signs was low A study done in Ethiopia women's knowledge on danger signs was low (Mihret & Mesganaw,2008). A study done in Nepal found out that the level of knowledge was low 32.2 % (Kaphle, Kunwar, & Acharya, 2013). A study done on BP/CR among post-natal mothers in

Malawi showed that pregnant women had limited knowledge on danger signs during pregnancy labour and delivery (Botha, et al, 2013).

In several studies' shortage of staff, lack of skilled attendants, inadequate equipment and supplies were affecting BP/CR. A study done on birth preparedness among women in Tharaka Nithi revealed that a shortage of staff compromised the quality of time with the clients to guide them on birth preparedness (Gitonga, Keraka, & Mwaniki, 2014). A study of determinant factors and magnitude of BP/CR revealed that Lack of skilled attendants; poorly motivated staff; inadequate equipment and supplies; weak referral system and, procedural guides compromised the quality of care (Bogale, 2015).

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter discusses research design, study area, target population, sampling methods, research instruments, data collection procedures, data analysis, techniques and ethical considerations.

3.2 Study area

This study was conducted at the Nakuru county Hospital at the maternal and child clinic (MCH) which is situated, along the Nairobi Eldoret trans highway, about 2 kilometres from Nakuru town. It's a very busy referral and teaching hospital with a bed capacity of 700. The MCH unit attends to approximately 60-80 clients per day and 1000 clients per month. The MCH unit is composed of ANC clinic, child welfare clinic, FP and PMTCT clinic. Services offered in the MCH include; counselling and testing for the prevention of mother to child transmission of HIV infection, immunization and antenatal services. Nakuru County Hospital has a wide catchment area and attends to women within the county and those who are referred.

3.3 Study design

This was an institutional-based descriptive cross-sectional study design using quantitative and qualitative methods. These designs complement each other because they generate different kinds of knowledge that are useful in nursing practice This design describes the situation of birth preparedness during the time of the study. The design is inexpensive and takes a shorter time compared to other designs. The

exploration qualitative study design comprised of the individual in-depth interview questions that were used to guide the researcher and was analysed qualitatively.

3.4 Study population

A target population refers to all members of a group of institutions, people or objects that have common characteristics (Ogula, 2005). The study had a population of pregnant women in Nakuru county and their health providers. The target population was primigravida women aged 15-49 years who are attending antenatal clinics at Nakuru referral county hospital and nurse manager and in charges attending to these women in the MCH, post-natal and maternity theatre.

3.5 Sample size

Sampling means selecting a given number of subjects from a defined population as representative of that population.

The sample size was determined using Fischer's formula.

$$n = \frac{Z^2P(1-P)}{d^2}$$

Where: n is the minimum sample size.

Z is confidence level at 95 % (standard value of 1.96).

p is the expected proportion of mothers with BP/CR plan of 22% (Tura, Afework, & Yalew, 2014)

D is the precision 50% (0.05)

$$n = \frac{(1.96)^2\ 0.22\ (1-0.22)}{0.05^2}$$

$$= 264$$

Six health care providers were purposively selected they had good knowledge of study concepts.

3.6 Sampling

A sample is a portion of a large population, which is thought to be representative of the larger population. Sampling is that part of statistical practice concerned with the selection of individual observations intended to yield some knowledge about a population of concern, especially for the purposes of statistical inference (Mugenda & Mugenda, 2003). Systematic sampling was used to choose the study participants. Whereby (population size/sample size) was calculated to obtain the sampling interval. Sampling interval (N) = No of mothers /Sample size that is 1000/264 = 3.7 which is approximately 4. The number of mothers who attended the antenatal clinic at Nakuru County Hospital during the two months period of study was 2248, whereby 1200 among them were primigravida.

3.6.1 Sampling methods

On the first day of the study, all the clients had their attendance numbers serialized. By use of the table randomised numbers the first respondent was identified. The first and every 4^{th} women answered questionnaires if she was eligible. A replacement was done by selecting the next eligible respondent based on the interval to maintain the randomness of the sampling process until the desired sample size was achieved. The key informants were propped by the key interviewer after having an appointment. The key informant interview was conducted on people with good knowledge of study concepts, they included the MCH in charge, postnatal ward nursing officer in charge, theatre maternity in charge and their deputies.

3.6.2 Recruitment and training of the research assistant

Two research assistants who were nurses with a Master of Science (MSc maternal and neonatal health) at Nakuru County Hospital were recruited and trained for a week on the methodology and how to administer the study tool.

3.7 Eligibility Criteria

3.7.1 Inclusion

- All primigravida aged 15-49 years attending the antenatal clinic.
- Nurse managers and in charges attending to pregnant women in MCH, postnatal, maternity theatre and their deputies.

3.7.2 Exclusion criteria

- Primigravida who are mentally ill.

3.8 Data collection methods

The data was collected by the use of questionnaires because it allows the researcher to reach a large sample within a limited time. (Borg & Gall 1989) observe that questionnaires are used to obtain descriptive information from a larger sample. It helped the researcher to compare responses given to different items and hence minimize subjectivity and makes possible to use quantitative analysis (Mugenda & Mugenda 2003). However, the key informants who are the managers of the maternal-child health clinic, post-natal ward, maternity theatre and their deputies were interviewed using the key informant interviewer guide.

Part one: Social demographic characteristics: This part aimed to gather information on age, marital status, level of education and occupation of the women.

Part two: **Obstetric information included:** parity, number of ANC visit, expected date of delivery of the current pregnancy and if it was possible for labour to start

before the due date. Their ANC cards were reviewed to confirm the gestational age and obstetric history.

Part three: Information on birth preparedness on assessing knowledge of BP/CR: For this section**,** only basic components were used as they are the one which is associated with the delays. Women were asked to mention the components of BP/CR. Those who mentioned at least three of the five basic components of BP/CR were regarded as "knowledgeable", and the rest were regarded as "less knowledgeable". The five basic BPCR components which were considered include, having fund available, identifying the mode of transport for delivery and/or for an obstetric emergency, identifying the time to reach a health facility, identifying health facility and trained birth attendant, identifying a blood donor, and collection of essential items necessary for clean birth.

Part four: Knowledge of danger signs: Knowledge of danger signs during pregnancy, delivery and post-delivery were asked. Those who mentioned at least a total of 3 obstetric danger sign during pregnancy, delivery and post-delivery were regarded as "knowledgeable" the rest including those who did not mention anything were regarded as "less knowledgeable"

Part five: Family support: To assess the family support the women were asked about the spouses' employment status, where thy stay, whom they stay with, identifying the person to take care of her during postnatal period, giving her advice and who will make the final decision where she will give birth and assist her during birthing. Data quality check was done by the principal investigator at the end of each day for completeness. The questionnaire with missing information of more than 20% was excluded. Data entry was done at the end of each day.

The key informant guides

1. What resources do you require to effectively implement birth preparedness and complication readiness in the facility?
2. Which interventions have been put in place to ensure birth preparedness among the clients?
3. Explain how is the staffing at all times?
4. Explain the routine systems to review cases of maternal and perinatal deaths and the near miss
5. What are the social demographic factors that influence BP/CR in the facility?
6. Which experiences do you have on your delivery of services to pregnant women regarding birth preparedness?
7. What are the economic factors that influence BP/CR in the facility?

3.9 Reliability

Reliability refers to the capacity of an instrument to produce consistent results in several trials. (Polit & Beck 2004) concur that an instrument's reliability is the consistency with which it measures the targeted attribute. In this study, the reliability of the data collection tool was assessed through a pilot study that was conducted in the Naivasha sub-district hospital at the antenatal clinic. 10% of the sample size population (26 participants) answered the questionnaire as recommended by (Mugenda & Mugenda, 2003) and in-depth interview, the researcher interviewed the nurse managers until saturation was achieved. Following the pilot study, the information collected was analysed to identify any misinterpretation of the questions during interview. The selected participants were not included in the study. The results of the pilot study were used to refine the data collection tools prior to the actual study

which was minimal. According to the pilot study results, the reliability test indicated a Cronbach's alpha value of 0.957 which is more than 0.7 alpha. The scale conforms to internal reliability implying that the scale used was reliable. Alpha was developed by Lee Cronbach in 1951 to provide a measure of the internal consistency of a test or scale; it is expressed as a number between 0 and 1 and acceptable values range from 0.70 to 0.95. A low value of alpha could be due to a low number of questions, poor interrelatedness between items or heterogeneous constructs

3.10 Validity

Validity refers to the degree to which an instrument measures what it is supposed to measure. For this study, the study instruments were submitted to the experts in the area of the study (supervisors) to assess face, content and construct validity.

The qualitative research, credibility refers to conducting a research in such a manner as to ensure that the subject was accurately identified, described and that credible findings produced. In order to produce findings that are convincing and believable, the researcher implemented prolonged engagement and referential adequacy.

3.11 Dependability

Qualitative research dependability is a criterion met once researchers have demonstrated the credibility of the findings. Triangulation of methods has the potential to contribute to the dependability of findings. Dependability in this study was enhanced by analysis triangulation which refers to using two or more differing data analysis techniques. Data collected was analysed by the researcher using the Statistical Package for Social Sciences (SPSS) version 20.0 and NVIVO 8 software for qualitative research.

3.12 Data analysis

Data analysis was conducted to reduce, organize and give meaning to the data (Burns & Grove, 2005:43). Data collected was analysed by the researcher using the Statistical Package for Social Sciences (SPSS) version 20.0. Descriptive statistics were used to generate frequencies and proportions. The dependent variable was organized as a binary variable with two categories; prepared verses not prepared. Chi-square at a 95% confidence interval was used to test the association of the independent and dependent variables. The variables that had a statistically significant association at P <0.05 were subjected to logistic regression to generate the odds ratios. The qualitative study design comprised of the individual in-depth interview questions that were used to guide the researcher and was analysed qualitatively. The analysis began immediately after completion of the first interview. Transcription and coding were performed simultaneously with other interviews. Transcription of the interviews was accomplished using MS word and analysis followed which comprised coding of major themes using NVIVO 8 software for qualitative research. The nodes that were coded formed the basis for further analysis into subthemes and themes respectively,

3.13 Ethical consideration

Approval to carry out the research was obtained from the Moi University and MTRH Institutional Research and Ethics Committee (IREC). Permission from the Medical Superintendents in-charge of the Nakuru county referral hospital. Written informed consent from the participants who agreed to participate in the study was obtained. Assent was sought for those under the age of 18 years (see Appendix ii). The questionnaires did not bear the names of participants and all information collected

was treated with confidentiality**.** Participation was on a voluntary basis and participants were free to withdraw at any stage of the study. Privacy was ensured by interviewing the mothers and the nurse mangers in a separate room and anonymity ensured by not having any form of identification on the data collection tools. Confidentiality was assured by storing all the questionnaires and the key informant guides collected in lockable cabinets accessible only to the researcher and research team. Further, a password was used to protect electronic data on the computer.

CHAPTER FOUR

RESULTS

4.1: Introduction

In this chapter, the presentation of the findings of the study in relation to the study aim and objectives are presented. The aim of the study was to assess the status of birth preparedness and complication readiness and associated factors among primigravida women in Nakuru county Hospital.

During the study a total of 262 respondents attending the MCH at the Nakuru county hospital and the six key informants were interviewed who are the health worker working at the Nakuru county hospital.

The findings are presented and interpreted based on the quantitative data collected from the structured questionnaires and responses from the qualitative data from six key informants interviewed. The results are presented using descriptive statistics in the form of tables. Inferential statistical analysis has also been presented to show appropriate correlations. Qualitative data has been presented as themes, subthemes and verbatim reporting.

4.2 Demographic characteristics

A total of 262 (99%) participants completed the questionnaire. Their mean age was 22.3 range 15-34, standard deviation 3.099 and variance 9.6. The majority were between the ages of 22- 25 years (46%) considered to represent the age of full maturity. Married women were 69%. There were 42% of women who reported that they had attended formal education up to college level 34% secondary and, 13% university. The percentage of women who had attended only one antenatal visit was 31%.the key informant 2 (20%) were bachelor holders while 4 (80%) were diploma holders

Table 3: Demographic Characteristics of women attending Nakuru County Hospital MCH

Variables	Categories	Frequency N=262	Percentage %
Age	15-18 years	19	7.3%
	19-21 years	94	36%
	22-25 years	121	46%
	26-30 years	28	11%
Marital status	Cohabiting	16	6.1%
	Married	181	69%
	Single	65	25%
Education	Primary	29	11%
	Secondary	90	34%
	College	110	42%
	University	33	13%
Number of ANC visits	1	80	31%
	2	37	14%
	3	50	19%
	4	50	19%
	5	27	10%

	6	14	5%
	7	4	2%

4.3: The status of BP/CR among primigravida in Nakuru County Hospital

The study used the chi-square test to assess birth preparedness among primigravida in Nakuru County. From table four below, the following factors were found to be significant when assessing the status of BP/CR; 90% had made funds available for transportation when labor began ($p<0.000$); 87% had identified the mode of transportation to hospital when labor began ($p< 0.000$); 30% of the women had made personal transportations; during labor ($p< 0.0000$).

Table 4: The status of BP/CR among primigravida women attending MCH in Nakuru County Hospital

Variables	Category	Frequency N=262	%	chi-square	Df	P-value
Have you made funds available for transportation to the hospital when labor begins?	Yes	235	89.7	165.13	1	0.000
	No	27	10.3			
Have you identified the mode of transportation to the hospital when labor begins	Yes	227	86.6	140.702	1	0.000
	No	35	13.4			
If yes what mode of transportation have you arranged for?	Motorbike	8	3.1	127.901	5	0.000
	Matatu	40	15.3			
	tuk-tuk	33	12.6			
	Taxi	73	27.9			
	Personal	77	29.4			
	Other	2	0.8			

4.3.1: Level of preparedness in relation to the health facility

Table five below indicates the preparedness of pregnant women in relation to the health facility factors. The following were found to be significantly associated with BP/CR. Those who had identified the birth companion who will take her to hospital when labour began (56%), (p<0.000); majority of women (97%) had identified the birth attendants (P<0.000); those who had packed their bags with items needed for delivery and for the baby were (70%), (p<0.000). Those who were aware they needed blood was (54%), though only (5.6%) had arranged for blood in the blood bank (p<0.000). Those who had identified the facility were (92%) while (82%) preferred to give birth in a government facility.

Table 5: Level of birth preparedness by women attending MCH in Nakuru County Hospital with relation to the health facility

Variables	Category	Frequency N=262	%	chi-square	Df	P-value
Have you identified a birth companion to take you to the hospital when in labor?	Yes	141	56	146.66	1	0.000
	No	121	46			
Have you identified the birth attendant?	Yes	254	97	230.977	1	0.000
	No	8	3			
Have you already packed your bag with items needed for delivery and for the baby?	Yes	183	70	51.399	1	0.000
	No	79	30			
Are you aware that you may need blood during labor?	Yes	141	54	1.527	1	0.217
	No	121	46			
Have you already arranged for a blood donor?	Yes	33	23	146.626	2	0.000
	No	108	77			
Do you already have blood in the blood bank?	Yes	8	5.6	230.977	1	0.000
	No	133	94			
Have you identified the facility you will give birth	Yes	38	92	174.794	1	0.000
	No	24	9.2			
If yes which hospital would you prefer?	Government	214	82	345.412	2	0.000
	Private	22	8.4			
	Faith-based	2	0.8			
How long does it take you to reach your nearest delivery	Less than an hour	258	99	246.244	1	0.000

health facility using your common means of transport?	1-2 hours	4	1.5			

4.3.2 Knowledge of danger signs among women

From the study it was observed that the pregnant women who did not mention any danger sign during pregnancy were 21%, those who did not mention any danger signs during labor were 86%, those who did not mention any danger sign during post-partum were 66% and pregnant women who did not mention any danger sign for the new-born were 48% as illustrated in the table six below.

Table 6: Knowledge of danger signs by women attending MCH in Nakuru County Hospital

Knowledge of danger signs	**Total (n) N= 262**	**%**
During pregnancy		
Mentioned one danger sign	74	28%
Mentioned two danger signs	69	26%
Mentioned three or more danger signs	63	24%
Mentioned no danger sign	56	21%
During labour		
Mentioned one danger sign	36	14%
Mentioned no danger sign	226	86%
During post-partum		
Mentioned one danger sign	72	27%
Mentioned two danger signs	14	5%
Mentioned three danger signs	2	1%
Mentioned no danger sign	174	66%
On the new-born		
Mentioned one danger sign	77	29%
Mentioned two danger signs	53	20%
Mentioned three danger signs	6	2%

Mentioned no danger sign	126	48%

4.4 The level of BP/CR in the family

From table seven below 92% of women had identified an individual to care for the baby (p<0.0000). Those who had someone to give advice when a danger sign was noticed were 93%, (p<0.000). Those who had identified someone to help when confined to bed were 96%, (p<0.000) and 96% had someone to take them to the doctor (p<0.0000).

Table 7: The level of BP/CR among family members of women attending MCH in Nakuru County Hospital (as reported by the women)

Variables	Category	Frequency N=262	Percentage %	chi-square	Df	P-value
Have you identified an individual who will help you care for the baby after he/ she is born	No	20	8%	188.107	1	0.0000
	Yes	242	92%			
Do you have someone to give you good advice when you notice a danger sign?	No	18	7%	194.947	1	0.0000
	Yes	244	93%			
Do you have someone to help you if you were confined to bed?	Yes	252	96%	223.527	1	0.0000
	No	10	4%			
Do you	Yes	257	98%	238.555	1	0.0000

have someone to take you to the doctor	No	5	2%			

4.5 Association between Demographic Factors and BP/CR

From analysis, there is association between the BP/CR and the age of the mother. This is because the chi square value 7.875 with a p- value of 0.049 which is less than 0.05 significant level.

From the analysis of the results, there is association between BP/CR and the level of education. Had a chi square value of 10.483, with a p-value of 0.015 which is significantly less than 0.05 significant level.

Table 8: Association between Demographic Factors and BP/CR.

		BP/CR					
VARIABLE		Yes	No	Total	Chi square	DF	P-VALUE
Level of education	Primary	9 (31.03%)	20(68.97)	29(100%)	10.483	3	.015
	secondary	20(22.22)	70(77.78)	90(100%)			
	College	40(36.36)	70(63.64)	110(100)			
	university	17(51.52)	16(48.48)	33(100%)			
Age in years	15-18 years	7(36.84%)	12(63.16)	19(100%)	7.875	3	.049
	19-21 years	24(25.53)	70(74.47)	94(100%)			
	22-25 years	40(33.06)	81(66.94)	121(100)			

	26-30 years	15(53.57%)	13(46.43%	28(100%)			

4.6 Birth preparedness and complication readiness in the health facility

This section consists of responses of the participants from the individual in-depth interview questions that were used to guide the researcher. The in-depth interviews involved 6 key informants from Nakuru county hospital. These key informants were in charge and their deputies who were working in maternal and child health clinic, maternity theatre and post-natal ward. Three themes emerged from those interviewed namely resources, health information and staffing. For the theme on resources the following subthemes emerged: equipment, and infrastructure. For the theme of health information, the following subthemes emerged: trained staff, and sensitization. For the theme of staffing the following subtheme emerged number of staff and teamwork.

4.6.1: Qualitative analysis

Table 9: Themes and subthemes

THEMES	SUB-THEMES
Resources	Equipment
	Infrastructure
Health information	Trained staff
	Sensitization
Staffs	Staffing
	Teamwork

4.6.1.1: Theme: Resources

Equipment

In this section, we evaluated the resources the health facility needed to fully implement birth preparedness and complication readiness. From the analysis of the key informants, the study observed that there is a need to ensure that there is good inventory keeping. The antenatal registers are available to be able to capture the records for all the patient and there is a need for digital blood pressure machines for efficient care health checks. There is a need for the fetal scope which is digital and extra chair and table for efficiency

Respondent *"for a good inventory keeping the equipment needed should include antenatal registers to ensure that all records are captured, antenatal booklet should be enough for every client and blood pressure machines which are digital, fetal scopes preferably digital and additional chairs and tables for efficiency and the screens for privacy should be made available for better and care" (KI#1)*

From the analysis of the study there was a need for heaters in the room. There is a need for the delivery pack to be available when a sick pregnant mother goes to labor.

Respondent *"The rooms require heaters. Availability of the delivery packs in case a sick mother goes into labor to ensure prompt care." (KI #2)*

The analysis of the key informants within the health facility indicated that emergency drugs are available in the facility. The study also observed that other work tools like gloves are available for every person. This has ensured that the health facilities are prepared for birth and birth complications.

Respondent *"The emergency drugs are available supplies are in plenty "siku hizi hatuombani gloves ama kujiwekea kama kitambo" team spirit in case of any obstetric emergency care" (KI#3)*

Respondent "*Avail quality control in the unit for easy access to the supplies. Avail mama kits. Trained personnel to handle obstetric emergencies before, during and after an operation. Adequate sterile linen drapes for surgery. Availability of the pediatrician to receive the babies' post c/s to improve care. (KI#4)*

Infrastructure

The analysis of the key informants indicates that there was a need for 24-hour laboratory services in the health facility.

Respondent "*The lab should be Incorporated in the building to give the client holistic care. Availability of the laboratory services 24 hours. Avail quality control in the unit for easy access to the supplies. Avail mama kit" (KI#1).*

Respondent "*There is a need for laboratory services. Drugs are available readily there is an inpatient pharmacy" (KI#2).*

The analysis of the key informant indicates that there is need of the high dependency unit (HDU)and (ICU)in the department in case of a complication the patient is taken to the ICU which is far from the department and only one bed is preserved for the maternity cases

Respondent "*ICU and HDU should be available in the department. Although there is usually a bed reserved always in the ICU for emergency cases from the maternity unit. Availability of the laboratory services 24 hours. Avail quality control in the unit for easy access to the supplies. Avail mama kits." (KI#3)*

The analysis of the interview also indicated that there was a challenge of bed capacity within the health facilities. This was disclosed since the capacity of the maternity unit was 48 and they admit up to 60 patients leading to sharing of the beds.

Respondent "*The bed capacity is 48 and the unit can admit up to 60 patients that has led to patients sharing beds" (KI#4).*

"The analysis of the key informant also indicates that there is need for mama kits be made available in the health facilities" (KI#4)

"The study also indicates that there is a need for provision of quality control in the maternal unit for easy access to the supplies" (KI#4).

4.6.1.2: Theme: Health information

Trained Staff

The analysis of the key informants indicated the health facilities in Nakuru use the standard partograph to monitor mothers in the labour. The analysis of the interview also indicates that there is the presence of trained midwives in the emergency obstetric care center.

Respondent *"Use of standard partograph to monitor mothers in labor, trained midwives on emergency obstetric care." (KI#3)*

The analysis of the key informant further indicates that there is a need for additional trained personnel to handle obstetric emergencies before and after operations. The analysis of the key informant also stated that there is a need to have a pediatrician to receive the babies' post c/s.

Respondent *"Trained personnel to handle obstetric emergencies before, during and after an operation. Adequate sterile linen drapes for surgery. Availability of the pediatrician to receive the babies' post c/s." (KI#4)*

"Availability of specialist i.e. gynecologist and obstetrician four working theaters." (KI#4).

Sensitization

From the analysis of the key informant's interview, it was observed that the health facilities have initiated the education to sensitize the pregnant mother of the importance of birth preparedness. This has been done through the availability of health education as groups and individuals on diet and birth preparedness, the emphasis being on antenatal care.

Respondent *"Emphasis have been done concerning focused antenatal care. Health education as groups and individuals on diet and birth preparedness" (KI#1).*

The analysis of the key informants indicated that the health facility has the provision of Linda mama program which ensure that the health of the mother and the baby is taken care for free this has ensured that almost all the pregnant mother attend a health facility to seek for medical care.

Respondent *"Linda mama has been incorporated hence mothers are getting free services." (KI#2)*

4.6.1.3 Theme: Staff

Staffing

The analysis of key informants in the hospitals indicated that about 80 clients are attended by 2 staff every day. The analysis also indicated that the main challenge is the availability of doctors, nurses, anesthetist, anesthetist -assistants cleaners and potters which are important in the childbirth operations

Respondent *"The staffing is low compared to the clients seen each day. Approximately 80 clients per day against 2 staffs" (KI #1)*

The analysis of the key informant's interview indicates that there is a need for additional midwives, interns' doctors, and extra consultants in the health facilities.

Respondent *"The facility is covered 24 hours despite the shortage of staff. A consultant obstetric specialist on call, medical doctors, nurses and subordinate staff, personnel, midwives, Doctors, interns and the consultants should be provided in the health facilities" (KI#2)*

The analysis of the key informants also indicates that the health facility despite facing the key shortage of health care providers. The health facility has ensured that there is a provision of the services to pregnant mothers. This has ensured the safety of the pregnant mother and the expected baby. The analysis of key informants also indicates that the hospitals are well prepared to handle the major challenges 24 hours a day.

Respondent "*The staffing is a major challenge medical doctors, nurses, anesthetist, anesthetist assistants' cleaners and potters" (KI #3)*

Respondent "*A major challenge though the unit is covered 24 hrs." (KI#4).*

Teamwork

The working relationship between all health workers is paramount. In order to enhance co-operation and teamwork between staff the hospital holds mortality meetings immediately and monthly to identify the gaps and acts accordingly without pinpointing on individual staff.

Respondent "*The review of maternal and perinatal deaths and near-miss are done once per month organized by the hospital this has brought about cooperation and teamwork because gaps are identified, and action taken immediately to avoid the same occurrence".* (KI#1).

Respondent "*There is a 24-hour review team on any maternal deaths and recommendation have done and monthly maternal mortality but however neonatal mortality is done by the paediatric this has brought about team spirit among all cadres" (KI#2)*

Respondent "We *immediately did an assessment especially maternal death. Also, there is monthly mortality and morbidity meeting this enhances harmony, teamwork and cooperation between staff no victimization" (KI#3).*

Respondent "*immediately assessment of the maternal death to identify the gaps that were missed" and monthly mortality and morbidity meetings by all stakeholder's cooperation and teamwork between all cadres of staff" (KI#4).*

The staff work as a team to ensure holistic care.

Respondent *"for quality and holistic care to be achieved despite the shortage of staff teamwork and privacy and ethical consideration is the key between all the stakeholders and encourage teamwork" (KI#1).*

Respondent "*giving back feedback to all stakeholders on any event or occurrence that occur in the department on the positive and the negative without intimidations improves teamwork and cooperation" (KI#2).*

Respondent *"despite the high workload cooperation between different departments has led to teamwork and better outcome" (KI#3).*

CHAPTER FIVE

DISCUSSION

5.1: Introduction

This chapter discusses the results of the study. It compared the results of this study with result of other past studies globally on Birth preparedness and complication readiness.

5.2 The status of BP/CR among primigravida in Nakuru county hospital

The main aim was to assess the status of birth preparedness and complication readiness among pregnant women in order to find out how well informed they are about dangers in pregnancy in order to avoid the three main delays that cause maternal deaths.

Recognition of obstetric danger sign is an important factor in seeking health care therefore, lack of basic information and awareness of obstetric danger sign is associated with delays. The study concluded that there were few pregnant women who were aware of the danger sign on BP/CR. The level of knowledge was low as shown by high percentages of those who did not mention any danger sign during pregnancy, labour, postpartum and new-born. The study outcome was also supported by a study in Ethiopia where less than half of the respondents had knowledge and practice on BP/CR (Demlie, Lema, & Hedija, 2018). The study outcome was also supported by a study done in Ethiopia, respondents had a high knowledge on birth preparedness but low knowledge on danger signs (Mihret & Mesganaw,2008) The study outcomes were contradicted by a study done in India whereby knowledge of danger sign during pregnancy, labour and postnatal were high at 79%,79% and 82%

respectively (Agarwal, et al, 2010). This difference could be due to the variables used to measure knowledge thy used one variable while in our study used three or more danger signs this is because knowledge of danger sign is crucial in BP/CR.

The association between baseline characteristics with BP/CR status in this study revealed that the BP/CR was significantly associated with education and age. This is supported by another study whereby adult pregnancy, married, high education, being employed, high income, extended family, multiparty, first antenatal visit ≤12 weeks and average distance to the hospital >2 hours (Kiataphiwasu & Kaewkiattikun, 2018). These variations could be attributed to different levels of female literacy and empowerment, spouse's education and occupation, knowledge of key danger signs, preference to institutional delivery and methodological differences in BPCR assessment. Relatively high BPCR in the present study could be due to high female literacy, better knowledge of danger signs, higher service utilization, and a higher proportion of institutional deliveries in the study district. This is supported by a study in Eldoret Kenya whereby education is a strong predictor of BP/CR. (Morara, 2016). This is also supported by a study done in Kakamega County Kenya revealed that birth preparedness was higher among literate women and those who had been given advice on BP/CR during antenatal follow up. (Hudson et al, 2016). Another study in Kenyatta National Hospital found that the level of education positively influenced birth preparedness (Mutiso et al., 2008)

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A study on BP/CR among women in Tanzania found that women with primary education and above were twice as much likely to prepare for birth and complication compared to those with no formal education (Urassa et al., 2012).

Identifying the place to birth and the skilled birth attendant is very important in this study it was observed that the pregnant women who had prepared by having identified the facility they will give birth was significant. The study results were supported by the result of another study that found out that, the participants had identified the place of delivery and identified the mode of transport to the place of childbirth (Kiataphiwasu & Kaewkiattikun, 2018). This was also supported by a study done in Bureti sub county of Kericho county where the women had identified place for delivery (Omari, Afrane, & Ouma, 2016).

Also, a study in Tharaka Nithi County, Kenya revealed that women who had identified a place for delivery were 68% (Gitonga et al., 2014).Identifying the mode of transport is important because it reduces delays. In this study majority of the women had identified the mode of transport. The study results were supported by the results of another study whereby the participants had identified the mode of transport (Kiataphiwasu & Kaewkiattikun, 2018), and another study where women had identified the mode of transport (Markos, Bogale, & Childbirth, 2014).

The study also concluded that there was little done on the arrangement of the blood donation and blood transfer. Planning for blood donors is important because women giving birth may need blood transfusions in the event of haemorrhage or caesarean section. In a study of BP/CR among expectant mothers at the ridge regional hospital Accra, 77.3% of the women knew that they may need blood during labour but only 16.4% of mothers actually had blood in the blood bank and 31.6% said they had arranged for a blood donor (Agbodohu, 2013).

The findings from this study showed that more than half of the total respondents agreed that they were sure that they may need blood during labour and (13%) of the

pregnant women interviewed indicated that they had not arranged for blood donors. This study was supported by results from Thailand that indicated that pregnant women who had arranged for blood donors before the need arises were (n = 29, 15.8%) (Kiataphiwasu & Kaewkiattikun, 2018). The study was supported by the result from Ethiopia that revealed that only a few pregnant women were well prepared by identifying a blood donor (Hailu et al., 2011). The study was also supported by results from southern Ethiopia which revealed that 2.3% had identified a potential blood donor (Hailu, et al, 2011). The study was also supported by results from Jamnagar district Gujarat India it revealed that 2.7% had planned for blood donor (Nimavat, et al., 2016).

5.3 The level BP/CR in the family

The findings on the level of the family preparedness showed that women had identified a place of residence, someone to stay with and someone to give advice when there was a danger sign. These findings agree with the study done Ethiopia and Ghana the participants had identified the person to take care of the mother after delivery (Agbodohu, 2013).

This study found out that most clients preferred the government facility this could be due to the introduction of free maternity and delivery by the Kenyan Government. This is supported by a quasi-experimental study that revealed an increase in the use of maternal health services after the introduction of free maternity services (Mardieh L Dennis, 2018).

5.4 Qualitative findings

5.4.1 BP/CR in Nakuru county hospital

This study found out that the BP/CR in Nakuru county hospital was optimal. For holistic care resources, staffing and infrastructure must be in place.

In this study the facility was well prepared they had enough drugs, and adequate non-pharmaceuticals. This agrees in a study done in Tanzania where it was reported that "they had all the necessary equipment, the plastic gloves and everything else. I once witnessed a woman after giving birth and she could not fall asleep. That happened because she gave birth at home, but when they give birth at a hospital they are injected and suffer from no abdominal pains. In the old days, they used to suffer a lot and would cry out loudly". (August et al., 2015).

In this study the facility was well prepared by ensuring privacy and ethical consideration is upheld *"for quality and holistic care to be achieved despite the shortage of staff teamwork and privacy and ethical consideration is the key between all the stakeholders"(key informant)* this is in agreement with the study done in Kenya (Wanjau, 2012) and contrary to a study done in southern Ethiopia *from FGD Women come to us for birth, not because they knew that we are experienced than the health professionals rather they know that we treat them friendly, keeping their privacy. Those women who give birth in our hands are ashamed of visiting health institutions where males, students, and a group of females watch them naked. This is out of our culture; they come to us even being late after passing several hours waiting for a normal birth……. but finally, when they become between life and death, the whole community starts to give attention. In some households their husbands do not allow them to visit health institutions for the reason I mentioned earlier"(TBA)(Andarge, Nigussie, & Wondafrash, 2017).* This could be due to the

rural setting whereby the uphold culture and their beliefs that in a hospital setting they are exposed to diverse staff some being males which do not go well with the culture.

This study- found that there was a need for laboratory services within the department to reduce the time lag. The findings from this study revealed that preparing for a potential blood donor for emergency cases that may occur during pregnancy-, childbirth and postpartum were low which is similar to a systematic review and meta-analysis study in Ethiopia where they found out that 8.8% of the women had arranged for blood (Berhe et al., 2018) and another study that was done in Kenyatta in Kenya revealed that thy is need for availability of laboratory (Wanjau, 2012).

This study found out that there was shortage of staff to care for pregnant women this is supported in a study done in Ethiopia whereby disempowering health system where providers are overworked and facilities are understaffed and overcrowded (Bohren, 2017) These findings are also similar to a study done in Kenyatta hospital Kenya that found out that organization must enhance employees capacity in order to improve provision of service quality (Wanjau, 2012). Staff are well trained at the Nakuru county hospital and there is continued education on the current updates in relation to BP/CR. This finding is supported by a study done in Tanzania where they reported that there are workers who are readily available. The Tanzanian government has trained a good number of midwives who can handle complications and give referrals to the difficult ones (Filby, 2016).

CHAPTER SIX

CONCLUSION AND RECOMMENDATION

6.1 Introduction

This chapter presents the conclusions of the study. It also gives recommendations as per the results of the research study based on the objectives of the study,

6.2 Conclusion

As evidenced by the findings;

- ✓ The study revealed a low level of knowledge on danger signs, low levels of awareness on the need for blood among pregnant women attending antennal clinics.
- ✓ The families of the respondents were prepared for birth and complication.
- ✓ There is a need to improve laboratory services and avail of a high dependency unit to manage complications. Provide trained staff to handle emergency complications.

6.3 Recommendations

As evidenced by the findings, the following are recommended;

- ✓ Come up with strategies to improve knowledge of danger signs among pregnant women. Women need to be sensitized on the need to arrange for blood through relatives.
- ✓ Provide a 24 -hour working laboratory services and high dependency unit
- ✓ More studies in other establishments in both urban and rural settings should be done to support and validate the findings of this study

REFERENCES

Acharya, A. S., Kaur, R., Prasuna, J. G., & Rasheed, N. (2015). Making pregnancy safer—birth preparedness and complication readiness study among antenatal women attendees of a primary health center, Delhi. *Indian journal of community medicine: official publication of Indian Association of Preventive & Social Medicine*, *40*(2), 127.

Agarwal, S., Sethi, V., Srivastava, K., Jha, P. K., & Baqui, A. H. (2010). Birth preparedness and complication readiness among slum women in Indore city, India. *Journal of health, population, and nutrition*, *28*(4), 383.

Agbodohu, D. (2013). *Birth preparedness and complication readiness among expectant mothers at the Ridge Regional Hospital, Accra* (Doctoral dissertation, University of Ghana).

Idowu, A., Deji, S. A., Aremu, O. A., Bojuwoye, O. M., & Ofakunrin, A. D. (2015). Birth preparedness and complication readiness among women attending antenatal clinics in Ogbomoso, South West, Nigeria. *International Journal Maternal and child health AIDS*, *4*(1), 47-56.

Andarge, E., Nigussie, A., & Wondafrash, M. (2017). Factors associated with birth preparedness and complication readiness in Southern Ethiopia: a community based cross-sectional study. *British Medical Journal pregnancy and childbirth*, *17*(1), 412.

August, F., Pembe, A. B., Kayombo, E., Mbekenga, C., Axemo, P., & Darj, E. (2015). Birth preparedness and complication readiness–a qualitative study among community members in rural Tanzania. *Global health action*, *8*(1), 26922.

Austin A, Langer A, Salam RA, Lassi ZS, Das J.K, Bhutta Z.A., (2014). Approaches to Improve Quality of Maternal and Newborn Health Care: An *Overview of the Evidence. Reproductive Health Journal* 2014.

Belda, S. S., & Gebremariam, M. B. (2016). Birth preparedness, complication readiness and other determinants of place of delivery among mothers in Goba District, Bale Zone, South East Ethiopia. BioMed Central Pregnancy Childbirth, 16, 73. doi: 10.1186/s12884-016-0837-8

Bintabara, D., Mohamed, M. A., Mghamba, J., Wasswa, P., & Mpembeni, R. N. (2015). Birth preparedness and complication readiness among recently delivered women in chamwino district, central Tanzania: a cross sectional study. *Reproductive health*, *12*(1), 44.

Bogale, B. (2015). Study of Determinant Factors and Magnitude of Birth Preparedness/Complication Readiness Practice among Rural Women of Bench Maji Zone, SNNPR, Ethiopia (Doctoral dissertation, Addis Ababa University). Retrieved from www.bogalle.com

Bohren, M. A. (2017). Mistreatment of women during childbirth in Abuja, Nigeria: A qualitative study on perceptions and experiences of women and healthcare providers Prof. Suellen Miller. *Reproductive Health*.

Botha, A. K., Maluwa, A., Pindani, M., & Bultemeier, K. (2013). Birth preparedness

and complication readiness among postnatal mothers in Malawi. *Health*, *5*(9), 1486–1493. https://doi.org/10.4236/health.2013.59202

Berhe, A. K., Muche, A. A., Fekadu, G. A., & Kassa, G. M. (2018). Birth preparedness and complication readiness among pregnant women in Ethiopia: A systematic review and Meta-analysis. *Reproductive Health*, *15*(1), 1–10. https://doi.org/10.1186/s12978-018-0624-2

Carroli, G., Rooney, C., & Villar, J. (2001). How effective is antenatal care in preventing maternal mortality and serious morbidity? An overview of the evidence. Paediatr {&} Perinat Epidemiol, 15. https://doi.org/10.1046/j.1365-3016.2001.0150s1001.x

Cephas Sialubanje1, 2. K. (2015). Reasons for home delivery and use of traditional birth attendants in rural Zambia: a qualitative study. BioMed Central Pregnancy and Childbirth.

Damian, C. (2013). Knowledge and practice on birth preparediness and complication readiness among pregnant women in Singida urban district,Tanzania (Doctoral dissertation, Muhimbili University of Health and Allied Sciences.).

Debelew, G. T., Afework, F., & Yalew, A. W. (2014). Factors affecting birth preparedness and complication readiness in Jimma Zone, Southwest Ethiopia: A multilevel analysis. *Pan African Medical Journal*, 19, 1–14. https://doi.org/10.11604/pamj.2014.19.272.4244

Dzakpasu, S., Powell-Jackson, T., and Campbell O.M. (2013). Impact of user fees on policy maternal health service utilization and related health outcomes: A systematic review. Health and planning; 1-14. Doi:10.1093/heapol/czs 14

Filby, A. (2016). What prevents quality midwifery care? A systematic mapping of barriers in low and middle-income countries from the provider perspective. PLoS ONE.

Filippi, V., Ganaba, R., Baggaley, R. F., Marshall, T., Storeng, K. T., & Sombié, I. (2007). Health of women after severe obstetric complications in Burkina Faso: a longitudinal study. Lancet, 370. doi: 10.1016/s0140-6736(07)61574-8

Gacheri, A. (2018). Tackling High Maternal Deaths in Kenya. Pan Africa Medical Journal, 43(1), 1–4.

Gebre, M., Gebremariam, A., & Abebe, T. A. (2015). Birth Preparedness and Complication Readiness among Pregnant Women in Duguna Fango District, Wolayta Zone, Ethiopia. PLoS One, 10(9), e0137570. doi:10.1371/journal.pone.0137570

Gitonga, E., Keraka, M., & Mwaniki, P. (2015). Birth preparedness among women in Tharaka Nithi County, *Kenya. African Journal of Midwifery and Women's Health*, 9(4), 153-157.

Hailu, M., Gebremariam, A., Alemseged, F., & Deribe, K. (2011). Birth preparedness and complication readiness among pregnant women in Southern Ethiopia. PLoS ONE, 6(6). https://doi.org/10.1371/journal.pone.0021432

Hudson, I., & PM, G. (2016). The Impact of Birth Preparedness on Pregnancy Outcome: Findings from Lurambi Sub County, Kakamega County, Kenya. *Journal of Pregnancy and Child Health*, 3(4). https://doi.org/10.4172/2376-

127X.1000269

Idowu A, Deji SA, Aremu OA, Bojuwoye OM, Ofakunrin AD. Birth Preparedness and Complication Readiness among Women Attending Antenatal Clinics in Ogbomoso, South West, Niger J Clin 2015; 4(1): 47-56.

Initiative, A. N., Margaret, O. F. H. E., First, T. H. E., Of, Lady, & Republic, T. H. E. (2018). Technical Report : 2017-2018 the First Lady of the Republic of Kenya Beyond Zero. 2017–2018.

Jolivet, R. R., Moran, A. C., O'Connor, M., Chou, D., Bhardwaj, N., Newby, H., … Langer, A. (2018). Ending preventable maternal mortality: Phase II of a multi-step process to develop a monitoring framework, 2016-2030. *BioMed Central Pregnancy and Childbirth*, 18(1). https://doi.org/10.1186/s12884-018-1763-8

Kaba2, K. Z. (2016). Birth preparedness and complication readiness among rural women of reproductive age in abeshige district, guraghe zone, snnPr, Ethiopia. International Journal of Women's Health.

Kaphle, H. P., Kunwar, L. B., & Acharya, A. (2013). Birth preparedness and complications readiness among women in LekhnathMuniciaplity, Nepal. *Global Journal of Medicine and Public Health* 1 Www.Gjmedph.Org, 4(32015), 2277–9604. https://doi.org/10.4314/ejhd.v22i1.10057

Magoma, M. (2010). High ANC coverage and low skilled attendance in a rural Tanzanian district: a case for implementing a birth plan intervention. BioMed *Central Pregnancy and Childbirth.*

Mardieh L Dennis, 1. T. (2018). Evaluating the impact of a maternal. BioMed Central Global health. 127X.1000269

Markos, D., & Bogale, D. (2014). Birth preparedness and complication readiness among women of child bearing age group in Goba woreda, Oromia region, Ethiopia. *BioMed Central Pregnancy and Childbirth*, 14(1), 1–9. https://doi.org/10.1186/1471-2393-14-282

Miller, S., Abalos, E., Chamillard, M., Ciapponi, A., Colaci, D., Comandé, D., … Althabe, F. (2016). Beyond too little, too late and too much, too soon: a pathway towards evidence-based, respectful maternity care worldwide. *The Lancet*, *388*(10056), 2176–2192. https://doi.org/10.1016/S0140-6736(16)31472-6

Morara, J. (2016). Assessment of the Factors Influencing Birth Preparedness and Complication Readiness Among Pregnant Women: a Case of Selected Health Care Facilities in Eldoret, Kenya. I*nternational Journal of Nursing, Midwife and Health Related Cases*, 2(3), 47–61.

Nandan, D. (2008). a Study for Assessing Birth Preparedness and Complication Readiness Intervention in Rewa District of Madhya Pradesh, 34.

Nimavat, K. A., Mangal, A. D., Unadkat, S. V, & Yadav, S. B. (2016). A study of birth preparedness of women in Jamnagar district , 3(9), 2403–2408. https://doi.org/http://dx.doi.org/10.18203/2394-6040.ijcmph20162889

Omari, P. K., Afrane, Y. A., & Ouma, P. (2016). Birth Preparedness and Complication Readiness among Women Attending Antenatal Care Clinic in Health Facilities within Bureti Sub County of Kericho County , 6(4), 123–128. https://doi.org/10.5923/j.ajmms.20160604.01

Solnes Miltenburg, A., Roggeveen, Y., Shields, L., van Elteren, M., van Roosmalen, J., Stekelenburg, J., & Portela, A. (2015). Impact of Birth Preparedness and Complication Readiness Interventions on Birth with a Skilled Attendant: A Systematic Review. PLoS One, 10(11), e0143382. doi: 10.1371/journal.pone.0143382

Solnes Miltenburg, A., Roggeveen, Y., van Roosmalen, J., & Smith, H. (2017). Factors influencing implementation of interventions to promote birth preparedness and complication readiness. *BioMed Central Pregnancy Childbirth*, 17(1), 270. doi: 10.1186/s12884-017-1448-8

Tanya Caulfied, e. a. (2016). Factors influencing place of delivery for pastoralist women in Kenya: a qualitative study. BioMed Central Women's Health. Thaddeus, S., & Maine, D. (1994). Too far to walk: maternal mortality in context. Soc Sci Med, 38. https://doi.org/10.1016/0277-9536(94)90226-7

Thaddeus, S., & Maine, D. (1994). Too far to walk: maternal mortality in context. Soc Sci Med, 38. https://doi.org/10.1016/0277-9536(94)90226-7

Tima, L., Marrone, G., Ekirapa, E., & Waiswa, P. (2015). Strategies for helping families prepare for birth: Experiences from eastern central Uganda. Global Health Action, 8(1). https://doi.org/10.3402/gha.v8.23969

Tunçalp, Pena-Rosas, J. P., Lawrie, T., Bucagu, M., Oladapo, O. T., Portela, A., & Metin Gülmezoglu, A. (2017). WHO recommendations on antenatal care for a positive pregnancy experience—going beyond survival. British Journal of Obstetrics and Gynaecology: *An International Journal of Obstetrics and Gynaecology*, 124(6), 860–862. https://doi.org/10.1111/1471-0528.14599

Tura, G., Afework, M. F., & Yalew, A. W. (2014). The effect of birth preparedness and complication readiness on skilled care use: A prospective follow-up study in Southwest Ethiopia. Reproductive Health, 11(1), 1–10. https://doi.org/10.1186/1742-4755-11-60

Urassa, D. P., Pembe, A. B., & Mganga, F. (2012). Birth preparedness and complication readiness among women in Mpwapwa district, Tanzania. Tanzania J*ournal of Health Research*, 14(1), 1–7. https://doi.org/10.4314/thrb.v14i1.8

Urassa, D. P., Pembe, A. B., & Mganga, F. (2012). Birth preparedness and complication readiness among women in Mpwapwa district, Tanzania. Tanzania Journal of Health Research, 14(1), 1–7. https://doi.org/10.4314/thrb.v14i1.8.

Wanjau, K. N. (2012). Factors Affecting Provision of Service Quality in the Public Health Sector : A Case of Kenyatta National Hospital. International Journal of Humanities and Social Science Vol. 2 No. 13; July 2012.

APPENDICES

Appendix I: Consent Form

Birth preparedness and complication readiness among primigravida women attending antenatal clinic at Nakuru county hospital

Introduction

This is a study being carried out to assess the birth preparedness and complication readiness among the primigravida attending antenatal clinic in Nakuru county hospital. The purpose of this study is to investigate in order to determine the level of birth preparedness among primigravida. Approximately 264 patients will be enrolled in this study. I am participating on a voluntary basis. The information obtained will be used to improve the participants care and complete a questionnaire to get data that will be analysed. The information obtained may be used for future planning and implementation of strategies on birth preparedness.

Procedure: By you consenting to participate, you will be asked questions by the researcher with the only aim being to collect information to meet the purpose of this study.

Benefits: No direct benefit will be achieved following participation in this study but the findings from it will benefit NCRH and antenatal mothers.

Risk: There is no anticipated risk to the participants in this study.

Confidentiality: Information gathered in this study will be considered confidential and no names will be written on the questionnaire. Filled questionnaires and consent forms will be locked for access only by the researcher, to enhance confidentiality.

Right of participants:

Your participation in this study is on voluntary basis. You are free to either refuse not to take part or to withdraw at any stage in the course of study.

Signed Consent for Participation

I agree to participate in this study:

Sign..... Date ……...…….

Researcher/assistant researcher.....Date.....

For any further information, you may contact:

Principle investigator,

Sylvia Nthiga

Box 15498

Tel **0724248275**

E-mail sylvianthiga @gmail.com

Appendix II: Assent Form

Serial number……...

Birth preparedness and complication readiness among primigravida women attending antenatal clinic at Nakuru county hospital

I Sylvia Wanjiku Nthiga, student of master of Nursing at Moi University, Eldoret would like to invite you to participate in the above study.

The purpose of this study is to assess level of birth preparedness and complication readiness among primigravida attending antenatal clinic in Nakuru County referral hospital. Data collected will provide information to health care providers on the level of preparedness hence finding ways of improving their counselling and advice towards birth preparedness and complication readiness. In order to achieve the objectives of this study, information will be collected from primigravida attending antenatal clinic at Nakuru county referral hospital. Your participation is voluntary, and whatever information you give shall be handled with high confidentiality. There are no direct benefits from the study and you are allowed to ask any question you may have freely.

Feedback on findings

The findings of this study will be communicated to IREC, County director of health and the Medical superintendent Nakuru county referral hospital.

Participant's consent

I have read the foregoing information/ the information has been read to me. I have had the opportunity to ask questions and received satisfactory responses. I hereby volunteer/assent to participate in the study.

Date ……Signature/ thumb print of respondent……

Date ……. Signature/thumb print of parent or guardian…….

Name of research staff…….

Signature of research staff……

Appendix III: Structured Questionnaire

MOI UNIVERSITY, SCHOOL OF MIDWIFERY AND GENDER

TOPIC: Birth Preparedness and Complication Readiness Among Primigravida women Attending Antenatal Clinic at Nakuru County Hospital.

Name of interviewer _____

Questionnaire number _____

Date of interview ___/___/2018

Time of interview _____

l am administering this research tool in partial fulfilment of Masters of Science in Nursing at Moi University. The objective is to assess how well prepared you are towards birth and how much you know about birth complications and also how ready you are to combat it should any occur.

BACKGROUND INFORMATION

1. Age in completed year……
2. Education
   a. Primary ☐
   b. Secondary ☐
   c. College ☐
   d. University ☐
   e. Others……
3. Marital status
   a. Married ☐
   b. Single ☐
   c. Separated ☐
   d. Widowed ☐
   e. Divorced ☐
   f. Cohabitating ☐
4. Occupation
   a. Trader ☐
   b. Housewife ☐
   c. Formal employment ☐
   d. Farmer ☐
   e. Others specify……

OBSTETRIC INFORMATION

5. Parity_____ Gravida_____

6. Number of visits to the ANC_____

7. Do you know your expected date of delivery?

Yes ☐
No ☐

8. Is it possible for labour to start before due date?

Yes ☐
No ☐

INFORMATION ON BIRTH PREPAREDNESS

8b If yes how long

a) One week before or after ☐
b) Two weeks before or after ☐
c) Three weeks or more before or after ☐

9. Have you made funds available for transportation to hospital when labour begins?

Yes ☐
No ☐

10a. Have you identified the mode of transportation to hospital when labour begins?

Yes ☐
No ☐

10b. If yes what mode of transportation have you arranged for?

a. Motorbike ☐
b. Matatu ☐
c. Tuk-tuk ☐
d. Taxi ☐
e. Personal ☐
f. Others……

11a. Have you identified the facility where you will give birth?

Yes ☐
No ☐

11 b If yes which health facility would you prefer?

a) Government hospital ☐
b) Faith based hospital ☐
c) Private ☐

12 How long does it take you to reach your nearest delivery health facility using your common means of transport?

a. Less than one hour ☐
b. 1-2 hours ☐
c. 3-5 hours ☐
d. More than 5 hours ☐

13a. Are you aware that you may need blood during labour?

Yes ☐
No ☐

13b. Have you already arranged for a blood donor?

Yes ☐
No ☐
N/A ☐

13c. Do you already have blood in the blood bank?

Yes ☐
No ☐
N/A ☐

14a. Have you identified a birth companion to take you to the hospital when in labour?

Yes ☐
No ☐

14b. If yes who

a) Husband ☐
b) Sister ☐
c) Mother in law ☐
d) Friend ☐
e) Others……...

15. Have you already packed your bag with items needed for the delivery and for the baby?

Yes ☐
No ☐

KNOWLEDGE OF DANGER SIGNS DURING PREGNANCY, LABOUR, POST-DELIVERY

16a. Do you know any danger signs in pregnancy?

Yes ☐

No ☐

16b.If yes, mention the danger signs you are aware of. (Interviewer to tick if interviewee mentions any of the following).

a. Bleeding ☐
b. Change in pattern of foetal movement ☐
c. Loosing liquor ☐
d. Swelling of face, ankle and feet ☐
e. Severe frontal headaches ☐
f. Blurred vision ☐
g convulsion/fits ☐

17a Do you know any danger sign during labour?

Yes ☐

No ☐

17b if yes, mention the danger sign you are aware of (interviewer to tick if interviewee mention any of the following)

a. Severe bleeding ☐
b. Convulsions ☐
c. Retained placenta ☐
d. Prolonged labour (>12 hrs) ☐

18 a do you know any danger sign during post-partum

Yes ☐

No ☐

18 b If yes, mention the danger sign you are aware of (interviewer to tick if interviewee mention any of the following)

a. Severe bleeding ☐
b. Four smelling discharge ☐
c. Convulsions ☐
d. High fever ☐

19 a Do you know any danger sign in the new-born?

Yes ☐

No ☐

19 b If yes mention the danger signs that you know (the interviewer will tick the interviewee mentions any of the following)

a. Convulsions ☐
b. Lethargy ☐
c. Difficulty in breathing ☐
d. Not able to breastfeed ☐

ASSESSMENT OF FAMILY SUPPORT

20a. Is your Spouse employed?

Yes ☐
No ☐

20b. If yes, which type of work does he do? …….

21. Where do you stay?

a) Own house ☐
b) Family house ☐
c) Rental house ☐

22. Whom do you stay with?

a. Live alone ☐
b. Live with husband only ☐
c. Live with husband and some family members ☐

23. Have you identified an individual who will help you care for the baby after he/ she is born?

Yes ☐
No ☐

24. Do you have someone to give you good advice when you notice a danger sign

Yes ☐
No ☐

25. Do you have someone to help you if you were confined to bed?

Yes ☐
No ☐

26. Do you have someone to take you to the doctor if you needed it?

Yes ☐

No ☐

27. Have you identified your birth attendant?

Yes ☐

No ☐

If yes who?

a. Skilled birth attendant ☐

b. Traditional birth attendant ☐

28. Who will make the final decision about where you will give birth?

a. Self ☐

b. Husband ☐

c. Mother in law ☐

d. Health professional ☐

29. Who will make the final decision about who will assist you with the birth of the baby.

a. Self ☐

b. Husband ☐

c. Mother in law ☐

d. Health profession ☐

Thank you for your participation

Appendix IV: Key Informants Interview Guide

Kindly answer the following questions as much as possible

1. What resources do you require to effectively implement birth preparedness and complication readiness in the facility?

2. Which interventions have been put in place to ensure birth preparedness among the clients?

3. Explain how is the staffing at all times?

4. Explain the routine systems to review cases of maternal and perinatal deaths and the near miss

5. What are the social demographic factors that influence BP/CR in the facility?

6. Which experiences do you have on your delivery of services to pregnant women regarding birth preparedness?

7. What are the economic factors that influence BP/CR in the facility?

Thanks for your participation

Appendix V: IREC Approval

MU/MTRH-INSTITUTIONAL RESEARCH AND ETHICS COMMITTEE (IREC)

MOI TEACHING AND REFERRAL HOSPITAL
P.O. BOX 3
ELDORET
Tel: 33471//2/3

MOI UNIVERSITY
COLLEGE OF HEALTH SCIENCES
P.O. BOX 4606
ELDORET

Reference: IREC/2018/174
Approval Number: 0003129

22nd October, 2018

Sylvia W. Nthiga,
Mo University
School of Nursing,
P.O. Box 4606-30100,
ELDORET-KENYA.

INSTITUTIONAL RESEARCH & ETHICS COMMITTEE
22 OCT 2018
APPROVED

Dear Ms. Nthiga,

RE: FORMAL APPROVAL

The MU/MTRH- Institutional Research and Ethics Committee has reviewed your research proposal titled: -

"Birth Preparedness and Complication Readiness among Primigravida Women Attending Antenatal Clinic at Nakuru County Hospital".

Your proposal has been granted a Formal Approval Number: ***FAN: IREC 3129*** on 22nd October, 2018. You are therefore permitted to begin your investigations.

Note that this approval is for 1 year; hence will expire on 21st October, 2019. If it is necessary to continue with this research beyond the expiry date, a request for continuation should be made in writing to IREC Secretariat two months prior to the expiry date. You will be required to submit progress report(s) on application for continuation, at the end of the study and any other times as may be recommended by the Committee.

Furthermore, you must notify the Committee of any proposal change (s) or amendment (s), serious or unexpected outcomes related to the conduct of the study, or study termination for any reason. You will also be required to seek further clearance from any other regulatory body/authority that may be appropriate and applicable to the conduct of this study.

Sincerely,

PROF. E. WERE
CHAIRMAN
INSTITUTIONAL RESEARCH AND ETHICS COMMITTEE

cc	CEO	-	MTRH	Dean	-	SOP	Dean	- SOM
	Principal	-	CHS	Dean	-	SON	Dean	- SOD