DETERMINANTS OF HOME CHILD BIRTH PRACTICES AMONG PREGNANT WOMEN IN OSHIKUKU DISTRICT, OMUSATI REGION, NAMIBIA.

A THESIS SUBMITTED IN PARTIAL FULFILMENT

OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF PUBLIC HEALTH

OF

THE UNIVERSITY OF NAMIBIA

BY

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OCTOBER 2023

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Abstract

Home child birth is one of the leading causes of maternal and infant mortality and morbidity worldwide but more especially in Africa. In Namibia, despite the Ministry of Health and Social Services (MoHSS) effort to enhance Maternal and newborn health by encouraging women to deliver at health facilities, there are still women who give birth at home. The main objectives of this study were to determine if there is a statistically significant association between women's socio-demographic data and gynecological history (independent variable) and home child birth practice (dependent variable). A quantitative, analytic cross-sectional study was conducted in the Oshikuku District, particularly in the Oshikuku district hospital. The study was done in Oshikuku district hospital because is the only hospital that has a maternity ward in the district. Maternal records of 146 women seeking post-natal care at above mentioned health facility after home child birth practice were reviewed using a structured Microsoft excel spreadsheet. The study reveals that the most women who deliver give birth at home are 25 years and younger. Women from rural areas give birth more at home 97% (n=141) compared to those living in urban areas 3% (n=3), 87% (n=127) were Namibian and 13% (n=19) were non-Namibian. Apart from that women with no formal education tend to deliver more at home 59% (n=86) and also single women give birth more at home 85% (n=124). 77% (n=113) of unemployed women give birth at home. Women with less gravidity and parity 1-3 tend to practice home child birth more than those with high gravidity and parity. Women with no ante-natal visits at all or less than 3 ante-natal visits give birth at home more 59% (n=86). The study also reveal that 64% (n=93) of babies born at home were healthy (no complications recorded) however 23% (n=34) had minor

complications, 7% (n=10) had major complications and 6% (n=9) died. 72% (n=105) of women who give birth at home were healthy (no complication recorded after home child birth), 20% (n=29) had minor complications, 4% (n=6) had moderate complications, and another 4% (n=6) had major complications respectively.The study identified factors associated with home child birth among women in Oshikuku district, Omusati region in Namibia. The study result shows that younger women, unmarried with no formal employment living in rural areas with low levels of education give birth at home.The recommendations that arise from the study are to give more health education to women on the importance of giving birth in the health facilities for safe delivery. Expanding waiting areas next to health facilities in Omusati region so that more women will be accommodated. This will help women to stay close to health facilities prior to labour. Health extension workers to give health education on maternal health in the communities. Further research is needed to understand the partner's role they play in choosing the place of child birth.

Keywords:

Home child birth, Health extension workers, Health facilities, Omusati region, Nambia.

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Abbreviations and Acronyms

ANC: Ante-Natal Care

DHS: Demographic Health Survey

HIS: Health Information System

HREC: Human Research Ethics Committee

LMIC: Low to Middle-Income Countries

MDG: Millennium Development Goal

MMR: Maternal Mortality Rate

MoHSS: Ministry of Health and Social Services

MWH: Maternal Waiting Home

NDHS: Namibian Demographic Health Survey

PARMaCM: Programme for Accelerating the Reduction of Maternal and Child Mortality

TB: Tuberculosis

TBAs: Traditional Birth Attendants

WHO: World Health Organisation

ACKNOWLEDGEMENT

First and foremost, I thank God the Almighty for his unconditional love, mercy, and strength he have given me throughout my study.

My sincere appreciation goes to my main supervisor Dr. Penehafo Angula (may her soul continue resting in peace) for her patience, support, guidance, and dedication she has shown in assisting me during my study. My appreciation also goes to Dr Hermine Iita who took over from the late Dr Penehafo Angula as my main supervisor for her dedication in guiding me during my thesis report writing.

I would also like to thank the University of Namibia and the Ministry of Health and Social Services for permitting me to conduct the research in the health facilities. I would like to thank the management of Oshikuku District hospital Dr. Awe (SMO) and the hospital Matron Mrs. Christine Mayungo and the team for their assistance during the data collection process.

I would like to thank Dr Moses Chirimbana (Statistian) for his help in data analysis and mr Samuel Valombola for technical support and edicting of the thesis.

I thank my friends, all MPH students, and lecturers at the School of Public Health for their support and for being my inspiration.

I would like to thank my mom Mrs. Hilaria Ainima and my entire family for their continuous encouragement and support during my study.

Special thanks go to my husband Mr. Johannes Shapumba, my daughter Magano and my son Tuna-Omukwafi for their support throughout my study.

Last but not least I would like to thank all those who contributed to my study directly or indirectly.

May God bless you all.

DEDICATION

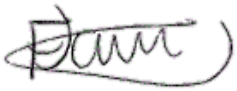
This thesis is dedicated to my late grandparents, Krispinus Ainima and Aurelia Shiweva for their upbringing, their words of encouragement to do better in life, for fearing God, and for teaching me the value of education. May their precious souls continue resting in peace.

To my children, siblings and cousins let this work be the source of motivation to study further.

DECLARATION

I Petronella Faustinus, hereby declare that this thesis titled “Determinants of home child birth practices among pregnant women in Oshikuku district, Omusati region, Namibia” is a true reflection of my own work and that this work or part of it has not been submitted for a degree in any other institution of high learning.

Petronella Faustinus October 2023



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CHAPTER 1: INTRODUCTION AND BACKGROUND OF THE STUDY

1.1 Introduction

Home birth (home child birth) is defined by World Health Organization (WHO) as cited by Hidengwa (1) as birth given outside health-care facilities including delivery at home, in a village clinic, or on the way to a healthcare facility; it can be planned and attended by midwife or physician or unplanned and mostly attended by family members or emergency department services (1).

Increasing women's access to health facilities with the capacity to receive emergency obstetric care has been the cause of large drops in infant and maternal mortality historically (1). Despite the international emphasis in the last few years on the need to address the unmet health needs of pregnant women and children, progress in reducing maternal mortality has been slow (1).

Maternal and neonatal morbidity and mortality continue to pose important health burdens, particularly in developing countries. The maternal mortality ratio (MMR) in developing countries was 15 times higher compared to developed countries in 2010. The highest maternal mortality ratio was recorded in Sub-Sahara Africa at 500 maternal deaths per 100 000 live births.

According to a recent study that investigates the prevalence of home child birth among developing countries. It was revealed that the proportion of home births was more than 50% in 12 countries. Seven of these countries belong to the Sub-Sahara Africa region. Among these African countries, home birth was high in Chad (78%), Ethiopia (73%),

Niger (70%), and Yemen (69%) respectively. The lowest home births were recorded in Europe and Central Asia (5%). Unlike developed countries, developing countries have a significant proportion of home births. This could be due to the fact that these countries their deficient health systems and scarce allocation of public health services (2) . Home birth is also attributed to personal preferences and structural barriers which makes it difficult for pregnant women to access health facilities. Home births attended by non-skilled people are associated with maternal and neonatal deaths as well as obstetric complications. In developing countries home birth is related to cultural and socio-demographic factors of the communities as well as the unavailability of health services in some countries. In order to reduce home birth in developing countries the institutionalization of childbirth strategies aimed at providing access to maternal care in health facilities with enough infrastructure and health professionals to ensure quality care should be evaluated. Some women fear giving birth in health institutions thus they opt for home child birth and some women is against their culture to give birth in a health facility (2).

The global prevalence of home birth is 28% according to Hernandez (2). He further indicates that the richest countries had the lowest proportions of home birth, while the poor countries had a high prevalence of home child birth. Women without education had the highest proportion of home births. It was found that the gap between the lowest-educated and the highest-educated women in relation to the prevalence of home child birth was large in most developing Countries. For example, in countries like Haiti and Chad the difference in prevalence between women who are educated and those with no

education was 77% and 76% respectively. The prevalence of home births among women with no education showed an out-of-trend prevalence in countries such as Philippines (74%), Honduras (45%), Peru (47%), and Namibia (40%). Regarding the urban and rural differences studies shows that rural dwelling has a high prevalence of home delivery (2).

Among other Sub-Sahara Africa countries with high maternal mortality ratio (MMR), Zambia is one of them. According to the latest demographic and health survey (DHS), the country's MMR is 591 maternal deaths per 100 000 live births. Besides more than half (53%) of women do not receive skilled birth attendance in Zambia. The number is even high in rural areas where more than seventy percent of women give birth at home often assisted by traditional birth attendants (TBAs). There is a lack of evidence on the main reasons for home child birth and the use of TBAs (3).

According to a study done in Malawi, the MMR in Malawi is estimated at 675 deaths per 100 000 live births in 2010. The study identified an association between home child birth practices and women's region, rural residency, lower socio-economic status, lower education, lower number of prenatal visits, and non-use of family planning services (4).

In Namibia, in 2015 the maternal mortality was 265 deaths per 100 000 live births and the infant mortality rate was 33 deaths per 1000 live births as per World Health Organization reports (5). The WHO in partnership with the Ministry of Health and Social Services (MoHSS) and the European Union in 2013 launched a programme for accelerating the reduction of maternal and child mortality, whereby maternity waiting homes are built next to health facilities in four regions across Namibia. The programme

aims to provide women with a safe place to stay prior to their delivery in order to deliver their babies in health care settings and prevent maternal and infant morbidity and mortality. Namibia still has women that give birth to their babies at home, despite the provision of safe places to stay built for pregnant women next to health facilities (5).

The maternity waiting homes bring women closer to health facilities, which aimed to help timely access to quality facility child births and avoid complications during pregnancy, childbirth, and the days after birth (5).

The maternity waiting homes are part of a comprehensive approach to bringing better quality care to pregnant women in Namibia. Moreover, community advocates are encouraging women to give birth in health facilities.

1.2 Background

According to World Health Organization report (5), approximately 830 women die from preventable causes related to pregnancy and child birth worldwide, every day. It was estimated that in 2015, around 303 000 women died during and following pregnancy and childbirth in the world. Almost all of these deaths occur in low-resource settings such as a home (5).

Home child birth is more common in developing countries especially in Sub-Sahara Africa 43% compared to developed countries like North America at 1% (5).

In 2017, 86% of all maternal deaths in the world took place in Sub-Sahara Africa. Sub-Sahara African countries are described as having non-skilled birth attendants and

barriers that prevent pregnant women to seek maternal health services when the need arises. Non-utilization of health facilities brings about adverse maternal and neonatal outcomes. In countries in Africa such as Tanzania, most births are attended at home by non-professional individuals such as TBA, siblings, and neighbors. There is also a lack of formal education among women, non-utilization of ante-natal care services, lack of telecommunication access, and low socio-economic status (2).

Bangladesh is another country with a high proportion of home child births. People believe that home birth is more important than institutional delivery. Financial constraints, fear of cesarean section, and husbands not allowing their wives to deliver in the institution are all reasons why women give birth at home instead of at a health facility. On the other hand, Europe and Central Asia were the regions with a low proportion of home births. Generally, developing countries have the highest proportion of home child births and share the presence of factors that leads to home child births (2).

Delivering a baby at home is associated with a higher risk of maternal deaths, therefore reducing the number of home child birth is important to improve maternal health (6).

In Namibia, despite the Ministry of Health and Social Services (MoHSS) effort to enhance Maternal and newborn health by encouraging women to deliver at health facilities, there are still women who give birth at home.

In addition, Namibian Demographic Health Survey (NDHS) reveals that out of total deliveries in Namibia 12% are home child birth. Omusati region (where Oshikuku

district is situated) is among the top five regions in Namibia with a high percentage of home child birth, which stands at 14% of home child birth (6).

Oshikuku district in the past four years recorded 455 home child birth out of 7673 deliveries which is 6% of the total deliveries. Among these home child birth, maternal and neonatal complications as well as death were recorded within the district (7).

Table 1 Percentage of home child birth in Oshikuku district

Years	Home deliveries	Total deliveries	Total percentage ratio
2017	153	1890	8:100
2018	149	1866	8:100
2019	146	1905	8:100
2020	144	1990	7:100

1.3 Problem statement

The WHO aims for every woman to deliver in health facilities where there is adequate obstetric emergency equipment to reduce maternal complications (5). Besides this target by the World health organization women still deliver outside health facilities.

In 2013 Namibia had about 12% of home child birth recorded. Omusati region had 14% of home child birth (8).

According to Oshikuku district Health Information System (HIS) statistics, Oshikuku district hospital had a total of 1890 deliveries in 2017. Out of that number, 153 are home

child birth (8:100). Out of these home child birth, four neonatal deaths were recorded. In 2018, a total of 1866 deliveries are recorded and 149 home child birth which included five neonatal death cases and eight maternal complications giving a ratio of 8:100. In 2019, the hospital had a total of 1905 deliveries, of which 146 are home child bith, three maternal complications, one maternal death and two neonatal death cases at a ratio of 8:100 were recorded. In 2020 the hospital recorded 144 home c hild birth out of a total of 1990 deliveries giving a ratio of 7:100 (8).

For every 1,000 live births about four women died during pregnancy, during childbirth, or within two months of child birth, in Namibia (8). Although a lot of efforts have been done by the Ministry of Health and Social Services in Namibia to improve maternal and newborn health, maternal mortality remains high.

The reasons why some women deliver their babies at home (without skilled birth attendants) or determinants of home child birth are not well established. No study of this nature was done particularly in Oshikuku district and Omusati region.

Although maternal morbidity/mortality occur also in health facilities, is more associated with women who give birth to their baby at home due to low resource settings and a lack of trained birth attendants (5). Home child birth is one of the contributing factors to increasing maternal and newborn complications leading to maternal and infant morbidity and mortality in Namibia.

In order to reduce maternal and infant mortality rate the issue of home child birth need to be addressed, hence the need for this study to fill that gap.

1.4 Purpose of the study

The purpose of this study was to determine and describe determinants of home child birth among pregnant women in Oshikuku district, Omusati region, Namibia.

1.5 Study Objectives

The study objectives were:

i) To identify determinants of home child birth among women seeking post-natal care services at Oshikuku district hospital.

ii) To analyse the factors associated with home child birth among pregnant women in Oshikuku district.

1.6 Research Hypothesis

-Null hypothesis (H0)

There is no relationship between home child birth practices and associate factors (socio-demographic characteristics, gynecological history).

-Alternative hypothesis (HA)

There is a relationship between home child birth practices and associate factors (socio-demographic characteristics, gynecological history).

1.7 Significance of the study

A study may help in determining the contributing factors to home child birth practices among women in Oshikuku district. These might help the district in making appropriate interventions that may help to reduce home child birth practices in the district, in Omusati region, and Namibia in general. These may help to enhance maternal and newborn health in Oshikuku district, Omusati region, and in Namibia as a whole as per the 2020/21 MoHSS strategic plan. In addition, the study may contribute to the body of knowledge and hoped to help the Ministry of Health and Social Services in the formulation of necessary policies to improve maternal and newborn health in Namibia.

1.8 Definition of concepts

The key concepts used in the study are defined below so that the reader can share the same understanding with the researcher. The following concepts are used in the report and are defined as follows:

Home child birth

Home child birth is a birth given outside healthcare facilities including giving birth at home, in a village clinic, or on the way to a healthcare facility; it can be planned and attended by a midwife or physician or unplanned and mostly attended by family members or emergency department services (9).

Maternal death

Female death from any cause related to or aggravated by the pregnancy or its management during pregnancy and childbirth or within 42 days of termination of pregnancy, irrespective of duration and site of the pregnancy (10).

Neonatal death

Neonatal deaths are deaths among live births during the first 28 days of life (9).

Maternity waiting home/areas

Maternity waiting homes/areas are residential facilities, located near a recognized medical facility, where non-laboring pregnant women from remote areas stay awaiting their delivery and be transferred to the medical facility shortly before delivery (11).

Skilled health personnel

Skilled health personnel is part of an integrated team of maternal and newborn health professionals, these include midwives, nurses, obstetricians, pediatricians, and anesthetists together they perform all key life-saving services of maternal and newborn care (12).

Traditional birth attendant

A traditional birth attendant is a person who assists a mother during childbirth and who initially acquired her skills by delivering babies herself or through an apprenticeship with other traditional birth attendants (13).

Health facility

Health facilities are places that can provide health care, equipped with resources that can provide or meet the demands of different patients (14).

1.9 Chapters layout

The following is the layout of this thesis in order:

Chapter 1: Introduction and Background of the study

Chapter 2: Literature review

Chapter 3: Research methodology

Chapter 4: Presentation of results

Chapter 5: Discussion of findings, conclusion, recommendations, and limitations

1.10 Summary

This chapter of the report included the introduction, background of the study, and problem statement. The purpose of the study, study objectives, research hypothesis as well as significance of the study is also covered. The key terms used in the study were also defined in this chapter. The next chapter will present a literature review on home child birth globally, nationally, regionally as well as on a local scale.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter presents a review of literatures to identify what is already known and the gap on the current reseach. The University of Southern California(15,16) defined literature review as the surveying of books, scholarly articles, and any other relevant sources on a particular issue or area of research and by so doing, provides a description, summary, and critical evaluation of this work concerning the research problem being investigated. Literature reviews aimed to provide an overview of sources the researcher explored while researching a particular topic and to demonstrate to the readers how the research fits within the larger field of study.

The literature review contains critical analysis and the integration of information from several sources, as well as consideration of any gaps in the literature and possibilities of future research (16).

2.2 The issue of home child birth globally

Of the world's estimated annual 130 million births, nearly half occur at home. Outcomes of these births, including maternal, fetal, and neonatal mortality, are reported to be considerably worse than those occurring in health facilities (17).

Research worldwide has documented women's perceptions and decision-making on child birth. Medical authority, religion, perception of risk, and access to care providers are some of the factors that influenced women's decisions that they make on where to

deliver their babies and with whom. A study done in the United States on women's childbirth preferences and practice shows that women's childbirth preferences emerge from their habitus, their birth practices come as a result of structural forces such as economic position and availability of birth options (18).

A recent study done in the United States during the Covid-19 pandemic shows a sharp increase in the interest of home births in the United States. This was noted in the weeks after Covid-19 was declared a pandemic on 11 March 2020 by the World Health Organization (WHO). The study showed a high preference among American women for home and center birth (5.4%) compared with the pre-Covid-19 national average (1.6%), (19).

Before the Covid-19 pandemic, almost >99% of childbirths in the United States occur in hospitals compared to 0.9% of child births that occur at home every year. One-fourth of these births are unplanned or unattended. Planned hospital birth offers a safe and controlled setting with readily available antibiotics, labour anesthesia, and rapid conversion to cesarean birth if the need arises.

Covid-19 disease and the associated restrictions in hospital policies have pushed pregnant women in the United States to consider giving birth at home to achieve their desired experience.

Moreover, in the Unated States there were 17 maternal deaths for every 100,000 live births in 2018. A ratio more than double that of most other developed countries. In contrast, the maternal mortality ratio was three per 100,000 or fewer in in the Netherlands, Norway, and New Zealand (19).

Another study done in the Netherlands (20) that compared the intervention rates between planned home births and planned hospital births, shows that home birth is associated with mortality disadvantages due to delayed treatment. The delayed treatment may be attributed to delayed travel time from home to the hospital when emergencies occur. It also shows that 0.4% of all low-risk pregnant women need urgent referrals. The study observed an increased perinatal death rate in infants of women who give birth at home than those that give birth in the health facilities (20).

According to Dutch guidelines (21), in the Netherlands, approximately 50% of pregnant women start their delivery in primary care under the supervision of community midwives. Community midwives are independent healthcare professionals who provide care for low-risk and medium-risk pregnant women.

In most developed countries some women prefer home birth and planning for them before labour. These women feel is safer to deliver in their own homes surrounded by their family members than in hospitals. They can be attended by a midwife or family physician. A study done in British Columbia, Canada, in 2009 (2), compared the outcomes of three groups, 1, planned home birth with midwives, 2, planned hospital births with midwives, and 3, planned hospital birth with a physician.

It reveals the following:

-Adverse maternal outcomes were rare in all groups. Those who planned home birth with the midwife were significantly less likely to have a third or fourth-degree perineal tear or postpartum hemorrhage compared to a planned hospital birth with a midwife.

Adverse maternal outcomes were significantly lower among the women who planned a home birth than those who planned a hospital birth with a physician.

-Those that planned a home birth were less likely to have a newborn that had birth trauma, required resuscitation at birth, or required oxygen therapy in 24 hours than planned midwife-attended hospital birth. Moreover, they were less likely to have meconium aspiration (2).

In relation to wealth quartiles, the richest quartiles had the lowest proportions of home birth while Poor countries had the highest proportion of home birth. It was also noted that women without education had the highest proportion of home birth (2)

2.3 Home child birth in Africa

While in developed countries home birth can be planned and attended by skilled personnel in developing countries, on the other hand, home birth is mostly unplanned and not attended by skilled personnel (2) This poses a great risk to both mother and the baby. Most studies on home child birth are done in Africa.

Even though, maternal mortality remains a major public health problem in most parts of the world, Sub-Sahara Africa regions bear the highest burden. 85% of maternal mortality occurs in Sub-Sahara Africa. These maternal deaths are highly attributed to home child birth. In developing countries most child birth still occur at home without the assistance of trained birth attendants. Women still give birth in unhygienic environment without lifesaving equipment and medications (22,23). The use of skilled personnel during

delivery is lower in Sub-Sahara Africa and south/southern Asia than in other regions. Nearly half of all women who have died due to pregnancy-related causes were from Sub-Sahara Africa. The main intervention to combat maternal and neonatal deaths is skilled birth attendance as per WHO universal advocating of skilled birth attendance (24).

Moyer (25) explored the use of the facility during delivery in sub-Sahara Africa. The most frequently documented factors associated with facility-based delivery and home child birth appear to be similar across regions in Sub-Sahara Africa. Frequently cited factors includes economic status such as the mother's socio-economic status, household wealth, and health insurance, maternal factors such as maternal education, and ante-natal care attendance, and logistical factors such as distance to health facility and urban/ rural residence. Other factors include cultural beliefs and women's trust in health facilities.

Kifle (26) maintain that in Eritrea 74.5% of women in that country give birth to their babies at home. Only 24.6% give birth in the health facility. He stated that different factors contribute to the choice of place of delivery. The independent predictors reflect the socio-cultural context in which the women live and how those factors affect their preferences in the use of services. This study shows that women with educated husbands with greater knowledge of maternal health were more likely to give birth in the health facility. Women whose husbands had little or no education were less likely to use health facilities. Unlike many studies that reveal that the educational level of pregnant women plays a role in the choice of place of delivery, Kifle (26) contradict the idea as he

maintains that the mother's educational level is not associated with the place of delivery in Eritrea. This study further argues that reproductive health preference is not determined by women's characteristics. Cultural molded, the male-dominated power differential between husbands and wives explains why even educated women may fail to give birth in the health facility if their husbands oppose their ideas to give birth in the health facility.

Intra-familial decision-making power regarding health care services is strongly influenced by the values and opinions of husbands, mothers-in-law, Traditional Birth Attendants (TBAs), close relatives, and other community members. Facility delivery can be seriously undermined by women's lack of decision-making power due to gender inequality (26).

Just like Moindi (27) stated that women's choice of place of birth depends on cultural practices in the community, similarly, Kifle (26) also stated that giving birth at home is strongly influenced by social and cultural beliefs in the household and community levels.

However, just like many studies economic and physical accessibility to health facilities were found to have a significant influence on women's place of birth choice.

While many studies have noted that women from low socio-economic status were more likely to give birth at home as a result of financial hardship and unable to pay nominal fees, transport fees, and compensating the gap left at home to care for children. In Kifle (26) study households with medium wealth status had higher odds of giving birth at the health facility.

The issue of financial expenses for facility delivery services tends to be minimal as the health care services are largely subsided by the government; users are only required to pay nominal user fees. While most studies show that, means of transport to the health facility is a barrier to health facility delivery in Eutrea women who use traditional means of transport such as horse and mule are more likely to give birth in the health facility.

Exposure to information on television, print media, and radio can increase knowledge and awareness on new ideas, and social changes and can affect an individual's perceptions and behavior including those of health matters. The utilization of the mass media influence women's knowledge about the availability of health services, delivery risks, and the benefits of health facility delivery. In many studies such as of Chernet (24) who indicated that women who do not watch Television were more likely to deliver at home, Kifle (26) on contrary argue that only reading newspapers is linked to the high proportion of delivery at the health facility. The latter could be due to those mothers who read newspapers become aware of the possible dangers/risks of home child birth and hence opt for facility delivery.

In a study that was done on 11 East African countries (22), shows that home child birth was 23.68% among women in East African countries. Home child birth varied between countries in this African zone. It was highest in Ethiopia (72.5%) followed by Kenyan women (37.5), Tanzanian women (34.7%), and lowest in Mozambique (2.8%), Rwanda (6.9%), and Malawi (7.1%). Home child birth was significantly increased among

uneducated women, aged 20-34 years, rural residents, unmarried, and women with the higher number of ever-born children. Home child birth was recorded as low among educated and wealthy women (22,28).

On the contrary, a study done in Uganda (29), indicates that the site of child birth is determined by the availability and affordability of health care services, the level of education attained, the presence of midwives and doctors, and behaviors of health workers. 93.9% of women who participated in this study had a secondary education level. It also indicates that women with low antenatal visits, low socio-economic status, and those that live long distances from the health facility give birth more at home. While most studies show that most women that give birth at home are uneducated this study indicated that most women who deliver at home had secondary education.

One factor associated with maternal and neonatal mortality is home child birth. A study done in Ethiopia (24) reveals that the home environment as a place of delivery in developing countries is unsafe and may have adverse neonatal and maternal outcomes. Interestingly, a large proportion of maternal deaths could be prevented through timely and appropriate interventions (24). Delivery in health facilities with skilled health personnel is the main important intervention for safe motherhood. Historically increasing women's access to health facilities with the capacity to provide emergency obstetric care is the main cause of drops in maternal mortality.

Chernet (24) reveal that women who live in rural areas, uneducated, older age, poor, and not watching TV are more likely to give birth at home at a 5% level of significance. Women living in urban areas had a better experience of health facility delivery than women living in rural areas. This, may be because women living in rural areas have little or no access to maternal health programs compared to women living in urban areas. Older women had a high probability of giving birth at home than younger women in Ethiopia. This may be due to the fact that older women consider themselves as having experience in childbirth and they do not need skilled personnel to assist them, than younger women. Younger women, on the other hand, had no experience with childbirth so they tend to fear complications that may occur while at home. Personal, family, health-related factors as well as social and cultural norms play a big role in influencing women to give birth at home and seek help from the TBAs. Old women with many children have strongly believed that they are at low risk of complications because their previous pregnancy and delivery were fine. These women believe they "know themselves" pretty well because they had many pretty successful deliveries previously. Moreover, they believe that they had enough experience in childbirth and they are able to recognize complications that may arise during labor and delivery (3,24).

It was also revealed that most women that give birth at home have negative attitudes toward nurses and healthcare services because of the way they were treated during ANC visits or during previous delivery at the health facility. 80% of women who participated in the study indicated that nurses at the clinic were harsh to the women in labor and used abusive language to them. Other women explained that they were shouted at by nurses at

the health facility, left alone to struggle in labor, or were not assisted well after labor. However, the husbands of these women show a positive attitude toward nurses (3).

In addition, most women give birth at home because of various barriers that are preventing them from delivering at the health facility. These barriers include lack of funds for baby clothes and other health facility requirements for the mother during and after labour, poor quality of service at the health facility due to lack of adequate nurses, negative experience with nurses during ANC, long distances to the nearest health facility, high transport fee, poor state of labour wards and lack of maternity waiting homes. Apart from health-related factors, some women have social and cultural norms that prevented them from delivering in the health facility. These women believed that they shouldn't be delivered by either young or male nurses at the health facility. Thus they opt to give birth at home assisted by TBAs that are female and older. On the other hand, young teenage and inexperienced women with childbirth give birth at home accidentally because they were inexperienced in childbirth and did not know when they will go into labour (3).

Even though TBAs lack professional skills and knowledge and do not have the medical equipment that may be required during labour and delivery most pregnant women in Zambia still have trust in them. One of the main reasons that pregnant women seek assistance from TBAs is that they are always and immediately available whenever they are called to assist a woman in labour regardless of the time of the day or weather

conditions. This trust in TBAs made most women choose to deliver at home rather than in the health facility where they believe they will not find the help they needed (3,30).

Sialubanje (3) further stated that in some instances, women in Zambia who went to the health facility for delivery did not find nurses to assist them. They ended up being assisted by relatives that accompanied them to the health facility or call the TBA from the community to assist them. The fact that women are familiar with TBAs also made most women use their services more than health facility services. Women feel free with TBAs because they live with them in the community than with nurses who are total strangers. They feel free to discuss the progress of labour with TBAs and to inform them how they feel about it or whether they needed food, a drink, or some rest. If a woman was not cooperative during labour a TBA will not do not shout at her, she will rather encourage her to push. If a TBA noticed that a woman is tired she will ask the woman to take a rest and either give some light porridge to eat or some Chibwantu (a local non-alcoholic drink) to drink. The care that TBAs give to mothers and their babies after delivery also contributed to women's choice of TBAs. Other women give birth at home with the help of TBAs because they believe they have adequate skills and experience when it comes to childbirth, they can detect complications on time and refer mothers to the clinic. TBAs are believed to have the following skills: carrying out an abdominal examination to assess the position and status of the baby during ANC, carrying out the abdominal examination and vaginal examination to assess the stage and progress of labour, cleaning the perineum to prevent infections during delivery, conducting a delivery including cutting of the cord and managing the third stage of delivery (delivery

of the placenta) to prevent postpartum hemorrhage, detecting danger signs and complications and making referrals to the nearest health facility (3).

A similar study done in Kenya (27), showed that the majority of women who give birth at home were assisted by untrained people like their mother-in-laws, or biological mothers only a few were attended by traditional birth attendants or skilled personnel. In Kenya, most women believed in cultural practices. Untrained birth attendants may carry out these practices during delivery at home such as massaging the abdomen before delivery. Massaging in a health facility is done to align the baby in the right position in readiness for delivery. Unskilled birth attendants are unaware of the dangers associated with massaging which include placenta praevia and abruption, asphyxiating the fetus, increasing chances of trauma to the baby, and premature delivery. Some women that took part in the study indicated that many uncomfortable vaginal examinations keep them away from health facilities and think that home child birth is safer. Women delivering at home lack information on how to treat the umbilical cord after delivery. The common practice among women in Kenya is to apply wood ash after cutting the umbilical cord. These cultural practices are the main cause of increased neonatal admissions with common diagnoses such as neonatal sepsis and neonatal Tetanus in hospitals (27).

While most studies showed similar findings that women who are older, uneducated, living in rural areas, have low socio-economic status, less ante-natal visits are more likely to give birth at home (31,32), had find out a different predictor of home child birth

apart from the common ones mentioned above. He reveals that a lack of awareness of at least one maternal danger sign is also a predictor of home child birth. Women that are lacking information on danger signs such as high blood pressure in pregnancy may give birth at home thinking that they are safe to do so. This put them at risk of maternal morbidity and mortality especially those living long distances from health facilities and referral could not be possible (31).

Although home child birth is common in Africa, in Malawi home child birth is not quite a lot. Only less than 10% of women deliver outside health facilities. Unmarried women, without any formal education, multigravida, had lower social economic status, and living in rural areas were more likely to give birth at home in Malawi (31).

2.4 The issue of home child birth in Namibia

Namibia is a country in the South Western part of Africa covering a land area of 824, 000 square kilometers, with a population of 2.59 million persons. Namibia is a lower-middle-income country (33).

Namibia is a stable, young democratic country. Even though Namibia is classified as a middle-income country, Namibia is still among the countries which make insufficient progress in achieving the Millennium Development Goals (MDGs) 4 and 5 which call for improving maternal health and reduction in maternal mortality ratio by ¾ and child mortality by 2/3 by 2015 (5), Some pregnant women give birth to their baby at home due

to poor roads, lack of transportation, and distance of up to 100 km especially those women in rural areas. Some women make use of maternity waiting homes while those that cannot make it or cannot afford the maternity waiting homes give birth at home. Himba tribe women from the northwest part of Namibia often have to travel up to 100km to the health facilities to give birth (5).

Nearly half of the regions, delivery by skilled health providers falls short of the population averages. Khomas region where the capital city is located has the highest percentages (70%) of delivery by skilled health professionals compared to other regions such as Kunene (54%). Seemingly the regions with the lowest human development index have the lowest uptake of maternal health services (33).

Some hospitals in Namibia do not have maternity waiting homes built. Hence pregnant women camp their tents near the hospital despite the challenges they face while staying in those tents. Some of the challenges are: no security, pigs roaming freely in the camp, and cooking is difficult when is raining (33).

Maternal and infant mortality or stillbirth in the third trimester may result from lack of care. But it has been harder for rural women to reach the health facility when in need of care. According to WHO report (5), the maternal mortality rate in Namibia was 265 deaths per 100 000 live births and infant mortality was 33 deaths per 1000 live births in 2015 (5).

In another study done in Namibia, Oshana region reveals that the majority (81.7%) of women who practice home child birth are unemployed and 74.6% lived more than five kilometers away from the nearest health facility (1).

It was also revealed that women with no formal or primary education were more likely to give birth at home than those with secondary or tertiary education. This could be due to the fact that women with better education may be exposed to health education programmes on the importance of maternal health and understands the danger of giving birth at home. Also, women with secondary and tertiary education are more likely to secure employment than uneducated women. She also reveals that women who attended ANC three or fewer times were more likely to give birth at home than those that attended ANC four times or more (1).

Is important to monitor equity in maternal health and health services to target scarce public resources to those in need and increase the progress toward achieving global targets.

If an effort is not made to reach the poor and the vulnerable people, the goal defined in terms of population averages may result in inequality in the country. Moreover, is difficult to achieve health Millennium Development Goal (MDG) targets without addressing the inequality in health and health care. The maternal mortality ratio in Namibia has increased from 271 per 100 000 live births in the period 1991-2000 to 449 per 100 000 live births in the period 1998-2007. Despite the coverage of maternal health interventions like ante-natal care and delivery by skilled individuals the increase in maternal mortality has been witnessed in Namibia (33).

Table 2 Namibia selected health and development indicators

Indicator	**Value**
Life Expectancy at birth (years, 2007)	59
Infant mortality rate per 1000 live births (2002-2006)	46
Under-five mortality rate per 1000 live births (2002-2006)	69
Total fertility rate (2006-2007) (%)	3.6
Maternal mortality ratio per 100 000 live births (1998-2007)	449
Percentage of pregnant women receiving ante-natal care from a skilled provider (2006-2007) (%)	94.6
Percentage of child deliveries by a skilled provider (2006-2007) (%)	81.4
Adult (15-49 years) HIV prevalence rate (2008) (%)	15.3
Gross national income (GNI) per capita in US $ (2007)	3,360
Health expenditure per capita in (real 2006 US $)	276

Physicians per 10 1000 population (2000-2007)	3
Nursing and midwifery personnel per 10, 000 population (2000-2007)	31
Hospital beds per 10, 000 population (2000-2008)	33

Source: 2011 Namibian Census

2.4.1 Maternity waiting homes as an intervention to reduce maternal and infant mortality in Namibia

Maternity waiting homes are accommodations located near health facilities where the women can stay towards the end of pregnancy and/or after birth to enable timely access to essential care or care for complications (34). These maternity waiting homes are very important and will alleviate the accomodation problem of women who do not have relatives or friends (35,36)

The Ministry of Health and Social Services in partnership with the European Union launched a Programme for Accelerating the Reduction of Maternal and Child Mortality (PARMaCM) in 2013. Maternity waiting homes were built next to the health facilities in four regions across Namibia. PARMaCM focused on the districts of Okongo, Outapi, Engela, Opuwo, Katima Mulilo, Gobabis, and Keetmashoop. These waiting homes replaced the makeshift camps and provide rural women with a safe place to stay. The homes can accommodate up to 80 women, set as dormitories with communal kitchens,

dining halls, bathrooms, and meeting areas. Maternity waiting homes are part of the approach to bringing quality care to pregnant women in Namibia. The government is improving access to primary health services, strengthening maternal and perinatal death surveillance (37).

The maternity waiting homes bring women closer to health facilities for timely access to quality facility childbirth, and avoiding complications during pregnancy, and days after giving birth. Women who stay in maternity waiting homes pay a small amount of fees or volunteer to work to cover their costs. Besides this intervention to curb maternal and infant morbidity and mortality in Namibia, there are still women who deliver at home (37).

2.5 Conceptual framework

Patrick, (38) defined conceptual framework as the researcher's synthesis of the literature on how to explain a phenomenon. It maps out the actions required in the study. It presents knowledge of other researchers' points of view and observations on the subject of research. The conceptual framework is the researcher's understanding of the connection between variables in his study. In other words, is the researcher's map in pursuing the investigation (38).

The research aims to determine and analyse factors associated with home child birth among pregnant women. Literature on factors associated with home child birth have

been reviewed and a conceptual framework is developed according to the findings of this literature. Factors that contribute to home child birth according to literature are pregnant women's age, place of residence, educational level, religion, socio-economic status of pregnant women and their family, quality of care provided to them, accessibility of health care facility, attitudes of health care providers, cultural factors and so forth. The motive is that addressing these factors that lead women to give birth at home will help women in making choices of health facility delivery. The latter can be done by providing health education to women at ANC, educating young girls in schools on maternal health and the availability of maternal health services, encouraging partners to get involved in maternal health of their partners, and building/expanding maternal waiting homes for pregnant women.

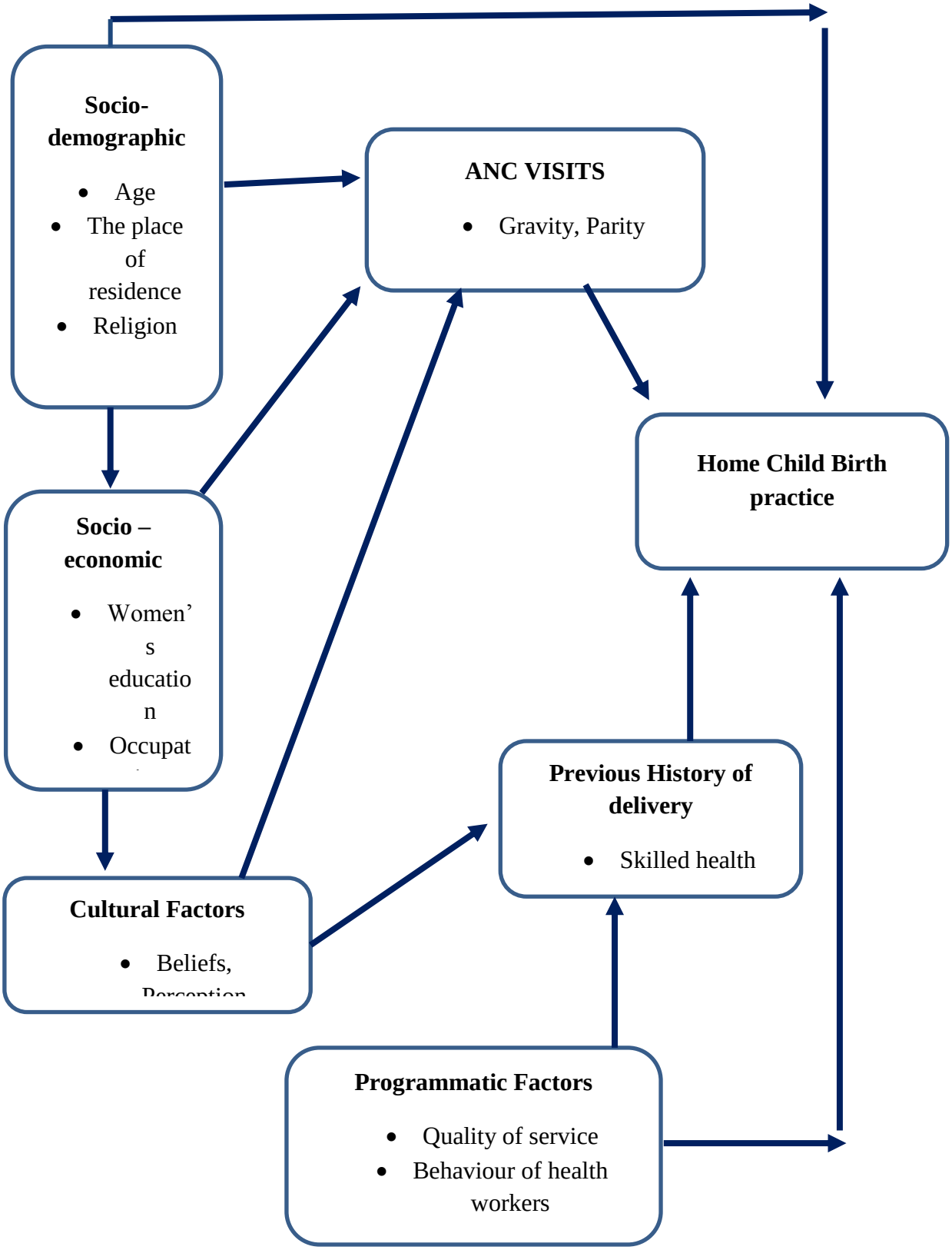

Figure 2 Conceptual framework for the study

Explanation of the Conceptual framework:

2.6 Factors associated with home child birth

Delivery care through access to health facilities and skilled health personnel is the main important intervention for safe motherhood. Studies have been done to assess factors associated with home child birth worldwide. Several factors have been identified as the main contributing factors to home child birth as illustrated by the conceptual framework above. These factors are as follows:

- Socio-demographic factors
- Socio-economic factors
- Programmatic factors
- Cultural factors

2.6.1 Socio-demographic factors

Socio-demographic factors such as pregnant women's age, place of residence, and religion have been identified by several studies as some of the factors that may influence the women's decision in whether to deliver at home or in the health facility.

i) Place of residence

As indicated by Abdella (39) women living in rural areas were 7.3 times more likely to give birth at home than women living in urban areas. The reason behind this might be that in rural areas proportion of mothers with education is low, low access to information related to maternal health in rural areas, long distance to the health facilities, or no

means of transport. In a similar study (24), it was revealed that women who live in urban areas had a better experience of institutional delivery than rural women.

ii) Age

Maternal age is another strong predictor of home child birth practice according to several studies. Some studies show that older women are more likely to give birth at home compared to younger women. This was revealed in a study done in Ethiopia (24) that older women had a high probability of home child birth compared to younger women. Similarly, Moindi (27), also show that older women are more likely to give birth at home. On the other hand, other studies show that younger women have a high probability of giving birth at home than older women. This was confirmed by Abdella (39) this study reveals that women who are less than 25 years were 2.9 times more likely to give birth at home than women who are older than 25 years. Similarly, Hidengwa (1) also shows that the highest proportion of those that gave birth at home were those aged 25-29 years while those aged 35-39 years were the highest proportion gave birth in the health facilities. This shows that younger women give birth moreat home than older women.

iii) Religion

The religion of pregnant women is another factor that influences women's choice in whether to deliver in the health facility or at home. While some women may believe in health services other women's faith may be against it which will influence them to give birth at home.

2.6.2 Socio-economic factors

A Socio-economic factor is another predictor of home child birth as shown by several studies.

A study done in three South-Asian countries (40), reveals that women from low socio-economic status were most likely to give birth to their babies at home. Just like many other studies, Sialubanje (3) also confirm that socio-economic status is a strong predictor of home child birth. He further stated in his study that most women fear not having the requirement that the health facilities ask delivering mothers to have for themselves and their babies. These include baby clothes, health facility fees, and so forth. These women instead opt to give birth at home with the help of traditional birth attendants (3).

In addition, some women live a long distances from the nearest health facility and they do not have transport fees for them to go to the health facilities. Other women fear not having adequate food to stay in the maternity waiting areas. The poor living standard of women especially in developing countries is the main cause of home child birth. Since they feel safe and free in their own environment and are being helped by the member of their community who are not judging them regardless of what they have for themselves and the baby (3).

Sarker (17) confirms this in his study the issue of the inability to pay for a health facility-based delivery is a reason why most women prefer home child deliveries. Hence they make use of TBAs due to lower prices by TBAs and a TBA can be compensated by non-monetary items such as a traditional dress.

2.6.3 Programmatic factors

Another contributing factor to home child birth is programmatic factors. This includes quality of service, health worker's attitudes towards pregnant women, and availability of medical supplies that may be required during delivery.

i) Quality of health service

While some women feel is safe to deliver in the health facility and trust the health care services other women feel unsafe and the service provided to them is poor. This is revealed by Sialubanje (3) that poor quality of service at the health facility due to lack of adequate nurses, the poor state of labor wards, and lack of maternity waiting homes prevent women from giving birth in the health facility. Most health facility does not have adequate nurses to provide quality health care to women in labor. Some women feel they are left alone to struggle while in labor and others feel proper care was not given to them and their baby after delivery. Moindi (27) further indicated that many uncomfortable vaginal examinations carried out at the health facility keep women away from the health facility.

Furthermore, Kifle (26) stated that individual perception of quality care has an important bearing on the choice of delivery place preferences. These perceptions are normally from personal experiences, the experience of others, or public opinions. Other studies show that individual perception of the quality of health services tends to be influenced more by the time given to the patient, and the level of interpersonal communication

skills of the health provider than the actual measurable quality of service indicators such as health facility setup, equipment and amount of health provider available. Some health workers indicated that some women wants to have birth companions including their husbands. However the labour rooms in most health facilies are not designed to accommodate the presence of birth companions due to lack of privacy in labour rooms. In most cases multiple women in labpour rooms occupying the same and limited space (41).

ii) Health worker's attitudes

Some women had a negative experiences with nurses during ANC, or during their previous pregnancy. Nurses do not give pregnant women in labour time to rest nor allow them to take a drink or food to gain energy to be able to push. While on the other hand traditional birth attendants provide food and a drink, allow the women in labour to rest, and provide adequate care to the mother and the baby after delivery. This was revealed by Sialubanje (3) in their study that was done in Zambia. Similarly, Kifle (26) indicated that women who were not happy about how the health workers communicated to them previously were more likely to give birth at home. In another study it was revealed that health worker mistreat pregnant women in the health facilities due to work overload (42). These mistreatment of pregnant women may push them away of health facilities and opt to give birth at home on their next pregnancy.

iii) Availability of medical supplies

Inadequate supplies of medical equipment or medicine may keep pregnant women away from the health facilities. This is common in developed countries, especially after covid-19 was declared a pandemic by World Health Organization in March 2020. Ru-Fong (19) reveal that women in the United States planned for home birth than hospital birth during the covid-19 pandemic. This was because they do not receive the care they needed in the health facility due to new policies and restrictions. In some instances, there was inadequate Personal Protective Equipment (PPE) for health workers to use on each client. This leads to health workers not attending to the pregnant women on time. Hence pregnant mothers feel safe in their own homes with the help of a family doctor or midwives surrounded by their family members than being in the hospital (19).

2.6.4 Cultural factors

Culture plays a big role in women's decision on whether to give birth at home or the health facility. In some culture pregnant woman is not the one to decide on the place of delivery. Older women in the family or the husband are the ones to decide on the place of delivery. Moyer (25) revealed that in West Africa home delivery was preferable because it protects secrecy, avoids onlookers, and prevents other people from talking about or gossiping about how well the woman does in labor. In East African countries like Tanzania going to the health facility was seen as the failure of self-treatment. They believed that a normal pregnancy defined as ante-natal care would result in normal delivery and thus did not need a health facility. In Uganda women strongly believe in

stoicism. Hence even if symptoms become severe “a proper woman” will not communicate that to anyone Moyer (25).

A study done in Bangladesh indicated that giving birth at home with the help of TBAs is a tradition. Elderly women in the family are responsible for making decisions on the place of delivery and they have a good relationships with TBAs. Mother in-laws prohibit their daughter in-laws from going to the health facility because even themselves did not go to the health facility. Elder’s views including that of mother in-law are of importance and thus influence decision making. In some parts of Bangladesh if delivery is conducted outside the home the prestige and social status of the family will be downgraded in the community (17).

“In this community, people think that, if a woman goes to the hospital for delivery then women have to be nude in front of an unknown male doctor. Besides, women also think that, if they go to the hospital for delivery, their delivery will happen by cesarean section instead of normal delivery, community people will not take it simply rather they will insult women. This issue hampers their prestige”

“Women easily understand another woman’s voice; they cannot share their all problems with a male person or with a male doctor, as they feel shy with them. If delivery is conducted at home by TBA, women are free from any anxiety and they feel peace in their mind”

This is what some participants' views who took part in the study that was done by Sarker in Bangladesh (17).

Since most of the doctors are men, women are ashamed of taking treatment from male doctors because they think their social status and prestige will be diminished as a result. For instance, a woman will have her reproductive organ exposed to a male provider which is a major barrier. Moreover, women are less likely to discuss their problems or symptoms with a male doctor. Some women feel shy to take maternity care from male doctors, especially Muslims (17).

Maternal and neonatal health outcomes improve when skilled personnel provides delivery services within health facilities. According to the US National Library of Medicine report (2016), the global maternal mortality rate was 210 per 100,000 live births in 2013. Of the 289,000 maternal deaths globally recorded in 2013, sub-Saharan Africa accounted for 179,000 (62%) (43).

In Namibia, as stated in the Demographic Health Survey (6), the maternal mortality rate is 4/1000 live births. 12% of women in Namibia give birth away from health facilities

The health care services that a woman receives during pregnancy, childbirth, and the immediate postnatal period are important for the survival and well-being of both mother and infant.

Although Namibia is classified as a middle-income country, Namibia made insufficient progress towards achieving Millennium Development Goals (MDGs) 4 and 5 which call for improving maternal health and reduction of maternal mortality by ¾ and child

mortality by 2/3 by 2015. According to a WHO report (5), 18.6% of women in Namibia give birth at home by 2013. Reasons for home child birth were due to socio-economic factors like lack of transport to go to the health facility, lack of money to pay for accommodation in town or accommodation to stay near the health facility, and long distances to the nearest health facility.

To respond to maternal and child needs in Namibia, the country needs to build maternity waiting homes (MWH) across the country. These maternity waiting homes will help pregnant women to stay closer to the health facility to access quality healthcare services and avoid complications during delivery. These homes also allow pregnant women to get an opportunity to get education on various health topics including maternal and newborn health (5).

A study done in Zambia (3) shows that various personal, family, and health-related factors as well as social and cultural norms played an important role in influencing women to give birth at home and to seek the services of Traditional Birth Attendants.

In a similar study done in Ethiopia (24) it was further discovered that home child birth is associated with young maternal age, low educational level, rural residence, low socio-economic status, high birth order, the absence of Ante-Natal Care (ANC) services, distance to health facilities and complications during delivery in the previous delivery.

2.7 Summary

In this chapter, several studies were reviewed with regard to determinants of home child birth among pregnant women worldwide, in Africa, and particularly in Namibia. The conceptual framework is also outlined to give a clear picture of the study topic. Factors that determine home child birth according to literature were highlighted which includes: socio-demographic factors (like maternal age, place of residence, religion, and educational level), socio-economic status of pregnant women and their family, programmatic factors (such as health worker's attitudes, quality of care provided and the availability of medical equipment). The next chapter will present the study methodology.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

A research method is the way by which researchers go about their work of describing, explaining, and predicting a phenomenon (44). This chapter presents the methodology the researcher employed in the study. The research design, study population, inclusion and exclusion criteria, sampling procedure, and research instrument are presented in this chapter. Data correction procedure, data analysis as well as ethical considerations were also covered.

3.2 Research design

Inorder to meet the study objectives virtually the researcher used a quantitative approach. The aim to conduct a quantitative research study was to determine the relationship between independent variables and dependent variables. The researcher was interested in quantifying the degree of contributing factors to the problem which is home child birth practice.

The researcher applied an analytic cross-sectional study design. The rationale being cross-sectional studies entail the collection of data on a cross-section of the population, such data provide a picture of the real situation at a particular point in time (point prevalence) (45). The researcher aimed to understand factors associated with home child birth among pregnant women in the Oshikuku district. Conducting a cross-sectional study helped the researcher to have an in-depth understanding of the phenomena under study.

The study was a retrospective study that reviewed maternal records of women seeking post-natal care after home child birth. The reason being retrospective is that is hard to get majority of women who delivered their baby at home at the same time. Hence maternal records were used instead.

3.3 Study population

A study population is the study target population that the researcher intends to study (46).

According to HIS statistic, the total number of deliveries both health facility and home child deliveries in Oshikuku district hospital within 12 months is estimated to be 1656 and the target population where the sample was drawn is estimated to be 232 home deliveries.

Since the district only has one health facility that has maternity wards where women got admitted after delivery which is Oshikuku district hospital, the researcher reviewed maternal records of 146 women who received post-natal care at Oshikuku district hospital after home child birth practice.

The study populations were women who give birth at home and reported themselves to the health facility after giving birth at home in the Oshikuku district.

3.4 Sample and sampling procedure

Sampling is the process of selecting a statistically representative sample of individuals from the population of interest. Sampling is an important tool for research studies

because the study population consists of too many individuals to be included in the study. A good sample is a statistical representative of the population of interest and is large enough to answer the research question. The researcher should be able to obtain a proper sample size. Too large sample size may be hard complete and wasteful (47).

3.4.1 Sample size

A sample is a portion of the entire population that has characteristics that the researcher wishes to examine (47).

According to Majid (47), the sample size of a study should have adequate power and significance which will allow the researcher to be confident that the study findings cannot be attributed to random variations in the population of interest. The investigator should be able to obtain a statistically representative sample from the population of interest such that the inferences and the study findings from the sample represent the real association in the population of interest.

The following things were considered prior to sample size calculation:

- The expected births (both home and facility deliveries) in Oshikuku district hospital in 12 months are 1656 births as per HIS statistics.
- Percentage of home child birth among other deliveries, according to Namibian Demographic Health Survey (NDHS) Omusati region has 14% of home child birth.
- Confidence level, is an expression of how confident a researcher can be of the data obtained from the sample. Confidence levels are expressed as a percentage

and indicate how frequently that percentage of the target population would give an answer that lies within the confidence interval. The confidence interval can be 90%, 95%, or 99%. In this study, the investigator adopted the 95% confidence level.

- The margin of Error, Statistics can never be 100% accurate, and the same applies to study results. The margin of error is the degree of uncertainty that your survey results might have. The larger margin of error the more likely to be far away from the "true figures" for the whole population. The researcher adopted the +/- 5% margin of error.
- Power, which is the measure of "doing the right thing", the higher the power the better (close to 100%) and if the power is low it will be difficult to determine the association. For this study, the power that was used to determine the sample size was 80%.

The sample size was determined using Epi info 7 using the formula for cross-sectional study:

Key:

N= Entire study population (where the sample is drawn from)

n = sample size

x = standard normal deviation level of confidence desired set at 1.96 for a 95% confidence level.

P = Proportion of people that delivered at home.

E = Margin of Error

Z = Standard normal deviation of confidence desired, set at 1.96 for a 95% confidence level

Where by:

Step 1:

$$X = \frac{(Z\alpha/2)^2 \times P(1-P)}{E^2}$$

$$X = \frac{(1.96)^2 \times 0.5\ (1-0.5)}{0.05^2}$$

$$X = 384$$

Step 2:

$$n = N \times X / (X + N - 1)$$

$$n = 146$$

The sample size is 146 maternal records

So, 146 maternal records from Oshikuku district hospital were reviewed. This sample size is selected from the target population of 232 home child birth at a confidence interval of 95% and a margin of error of 5%.

3.4.2 Sampling procedure

-The researcher adopted convenience sampling since there is no proper register books with a list of women who delivered at home.

- The researcher reviewed maternal records of women who delivered at home until the required sample size is achieved.

-The researcher reviewed 146 maternal records of women who attended post-natal care at Oshikuku hospital after home child birth.

3.4.3 Convenience sampling

There were no proper register books in the health facility that capture women that deliver at home. Hence the researcher adopted a convenience sampling strategy to select study participants. Women that delivered at home usually come to the hospital for post-partum care and for immunizations of their babies. These women got admitted to the hospital for quite a few days for proper observation since they delivered on their own in the absence of a health professional. The study was a retrospective study that aimed to review maternal records of women that delivered at home within the period of 12 months prior to the study. Hence maternal records were selected until the study sample size required is reached.

3.5 Inclusion criteria

- All women who delivered outside health facilities and seek maternal or child health care services irrespective of their age at Oshikuku district hospital.
- Women who give birth at home within 12 months prior to the study.

3.6 Exclusion criteria

- Women who delivered at home but didn’t seek post-natal care services after home delivery.

- Women who seek post-natal care services at other health facilities other than Oshikuku district hospital.

3.7 Study setting

Figure 1 The location of Oshikuku district hospital in Namibia

Oshikuku district hospital (well known as Oshikuku ST Martin district hospital) is situated in the eastern part of the Omusati region in the northern part of Namibia. Oshikuku is a faith-based organization. The hospital is one of the few catholic hospitals

in Namibia, under the supervision of Catholic Church leaders in partnership with the Ministry of Health and Social Services. The facility estimated catchment area is 8510. The hospital consists of inpatient departments (five wards) and an outpatient department which includes the emergency department (Causality). Five wards in the hospital are: ward 1(maternity ward), ward 2 (Female general ward), ward 3 (Male general ward), ward 4 (paediatric ward), and ward 5 (TB ward). The hospital has 250 beds capacities. The hospital has an outreach team that delivers health care in the community at the primary healthcare level.

Oshikuku district hospital provides several services that include:

- Family planning services
- Ante-natal Care services for pregnant women
- Expanded programme on Immunization
- HIV/AIDS Management and counseling services
- Tuberculosis services
- Nutritional assessment for under-five children
- General Clinical Service
- Prevention Mother-to-Child Transmission Services
- Laboratory services
- Radiology
- Sexual Transmitted Infection screening and management
- Mortuary services

Oshikuku hospital is known for its good, quality health services to people in the northern part of the country. It provides services to many people some even coming from far such as from Angola. Angola is a country bordering Namibia in the Northern part.

3.8 Research Instrument

The research instrument is one's tool for data collection and serves as the mechanism for gathering data about the concept or attribute(s) of interest. An instrument is a device that a researcher uses to collect data.(48). The self-developed data extraction form was used to extract data from the data source. Data were then entered into the Excel spreadsheet for a systematic review of maternal records (files). The instrument was used to measure the independent variables which are socio-demographic data (such as age, place of residence, religion, educational level, etc.) and gynecological history (such as gravidity, parity, etc.), and the dependent variable which was home child birth practice.

3.8.1 Pilot study

Pilot study is a small-scale preliminary study conducted before any large-scale quantitative research in order to evaluate the potential for future, full-scale projects (49). A pilot study is a fundamental stage of the research process. Pilot study help to identify design issues and evaluate the feasibility, practical, resources, time, and cost of the study prior to the main research. It involves selecting a few people and doing a study on them using the same study tool for the main research. It helps save time or money in some cases by identifying the imperfection in the designed procedure of the research. A pilot

study enables the researcher to predict an appropriate sample size, budget accordingly, and improve the study design before performing a full-scale project. It also provides researchers with preliminary data so that they gain insight into the potential results of their proposed experiment (49).

The data extraction form was pre-tested on maternal records of 8 women receiving post-natal care services at Outapi district hospital, Omusati region to ensure that the tool captured what the researcher intended to study. After the pilot study the following changes were made to the data collection tool:

-The **place of residence** under **urban** was changed from **"Urban: informal settlement and town" to "urban: shark dwellers and modern house".**

-The part of the educational level was changed from "**never attended school, grade1-7, grade 8-12, tertiary education"** to **"no formal education, kinder garden – grade 7, grade 8-12, and tertiary education".**

3.9 Reliability and Validity

Reliability and validity are concepts used to evaluate the quality of research (50).

3.9.1 Reliability

Reliability refers to the consistency of a measure or the extent to which the results can be reproduced when the research is repeated under the same condition (50). The following factors were considered important factors in the choice of place of delivery by a pregnant woman: age of the woman, place of residence, ethnicity of woman, educational level, marital status, occupation, the religion of the woman, and

gynecological history. These factors were subjected to reliability testing using Croncbach's Alpha in SPSS. To ensure reliability in this study, Cronbach's alpha testing was used which measures scale reliability. The reliability coefficient is only acceptable if is .70 or higher.

Cronbach alpha formula:

α= Nč / v̈ + (N-1) č

Where by:
N = Number of items (questions)
Č = average inter-item covariance among the items (questions)
V̈ = average variance

146 maternal records were reviewed using the data extraction tool excel spreadsheet. The Demographic Characteristics of Participants subsection consisted of 8 items (α=0.734), and the Gynecological history and Obstetric history of participants subsection consisted of 7 items (α=0.871). This presents an acceptable reliability analysis

3.9.2 Validity

It refers to how accurately a method measures what it intended to measure (50). In this study, validity was ensured through pilot testing the study instrument on maternal records of women attending post-natal care at Outapi district hospital and ensuring that the data extraction tool covered the study objectives and literature are properly reviewed. Apart from that, the data extraction tool was well formulated to ensure that all relevant information needed to answer study objectives are obtained.

3.10 Data collection procedure

The researcher visited the health facility under study and handed over the permission letter from the Ministry of Health and Social Services to the Medical Officer and Nurse Manager in charge of the health facility to seek their permission and cooperation in data collection at the facility. The researcher explained to them the objectives and purpose of the study and that only maternal records of women who delivered at home were required for review in order for the researcher to fill in the data extraction tool. The data extraction form was self-developed by the researcher.

The researcher further explained that no women will be interviewed or required but their maternal records or files will be used instead (secondary data). The date of data collection was then arranged so that no disruption of care will be done. On the date of data collection, the researcher chooses women's files that meet inclusion criteria and data was collected until the estimated sample size was reached. The data collection from each maternal record lasted about 4-6 minutes.

3.11 Data handling and analysis

Data analysis is the process of systematically applying statistical and/or logical techniques to describe and illustrate, condense or recap and evaluate data (51).

- After data collection, data collection tools from the health facility were stored in a safe place.

- Data was then converted from raw data into meaningful and readable format through the following data analysis steps: step 1: data validation, step 2: data editing.
- Then data was entered into a database with a Microsoft Excel spreadsheet and later in Epi Info for analysis with the help of the statistian.
- The p value was used to determine if there is a statistically significant association between the independent and dependent variables under study. The statistical test showed whether to reject or fail to reject the Null hypothesis.
- If the p value is <0.05 then we fail to reject the Null hypothesis but if p value is >0.05 then there is a statistical significant association between the independent (socio-demographic characteristics and gynecological history of women) and the dependent variables (home delivery practice) these were done with the help of a statistician.

3.12 Ethical Considerations

Ethical clearance from the University of Namibia, the Human Research Ethics Committee (HREC), and permission from the Ministry of Health and Social Services was sought before conducting the study. Permission was also sought from Oshikuku district hospital management before data collection. The maternal records in the health facility were used as the data sources for the study.

Anonymity and confidentiality were maintained throughout the study. The information obtained is only shared with relevant stakeholders that are part of the study. The data

from the data source were stored in a computer with a password only known by the researcher.

3.13 Summary

This chapter presented the research methodology which was used in the study. The study was quantitative, analytical cross-sectional which assessed the determinants of home child birth among pregnant women. Study population, sample size, and inclusion and exclusion criteria were discussed. Data collection tools and data collection procedures were presented as well as data analysis and ethical considerations were discussed in this chapter. The next chapter will present the study results or findings.

CHAPTER 4: PRESENTATION OF RESULTS

4.1 Introduction

This chapter presents the results of the study findings. The findings include the socio-demographic information of study participants, gynecological history, and obstetric history of women who give birth at home and reported themselves at the health facility. The analysis examined the association between individual factors and the likelihood of giving birth at home. About 146 maternal records of women who received post-natal care at Oshikuku district hospital within 12 months before the study were reviewed. The distributions of variables among participants were presented in tables and graphs.

4.2 Socio-demographic information of participants

The socio-demographic information of participants obtained during the study was: age, place of residence, nationality, ethnicity/language, educational level, marital status, occupation, and religion. These variables were used to determine the probability of giving birth at home.

Table 3 Socio - demographic information of study participants

Socio-demographic information of participants			
		Frequency	Percentage
Age	Less than 25 years	64	44%
	25 - 34 years	45	31%
	35 - 44 years	37	25%
	45 years and above	0	0%
	Total	146	100%
Place of residence	Rural	141	96.6%

	Urban Shack Dwellers	4	2.7%
	Urban Modern House	1	0.6%
Nationality	Namibian	127	87%
	Other	19	13%
Ethnicity/Language	Oshiwambo speaking	142	97%
	Other	4	3%
Highest education level completed	No formal education	37	25%
	Kindergarten - Grade 7	19	13%
	Grade 8 – 12	86	59%
	Tertiary education	4	3%
Marital status	Single	124	85%
	Married	22	15%
	Divorced/Separated	0	0%
	Cohabitating	0	0%
	Widow	0	0%
Occupation	None	113	77%
	Businesswoman	10	7%
	Professional (Employed)	0	0%
	Other	22	15%
	Missing data	1	1%
Religion	Christian	145	99%
	Non-Christian	0	0%
	Missing data	1	1%

4.2.1 Age

The age of respondents who delivered at home was grouped into four groups: less than 25 years, 25-34 years, 35-44 years, and above 45 years of age with a mean age of 27.7 years and a standard deviation of 5.7.

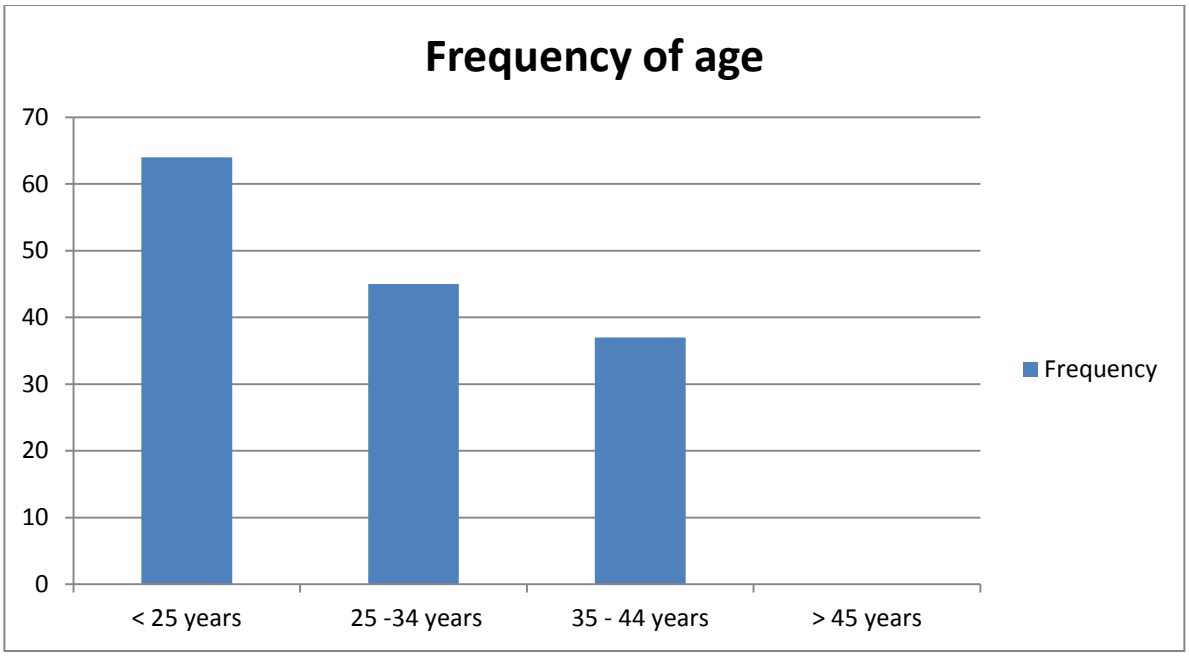

Figure 2 Age groups of respondents

According to the study, home child birth are recorded as the highest among women less than 25 years 44% and the lowest among women 35 – 44 years (25%). These could indicate that women at an early age have fear of the unknown. They do not know what to expect and when to expect it, so they may stay at home even though they are in labour which may lead to them giving birth at home.

4.2.2 Place of residence

The place of residence of respondents was categorized into rural (who stay in villages), urban (those who stay in town), and urban was further categorized into Shark dwellers and Modern house. Among 146 women who took part in the study 141 women, 96.6% stays in rural (village) areas, while 2.7% stayed in Shark dwellers and 0.6% in the modern houses.

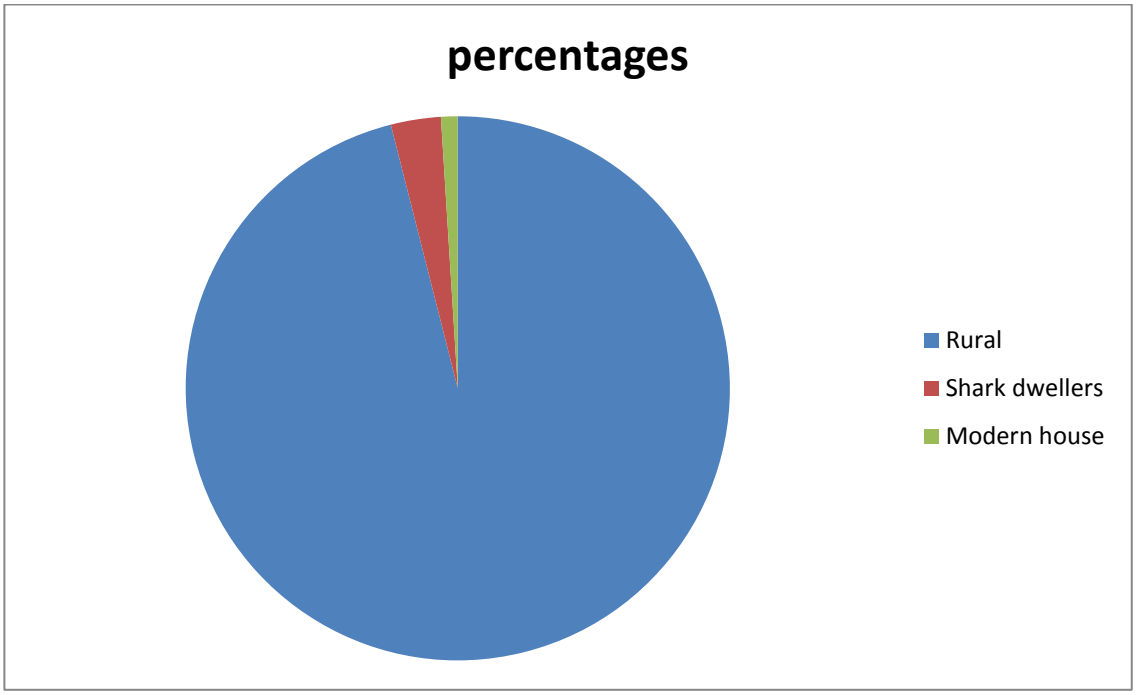

Figure 3 shows the distribution of women as per place of residence.

4.2.3 Nationality of participants

According to the data obtained from maternal records of women who give birth at home, 87% are Namibians, while 13% are Angolans.

4.2.4 Ethnicity / Language

Out of 146 women, 142 women were Oshiwambo speaking which is 97%, and 2% (n=3) were Oshidhemba speaking while 1% (1) was Portuguese speaking.

4.2.5 Educational level of participants

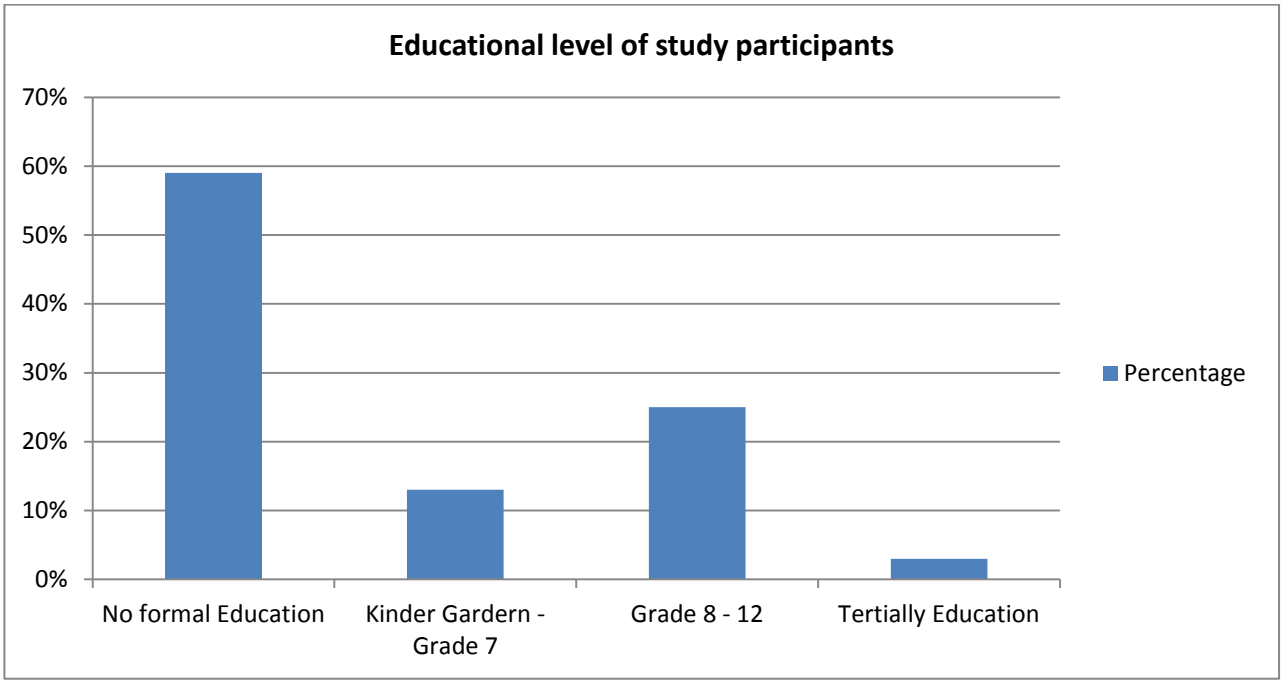

Figure 4 Educational levels of study participants according to their maternal records.

The study reveals that 59% (n=86) of women who gave birth at home had no formal education, 13% (n=19) only had lower primary education, while women with the educational level of Grade 8- 12 were 25% (n=37) and only 2.7% (n=4) had tertiary education.

4.2.6 Marital status

Marital status is one of the variables that were assessed during the study. It was grouped into five categories: Single (never married), Married, Divorced/separated, Cohabitating and Window.

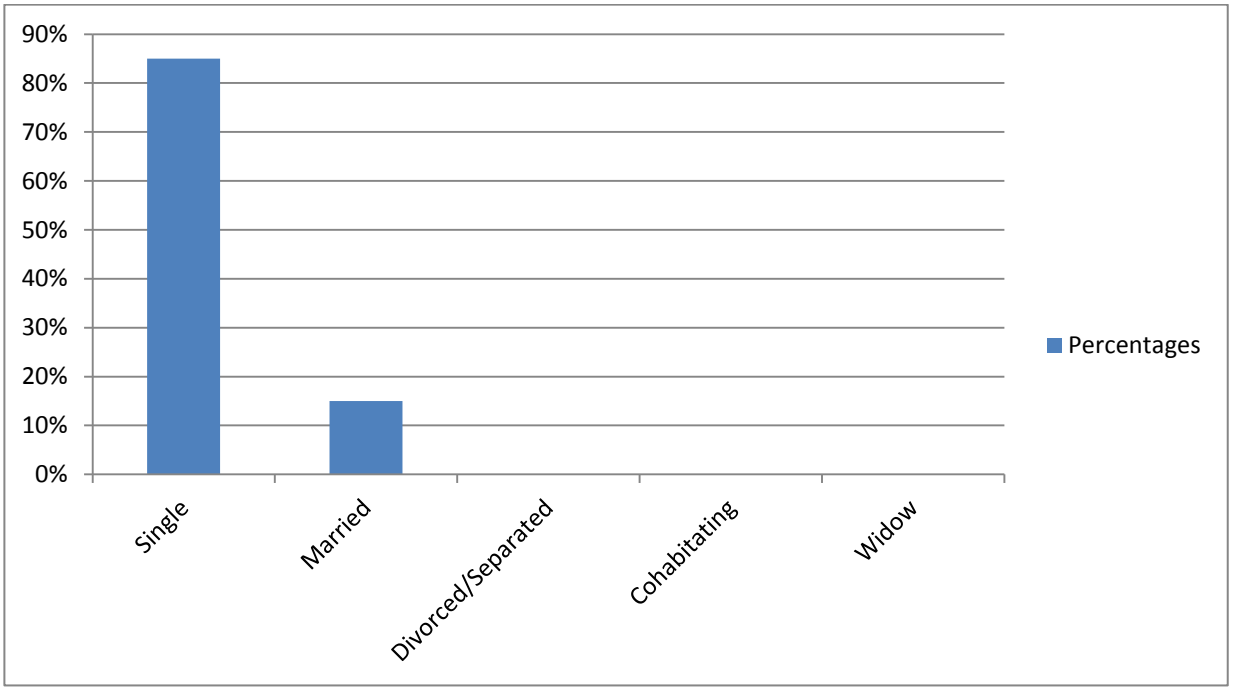

Figure 10 Distribution of participants according to their marital status.

The study shows as displayed in figure 4.4 above, the majority 85% (n=124) of women who give birth at home are single, and only 15% (n=22) are married. According to the data collected none of the participants were divorced/separated, cohabitating with their partners, or window.

4.2.7 Occupation

Table 4 Shows the distrubtion of occupation among women who took part in the study

Occupation		**Number of women**	**Percentage of women**
None (Unemployed)		113	77%
Business women (informal business)		10	7%
Others	Learner	9	6%
	Domestic worker	12	8%
	Shop Attendant	1	1%
	Missing data	1	1%

As shown by table 4.1 above the highest number of women who give birth at home were unemployed at 77% (n=113), 7% (n=10) of these women were doing small business, 6% (n=9) were learners while 8% (n=12) were having informal employment such as domestic workers, 1% (n=1) were shop attendant, etc. however 1% of data were missing in the data source.

4.2.8 Religion of participants

According to the study, 99% (n=145) of women were Christian; none of them indicated non-Christianity. However, 1% (n=1) of data regarding the religion of women was missing from the data source.

4.3 Gynecological history and Obstetric history of participants

The gynecological and obstetric histories of study participants were examined during the study. This includes the gravidity and parity of women, history of abortion, number of ante-natal visits, as well as the outcome of both baby and mother after home child birth.

Table 5 Gynecological and obsteric information of study pasrticipants

Gynecological history and Obstetric history of participants			
		Frequency	Percentage
Gravidity	1	19	13%
	2	26	18%
	3	36	25%
	4	24	16%
	5	17	12%
	6	11	8%
	7	6	4%
	8	6	4%
	9	1	1%
	Total	146	100%
Parity	0	1	1%
	1	20	14%
	2	26	18%

	3	34	23%
	4	28	19%
	5	15	10%
	6	11	8%
	7	7	5%
	8	3	2%
	Not stated	1	1%
Any history of still birth	Yes	2	1%
	No	142	97%
	Missing data	2	1%
Number of ANC visits attended	None	0	0%
	1 - 3 visits	86	59%
	4 or more	60	41%
Outcome of the baby after home delivery	Healthy (no complication recorded)	93	64%
	Minor complications (such as feverish, skin rashes, minor eye infections etc)	34	23%
	Major complications (e.g septic umbilical cord, major eye infections)	10	7%
	Death	9	6%

Maternal health outcome of mother after home delivery	Healthy	105	72%
	Minor complications	29	20%
	Moderate	6	4%
	Major complications	6	4%

4.3.1 The gravidity and parity of study participants

Table 6 The gravity and parity of study participants

Gravidity			**Parity**		
	No.	**%**		**No.**	**%**
1	19	13	0	1	1
2	26	18	1	20	14
3	36	25	2	26	18
4	24	16	3	34	23
5	17	12	4	28	19
6	11	8	5	15	10
7	6	4	6	11	8
8	6	4	7	7	5
9	1	1	8	3	2
Total	146	100		145	99

As displayed by the table above women with less gravidity turn to give birth at home more than women with greater gravidity. The highest was women with gravid 3 with 25% (n=36) while the lowest was women with gravid 9 with 1% (n=1).

The same applies to parity, according to the study findings women with less parity (fewer children) tend to give birth at home more than women with more parity (more children). The highest is women with para 3 with 23% (n=34) while the lowest is women with para 8 with 2% (n=3) respectively.

4.3.2 History of Abortion and Stillbirth among women under study

Table 7 History of abortion and stillbirth

History of Abortion			**History of Stillbirth**		
	Total Number	%		Total Number	%
NO	136	93	NO	142	97
YES	1	1	YES	2	1
Missing data	9	6	Missing data	2	1

The table above shows the history of abortion and the history of stillbirth among women who delivered at home within the study period. According to data from the data source, most women did not report the history of abortion 93% (n=136) nor a history of stillbirth

97% (n=142). Only 1% (n=1) reported a history of abortion and stillbirth respectively although there are a few missing data that were not captured by the data source.

4.3.3 Number of Ante-natal visits (ANC) attended

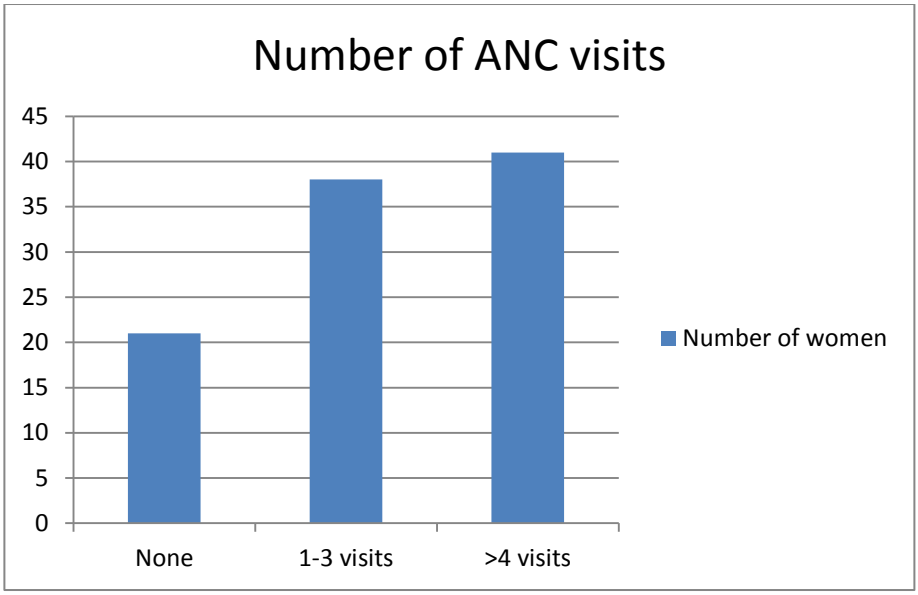

Figure 5 The frequency of Antenatal visits of women who took part in the study.

As shown by the above graph above, most women didn't receive adequate ante-natal visits. More than 50% of women only attended 3 or fewer ante-natal visits (n=86). Only 41% (n=60) of women have attended ante-natal care more than 4 times.

4.3.5 Outcome of the baby after home delivery

Table 7 Shows the outcome of the baby during last delivery

Baby outcome	**Total number**	**%**
Healthy (no complication noted)	93	64%
Minor complications	34	23%
Major complications	10	7%
Death	9	6%

The researcher also considered the outcome of babies when mothers reported themselves at the health facility after home child birth. The outcomes were categorized into four categories: 1. Healthy (alive and well), 2. Minor complications, 3. Major complications and 4. Death.

As shown by table 8 above, 64% (n=93) of babies were alive and well (healthy), while 23% (n=34) had minor complications such as fever, slight eye infections, 7% (n=10) had major complications like a septic umbilical cord, severe eye infections, severe skin disorders and 6% (n=9) of babies died during/after home child birth.

4.3.6 Maternal health outcome of mother after home child birth

Table 8 Shows the maternal outcome of the mother during the last delivery

Maternal outcome	**Total number**	**%**
Healthy	105	72
Minor Complications	29	20
Moderate	6	4
Major complications	6	4

Mother's outcome after home child birth was also one of the variables. The outcome was categorized into four categories: Healthy, Minor complications, Moderate complications, and Major complications respectively.

It was recorded that 72% (n=105) of mothers had no complications recorded (healthy), 20% (n=29) had minor complications like fever, and slight high blood pressure, 4% (n=6) of them had moderate complications such as moderate high blood pressure, 2nd-degree perineal tear. 4% (n=6) had major complications which includes post-partum hemorrhage (bleeding), retained placenta, and severe high blood pressure. No death of the mother was reported.

4.4 Socio-demographic characteristics and home child birth.

Table 9 Shows the association between individual socio- demographic characteristics and place of delivery .

Characteristics	**Strata**	**Home child birth**		**Relative risk**
		No	**%**	
Age	<35years	109	75	3
	>35 years	37	25	
Place of residence	Rural	141	97	32.3
	Urban	5	4	
Educational level	No formal education	86	59	1.6
	Formal education	60	41	
Marital status	Single	124	85	5.7
	Married	22	15	
Occupation	Unemployed	113	77	3.3
	Employed	33	23	
Gravidity	Gravid 3 or less	81	56	1.2
	Gravid 4 or more	65	44	
Parity	Para 3 or less	81	55	1.2
	Para 4 or more	65	45	
ANC visits	3 or less	86	59	1.4
	>4	60	41	

4.4.1 Age

The analysis, reveals that young women (34 years and younger) are 3 times more likely to give birth at home than women who are 35 years and older.

4.4.2 The association between place of residence and home child birth

The place of residence is classified into rural (village) and urban (town/shark). The analysis reveals that women living in rural areas are 32.3 times most likely to give birth at home compared to their counterparts living in urban areas.

4.4.3 Educational level

As shown by table 10 above, the educational level of women was classified into two strata: no formal education and formal education. Women with informal education are 1.6 times more likely to give birth at home than those with formal education.

4.4.4 The association between marital status and home child birth

Marital status was categorized into single and married. The analysis reveals that single women are 5.7 times more likely to give birth at home than married women.

4.4.5 The association between women's occupation and home child birth

The occupation was classified into unemployed and employed. Unemployed women were 3.3 times most likely to give birth at home than those who are employed at a 95% confidence interval.

4.4.6 Gravidity and parity

Gravidity and parity were classified into two groups: gravid 1-3 and gravid >4 respectively. The analysis reveals that women with less gravidity and parity are most likely to give birth at home than women with higher gravidity and parity.

4.4.7 The association between ANC visits and home child birth

ANC visits of women were categorized into two groups: 3 or fewer ANC visits and 4 or greater visits. Women with less ANC visits tend to give birth more at home than those who received more ANC visits with a relative risk of 1.4 at 95% confidence interval.

Table 10 shows Multivariable analysis for determinant factors

Multivariable analysis for determinant factors of home child birth among mothers at Oshikuku district Hospital					
Variable	Category	Cases No. %	COR (95% CI)	AOR (95% CI)	value
Mothers educational status	No formal education	86 (59)	1.6 (0.53-2.66)	1.71 (2.18-11.50)	<0.001
	Formal	60(41)	1	1	
Age	Less than 35	109 (75)	32 (22.7-48.4)	33.2 (21.9-37.4)	<0.001
	Greater or	37 (25)	1	1	

	equal to 35				
Place of Residence	Rural	141 (97)	29.8 (22.74-38.19)	32 (21.70-36.19)	<0.001
	Urban	5 (34.1)	1	1	
Marital status	Single	113 (85)	5.1 (4.63-6.98)	5.7 (2.01-12.31)	<0.001
	Married	22 (15)	1	1	
Occupation	Unemployed	113(77)	2.1 (2.86-8.79)	3.7 (1.63-6.63)	<0.001
	Employed	33(23)	1	1	
Gravidity	Gravid <3	81 (56)	1.66 (0.99-2.8)	1.2 (1.63-6.63)	<0.001
	Gravid>=3	65 (44)	1	1	
Parity	Para<3	34 (38.6)	1	1	<0.001
	Para>3	54 (61.4)	1.68 (0.98-2.89)	1.2 (0.63-4.93)	
ANC Visits	3 or less	60 (41)	1	1	
	>4	86 (59)	1.3 (0.11-5.21)	1.4 (0.31-4.21)	<0.001

*****Note COR: crude odds ratio; CI: confidence interval, ACO Adjusted Crude Odd

The table demonstrates that among mothers at Oshikuku Hospital, the mothers' educational status was a determinant of home child birth, with those with no formal

education being (ACO=1.71; CI=2.18-11.50;p<0.001) times more likely to deliver at home than those who had formal education. Age was also discovered to be a determinant, with those under 35 years old being 33.2 times more likely (ACO=33.2; CI=21.9-37.4;p<0.001). Gravity was also discovered to be one of the determinant factors, with those with Gravity less than 3 being 1.2 times more likely than those with Gravity above 3 (ACO=1.3, CI=1.63-6.63; p<0.001). When it came to marital status, those who were single were 5.7 times more likely to practice home child birth as compared to the married (ACO=5.7, CI= (2.01-12.31; p<0.001). Parity was another determinant, with individuals with a parity of fewer than three being 1.2 times more probable than those with a parity of more than three. The study also discovered that ANC Visits were a factor, with those who had 3 or fewer visits being 1.4 times more likely to give birth at home than those who had more than 4 (ACO=1.4, CI=0.31-4.21; p<0.001).

Mothers who were under 35 years old had greater probabilities of having a baby at home than women who were over 35. This result is in line with a study carried out in Southern Ethiopia's Zala District (39). Positive behaviors are affected by younger ages. The preference for delivery services can be significantly influenced by younger mothers' attitudes toward facility deliveries, which can be improved through education. The Oshikuku district must play a part in raising mothers' and the community's knowledge of maternal health care services.

In the current study, mothers who weren't working had a higher likelihood of giving birth at home than those who were. This result is consistent with other research carried

out in Ethiopia and Kenya (26,47). Despite the fact that maternal health care are free, varying expenditures are associated with employment positions. According to several research, moms from low-income families might not be able to afford transportation costs and family finances (2,33). Access to health facilities and free transportation systems need to be taken into account in order to improve the delivery of healthcare services.

Furthermore, mothers with fewer than three ANC visits had a higher likelihood of giving birth at home. This result is consistent with research done in the Tanqua-Abergele district, South Tigray zone, and Istanbul, Turkey (3). Pregnancy-related health education and promotion activities are part of the ANC package. These activities also cover advised practices. Due to the rural nature of the research area, health institutions are the only places where communities, including mothers, may get information on maternal and related health issues. Mothers' choices for the delivery location would be impacted if they lose the chance to receive ANC services during their pregnancy. The local health office must increase ANC service utilization as a result.

4.5 Summary

The study results have shown that younger women, who live in rural areas (villages), with no formal education, single women, who are unemployed, with less gravidity and parity, who had fewer ante-natal care visits, are most likely to give birth at home. The next chapter will discuss the findings, conclusion, recommendations, and study limitations.

CHAPTER 5: DISCUSSION OF THE FINDINGS, CONCLUSION, RECOMMENDATIONS, AND LIMITATIONS

5.1 Introduction

This chapter presents a discussion of the findings of the research. A study limitation is also indicated in this chapter, the conclusion of the study is drowned as well as recommendations. The study aimed to determine the factors associated with home child birth among pregnant women in the Oshikuku district. The study was a quantitative analytic cross-sectional study.

The independent variables were socio-demographic data, gynecological and obstetric history, and the dependent variable which is home child birth was analyzed. The study findings were discussed based on the study objectives which were:

i) To identify determinants of home child birth among pregnant women seeking post-natal care services at Oshikuku district hospital.

ii) To analyse the factors associated with home child birth among pregnant women in Oshikuku district.

5.2 DISCUSSION OF FINDINGS

The study aims to identify determinants of home child birth among women attending post-natal care in Oshikuku district hospital. Different factors were identified as predictors of home child birth and were discussed below.

5.2.1 Factors associated with home child birth practices

5.2.1.1 Socio-demographic factors

The study shows that 75% of women who give birth at home are those 34 years and younger with a mean age of 27.7 years. This could be attributed to not having experience and knowledge of the signs and symptoms of labour. This was confirmed by Sialubanje (3) in their study that young teenage women give birth at home accidentally because they were inexperienced with childbirth and did not know when they will go into labour. However, this was in contradiction with Kifle (26), study who shows that younger women tend to deliver more in health facilities while older women are the ones associated with home child birth. This could be due to developed "confidence" attitudes in older women that delivery is a natural process and does not need assistance from health providers. Older women had the perception that modern healthcare is not necessary with increasing mothers' experience or knowledge from the previous delivery. On the other hand, younger women are more likely to develop complications that may lead to maternal and neonatal morbidity and mortality, because at home there are no trained health workers and obstetric equipment that may be required during delivery for safer delivery.

This is similar to a study that was done in Ethiopia (39) that shows that younger women are 2.9 times more likely to give birth at home than older women. The relation between age and home child birth is however in conflict with other literature findings. Other studies indicated that older women are more likely to give birth at home since they have experience in childbirth than younger women. The study also noted that 97% of women

who give birth at home are those living in rural areas compared to 4% who live in urban areas. This is consistent with most study findings such as Mazalale (4), who presents that women living in rural areas are more likely to give birth at home than their counterparts. This may indicate that women in rural areas have no means of transport in case of emergencies or there is a long distance to the nearest health facility. Women living in rural areas also lack adequate information related to maternal and neonatal health. Although the Ministry of Health and Social Services in Namibia built waiting areas for pregnant women to stay close to the hospital, young women tend not to use these waiting areas. Instead, they stay at home until they are in labour.

The other factor which was put into consideration was the educational level of women. According to the study women with no formal education tend to give birth more at home (59%) than those with formal education (41%).

Furthermore, the marital status of women under study was also examined to understand its impact on the place of delivery. Single women tend to give birth at home more (85%) than married women.

This could indicate that married women are encouraged by their partners to deliver at the health facilities. Only 15% of married women give birth at home.

The occupation of participants was also assessed. The analysis reveals that 77% of unemployed women give birth at home while only 23% of employed women deliver at home.

5.2.1.2 Gynecological and obstetric factors

A number of gynecological and obstetric factors were examined and analyzed which are the gravidity and parity, number of ANC visits, and outcome of baby and mother after home child birth.

It was revealed that those women with less gravidity and parity 1-3 were more likely to give birth at home than women with high gravidity and parity 4 or more.

Apart from that, women with 3 or less ANC visits tend to practice home child birth more (59%) than those with 4 or more ANC visits (41%). ANC visits are important during pregnancy because it give a chance to women to get health education, and screening for diseases like HIV, Syphilis, High blood pressure, and so forth, which may put the women and the baby at risk.

The outcome of the baby after home child birth was also examined and it was revealed that 64% of the baby born at home were healthy, 23% had minor complications like fever, or slight eye infections, 7% had major complications such as severe skin infections, low birth weight, septic umbilical cord, and 6% (n=9) babies died during home child birth or by the time they reach the health facility. Although the Ministry of Health aims for zero neonatal or maternal death is very devastating that these types of death is still recorded in Namibia just because women do not want to give birth in health facilities with the help of trained health workers.

Mother outcome after home child birth was also examined during the study. 72% (n=105) were recorded as healthy (no abnormality observed), 20% (n=29) had minor complications such as fever, and 4% (n=6) had moderate complications such as 2nd-degree perineal tear, moderate HBP, and moderate hemorrhage. Lastly, 4% (n=6) had major complications such as retained placenta, convulsions, severe bleeding, and so on.

5.3 Conclusion

This study was a quantitative cross-sectional study. The researcher studied factors associated with home child birth retrospectively among women attending postnatal care at Oshikuku district hospital. Specific objectives were formulated for the study which was: to identify detrminants of home child birth among women seeking post-natal care services at Oshikuku district hospital and to analyse the factors associated with home child birth among pregnant women in Oshikuku district. Hence this chapter discusses whether the study objectives were answered or not.

5.3.1 To identify detrminants of home child birth among women seeking post-natal care services at Oshikuku district hospital

146 maternal records of women who give birth outside the health facility were studied. 44% were less than 25 years, 31% were aged between 25-34, 25% were aged 35-44 and 0% were 45 years and above. When it comes to the place of residence, nearly 96.5% of women live in rural areas, 2.7% live in urban Shark dwellers, and only 1% live in a modern houses in the urban areas. Of 146 women studied 127 (87%) are Namibians, and

19 (13%) are Angolans. Nearly all 97% were Oshiwambo speaking, 2% Oshidhemba, and 1% Portuguese speaking. Portuguese is an official language spoken in Angola (a country North-bordering Namibia), Oshidhemba is spoken mainly by people living in Angola of Dhemba tribe, and however, some people living in North-west of Namibia also are of the Dhemba tribe speaking Oshidhemba. 59% of women studied had no formal education, 25% had grade 8-12, and 3% had Tertiary education. Apart from that, 85% were single and 15% were married. The majority of women were unemployed (77%), 8% were domestic workers, 7% were doing small business, 6% were learners, 1% were doing informal employment while 1% of data was missing from the data source. Nearly all (99%) indicated as Christians, and none of the indicated other religions. 1% of the data was missing. More women had less gravidity 1-3 (56%), gravid 4-5 (28%), and gravid 6-9 (29%) respectively. Similarly, more women were of less parity 1-3 (55%), Para 4-5 (29%) and Para 6-8 (15%). 93% had no history of abortion only 1% of them had a history of abortion, however, 6% of women their abortion status was unknown since the data were missing. 97% had no history of stillbirth, and 1% had a history of stillbirth. 21% did not attend ANC at all, 38% only attended 1-3 ANC visits and 41% attended 4 or more ANC visits.

Regarding the outcome of both baby and mother, 64% of babies born at home were healthy (no complications noted at the hospital as they present for post-natal care), 23% had minor complications such as fever, slight eye infections, and so forth, 7% had major complications while 6% (9) babies or infant died as a result of home child birth. Furthermore, 72% of mothers were complications-free after a home child birth, 20% had

minor complications (such as fever, 1st-degree tear), 8% had moderate to major complications like severe High Blood Pressure (HBP), post-partum hemorrhage, and retained placenta and so on. However, no death was recorded among women who were under study.

Hence the study results have shown that younger women, who live in rural areas (villages), with no formal education, single women, who are unemployed, with less gravidity and parity, who had fewer ante-natal care visits, are most likely to give birth at home.

5.3.2 To analyse factors associated with home child birth among pregnant women in Oshikuku district.

To answer this study objective, the socio-demographic data and gynecological and obstetric history of women attending postnatal care after home child birth were analyzed. The study found out that younger women <25 years had high chances of delivering at home (44%) than older women 25-34 years (31%) while those aged 35-45 years (25%). Women living in the rural areas (97%) were more likely to give birth at home than those that live in the urban areas (3%). Even though the nationality of study participants was assessed and it was revealed that 87% of women were Namibian while 13% were Angolan, it seems no significant relationship between nationality and home child birth, because only a few Angolans live in Namibia compared to Namibian citizens that live in the country. Women with no formal education were more likely to deliver at home 59% than those with formal education 25%. The marital status of women was also found a strong predictor of home child birth as the majority of women who deliver at

home were single (85%) while married women were only (15%). Unemployment or low socio-economic status was associated with home child birth since according to the study findings, women who are unemployed were (77%) while those who were employed (formally or informally) were (23%). However religion seems to play no role in the choice of place of delivery since nearly all women (99%) were Christian and none of them indicated otherwise, 1% of data were missing in the data source.

The gynecological and obstetric history of study participants was also assessed. It was found that women with less gravidity of 1-3 (56%) and less parity 0-3 (55%) were more associated with home child birth than those with high gravidity (44%) and parity (45%). Moreover, women with less ANC visits of 0-3 visits (59%) were more likely to give birth at home than those that had four or more ANC visits (41%). Apart from that, the outcome of both the baby and mother were assessed, and the study revealed that 64% of babies born outside health facilities were healthy (no complication noted at the hospital as they present for post-natal care). 23% had minor complications such as fever, slight eye infections, and so forth, 7% had major complications while 6% (9) babies or infants died as a result of home child birth. Furthermore, 72% of mothers were complication free after a home child birth, 20% had minor complications, 8% had moderate to major complications like severe High Blood Pressure (HBP), post-partum hemorrhage, and retained placenta, and so on. However, no death was recorded among women who were under study.

5.4 Study limitation

The limitation of the study is influenced that cannot be controlled by the researcher (52).

- The study used secondary data, hence, the study was constrained to the limited information available in the data sources due inadequacy of records.
- The study had selection bias since the study studied only women who presented at the health facility excluding women who did not come to the health facility after home child birth or presented at other health facilities other than the one studied. These women might have a different reasons for giving birth at home.
- Only a sample size of 146 women was studied although there were other women who meet inclusion criteria they were not part of the study which limits the generalization of the study findings.

5.5 Recommendations

This study was a cross-sectional analytic study. The study identified different factors that contribute to women's choice to give birth at home. Based on the study findings the following recommendations are therefore made to the Ministry of Health and Social Services:

- **Implement interventions to empower women with adequate information on maternal health**

-The Ministry of Health and Social Services through the Ministry of Education Art and Culture should ensure that information on maternal health is given to teenage girls in school through the life skill subject.

-Since the study finds out that most women that giving birth at home are uneducated ones, the Ministry of Health and Social Services together with the Ministry of Urban and Rural Development should ensure that health workers hold community meetings to provide information on maternal health and emphasize on the importance of attending Ante-Natal Care and delivering at the health facility. This can be done with the help of community headmen and religious leaders.

-The Ministry of Health and Social Services in partnership with the Ministry of Education Art and Culture should hold literacy classes not only for women but men too. These may improve their literacy level in the Omusati region and the whole country at large, especially for people that did not attend school.

-The Ministry of Health and Social Services via district hospital management should ensure that health extension workers give health education in the community on the availability of maternal health services and encourage pregnant women to attend ANC. Health extension workers can provide information by holding community meetings or in local churches.

-The Ministry of Health and Social Services should ensure that health workers working in the Ante-natal care (ANC) department give proper and adequate information to women attending ANC on the importance of delivering in the health facility and possible risks of delivering outside the health facility.

- **Implement interventions that will allow access to maternal health services**

-Most district hospitals if not all in the Omusati region have maternity waiting homes however they are limited in space and some women are sent home if they get full. Hence

the Ministry of Health and Social Services needs to expand these maternal waiting homes in order to accommodate all pregnant women in need.

-The Ministry of Health Social Services should allow health centres and clinics to operate on a 24-hour basis since clinics and health centres are decentralized, unlike district hospitals which is only four in the whole Omusati region. Health centres and clinics are more accessible than district hospitals. Some women cannot access the district hospital, especially during the night especially those that live in rural areas. Women living in rural areas are more associated with home child birth according to the study findings

-The Ministry of Health Social Services through the regional directorate should ensure that hospital ambulances are equipped with necessary medical equipment that may be needed in case of emergencies, especially for pregnant women that may deliver on the way to the hospital. Drivers should be always readily available in case pregnant women call for help from the hospital.

-The Ministry of Health and Social Services through the Ministry of Agriculture should come up with projects for youth to work and earn a living. The study findings reveal that women who are unemployed or with low socio-economic status are more associated with home child birth.

- **Implement interventions that will promote facility-based delivery**

-The regional directorate of the Ministry of Health Social Services should ensure that each health facility including clinics and health centres provides health education at ante-natal care visits and encourage women to deliver in the health facility.

-The Ministry of Health and Social Services should promote facility delivery through mass media campaigns (on the radio or on television) as well as through social networking especially in hard to reach areas.

-The Ministry of Health Social Services through the regional directorate should empower health extension workers with adequate maternal health information and encourage them to give health education in the community on the importance of facility-based delivery. Continuous monitoring and evaluation should be done in the communities through the village headmen to ensure that the health extension workers are really doing their work.

-The Ministry of Health and Social Services should work together with the community headmen throuth the Ministry of urban and rural development to encourage women to deliver their baby in health facility. This can be done by giving small punishment to women that give birth at home full term babies. Women can pay a fee to the village headman or given work if unable to pay the fee. This is similar to the recommendation by Rahman (40) in his study who suggest that women who deliver in heath facility should be given financial incentives. This may encourage women to seek maternal health services on time and be able to deliver in the health facility.

5.6 Recommendations for further research

The study was retrospective studies that only review maternal records of women seeking post-natal care at Oshikuku district hospital after home child birth. It is therefore recommended that further future prospective, extensive research should be done to get

in-depth information from the women themselves on a large scale. The study also did not assess partners and family involvement in the making the choices of place of delivery for their women. Is therefore recommended that further future research is done to assess partners and family involvement in making the choice of place of delivery.

5.7 Summary

This chapter discussed the findings of the study. Conclusions, recommendations as well as limitations of study were also presented. Socio-demographic factors, gynecological and obstetric history of women under study were examined and analyzed. The study reveals that younger women are more likely to give birth at home than older women. Women living in rural areas as well as single women deliver at home more than women living in urban areas and those who are married. Moreover, unemployed women deliver at home more than those who are employed.

Those who attended ANC visits 3 times or less tend to deliver at home more than those who attended ANC visits 4 or more times. Several complications ranging from minor to major complications were recorded in both babies born at home and mothers who delivered at home. 9 babies died as a result of home child birth.

Moreover, several interventions need to be implemented by the Ministry of Health and Social Services and other stakeholders in order to improve maternal health in the Omusati region and Namibia in general. Further future research also needs to be done to assess partners and family involvement in making the choice of place of delivery as

revealed by Kifle (26) that women's reproductive preferences are not determined by women's characteristics. Cultural molded, male-dominating power differences between men and women influence the decision of place of delivery. He further stated in his study that, intra-familial decision-making power regarding health care services is influenced by the value and opinions of husbands, mother-in-laws, Traditional Birth Attendants, close relatives, and other community members.

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Annex 1

DATA EXTRACTION FORM

STUDENT NAME/ NUMBER: Petronella Faustinus / 200717324

This data collection tool is on: DETERMINANTS OF HOME CHILD BIRTH PRACTICES AMONG PREGNANT WOMEN IN OSHIKUKU DISTRICT, OMUSATI REGION, NAMIBIA.

SECTION A

1. Socio-demographic information

1.1 Age

a) Less than 25 years	
b) 25 -34 years	
c) 35 – 44 years	
d) 45 years and above	

1.2 Place of residence

		Specify
Rural		
Urban	Shack dwellers	
	Modern house	

1.3 Nationality

a) Namibian _____

b) Others (Specify) _____

1.4 Ethnicity/Language

a) Oshiwambo speaking _____

b) Others (specify) _____

1.5 Highest education level completed

No formal education	
Kinder garden - Grade 7	
Grade 8 – 12	
Tertiary education	

1.6 Marital status

a) Single	
b) Married	
c) Divorced/Separated	
d) Cohabitating	
e) Widow	

1.7 Occupation

None	
Business woman	
Professional (Employed): Specify	
Others: Specify	

1.8 Religion

Christian _____

Non-Christian (specify) _____

SECTION B

2. GYNECOLOGICAL HISTORY

2.1 Gravidity ____

2.2 Parity _____

2.3 Any history of Abortion? _____

2.4 Any history of stillbirth? _____

2.5 Age at last pregnancy ____

2.6 Obstetric history related to a recent pregnancy

2.6.1 Number of ANC visits attended

a) None	
b) 1-3 visits	
c) 4 or more	

2.6.2 Outcome of the baby after home delivery

a) Healthy (no complication recorded)	
b) Minor complications (such as feverish, skin rashes, minor eye infections etc)	
c) Major complications (e.g septic umbilical cord, major eye infections)	
d) Death	

2.6.3 Maternal health outcome of mother after home delivery

a) Healthy (no complication recorded)	
b) Minor complications (e.g. feverish, headache, minor perineal laceration)	
c) Moderate – major complications (such as HBP, major perineal lacerations, postpartum hemorrhage, retained placenta, Coma or death on arrival, etc.)	
d) Death on arrival	

DATE:

RESEARCHER SIGNATURE:……..

Appendix 1

ETHICAL CLEARANCE CERTIFICATE

9 August, 2021

Ethical Clearance Reference Number: DEC/ OSH/ 03/2021

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

OSHAKATI CAMPUS

DECENTRALIZED ETHICS COMMITTEE [DEC]

Title of Project: Determinants of home delivery among women in Oshikuku District, Omusati region, Namibia

Student: Petronella Faustinus

Student Number: 200717324

Supervisor(s): Dr P Angula

Take note of the following:

1. Any significant changes in the conditions or undertakings outlined in the approved Proposal must be communicated to the DEC. An application to make amendments may be necessary.

2. Any breaches of ethical undertakings or practices that have an impact on ethical conduct of the research must be reported to the DEC

3. The Principal Researcher must report issues of ethical compliance to the DEC(through the Chairperson of the Faculty/Centre/Campus Research & Publications Committee) at the end of the Project or as may be requested by HREC-H

4. The HREC-H retains the right to:

i) Withdraw or amend this Ethical Clearance if any unethical practices (as outlined in the Research Ethics Policy) have been detected or suspected,

ii) Request for an ethical compliance report at any point during the course of the research.

DEC wishes you the best in your research

_____. _____
Dr Hans J Amukugo (Chairperson) Dr Lahya T Nghipandulwa (Secretary

Appendix 2

REPUBLIC OF NAMIBIA

MINISTRY OF HEALTH AND SOCIAL SERVICES

Ministerial Building
Harvey Street
Private Bag 13198, Windhoek

OFFICE OF THE EXECUTIVE DIRECTOR

Tel: No: 061 -203 2507
Fax No: 061-222 558
Andreas.Shipanga@mhss.gov.na

Ref: 17/3/3/PF
Enquiries: Mr. A. Shipanga

Date: 28 October 2021

Mrs. Petronella Faustinus
PO Box 129
Outapi
Namibia

Dear Mrs. Faustinus

Re: Determinants of home delivery among women in Oshikuku District, Omusati Region, Namibia.

1. Reference is made to your application to conduct the above-mentioned study.
2. The proposal has been evaluated and found to have merit.
3. **Kindly be informed that permission to conduct the study has been granted under the following conditions:**
   - 3.1 The data to be collected must only be used for academic purpose;
   - 3.2 No other data should be collected other than the data stated in the proposal;
   - 3.3 Stipulated ethical considerations in the protocol related to the protection of Human Subjects should be observed and adhered to, any violation thereof will lead to termination of the study at any stage;
   - 3.4 A quarterly report to be submitted to the Ministry's Research Unit;
   - 3.5 Preliminary findings to be submitted upon completion of the study;
   - 3.6 Final report to be submitted upon completion of the study;
   - 3.7 Separate permission should be sought from the Ministry for the publication of the findings.
4. All the cost implications that will result from this study will be the responsibility of the applicant and **not** of the MoHSS.

Yours sincerely,

BEN NANGOMBE
EXECUTIVE DIRECTOR