AN INVESTIGATION OF FACTORS AFFECTING UTILISATION OF ANTENATAL CARE SERVICES AMONG WOMEN IN POST-NATAL WARDS IN NAMIBIAN HOSPITALS. A CASE STUDY OF INTERMEDIATE KATUTURA AND WINDHOEK CENTRAL HOSPITALS

A RESEARCH THESIS SUBMITTED IN FULFILMENT OF THE REQUIREMENT

FOR

THE MASTER'S DEGREE OF

NURSING SCIENCE

OF

THE UNIVERSITY OF NAMIBIA

BY

MHINGANA ESTER AMUNGULU

200613511

April 2022

MAIN SUPERVISOR: DR E.M. NGHITANWA

Abstract

Antenatal care services are the care provided by skilled health-care professionals to pregnant women to ensure the best health for both mother and baby during pregnancy and after delivery. Utilisation is a quantification or description of the use of services by persons to prevent and cure health problems, promoting maintenance of health and well-being, or obtaining information about one's health status and prognosis. In Namibia utilisation of antenatal care services has been reported to be dropping from 97% in 2013 to 91% in 2016. The purpose of this study was to investigate the factors affecting the utilisation of antenatal care services among women in post-natal wards at the Intermediate Katutura Hospital and Windhoek Central Hospital in Khomas region. The objectives of the study were to investigate the factors affecting the utilisation of ANC services and to investigate association of the factors affecting utilisation of antenatal care services among the mothers admitted in the postnatal wards at the selected hospitals.

A quantitative approach and a cross-sectional analytical design were used to carry out the study. The population of the study was all mothers who delivered and were admitted to the postnatal ward of Intermediate Hospital Katutura and Windhoek Central Hospital during the time of the study. Data were collected from a total sample of 320 mothers using self–administered structured questionnaires. The data were analysed using the Statistical Package for Social Science (SPSS) Version 25 software. Descriptive statistics were used to analyse factors influencing the utilisation of ANC services among the respondents. Chi-square and Fisher's exact tests were used to investigate the association between categorical variables in the study. The back ward stepwise Binary logistic

regression was used to predict the odds of not utilizing ANC based on the values of the independent variables (predictor).

The participants of the study were aged between 18 years and 42 years with a mean age of 27 years. The result shows that 229 (71.6%) utilised ANC while 91(28.4%) did not utilise ANC services. Utilisation of ANC was significantly associated with women's attitude toward the current pregnancy (p-value 0.014).

The study identified factors that affect utilisation of ANC services such as age, marital status, mothers education, partner's formal education, negative attitude of health care providers, long distance to and from ANC health care facilities, fear of HIV test and results, Covid-19 regulations, inability to determine the pregnancy at the earlier stages and financial constraints. Based on this study findings, it is recommended that the utilisation of ANC might be improved through effective community mobilisation and outreach of maternity services to educate and improve awareness on the importance of ANC. Furthermore, qualitative research utilising interviews may be conducted for the in-depth feedback from participants. Finally, a countrywide study may be conducted to reflect the true picture of antenatal care utilisation in Namibia.

Keywords: Antenatal care services, Factors, Utilisation, Antenatal Care (ANC)

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ACRONYMS

AIDS – Acquired Immunodeficiency Syndrome

ANC – Ante-Natal Care

HB - Haemoglobin

HCW – Health Care Worker

HIV – Human Immunodeficiency Virus

LMICs – Low and Middle- Income Countries (LMICs)

PMTCT- Prevention of mother to child transmission

SB- Still Birth

SSA – Sub-Sahara Africa

SPSS – Statistical Package for Social Science

STI – Sexually Transmitted Infections

WHO – World Health Organisation

ACKNOWLEDGEMENTS

Firstly, I would like to thank the Almighty God for keeping me focused and strong during my studies despite the unforeseen circumstances that I came across, your grace was sufficient.

My sincere gratitude also goes to the University of Namibia (School of Nursing), the Ministry of Health and Social Services Research Committee and the Medical Superintendents of the two hospitals involved for permitting me to carry out my study.

I would also like to express my gratitude and appreciation to the following people who made it possible for me to carry out this study:

- Dr Emma Maano Nghitanwa, for being my supervisor , your patience, courage, guidance outmost the success of this study.
- Mr A, Karera for your knowledge, support, time, tirelessness during data analysis.
- Mr T. K. Muyenga for being a caring husband, your love, encouragement, taking over the responsibility of our kids and sitting together for long nights while I was busy with my study, this is sincerely appreciated.

Finally, I would like to thank the participants who took part in this study, your time and responses made the study successful.

DEDICATION

This study is dedicated to my late Mother Herlidis Ndapwilapo Fredrick. Mom your departure from this planet made me strong and independent. You left too soon without witnessing my success, may you continue to rest in peace.

This study is also dedicated to my Kids Rosa-Maria and Eddie; this is yours my babies may this study be an example to you.

DECLARATION

I, **Mhingana Ester Amungulu**, hereby declare that this study is my own work and is a true reflection of my research, and that this work, or any part thereof has not been submitted for a degree at any other institution.

Mhingana Ester Amungulu		15/03/2022
Name of Student	**Signature**	**Date**

CHAPTER 1

INTRODUCTION AND BACKGROUND OF THE STUDY

1.1. Introduction

Antenatal care (ANC) services are the care provided by skilled health-care professionals to pregnant women in order to ensure the best health conditions for both mother and baby during pregnancy and after delivery (World Health Organisation (WHO), 2016). ANC services provide a foundation for central healthcare tasks, including health promotion, screening, diagnosis, and disease prevention. Equally important ANC provides essential interventions like identification and management of obstetric complications such as preeclampsia, tetanus toxoid immunisation, identification and management of infections including Human Immunodeficiency Viruses (HIV), syphilis, and other sexually transmitted infections (STIs).

Utilisation is a quantification of the use of services by persons to prevent and cure health problems, promoting maintenance of health and well-being, or obtaining information about one's health status and prognosis (Carrasquillo, 2013). In this study utilisation is the use of ANC services by pregnant women. On the contrary, non-utilisation of ANC services denote the failure of pregnant women to make use of ANC services during pregnancy.

ANC is also an opportunity to promote the use of skilled attendance at birth and healthy behaviour such as breast-feeding, early postnatal care, and planning for optimal pregnancy spacing. ANC services remain a vital health care tool to reduce the risk of stillbirths, preterm labour, and pregnancy complications (Dulla, Daka & Wakgari, 2017). Although the WHO requires all pregnant women to attend ANC services, only 55% of pregnant women, are utilising ANC services globally (Asim, Malik, Siddiqui, Nawaz & Ali, 2017).

When a pregnant woman utilises ANC services for the first time, a midwife issues her a completed ANC record. This ANC record is the key record of the pregnancy and is completed whenever the woman goes for regular ANC contacts. After the first contact at the ANC facility, the woman is regarded as a person that utilises ANC services, and she will be given follow-up services for regular contacts.

The first contact is very significant because, during this contact, a woman receives a complete assessment of the pregnancy and the risk identification. A full physical examination would be done, medical history, surgical history; gynaecological history, family history as well as social history will be taken. After that, the pregnant woman undergoes essential screening investigations, such as syphilis serology test, rhesus factor (D) blood group, haemoglobin (Hb) level, hepatitis B and HIV. At this point ultrasound will be done. All pregnant women are given supplements of ferrous sulphate tablets to prevent iron deficiency (Anaemia), folic acid to prevent birth defects of the baby's brain and spinal cord, while tetanus toxoid prevents neonatal tetanus (Ministry of Health and Social Services (MoHSS),2016a).

The main aim of ANC services is to monitor the progress of pregnancy in order to support maternal health, normal foetal growth, and development (Sellers, 2018). In addition, it helps to foster good relations between the husband and wife, mother and child and father and child (Cumber, Diale, Stanley & Monju, 2016). ANC services reduce the chances of the unborn baby being infected with HIV through the implementation of the Prevention of Mother to Child Transmission (PMTCT) - guidelines. Mothers who do not utilise ANC services are known to be at increased risk of having low birth weight babies, maternal and infant mortality (Siddalingappa & Mishra, 2016). Arguably, utilisation of ANC is associated with improved maternal and neonatal health outcomes.

Since inadequate utilisation of antenatal care services is associated with worse pregnancy outcomes, it is vital for health policymakers to better understand the factors affecting the utilisation of ANC services. The utilisation of antenatal care services during pregnancy will lead to further utilisation of additional maternal services like institutional delivery.

ANC services in Namibia are free of charge across the entire country in all public health facilities (MoHSS and ICF International, 2014). However, some pregnant women still do not utilise ANC services (MoHSS, 2016). As a result, this establishes the research gap which this current study sought to fill.

1.2. Background of the study

The WHO recommends a minimum of eight (8) ANC visits/contacts for pregnant women to reduce perinatal mortality and improve women's experience of care (WHO, 2016). Although 86% of pregnant women access ANC at least once with skilled health personnel, maternal death remains a global challenge (United Nation International Children's Emergency Fund (UNICEF), 2016). Every year 529,000 maternal deaths occur, 99% of this occurs in developing countries (Kawungezi et al., 2015) with sub-Saharan Africa alone accounting for roughly 66% (Tolefac et al., 2017). The WHO requires all pregnant women to utilise ANC services during pregnancy. The pregnant women without complications are recommended to at least have four comprehensive ANC visits before delivery (WHO, 2016). However, the situation is still dire (MoHSS, 2018)..

African countries still face the challenge of poor utilisation of ANC services. Regardless of it being a key strategy for reducing maternal morbidity and mortality rates, millions of pregnant women in developing countries do not utilise ANC (Nyathi, Tuguli ,Tshtangano & Mpofu,

2017). In 2010-2016 Sub-Saharan Africa, 46 % of pregnant women received the recommended number of ANC contacts (UNICEF, 2016). In Sudan, the percentage of women who did not utilise any form of ANC services was approximately 58 % in 2015 (Mugo, Dibely & Agho, 2015). The survey by Fagbamigbe and Idemudia (2015), on barriers to ANC use in Nigeria found out that about 82.5% of pregnant women who failed to utilise ANC services were from rural areas.

In Ethiopia, 62% of pregnant women who gave birth in the five years preceding the year 2016 utilised ANC as recommended (Dulla et al., 2017b). Meanwhile, in South Africa, (Sibiya, Ngxongo, Bhengu., 2018), revealed that, social and cultural beliefs, quality of ANC, availability of human, the partial accesses to antenatal health care, and material services are challenges met by pregnant women when accessing and utilising ANC services available in KwaMkhizwana district, South Africa. Still in South Africa, a study undertaken in the inner-city of Johannesburg found out that 37% of pregnant women did not utilise ANC services in 2017 (Gumede, Black, Naidoo & Chersich, 2017).

Namibia has implemented universal health services that makes health services accessible and affordable to all Namibians. Pregnant women are expected to attend ANC first visit within the first 12 weeks of their pregnancy and the second visit between week 12 and week 18, followed by visits every four weeks until week 28 and every 1-2 weeks thereafter (MoHSS & ICF International, 2014). In Namibia, the first visit is recommended at less than 16 weeks, the second between week 20 and week 24, the third between week 28 and week 32, and the fourth at 36 weeks (MoHSS, 2013c).

Namibia was ranked with a high maternal mortality ratio among the African countries at 385 deaths per 100,000 live births (MoHSS& ICF International, 2014). The MOHSS set a target to reduce this number to less than 70 deaths per 100,000 live births by 2030.

Namibia is a member of WHO, as such it adheres to WHO recommendations on ANC for pregnant women. Namibia Demographic and Health Survey (2013) indicates that 53% of mothers who did not utilise ANC services were being delivered by a skilled attendant in hospitals as compared with 92% of women who utilised ANC (MoHSS, 2016). At the Intermediate Hospital in Katutura and Windhoek Central Hospital, the number of pregnant women who have not utilised ANC during their pregnancy has become a concern (Katutura District Health Information System, 2016). A reduction in the number of ANC utilisation by pregnant women is a threat to maternal mortality and neonatal mortality. Extant related literature suggests that in addition to the increasing rate of non-utilisation of ANC services, there is also lack of scientific studies that investigate the factors affecting utilisation of ANC services in Namibia.

1.3. Problem Statement

Utilisation of antenatal care services during pregnancy is important to identify risk factors in pregnancy and manage it promptly, for instance, elimination of mother to child transmission (EMTCT) and birth preparedness. Namibia have high maternal and neonatal morbidity rate these might be associated with behavioural risk factors such as low or non-utilization of antenatal care services. Many maternal and perinatal deaths could be prevented if all pregnant women would utilise antenatal care services .

Khomas region is reported of recording women missing ANC services. According to the Intermediate Hospital Katutura Annual Report (2017), about 3 mothers admitted for delivery did not utilise ANC services. It was further revealed that between January 2016 and February 2018,

1.4. Aim of the study

The aim of this study was to investigate the factors affecting the utilisation of ANC services among women at post-natal wards at the Intermediate Hospital Katutura and the Windhoek Central Hospital in the Khomas Region.

1.5. Objective of the study

The objectives of this study were to:

- Investigate the factors affecting the utilisation of ANC services.
- Investigate association of the factors affecting utilisation of antenatal care services among the mothers admitted in the postnatal wards at the selected hospitals.

1.6. Significance of the study

The study findings could be beneficial to management of hospitals because the factors affecting utilisation are known and pregnant women will be rendered timeous ANC services. The findings of this study might also be beneficial to policy makers because the factors affecting utilisation of ANC will be known and this will promote the development of guidelines related to the provision of ANC services. The study may also benefit researchers and academics as the findings may provide opportunities for further research.

The study identified factors affecting ANC utilisation, which had become instrumental in providing effective interventions to improve ANC utilisation amongst pregnant women in IHK and WCH hospitals. In addition, the study forms a baseline in the field of midwifery in Namibian context for future research. Empirical evidence gathered in this research could serve as a source of information that will stimulate future research in the area in an effort to build adequate literature on the subject. Finally, the study contributes to the already existing literature on the

subject, especially in the context of a developing country such as Namibia, by revealing the relationship among the factors that influence the utilisation of ANC.

1.7. Definition of key concepts

1.7.1. Antenatal care:

This is the care provided by skilled health-care professionals to pregnant women in order to ensure the best health conditions for both mother and baby during pregnancy (WHO, 2016). In this study this is the ANC services provided by a nurse/midwife at the two identified hospitals.

1.7.2. Antenatal care utilisation:

Antenatal care utilisation refers to an act of using ANC services by pregnant women. In this study, utilisation of ANC is defined as having made at least one antenatal contact before delivery (Zhao et al., 2012).

1.8. Limitations of the study

The study was only conducted at one point; it would be great to be a longitudinal study where one can get a trend analysis. The study was limited to the Intermediate Hospital Katutura and the Windhoek Central Hospitals, maternity departments only and therefore its findings cannot be generalised to other hospitals countrywide. However, the findings may be helpful in terms of what can be found in similar hospitals in Namibia. All these limitations were due to limited time within which the study was to be completed.

1.9. Delimitation of the study

The study was limited to two Windhoek hospitals due to time and financial constraints. Therefore, the results from this study may not be generalised as factors affecting the utilisation of antenatal care services throughout other parts of Namibia and worldwide may be different.

1.10. Summary

This chapter has discussed the introduction and background of the study and the purpose of the study. It further explains the problem statement, objective of the study significance of the study, definition of the key terms, and limitation of the study and finally delimitation of the study. The next chapter (chapter 2) will present and discuss the literature reviews from various sources on the factors affecting utilisation of ANC.

CHAPTER 2

LITERATURE REVIEW

2.1. Introduction

This chapter reviews extant relevant literature that has been scientifically studied by other research professionals in the same field. A literature review is a relevant and valid chapter of the research process as it helps the researcher to have an idea about the existing data on the topic of interest. It also plays a most important role in selecting an appropriate research design and method of the study. Reviewing literature further allows the researcher to make arguments, judgments, and sense of their findings (Polit & Beck, 2018).

The data in this chapter was gathered and accessed from the data sources such as HINARI, University of Namibia repository, Science direct, Google scholar, PubMed and Biomed. The literature review was conducted under the following headings: Utilisation of ANC globally, ANC, utilisation of ANC in Sub-Sahara Africa, recommendations of WHO on ANC and factors affecting utilisation of ANC.

Academic works by different authors who conducted studies from different settings were accessed. These authors state some of the factors affecting the utilisation of ANC services. The chapter discusses the Theoretical framework of the study, recommendations of the WHO, utilisation of ANC services globally and provision of ANC services. Furthermore, it discusses some factors affecting utilisation of ANC services.

2.2. Theoretical framework underpinning antenatal care utilisation

A theoretical framework consists of concepts, together with their definitions as well as reference to relevant scholarly literature and existing theory that is used for a particular study (Jones,

Jensen & Scherr et al., 2015). Jones et al., (2015), argue that the theoretical framework demonstrates an understanding of theories and concepts that are relevant to the topic of the research study and that relate to the broader areas of knowledge being considered.

The theory that informed this study is the Health Belief Model. This was found not to be the only theory that meets the scope of this study, but the researcher adopted this theory to limit the scope of the relevant data by focusing on specific variables and defining the specific viewpoint [framework] that the researcher was to adopt in analysing and interpreting the data that was to be gathered. It also facilitates the understanding of concepts and variables according to given definitions and builds new knowledge by validating or challenging theoretical assumptions. This was found mostly significant to investigate the factors affecting the utilisation of ANC services among pregnant women.

2.2.1 Health Belief Model

The Health Belief Model is a psychological health behaviour change model developed to explain and predict health-related behaviours, particularly in regard to the uptake of health services. The Health Belief Model was developed in the 1950s by social psychologists including Irwin, Rosenstock, Godfrey , Hochbaum, Kegeles, and Leventhal in the United States of America (USA) (Rosenstock, 1974). This model remains one of the most well-known and widely used in health behaviour research. It suggests that people's beliefs about health problems, perceived benefits of action and barriers to action and self-efficacy explain engagement (or lack of engagement) in health-promoting behaviour (Abraham & Sheeran, 2014). A stimulus, or cue to action, must also be present in order to trigger the health-promoting behaviour. This model hypothesises that health-related action depends upon the simultaneous occurrence of three factors namely:

1. The existence of sufficient motivation (or health concerns) to make health issues salient or relevant;
2. The belief that one is susceptible (vulnerable) to a serious health problem or to the sequelae of that illness or condition. This is often termed a perceived threat; and
3. The belief that following a particular health recommendation would be beneficial in reducing the perceived threat, and at a subjectively acceptable cost. Cost refers to perceived barriers that must be overcome in order to follow the health recommendation.

2.2.2 Application of the Health Belief Model to the study

The Health Belief Model provides a theoretical framework for estimating the probability of an individual making use of ANC services. This model is applied by the researcher to investigate the factors affecting utilisation of ANC services based on the belief patterns of individuals and describe the association between the factors and utilisation of ANC services among mothers admitted in post-natal wards of the two identified hospitals in this study.

Based on this model, modifying variables are demographic factors like age, education, religion, and others. The model postulates that the likelihood of behaviour e.g., utilisation of ANC services, is predicted by the individual's perceived threat towards the problem (severity of the risk identified with non-utilisation of ANC services and susceptibility to the problem), the perceived net benefit of adopting the behaviour (the opportunity to make use of ANC services), the individual's perceived self-efficacy to perform the behaviour, and exposure towards cues-to-action (factors that motivates pregnant women to utilise ANC services)

Therefore, the mothers' beliefs on ANC services are very much important, and the application of this model in studying mothers' beliefs was found to be effective on the utilisation of ANC services.

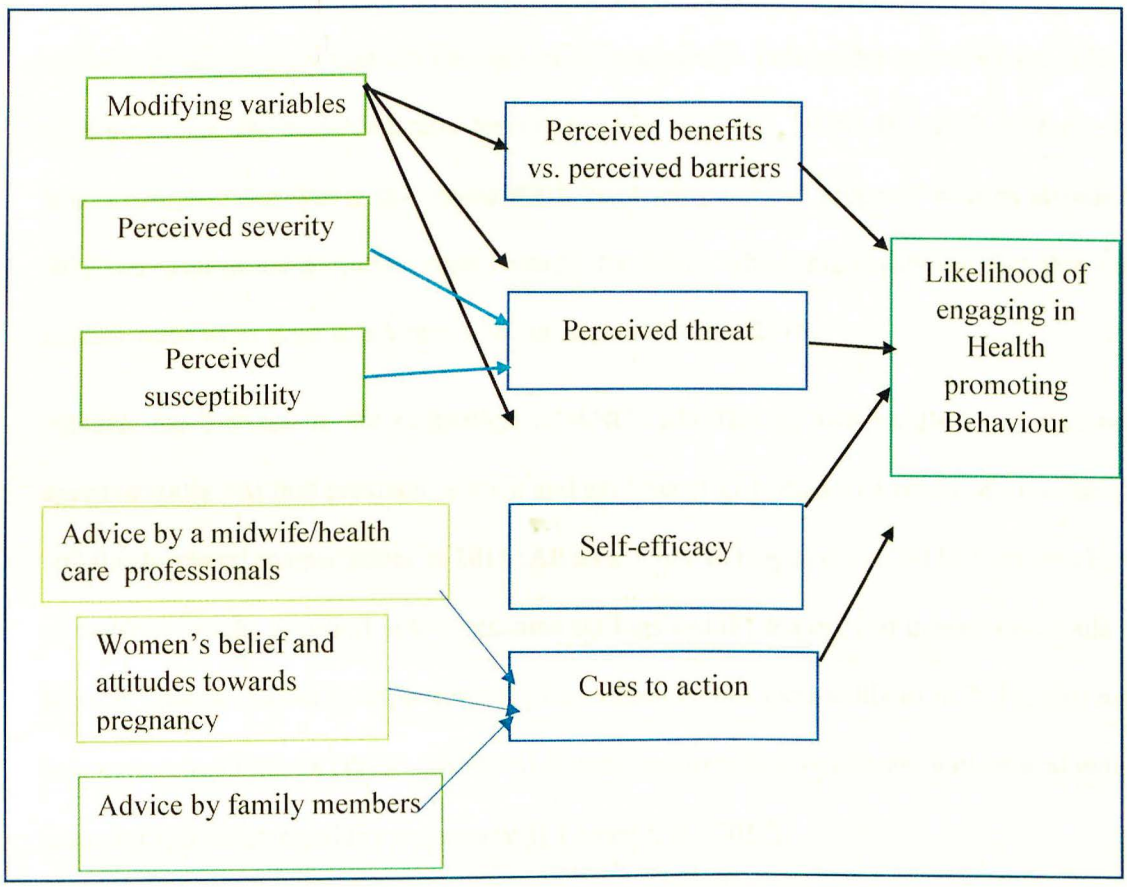


Figure 1: Health Belief Model (Source: Nutbeam and Harris, 1998)

2.3 Recommendations of the WHO regarding ANC utilisation.

The WHO is a part of the United Nations that deals with major health issues around the world. The WHO has set standards for disease control, health care, and medicine; conducts education and research programs; and publishes scientific papers and reports (World Health Organisation (WHO), 2016). Its major role is to improve access to health care especially for people in developing countries and in groups that have no access to good health care. In this instance WHO envisions a world where every pregnant woman and new-born baby receives quality care throughout the pregnancy, childbirth, and the postnatal period (WHO, 2016)?

The WHO introduced a model called Focused Antenatal in 2002, where pregnant women are required to have only 4 contacts throughout the pregnancy. This model increased the utilisation of ANC in low-and middle-income countries (LMICs) (WHO, 2016). However, globally, it has been evidenced that during the period 2007–2014, only 64% of pregnant women attended the WHO-recommended minimum four contacts for ANC, which highlights the fact that further studies need to be done to address ANC utilisation (WHO, 2016).

Besides the increase in the percentage of ANC utilisation in low-middle income countries, approximately 303 000 pregnant women and adolescent girls died as a result of pregnancy and childbirth-related complications in 2015 (Alkema, Chou & Hogan et al., 2016). Conversely, 99% of maternal deaths occurred in low-resource settings and the majority of those cases could have been prevented. Similarly, approximately 2.6 million babies were stillborn in 2015, also mainly in low-resource settings (WHO, 2016). ANC services serve as a significant indicator of reducing maternal and child morbidity and mortality (Asim et al., 2017).

The WHO highlights that the main objective of ANC is to provide pregnant women with respectful, individual, person-centred care at every contact, with the implementation of effective clinical practices (interventions and medical tests such as HIV, and Hepatitis B), and provision of relevant and timely information, and psycho-social support, by practitioners with good clinical and interpersonal skills within a well-functioning health system (WHO, 2016). Geta and Yallew (2017), emphasise that the main goal for antenatal care services is to promote and maintain the physical, mental, and social health of the mother and the baby.

In order to achieve this, the health care provider provides educative information on nutrition, personal hygiene, the birth process, as well as detection, and management of complications during pregnancy. Equally important, ANC services enhance birth preparedness and

complication readiness plan that helps to prepare pregnant mothers regarding successful breastfeeding, experience normal puerperium and good care of the child (Geta & Yallew, 2017).

Thus, in order to achieve this, in 2016 WHO published a guideline titled" WHO Recommendations on Antenatal Care for a Positive Pregnancy Experience." This guideline recommends that all pregnant women should have eight (8) ANC regular contacts throughout their pregnancy.

2.4. Utilisation of antenatal care services globally

Globally, Yaya and Ghose (2019), conducted a study on "Global Inequality in Maternal Health Care Service Utilization: Implications for Sustainable Development Goals" The study found out that, inadequate or non-utilisation of ANC services reduces the opportunities for detecting and addressing the diverse complications that may arise for a pregnant woman (e.g., hypertension, diabetes, and miscarriage) as well as for foetal surveillance that is crucial for vital examinations such as intrauterine growth retardation. Furthermore, the study also established that, women who did not utilise ANC services were less likely to use professional childbirth services and thus altogether bear an increased risk of poor pregnancy outcomes.

Furthermore, the study found that only 78.17% of pregnant women utilised antenatal care services, although 88.33% deliveries were conducted by skilled birth attendants irrespective of whether they utilised antenatal care services or not.

Jibril (2017) conducted a study in Nigeria on "Awareness and use of Antenatal Care Services among Women in Edu LGA, Kwara State, Nigeria." Jibril (2017), agreed with a survey that was done by UNICEF in Sub-Sahara Africa in 2009, which revealed that 72% of pregnant women were known to be utilising ANC services once or more times, compared to the South East Asia

reported that, women in urban areas and those in highest wealth quintiles were more likely to receive ANC services from a doctor (MoHSS & ICF International, 2014).

2.6. Factors affecting utilisation of ANC services.

According to Andersen and Newman's health behavioural model (Boerleider, Weigers, Mannien et al., 2013) the ability to utilise ANC services in developing countries is affected by a number of factors. The model consist of individual determinants of health care utilisation that can be divided into predisposing, enabling and need components (Beeckman, Louckx, Putman et al., 2013). This model helped the researcher to conceptualise the factors associated with ANC utilisation and was also used to do the focused literature search in order to establish the factors associated with ANC utilisation for this review.

Previous studies have concluded that young age, low educational level, lack of a paid job, poor language proficiency, and support from a social network and lack of knowledge of the health care system are associated with inadequate ANC utilisation (Heaman, Bayrampour, Kingston et al., 2013 & Nketiah-Amponsah, Senadza, Arthur, 2013). Enabling determinants refer to conditions which make ANC available to pregnant women. The absence of health insurance, the planned pattern of ANC, hospital type at booking, personalised communication, and knowledge of cultural practices of the care provider have also been found to be associated with inadequate ANC services utilisation (Beeckman et al., 2013 & Feijen-De Jong , Jansen , Baarveld et al., 2012).

The pregnancy-need components of the determinants include pregnancy-related elements explaining the degree of care needed (Heaman, Bayrampour & Kingston et al., 2014) & (Nketiah-Amponsah, Senadza & Arthurl., 2013). Inadequate use of ANC seems to be related to high parity, unplanned pregnancy, no previous premature birth, discontinuity of care, late

recognition of pregnancy and behavioural factors such as smoking during pregnancy (Heaman et al., 2014) & (Nketiah-Amponsah et al., 2013).

However, several researchers have identified several factors that may affect the utilisation of ANC services such as age, educational status of the mother and partner, marital status, knowledge about ANC services, quality of the services offered, the attitude of services providers, socio-economic factors, cultural beliefs, number of pregnancy, family size , previous pregnancy complications and many more factors affect the utilisation of ANC services and many more (Osorio, Tovar,& Rathmann., 2014, Asim et al., 2017, Akowuah, Agyei-Baffour & Awunyo-Victor, 2018). Some of the important factors are discussed below in detail.

2.6.1. Age of the pregnant mothers

Findings from numerous studies regarding factors affecting utilisation of antenatal care services have established evidence of a relationship between age and utilisation of ANC services (Aziz Ali et al., 2018). These scholars state the disconnection in how women view ANC in relation to the health and security of their children, which may result in the difference that exist in their utilisation of ANC services. Furthermore, older women are found to be more confident and influential in household decision-making than younger women and adolescents in particular. Moreover, older women may be told by health workers to deliver in a facility since older age is a biological risk factor.

Efendi, Chen, Kurniati, and Berliana (2017) have found that women aged 35 years and above were associated with an increased utilisation of ANC services in Indonesia compared to women aged 20-34 years old. A study from Central Ethiopia also found that the odds of attending ANC are 1.2 times higher (OR=1.168) for women in the age group of 20-34 as compared to those in the age group 15–19 women (Tran ,Gottvall & Nguyen et al., 2012).

Similarly, a study conducted in Vietnam found that older women (more than 25 years old) were more likely to utilize ANC (Tran et al., 2012). Likewise, a study conducted in China also found that women between the ages of 25 and 30 and women older than 30 were more likely to have adequately utilised ANC (AOR=2.2 and 1.9, 95% CI=1.4-3.5 and 1.1-3.2, respectively) than younger women (Zhao ,Huang & Yang et al., 2012).

On the other hand, older women aged 35 years or above are less likely to utilise ANC as they may belong to more traditional cohorts and thus be less likely to use modern facilities than younger women (Zhao et al., 2012). These women tend not to utilise ANC because they feel like they are too old to be pregnant and scared to be seen in the ANC facility.

Results from various studies have found mixed evidence of an association between age and utilisation of ANC services (Efendi et al., 2017, Tran et al., 2012 & Zhao et al., 2012). In some studies, the youthful age of women has been identified as a predisposing determinant for utilisation of ANC services (Nketiah-Amponsah, Senadza & Arthur, 2013). Young women of less than 35 years tend to utilise ANC than older women because some are too excited that they have become pregnant and they would want to know the gender of their unborn babies.

On contrary, young pregnant women tend not to utilise ANC because in most cases their pregnancy will be unplanned, some will still be schooling, and some will try to hide their pregnancy until birth. Teenagers who are pregnant also do not utilise ANC as they are scared of their parents to know about their pregnancy, hence they try to hide the pregnancy until parents discover it on their own, which sometimes is too late, and it is only discovered when they are in labour (Ebonwu, Mumbauer, Uys, Wainberg, & Medina-Marino, 2018). Sometimes young pregnant women may utilise ANC because they might think that they are too young and need to

be examined by health care workers who will explain to them how to take care of themselves during pregnancy.

2.6.2. Educational level of women

Maternal educational level may also have an effect on the utilisation of ANC services. It is known that higher levels of education is reflected in greater awareness of and access to adequate practices during pregnancy, strengthens the empowerment of women, and is associated with income levels (Osorio et al., 2014). The same result has been found in Timor-Leste in Asia where it was also established that a low level of maternal education might have contributed to their lack of household decision making, resulting in a high rate of non- utilisation of ANC (Khanal, Da cruz, Mishra, Karkee, & Lee, 2015).

Educated women tend to have a greater awareness of the existence of ANC services and the advantages of using such services (Efendi et al., 2017). It is argued that educated women were more aware of health problems, know more about the availability of health care services, and utilise the information more effectively than non-educated women (Olayinka ,Joel & Bukola et al., 2012) Moreover, higher levels of education tend to positively affect health-seeking behaviours, and education may increase a woman's control over her pregnancy (Efendi et al., 2017).

In addition, education may help to expose women to more health education messages and campaigns, enabling them to recognise danger signs and complications and take appropriate and timeous action (Efendi et al., 2017).These women might have greater opportunities to receive health information and pay more attention to maternal healthcare (Efendi et al., 2017). Studies have shown that women with lower education usually have less knowledge about ANC services and more difficulties to get access to ANC services (Olayinka et al., 2012). A study conducted

They are limited to information about pregnancy and less likely to make decisions about their own health.

2.6.3. Husband formal education

Husband education is also known as an important factor in the utilisation of ANC services. Women whose husbands are educated are more likely to attend ANC as husband's education, determine the women attitude and behaviour of seeking ANC services (Asim et al., (2017). In addition, partners with a higher level of education may be well-organised in the use of available information on maternal and childcare and amenable to health practices that endorse safe motherhood. Also, a paternal educational level significantly increases the utilisation of ANC at the health facility (Olaitan et al., 2017).

In Nepal women whose husbands were educated utilized ANC services by one and a half, two and a half and over three and a half times more than those women whose husbands have not had formal education (Tripathi & Singh, 2015).

Likewise, in Nigeria women whose husbands possessed tertiary level education were about 4.13 times more likely to use ANC than women whose husbands had no formal education (Dahiru & Oche, 2015). High educational levels of both husband and wife has been observed to promote positive health-seeking behaviours according to (Dahiru & Oche, 2015).

Women whose partners or husbands are uneducated may be less likely to utilise antenatal care because the husbands do not understand the importance and advantages of utilising ANC while pregnant. However, Tekelab , Chojenta, Smith and Loxton., (2019), argue that there is no association between the husband's or partner's education with antenatal care service utilisation.

2.6.4. Occupation of women

The occupational status of a pregnant mother influences her propensity of utilising antenatal services (Akowuah et al., 2018). In Colombia, it was found that women in unskilled labour or farming occupations were less likely to attend ANC visits than those who did not work (Osorio et al., 2014). Women who are employed with better jobs might utilise antenatal care more because they mostly have money to access ANC services.

Akowuah et al., (2018), found out that although ANC services were theoretically known to be free in Ghana, pregnant mothers were inhibited from accessing them due to the additional costs of care involved. These could be either direct or indirect, as some of these costs were not absorbed by the free maternal healthcare policy. Among these were screening, laboratory tests, management of minor ailments, and immunisation. This made pregnant women who were more resourced, more likely to afford and use such services and forfeit the rate of utilisation by the less privileged, hence, not meeting the recommended visits by the WHO (Akowuah et al., 2018).

Financial difficulties have been considered as an important barrier to ANC services for migrant women (Efendi et al., 2017). Most of the studies have shown a positive association between socio-economic status and the utilisation of ANC (Roy, Mohan Singh, Singh, & Srivastava, 2013); (Dulla, Daka, & Wakgari, 2017b) & (Tolefac, Halle-Ekane, Agbor, Sama, Ngwasiri, & Tebeu, 2017). These researchers argued that women who were unemployed, students or housewives were unlikely to utilize ANC because they had no money to pay for transport to and from ANC health facilities.

A study from Ethiopia identified that women with higher income tended to start ANC early and the likelihood of utilising ANC decreased, as the family income decreased (Akowuah et al., 2018). Likewise, a study from China found that women who had higher household incomes were

more likely to have adequately utilised ANC services (AOR=1.6, 95% CI=1.0-2.5) (Efendi et al, 2016). The positive contribution of better wealth status for all maternity service indicators and its significant contribution to postnatal care are also observed in similar studies (Osorio et al., 2014).

2.6.5. Marital status

Marital status is one of the factors that play an important role in the utilisation of antenatal care services. It is assumed that women who are married are more likely to attend ANC than single women. This is supported by the study done in Malawi by Sealy & Roberts, (2017), who say that their results revealed that all mothers who were not married or living together with their partners, women who were pregnant outside of wedlock or pregnant with someone else's spouse, were unlikely to utilise ANC services. This might lead to the non-utilisation of antenatal care services because they might be ashamed of the pregnancy or current relationship status and that they do not want to be seen going to the clinic where others could see them or learn about their relationship history (Sealy et al., 2017).

In addition, one of the key findings related to the high risk of non-utilisation of ANC services in Sudan was among women whose husbands had more than one wife. Mugo et al., (2015), stressed that women need support from their husbands to utilise ANC. Thus, for women in a polygamous relationship, their husband's attention is divided between his wives, and therefore he would have less time to pay attention to the needs of each of his wives.

On the other hand, a study conducted in Rwanda found out that women who were not married to the household head, or who were single, divorced, widowed, or separated did not utilise ANC. Similarly, Rurangirwa, Mogren and Nyirazinyoye et al., (2017) concurred that women who were married to a husband aged 41 years or more were highly associated with the non-utilisation . In

a study conducted in Eritrea, women pointed out that they were afraid to go to ANC facilities because they were pregnant while they were not married (Chol et al., 2018).

2.6.6. Decision Making Power

Mother's autonomy has been highlighted as an important factor in utilising ANC services. A study conducted in Colombia on the Individual and local level factors and antenatal care use in Colombia. Osorio et al., (2014), found that a mother's decision-making power within a household, related to decisions about her own health has a negative effect on the utilisation of ANC services. The decision- making power of mothers is found to be an important factor influencing antenatal health care service utilisation. Not having such power and independence of decision making has been described as a main obstacle in the utilisation of maternity services in Indonesia (Tripathi & Singh, 2017).

Furthermore, in Pakistan women's autonomy is also known as one of the major determinants of maternal health-seeking behaviour (Asim et al., 2017). Moreover, Hou and Ning as cited in Asim et al., (2017), examined and established that the impact of women decision making at household level has an effect on access to ANC services.

In many parts of Africa, in countries like Malawi, Zimbabwe and Ethiopia, women's decision-making power is extremely limited particularly in matters of reproduction and sexuality. Decision making with regard to maternal care is often made by husbands or other family members (WHO, 2016). In a study conducted in Nigeria, it was found that in almost all cases, a husband's permission is required for a woman to seek health services, including lifesaving care. Men play a determining role in decisions over when to seek treatment, be it traditional or orthodox in many cultural contexts (Tey & Lai, 2013).

The autonomy of women who are married by abusive husbands is more likely to be compromised; these women are unable to make any decisions regarding their pregnancy. This pregnancy might be unplanned because there is no planning between the couple or the pregnancy might be a result of force. These women may be living in fear and will be unable to seek necessary help because these pregnant women are not allowed to leave the house without the husband or partners permission. Therefore, women who cannot make decisions on their own are less likely to utilise ANC services.

2.6.7. Accessibility of the antenatal care services

Transport is known as a major issue that plays a key role in ANC services access. In Zimbabwe in Mangwe district Nyathi et al (2017), found that women experienced problems regarding accessing transport as there was only one mutual transport that was used, which did not come every day. As a result some women would not make it for their date of ANC initial visit.

Nyathi et al., (2017), continues to state that women expressed concern about high transport costs. They suggested that since they were not working, it was difficult for them to pay for the transport fees as it was expensive. Some needed to be accompanied by a family member and it meant double costs. Similarly, Sealy and Roberts, (2017), established that the reason for the non-utilisation of ANC services in Malawi included the distance to the hospital or health care centres, transport, and lack of money to pay for health services.

In Nigeria nearly half (48.8%) of the non-users did not go for ANC services because the providers were far from them (Fagbamigbe & Idemudia, 2015). Furthermore, household characteristics known as composite index of household socio-economic status may contribute to the non-utilisation of ANC (Osorio et al., 2014). Some mothers are unemployed, they have no transport money to go book for ANC services. Poor socio-economic women are less likely to

access ANC services. A related study done in India for tribal women emphasizes that lack of transport is one of the factors that is perceived by pregnant women for not getting access to ANC services (Roy et al., 2013).

2.6.8. Misconceptions about ANC

Most of the teenage mothers are known to have false information, opinions or attitudes regarding ANC services in Kenya. Stephen Mulinge (2017), found that misconceptions about ANC were one of the factors influencing utilisation of ANC among teenage mothers in Kenya. The scholar indicated that there was a misconception that young pregnant girls were insulted/rebuked by nurses during ANC which contributed to the reason why they did not go to ANC. They were scared to be insulted by nurses. Another misconception in Kenya was that HIV test was done forcibly on these teenage pregnant girls and that the results would be shared with the pregnant teenage girl's family members. This may create fear among pregnant women and may lead to non-utilisation of ANC services.

In a study conducted in Nigeria Fagbamigbe & Idemudia, (2017), found that women were not utilising ANC because they did not have any serious problems that needed doctor's intervention therefore they did not go to seek for ANC services. These women thought that ANC care services were only for women who were experiencing problems during their pregnancy. Moreover, these pregnant women considered themselves as healthy and therefore there was no need to utilise ANC services.

Nevertheless, knowledge is a major structural variable that could influence the decision on whether to utilise ANC services. Women need information about pregnancy and ANC services during their preconception period so that they can make informed decisions when pregnant.

Enough information about ANC service may resolve most of the myths about the importance of ANC services and their utilisation.

Health education programmes during ANC services should inform the women about reproductive health, knowledge related to sexuality, pregnancy, nutrition, family planning, malaria, S.T.I's, HIV/AIDS etc. Information should indicate where these services are offered, including the requirements for attending ANC. Specific knowledge about the risks of childbirth and the benefits of skilled attendance should increase preventive care-seeking, while recognition of danger signs and knowledge about available beneficial interventions should increase care-seeking for complications.

Inadequate knowledge about ANC and its benefits to the mother's and the infant's health may also negatively influence the utilisation of ANC services. Sometimes, pregnant women may not be aware of the health problems related to poor or no utilisation of ANC services. Behaviour is expected to change if pregnant women are aware of the implications of not attending ANC and if they are convinced of the benefits of practicing preventive care.

Perceived benefits of utilizing ANC services provide a platform for interacting with pregnant women, identifying needs or problems and jointly arriving at possible solutions to these needs. Pregnant women need to know the benefits of attending ANC as well as the implications of not attending ANC. Pregnant women might value the importance of ANC if they are aware of its benefits to their health and that of their babies. Adequate ANC utilisation implies that the initial ANC should take place before 16 weeks of gestation during the first trimester of pregnancy with a minimum of four ANC visits during the pregnancy.

2.6.9. Quality of services and services satisfaction

The quality of antenatal care services and the way the services are being provided to pregnant women will affect the utilisation of antenatal care services by pregnant women.

In Nigeria health facility-related factors comprising of unavailability of good drugs and skilled health workers, poor attitude and unprofessional conduct (Fagbamigbe & Idemudia, 2015). Unprofessional practices, attitudes and behaviours of ANC providers may further increase the non- utilisation of ANC by pregnant women. Unprofessional conduct such as disrespect of privacy, confidentiality, and traditional beliefs of the health seekers by the health workers made up 27.5% of the reasons why the pregnant women did not attend ANC services in Nigeria (Fagbamigbe & Idemudia, 2017). As indicated health workers in health facilities cannot guarantee the confidentiality of women health status (Fagbamigbe & Idemudia, 2015).

In Ghana, the important system factors which influence antenatal care utilisation is quality of service, and service satisfaction. Moreover, this study also presented fluctuating utilisation levels of ANC, (Akowuah et al., 2018). In Zimbabwe, pregnant women described midwives as hostile and abusive, which might affect the attitudes to and utilisation of ANC (Nyathi et al., 2017). Also, the environment was said not to be conducive and dirty.

Women were reported to initiate ANC late owing to the perceived bad quality of services at the healthcare facility (Efendi et al., 2017). The women's criticisms were related mainly to lack of services, citing reasons such as being sent home without receiving services owing to insufficient staff, and having to purchase drugs, cards or diagnostic tests, although the service was supposed to be free (Nyathi et al., 2017).

Another strong facility-level predictor for skilled maternal care utilisation was the performance of health facilities. The presence of all the six signal functions in the nearby basic essential obstetric care facility (health centre) positively contributes to the utilisation of all indicators of skilled maternal services. Functioning obstetric facility means performing the essential services for normal situations and complications and these services should be available 24 hours a day and 7 days a week. The presence of all signal functions reflects better performance (quality) of a health facility (Nyathi et al., 2017).

2.6.10. Sources of information about ANC

The utilisation of antenatal care services depends on how information is disseminated to pregnant women. Pregnant women have different sources of information regarding antenatal care services. In the developed countries or in continents like Europe, women said the main source of information about ANC was through the internet. Women tend to visit the page or websites of a certain hospitals regarding the importance of antenatal care utilisation. However, women who are more accessible to the internet may be less likely to utilise antenatal care services because they tend to use the internet more and might think there is no need to utilise ANC services since they know better.

Sibiya et al (2018), states that it is hard to reach all mothers by health workers and therefore, only mass media remains a viable option to reach families and communities to disseminate messages on the importance of ANC attendance and availability of such service in their own communities. This study has provided evidence that mass media has a positive effect on the utilisation of maternal health services. On the other hand, women who are not exposed to media such as radio and television are less likely to attend ANC (Sibiya et al., 2018). The basic source

of information for ANC utilisation in Ethiopia were relatives and/or friends, health care workers and health extension workers (Dulla et al., 2017a).

In a similar study done in Ethiopia on the timing of antenatal care service, revealed that one of the factors associated with the timing of ANC was media exposure, such as television, radio and newsletters (Gebremeskel et al., 2015).

2.6.11. Social and cultural beliefs

The Oxford Dictionary, (2012) defines culture as the totality of socially transmitted behaviour patterns, arts, beliefs, institutions, and all other products of human work and thought. Culture is learned and shared within social groups and is transmitted by no genetic means.

Deo, Paudel and Khatri et al., (2015), point out that in Uganda, women have faith in traditional healers and have fewer chances of utilising ANC services. These women believe in traditional healers, with the faith that they can provide health education in a culturally appropriate and cost-effective manner. Therefore, the study suggested the involvement of traditional healers in a productive way to provide health education on maternal and child health seems promising. Again, in southern Sudan tradition and culture are known to have an influence on ANC utilisation. The relationship between the health of the mother and the health of the baby seemed to be poorly understood in culture. Culturally, pregnancy was perceived to be a normal life event that did not require visiting a health worker unless if there was a complication (Wilunda, Scanagatta & Putoto et al., 2017).

In South- Africa participants reported a number of social and cultural issues influencing pregnant women's decision to seek and reach out for care. Amongst these factors were, traditional and cultural norms and beliefs regarding ANC attendance; client's awareness regarding the

importance of ANC; peer and community influence regarding ANC attendance and approval of pregnancy by parents and the community. Understanding social and cultural issues is necessary to recognize 'seeking care' behaviours of the population or communities (Sibiya et al., 2018).

Sibiya et al., (2018), study on an understanding of the obstacles within the local culture is vital in order to improve women's awareness about their pregnancy. Most participants in their study believed that pregnancy must be kept a secret until it was visible and apparent. This may have serious implications on utilisation of ANC services, because some women kept this as a secret until the time of delivery.

Cultural practices associated with pregnancy makes it difficult for women to attend ANC visits in Ghana (Ziblim, Yidada, & Mohammed, 2018). These scholars found that in certain ethnic groups, before the pregnancy is revealed, there should be some rituals performed on this pregnancy. The delay in performing rituals related to pregnancy may delay the women from utilising ANC.

2.7. Knowledge gap

This chapter reviewed extant relevant literature on various factors that influence the utilisation of ANC services which included Socio-demographic factors, Knowledge about ANC services, Accessibility of the ANC and the Quality of services rendered at the ANC. A study done by Ejik et al (2006), in Asembo and Gem, found that the usage of the ANC was high, but this opportunity to deliver important health services was not fully utilised. The use of professional delivery services was low, and almost 1 out of 5 women delivered unassisted.

They further suggested that there is an urgent need to improve this dangerous situation. It is therefore evident that various studies have attempted to address a myriad of factors that influence

the utilisation of antenatal care services in different countries. Within the Namibian context, one can see that the said factors are correlated but the extent to which these factors influence the utilisation of ANC services is not clear and that determines the void that exists in academia which this study sought to address.

2.8. Summary

Although there are similar, studies conducted worldwide and in Africa in particular, the researcher believes that there are some gaps and unanswered questions on factors affecting the utilisation of ANC services in Namibia. There is a probability of cultural stereotype that some women still do not utilise ANC services during pregnancy, these implies the basic to understand why women do not utilise ANC services. Moreover, the researcher did not come across any study conducted in Namibia on factors affecting the utilisation of ANC services.

CHAPTER 3

RESEARCH DESIGN AND METHODS

3.1. Introduction

This chapter discusses the design and methods that was used for this study. The researcher also justifies the reason for adopting such a research design. Furthermore, the population of the study, sample and sampling methods, research instruments and validity and reliability of the instrument are discussed. Procedures of data collection, data analysis as well as ethical aspects of the study are also addressed.

3.2. Research design

Polit and Beck, (2018) define a research design as a strategy which answers the research question or aim. This design includes an outline of what the researcher will do from writing the hypothesis and its operational implications to the final analysis of data. The researcher used a quantitative, cross-sectional analytical study design that investigated the factors affecting the utilisation of ANC care services at the Intermediate Hospital in Katutura and the Windhoek Central Hospital.

The study employed a quantitative research approach to quantify and get an in-depth understanding of factors affecting the utilisation of ANC services by pregnant women. The quantitative approach focuses on gathering numerical data and generalises it across groups of people, while the qualitative approach is based on the opinions and arguments of respondents (Brink, van der Walt, & van Rensburg, 2018).

A cross-sectional analytical design was suitable for this study because the data was collected at one point at a time and the purpose was to measure the association between the variables and the outcome. For this study utilisation of ANC was a dependent variable while independent variables

included age, educational status, occupation, decision-making power in the household, employment status, source of income, mode of transport to the health care centre, attitudes of health care workers, quality of health care services as well as the availability of infrastructure and equipment.

3.3. Population of the study

A population is defined as all the individuals or objects of interest where the subject of interest can be sampled (Creswell & Creswell, 2018). On the other hand Brink et al., (2018) define the target population as the population to which the researcher ideally would like to generalise the results. The population of this study was 630 women who delivered and were admitted at postnatal wards at the Intermediate Hospital in Katutura and Windhoek Central Hospital at the time of data collection. The study included all the mothers who did and did not utilise ANC services during their pregnancy. The researcher obtained the list of all names of mothers admitted in the postnatal ward during data collection time from the delivery register book of the maternity wards and used the list as a sampling frame.

3.3.1. Inclusion criteria

The study included all the women who had delivered their babies and were admitted at post-natal wards of the Intermediate Hospital Katutura and Windhoek Central Hospital. Only the mothers who were stable and willing to take part in the study participated.

3.3.2. Exclusion criteria

Women who were unstable, seriously sick, or were not admitted in the two postnatal wards of the Intermediate Hospital Katutura and Windhoek Central Hospital at the time of data collection were excluded from the study.

3.4. Sample and Sampling methods

A simple random sampling method was used to select the sample of this study. The simple random sampling method reduces the chance of sampling error, thereby ensuring an equal chance of participation to all possible participants (Polit & Beck, 2018).

The sample of this study was drawn from all the women who had delivered and were admitted to postnatal wards at the Intermediate Hospital in Katutura and the Windhoek Central Hospital at the time of data collection.

According to the delivery registers at the Intermediate Hospital in Katutura and the Windhoek Central Hospital, an average of 300 and 330 deliveries were respectively recorded monthly and this included Normal vertex delivery, assisted delivery and caesarean section.. From the average population of women who delivered their babies at the Intermediate Hospital in Katutura, a total of 178 mothers were sampled, at 95% confidence interval and 5% margin of error. Likewise, a total number of 169 women were also sampled for the Windhoek Central Hospital. This gives an overall combined study sample of 347 women. The sample was calculated using online sample size online calculator with this formula.

$$n = \frac{z^2 \times \hat{p}(1-\hat{p})}{\varepsilon^2}$$

Where
z is the z score
ε is the margin of error
N is the population size
p̂ is the population proportion

Table 1: Sample size calculation for the Intermediate Hospital in Katutura

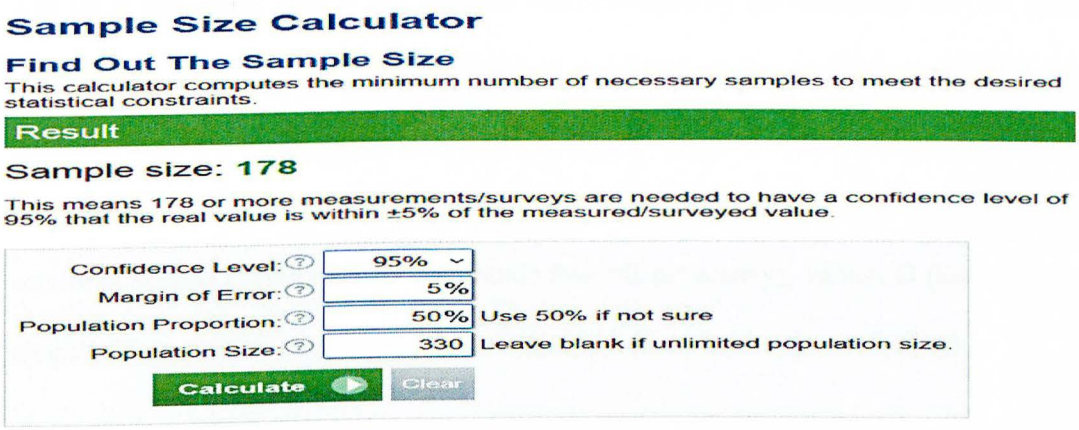
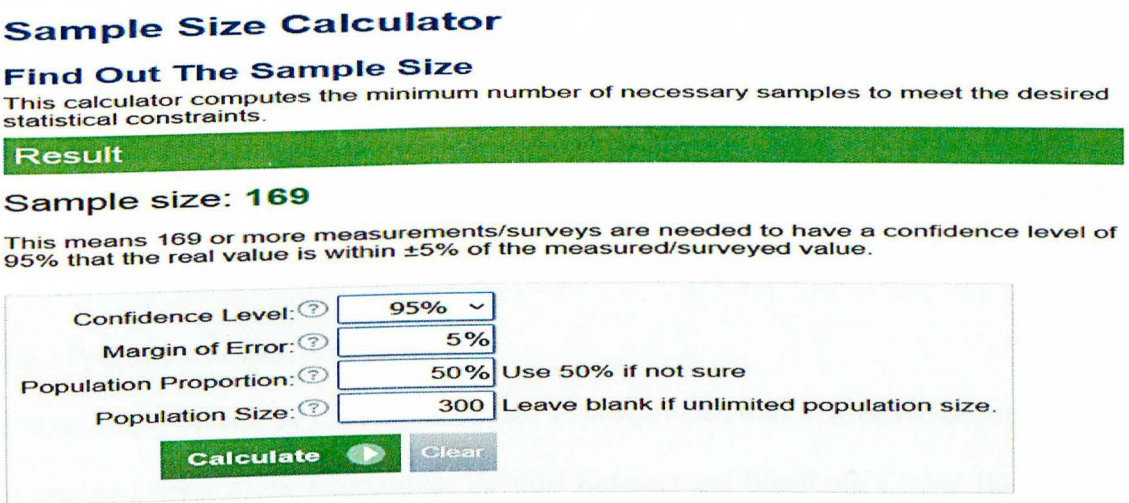


Table 2: Sample size for Windhoek Central Hospital



3.5. Data collection

Data collection is the process of gathering information from the target population (Creswell, 2014). The data of this study was collected within a period of two months (November to December 2020) from targeted population of 347. The data was collected after the permission was granted by the University of Namibia ethical clearance committee and by the MoHSS research committee.

3.5.1. Research instrument

The study instrument used in this research was developed by the researcher with the assistance of the supervisor from extant relevant literature, published studies, and then modified to the local context to meet the study purposes. The questionnaire consisted of five sections namely, section A (socio-demographic characteristics), section B (factors affecting utilisation of antenatal care services), section C (information on attitude towards pregnancy), section D (knowledge about antenatal care services) and section E (access to and from antenatal care facility).

Attitudes of health care workers were measured using a list of statements that reflected how the health care workers treated pregnant mothers and for each statement, participants were asked to state their opinions and experience, using a 5-point Likert scale ranging from 1= agree, to 5= strongly disagree. The questions were written in simple English for easy understanding. There was no need for translation since the study was carried out in Windhoek and all participants could either speak English, Oshiwambo, Rukwangali or Othjiherero, languages that the researcher was conversant with.

3.5.2 Procedure of data collection

During data collection the researcher obtained a list of women who were delivered and admitted at postnatal wards of the Intermediate Hospital Katutura and Windhoek Central Hospital was obtained from a delivery register and permission was given by the sister in charge of postnatal wards. In the absence of the sisters in charge of these wards permission was given by the senior nurse who was present at the time of data collection exercise. Thereafter, the researcher assigned numbers to the provided list, where every 2nd name on the list was selected for the study without a reputation of using a systematic selection method. The starting point of the selection of participants in this study was every number two. This process was done at both hospitals until

the total sample size of 320 was achieved. The data collection took about two months, from 01 November 2020 to 31 December 2020.

Before handing out the questionnaire to the respondents, the researcher introduced herself and explained the purpose of the study. Participants were informed that participation in the study was on voluntary basis and that anyone could opt out at any time without any negative consequences and then a self-structured questionnaire was administered on a face-to-face basis.

Some of participants were interviewed for each question and then the researcher completed the questions with the exact answer from the participants. This was done because some of the participants were not willing to write on their own but they preferred the researcher to write the answers for them. The questionnaires were collected on the same day at the same time to avoid questionnaires being lost. All the questionnaires were numbered before they were administered to the respondents.

3.5.3. Pilot Study

A pilot study is a small-scale study conducted prior to the main study. It involves a limited number of participants from the population at hand (Brink, 2018). The researcher conducted a pilot study on a small-seized population of 32 women who had delivered and had been admitted at postnatal wards at the Intermediate Hospital Katutura and Windhoek Central Hospital a month before the period of this study. The piloting was done to pre-test the questionnaires and the population represent 10% of the study sample.

The researcher explained the purpose of the study to the respondents and ensured that confidentiality was observed during data collection. The results were analysed using SPSS and gaps such as spelling of words, numbering of questions were identified and questions of gravidity

and parity was added. These gaps were corrected and amendments were done by the researcher with the assistance of the supervisor. The result of the pilot study is not included in the findings of the main study.

3.5.4. Reliability and Validity

Reliability and validity appear to be crucial components in a research as they measure/assess the accuracy and relevance of the instruments used for data collection. In addition, these components have different meanings under different types of research. For this study, the researcher measured the validity and reliability of the instruments that were used for data collection.

3.5.4.1. Reliability of the data collection instrument

Creswell & Creswell (2018) define reliability as the constituency of a measure. The research instrument is intended to measure a certain variable should have approximately the same response each time it is used. In this study, the internal consistency reliability of all variables coded with the Likert scale in the questionnaire was assessed using Cronbach's alpha coefficient. Cronbach's alpha is a measure of internal reliability for multi-item summated rating scales, and its values range between 0 and 1, where the higher the score, the more reliable the scale (Drost, 2015). At a minimal level, scores ranging from 0.5 to 0.6 are acceptable, while scores above 0.6 mean that the instrument is acceptable. The score of the instrument was 0.6 and this indicated that instrument was reliable. The questionnaire avoided difficult words to make it easier for the participants to understand. This increased the reliability of the instrument in such a way that the responses given were nearly accurate to the questions asked.

3.5.4.2 Validity of the data collection instrument

According to Drost (2015), validity is the extent to which a set of measured items actually reflects the theoretical latent construct that those items are designed to measure. Content validity was

employed in this study to ensure that the questionnaire covered all the crucial components on factors that influence the utilisation and non-utilisation of ANC services by pregnant women. Construct validity was guaranteed by ensuring that indicators and measurements were carefully developed based on the existing knowledge. The researcher adopted the standard use of questions on ANC utilisation and the questions that would help to fill the identified gap in literature. Moreover, the study used structured and semi-structured questions; which ensured that participants chose their views from the list of items, which were based on the questions. Thus, the answers that participants provided were controlled by the structure of the questionnaire. To increase validity, the researcher further explained all the questions to the respondents for them to understand everything clearly. To ensure face validity the researcher consulted two experts in the area of midwifery for their opinion of the questions in the questionnaires (Supervisor and Obstetrics and gynaecology consultant). They assessed the questionnaire to establish if the intended concept was included in the questionnaire and amendments based on their opinions and suggestions were implemented.

3.6. Data Analysis

The data were analysed using Statistical Package for Social Science (SPSS) Version 25 software. Descriptive statistics which include mean, median, standard deviation and frequency table were used to analyse socio-demographic features such as age, marital status, employment status and factors that influence the utilisation of ANC services among the respondents. The Pearson's Chi-squared test was used to assess the association between categorical variables such as age, employment status, gravidity, parity, attitude toward pregnancy and utilisation of antenatal care services.

Fisher's exact test was also used to investigate the association between marital status, religion/ number of miscarriages, source of information about ANC and medical history because they were less than five responses in the cell and Chi-squared test was considered invalid. The utilisation of ANC services was the dependent variable. While explanatory variables included age, educational status, occupation; employment status, source of income, a mode of transportation to the health centre, attitudes of HCW, quality of health services, availability of infrastructures, medical equipment's, attitudes of health care workers as well as knowledge of ANC services.

The researcher used self- rating to rate participant's attitude toward pregnancy, knowledge regarding ANC, right to make decision and quality of the service being provided at ANC facilities. There were four questions on attitude with three points of Likert scale. The minimum score was four and the maximum score was 12. Attitude was then categorised into two level participants who scored four to seven and were classified as having positive attitude toward their pregnancy while participants with scores of 8-12 were classified with negative attitude.

Knowledge of participants was also scored and there were seven questions on knowledge with three Likert scale points. The minimum score was seven and maximum score was 21. Knowledge was then categorised into levels namely, high and low levels of knowledge. Participants who scored 7-14 were categorised to have high levels of knowledge while the score of 15-21 was categorised as low levels of knowledge.

The right to make decisions had three questions with three Likert scale points. The minimum score was three and maximum was nine. The score of three to five was rated as participants who had no right to make decisions while a score of six to nine have the right to make their own decisions.

There were nine questions on the quality of the services with three Likert scale points. The minimum score was nine while the maximum score was 27. Quality was then categorised as good quality and poor quality. The score of 9-14 was rated as good quality services and 15-27 as poor quality. Decisions for statistically significant were concluded at p= 0.05. A binary logistic regression model was employed to identify significant factors associated with ANC service utilisation.

3.7. Research ethics

Permission to conduct the study and ethical clearance was sought and granted from the Centre for Postgraduate Studies Committee of the University of Namibia, the Human Research Ethics Committee (HREC) of the University of Namibia, the Research and Ethical Committee of the Ministry of Health and Social Services. The Executive Director of the MoHSS granted on behalf of the MoHSS. The medical superintendent of the two identified hospitals as well as the unit managers at the two identified hospitals were provided with the letter from MoHSS to show that the researcher had permission from the MoHSS to carry out this study.

The research applied ethical principles namely:

3.7.1. Principle of respect for persons

This ethical principle concentrates on respect for human dignity, which includes the right, to self-determination and the right to disclosure. Self-determination means that prospective participants voluntarily decide whether to take part in a study, without risk of prejudicial treatment. Participants were given chance to ask questions where they did not understand and their rights to refuse to give information and to withdraw from the study were respected. A person`s right to

self-determination includes freedom from coercion (Polit & Beck, 2018). The researcher fully disclosed the information about the study and explained the voluntary nature of participation. Participants were given opportunity to make right decision regarding participation in the study.

Autonomy: Participants had the right to full disclosure. Participants right to make informed and voluntary decisions about study participation requires a full disclosure of the study (Polit & Beck, 2018). In this study, the researcher fully described the nature of the study, purpose of the study as well as benefits and risks of the study using simple terms that participants understood. Participants were given the opportunity to ask questions for clarification before they decided to participate in the study. All respondents who participated in the study did so voluntarily without any coercion.

Privacy. The information collected from the participants was not shared with other participants. It was only shared with the supervisors who were the experts in this field.

Data storage: All collected data were scanned to soft copies. Hard copies including all the questionnaires were put together in an envelope. Those envelopes are kept in the researcher's study room within a lockable drawer to prevent anyone from accessing them. Duplicates of soft copies were compressed and zipped into a single folder which is kept on an electronic disk with an access password. The data will be kept for five years after the research and will then be permanently destroyed (Creswell, 2014b).

Anonymity: Information collected from participants was not linked to the real names of the participants. The participants were given a unique number during data collection and they were not asked to write their real names on the questionnaires. During publication of the results the

researcher ensured that participants' identities are protected and no names would be published with the results.

Consent form: The researcher involved mothers in the study after getting the required permission from the maternity department. The consent form was attached on top of the questionnaire and it explained the purpose of the study, objective, and methodology of the study and the significance of the study to the participant. It further explained to the participant that, individual participation was voluntary and that there would be no penalty for not taking part in the study. Again, participants had the right to withdraw from the study anytime even in the middle of data collection. The participants were required to sign the consent form, to show that they had granted permission to take part in the study.

Confidentiality: Data were not linked to individual participants. Responses to questionnaires were kept in a safe place to avoid it to be accessed by any other person who is not part of research study. The names of participant were not mentioned throughout the study. Individuals were identified as participant one or two.

3.7.2. Principle of beneficence

The study's participants were all adults, namely: the women who delivered their babies. The researcher collected non-sensitive information from non-vulnerable adult participants who were involved in the study. The study was carried out at the two identified hospitals and the participants were not exposed to any form of risk or harm. The participants were assured that there would be no harm either physical or mental as a result of participating in this study. Members interested in taking part in this study were selected randomly (Brink et al., 2018).

The researcher made it clear to the participants that, the result of the study may not be beneficial to individuals. However, the result of the study was used to provide recommendations on how to reduce the number of pregnant women who are not utilising ANC and this will benefit the mothers in their next pregnancy and the future of their unborn babies. Furthermore, the result of the study will be submitted to the MoHSS and may be used to improve maternal and child health in general.

3.7.3. Principle of Justice

Participants were fairly selected and treated in the same way. Simple random sampling of participants ensured an equal chance of being selected to participate in the study. The agreement between the researcher and participants was also respected. The participants were selected according to the inclusion criteria until the study sample was achieved.

3.8. Summary

This chapter discussed the research design and methods used in this study by explaining the research approach and design used. It further outlined the population of the study, sample and sampling methods, data collection, data analysis and ethical aspects of the study. In the next chapter the results of the findings of the study are presented.

CHAPTER 4

PRESENTATION OF STUDY FINDINGS

4.1 Introduction

This chapter represents the views of respondents regarding the factors affecting the utilisation of ANC services at the Windhoek Central Hospital and the Intermediate Hospital Katutura, Khomas region. The results of statistical analysis were done and the interpretation of findings is presented using tables and graphs.

The respondents were all women who delivered through any form of delivery and were admitted to postnatal wards of the two identified hospitals at the time of data collection. This study targeted a total sample of 347 respondents although only 320 mothers eventually participated in the study which gave a response rate of 92%.

4.2. Presentation of research findings

The findings of the study is presented under socio-demographic data, utilisation of antenatal care services, relationship between factors and utilisation of ANC services and factors that predict utilisation of antenatal care services.

4.2.1. Socio-demographic data

The socio-demographic information obtained refers to participants' age, marital status, educational level, employment status, religion as well as ethnic group.

4.2.1.1. Age of participants

Participants were asked to indicate their age. Table 3 presents the age of participants.

Table 3: Age of participants n=320

Age groups		Frequency	Percentage%
	Below 20	47	14.7
	21-25 years	89	27.8
	26-30 years	87	27.2
	31-35 years	51	15.9
	36-40 years	23	7.2
	41 and above years	7	2.2
	Ages not indicated	16	5.0
Total		320	100

The findings indicate that the average age of mothers who participated in this study was 27 years, with the youngest mother aged 18 years old, and the oldest mother aged 42 years.

4.2.1.2. Marital status, participants, educational level, employment status and partner's educational level

Table- 4 illustrates demographic characteristics of marital status, participants educational qualifications, partner's highest educational qualifications, employment status, religion and ethnic group.

Table 4 : Socio-demographic factors n=320

Variables		Frequency	Percentage (%)
Marital Status	Single	282	88.1
	Married	29	9.1
	Divorced	6	1.9
	Widowed	3	0.9
	Total	**320**	**100**
Mother educational level	No Education	36	11.3
	Primary education	43	13.4
	Secondary education	194	60.6
	Tertiary and above	47	14.7
	Total	**320**	**100**
Employment status	Unemployed	147	45.9
	Employed	73	22.8
	Self-employed	53	16.6
	Student/ learner	41	12.8
	Not indicated	16	1.9
	Total	**320**	**100**
Religion	Christian	186	89.4
	Muslim	11	3.4
	Others	5	1.6
	No religion	18	5.6
	Total	**320**	**100**
Partner's highest education	No Education	36	11.3
	Primary education	30	9.4
	Secondary education	185	57.8
	Tertiary and above	59	18.4
	Did not know their partners education	10	3.1
	Total	**320**	**100**

Results for socio-demographic factors indicate that the majority of the mothers were single 282(88.1%), while 11.9% were distributed among married, divorced or windowed. Findings further show that 194(60.6%) of the mothers had secondary education qualifications with 36 (11.6%) mothers having no education. The partners' highest education level indicated that the majority 185(57.8 %) had secondary education and 36(11.3%) had no educational background. The results also revealed that more than 186(89.4%) were Christians, and 3.4% were Muslims with 1.6% belonging to other religions. The study also shows that the largest population of mothers who participated in the study were unemployed 147(45.9%) with the least being student/learners 41 (12.8%).

The highest percentage of mothers who participated in the study were of Oshiwambo extraction at 157 (49.1%) and Caprivian with the minimum of 17(5.3%). Nama/Damara were 70 (21.9%), Kavango were 46(14.3%) while 25(7.8%) were from other ethnic groups with 5(1.6%) of participants who did not indicate their ethnic group.

4.2.2. Obstetric factors

Table 5 indicates the obstetric characteristics collected as part of ANC during pregnancy. This table indicates the frequency and percentage of the following variables, gravidity, parity, number of miscarriages, trimester of pregnancies that miscarried mode of delivery, source of information about ANC services, place of delivery, number of still-births as well as medical history.

Table 5: Obstetric factors n=320

Obstetric questions		Frequency	Percentage (%)
Gravidity	1-2 pregnancy	190	59.4
	3-4 pregnancy	111	34.7
	5 or more pregnancy	18	5.6
	No response	1	0.3
	Total	**320**	**100**
Parity	1-2 births	167	52.2
	3-4 births	126	39.4
	5 or more births	27	8.4
	Total	**320**	**100**
Number of miscarriages	0 miscarriage	267	83.4
	1 miscarriage	29	9.1
	2 miscarriages	18	5.6
	3 miscarriages	3	0.9
	4 miscarriages	3	0.9
	Total	**320**	**100**
Mode of delivery of a current pregnancy	Normal delivery	264	82.5
	Instrumental delivery	19	5.9
	Caesarean section	16	5.0
	No mode of delivery stated	21	6.6
	Total	**320**	**100**
Source of information about antenatal care services	Midwife	120	37.5
	Radio	49	15.3
	Traditional birth attendants	69	21.6
	Relatives	4	1.3
	Others	1	0.3
	Not sure what was the source	77	24.1
	Total	**320**	**100**
Number of still births	None	228	71.3
	1-2 still-births	35	10.9
	3+ still-births	17	5.3
	Not indicated	40	12.9
	Total	**320**	**100**
Mother's medical history	Diabetic	14	4.1
	Epilepsy	3	0.9
	High blood pressure	35	10.9
	Cancer	2	0.3
	Joint problem	11	3.4
	Total	**320**	**100**

Table 5 shows 190 (59.4%) had become pregnant either once or twice with the least percentage of 18(5.6%) of mothers who had five or more pregnancies. The study also shows that 267(83.4%) of the mothers had no previous miscarriage, 29(9.1%) had one miscarriage in their lifetime, while 18(5.6%) had two miscarriages. Results from the study highlighted that about 264(82.5%) of the mothers had a normal delivery for their babies, 19(5.9%) delivered through instrumental assistance and 16(5.0%) delivered through caesarean section. The study found that most the mothers heard information about ANC through midwives 120(37.5%), while 38.2% indicated the sources of ANC information as either through the radio, traditional birth attendance or relatives and 1(0.3%) indicated other sources which were not specified.

It was also shown that about 228(71.3%) of the mothers did not have a previous stillbirth, while 35(10.9%) experienced between 1 - 2 stillbirths. In addition, the study shows that 222(70.9% of mothers had no medical condition while 35(10.9%) of the mothers had high blood pressure, 14(4.1%) had diabetes, and 31(9.4%) had other medical conditions.

4.3. Utilisation of Antenatal Care Services

Table 6 presents the results of participants regarding the utilisation of ANC services.

Table 6: Antenatal care utilisation n=320

Variables	**Frequency**	**Percentage (%)**
Utilised antenatal care	229	71.6
Did not utilise antenatal care	91	28.4
Total	**320**	**100**

Among the participants 229 (71.6%) utilised ANC services while 91(28.4%) did not utilise the ANC services.

4.3.1 Number of antenatal care visits

Participants were asked how many times they had attended antenatal care during their current pregnancy. Figure two indicated the participant's responses regarding the number of ANC visits. There was one participant who did not indicate the number of visits she had made for ANC services.

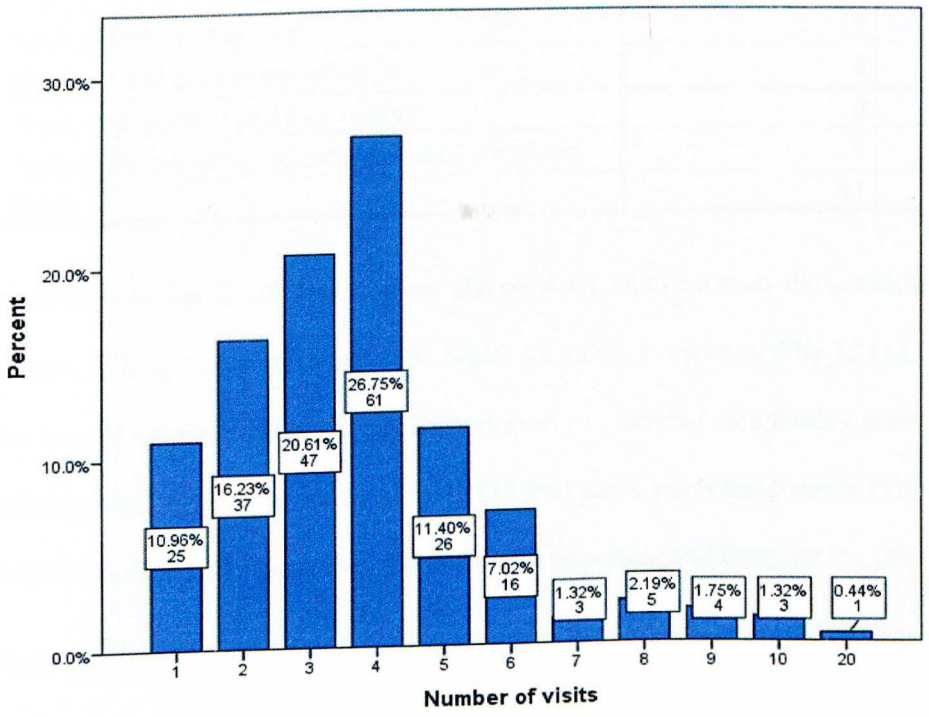


Figure 2: Number of antenatal care visits

The results shown in figure 2 show that most of the participants had four ANC visits/contacts at 61(26.75%), followed by 3 times at 47(20.61%) with fewer of 1(0.44%) who had utilised ANC 20 times.

4.3.2. Factors that prevent pregnant women from utilising antenatal care services

The participants were asked about the factors that prevent them from utilising ANC services, and table seven represents the results from the participants regarding ANC utilisation.

Table 7: Factors that prevent pregnant women from utilising antenatal care services n=91

Factors	Frequency	Percentage (%)
Negative attitude of health care workers	9	9.9
Covid-19 restriction measures	5	5.5
Long distance to health facilities	19	20.9
Fear of positive HIV test results	7	7.7
Feeling that ANC is not important	12	13.2
Not aware of being pregnant	12	13.2
Lack of transport money	12	13.2
Previous bad experience of ANC	4	4.4
Work engagement and lack of time	9	9.9
Factors for not utilizing antenatal care not stated	2	2.1
Total	**91**	**100**

Table 7 shows that 19 (20.9%) mothers who participated in the study did not utilise ANC services because of long distances to the ANC health facilities. It was stated by 12 (13.2%) participants that lack of transport money to pay for transport to antenatal care facility prevented them from utilising ANC. It was also indicated by 12 (13.2%) participants that the reason they did not utilise ANC services were because they did not find it important and there are too many follow-ups.

There were about 12 (13.2 %) participants who indicated that they did not utilise ANC services because they were not aware that they were pregnant as they had not seen their partners for a while and they just did not feel as if they had conceived. Moreover, the negative attitude of health care workers, Covid-19 restrictions, work engagement and time were also stated as factors that stifled utilisation of ANC for some participants. In addition, 7 (7.7%) participants stated that they did not start ANC because they were afraid to be tested for HIV. They averred that they were scared of stigmatisation when they returned to their communities especially if the results would have come out HIV positive.

Finally, 4 (4.4%) of participants stated their previous unpleasant experience of ANC services which made them avoid utilising ANC with their current pregnancy.

4.3.3 Factors that motivate pregnant women to utilise antenatal care services

Participants in the study were asked to select the main reason that motivated them to attend ANC services and the responses are shown in Table 8. The study revealed that 63 (27.5 %) of participants indicated that the main reason for utilising ANC was to make sure that their health and that of their unborn baby was protected.

In addition, factors such as health education at 19 (8.3%) and monitoring of the baby growth 43(18.8%) were also mentioned by participants. About 34 participants (14.8%) utilised ANC because they wanted to prevent complications during pregnancy. Factors like going to get medication, knowing the estimated date of delivery and having a certain medical conditions were some of the reasons why some women utilised ANC services.

Table 8: Factors that motivate pregnant women to utilise ANC services during pregnancy n=229

Factors		**Frequency**	**Percentage (%)**
	Due to medical conditions	1	0.4
	ANC is important	29	12.7
	Importance of the health education	19	8.3
	To ensure good health of mother and unborn baby	63	27.5
	To determine the risks that might occur during pregnancy	16	7.0
	To get medication	7	3.1
	To know HIV status	13	5.7
	To know the estimated date of delivery	1	0.4
	To monitor the growth of the unborn baby	43	18.8
	To prevent complications	34	14.8
	No factors stated to utilization of ANC	3	1.3
	Total	**229**	**100**

4.3.4. Attitude of participants toward pregnancy

Participants were asked on their attitudes towards their pregnancy utilising indicators on a 3-point rating scale (agree, neutral, disagree). Table 9 shows the results of participants regarding their attitudes towards their pregnancy.

Table 9: Attitude towards pregnancy n=320

Statements	Agree	Neutral	Disagree	No response	Total
Right before I became pregnant with my pregnancy, I wanted to have another baby.	147 (45.9%)	29 (9.1%)	127 (39.7%)	17 (5.3%)	320 (100%)
When I last became pregnant or before I become pregnant, I wanted a baby sometime in future.	217 (67.8%)	9 (2.8%)	53 (16.6%)	41 (12.8%)	320 (100%)
During my pregnancy, my family members were happy to know about my pregnancy.	230 (65.3%)	30 (9.4%)	49 (15.4%)	32 (10%)	320 (100%)
I was scared to visit a health facility for ANC during pregnancy.	108 (33.7%)	15 (4.7%)	153 (49.4%)	39 (12.2%)	320 (100%)

Results pertaining to attitudes towards the pregnancy show that 147(45.9%) of the mothers agreed that they wanted to have another baby right before they became pregnant, while 127(39.7%) asserted that they did not want another baby. Similarly, 217(67.8%) of the mothers agreed that they would want a baby in the future while 49(16.6%) were against this statement.

It was shown that 230(65.3%) of the mothers stated that their family members were happy about their pregnancy, as opposed to 49(15.4%) who indicated that their family members were not happy with their pregnancy. Furthermore, 108(33.7%) of the mothers indicated that they were scared to visit a health facility for ANC service during pregnancy, while 153(49.4%)highlighted that they were not scared at all.

4.3.5. Attitude score of participants

Table 10 represents the overall attitude score of the participants regarding their pregnancy. Firstly, the indicator statements were scored and summed up to generate individual total attitude scores. The attitude levels were then categorised as positive (score of 4-7) and negative attitude (score of 8-12).

Table 10: Participants attitude score towards pregnancy n=320

Attitude level		Frequency	Percentage%
	Positive	103	32.2
	Negative	154	48.1
	Total	257	80.3
Missing	System	63	19.7
Total		320	100.0

Table 10 shows that only 103(32.2%) of participants had a positive attitude towards their pregnancy as opposed to 154(48.1%)who showed a negative attitude towards their pregnancy. The study further indicated that 63(19.7%) did not indicate their attitude.

4.3.6. Knowledge about antenatal care services

Participants were asked questions to assess their knowledge about ANC. However, 17 participants did not answer this question. Figure 3 is a bar chart indicating the knowledge of respondents on the number of the required ANC visits for pregnant mothers.

4.3.6.1. Total number of antenatal care visits per pregnancy

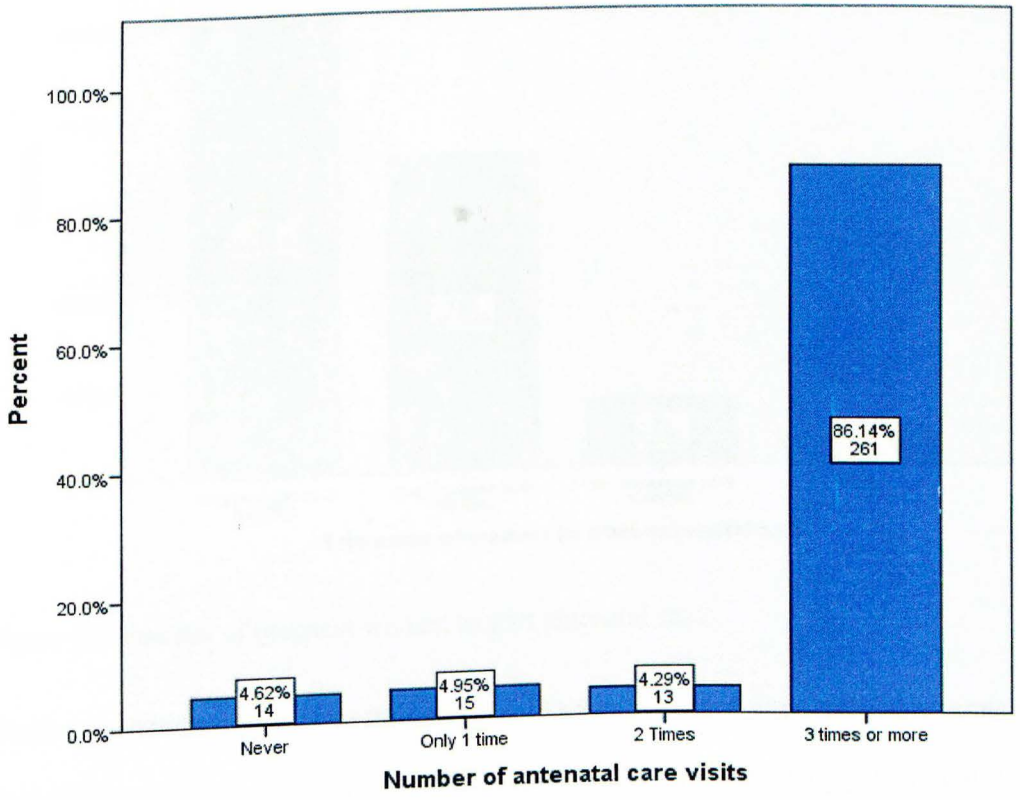


Figure 3: Number of antenatal care visits

Figure 3 has shown that 261(86.14%) of the mothers pointed out that pregnant woman should visit the antenatal health care facilities 3 or more times, 13 (4.29%) indicated that they should only visit 2 times and 14(4.62%) indicated that there was no need for pregnant women to utilise ANC services.

4.3.6.2. Knowledge of participants regarding when to start 1st antenatal care visit

Participants were assessed on when a pregnant woman should start utilising antenatal care services. Figure 4 indicates views of respondents in this regard.

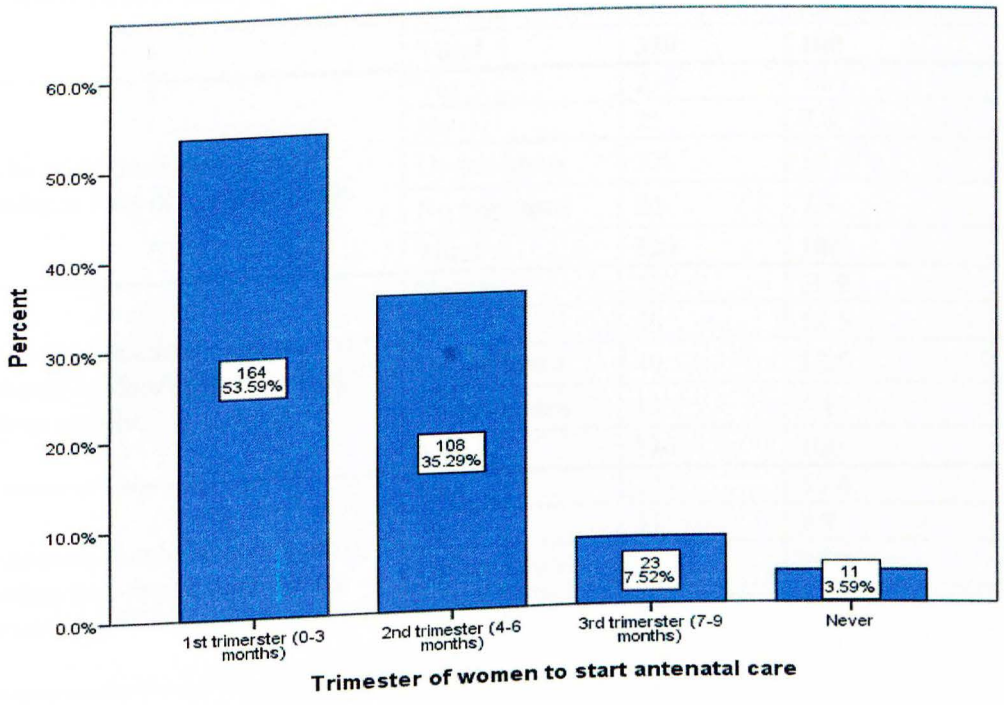


Figure 4: Trimester of pregnant women to start antenatal care

Findings highlighted, that more than half 164 (53.59%) of the women felt that a woman should start ANC services during the 1st trimester, 108 (35.29%) indicated that ANC should start in the 2nd trimester, while 23 (7.52%) reported that they should start in the 3rd trimester.

4.3.7. General knowledge of participants about antenatal care services

Participants were assessed on their general knowledge regarding antenatal care services as shown in Table 11. This study assessed the knowledge of mothers on the ANC services.

Table 11: Knowledge of participants regarding antenatal care services n=320

Statement on Knowledge	Rating scale	Frequency	Percentage (%)
Check-up during pregnancy reduces risks of maternal death.	Yes	238	74.4
	No	28	8.8
	Do not know	39	12.1
	No responses	15	4.7
	Total	**320**	**100**
Check-up during pregnancy reduces risks of neonatal death.	Yes	239	74.7
	No	25	7.8
	Do not know	32	10
	No responses	24	7.5
	Total	**320**	**100**
The first antenatal examination should be done within the first three months.	Yes	227	70.9
	No	40	12.5
	Do not know	40	12.5
	No responses	13	4.1
	Total	**320**	**100**
Anaemia should be prevented by eating iron- based food during pregnancy.	Yes	171	53.4
	No	31	9.7
	Do not know	95	29.7
	No responses	23	7.2
	Total	**320**	**100**
Pregnant women need to be checked blood pressure often.	Yes	280	87.5
	No	20	6.3
	Do not know	9	2.8
	No responses	11	3.4
	Total	**320**	**100**
Tetanus toxoid injection reduces the risks of both mother and child to getting tetanus diseases.	Yes	225	70.3
	No	36	11.3
	Do not know	43	13.4
	No responses	16	5
	Total	**320**	**100.0**
Women delivered by traditional birth attendance should not visit the hospital after delivery.	Yes	41	12.8
	No	230	71.9
	Do not know	32	10
	No responses	17	5.3
	Total	**320**	**100**

Findings revealed that 238(74.4%) of the mother acknowledged that checking up during pregnancy reduced the risk of maternal deaths. About 239(74.7%) of the mothers acknowledged that checking up during pregnancy reduces the risk neonatal deaths. About 227(70.9%) of mothers further indicated that the first ANC examination should be conducted in the first three months. Half of the mothers highlighted that anaemia should be prevented by eating iron-based food during pregnancy. Furthermore, 280(87.5%) of all women acknowledged that pregnant women need to be checked blood pressure often.

The study also showed that 225(70.3%) of the mothers acknowledged that Tetanus toxoid injection reduces the risk of both mother and baby getting tetanus disease. Furthermore, about 230(71.9%) of the mothers stated that delivery conducted by a traditional attendance was not clean therefore, the mother still needed to visit the hospital for further observations.

4.3.8. Participants knowledge score regarding ANC services

Table 12 indicates the overall level of participant's knowledge regarding ANC services. The knowledge statements were scored, summed-up and categorised into two levels which are 'high level of knowledge' and 'low level of knowledge'. Participants who scored 7-14 were classified as having a high level of knowledge regarding antenatal care services while participants who scored 15-21 were classified as having a low level of knowledge.

Table 12: Participants knowledge score regarding antenatal care services n=320

Knowledge level	Frequency	Percent
High	244	76.3
Low	20	6.3
Total	264	82.5
Missing System	56	17.5
Total	320	100.0

The majority of participants in the study 244(76.3%) showed a high level of knowledge compared to 20(6.3%) of participants who had a low level of knowledge.

4.3.9. Access to and from antenatal care facility

Respondents were also assessed on the means of transport they used to travel to and from the antenatal health care facility. Figure 5 presents the results in percentages (%) and frequency.

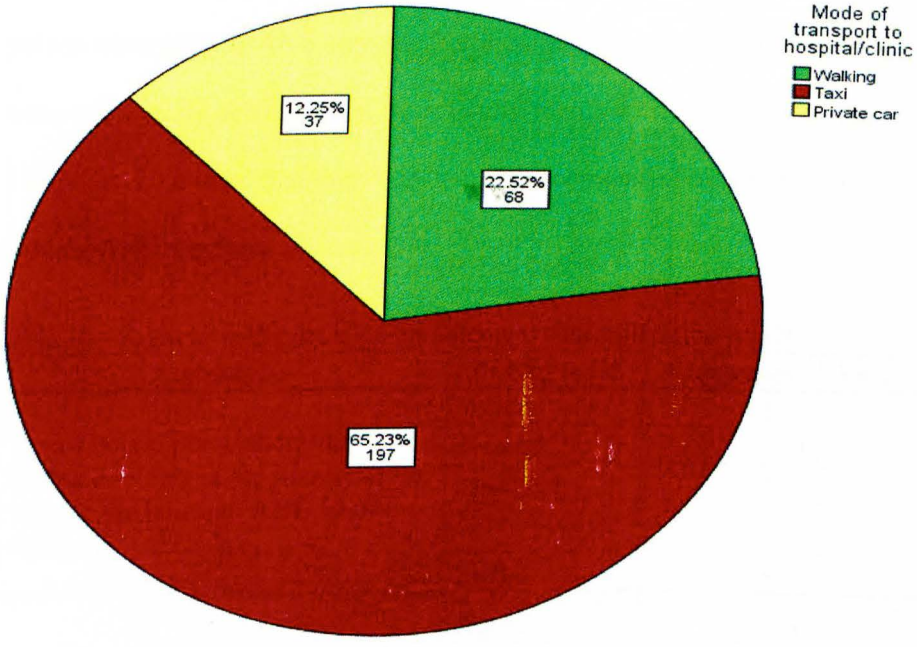


Figure 5: Mode of transport for ANC services

The results of figure 5 show that 197(65.23%) of the mothers indicated that they used taxis, while 37(12.25%) used private transport and 68(22.52%) reported that they walked to the health facilities.

4.3.10. Right to make decision on antenatal care utilisation

Participants were assessed on their autonomy regarding the utilisation of antenatal health care services. The participants were given statements where they agreed or disagreed with the

statements. Table 13 shows that most of the mothers, 157(49.0%) disagreed that they needed to obtain permission from their husbands/elders in the house before going for ANC services. However, about 124(38.8%) of the mothers agreed that they needed permission from their husbands/elders in their houses before seeking ANC services. Equally,159 (49.7%) of the mothers indicated that they did not need an elder person company while seeking ANC services, as compared to 113(35.3%) who indicated that they would need some company from an older person when seeking ANC services. Furthermore, 152 (47.5%) of the mothers indicated that they were not usually accompanied by a family member when accessing the ANC service, while 115(36.2%) admitted that they were usually accompanied by a family member when they were seeking ANC services.

Table 13: Right to make decision on antenatal care utilization n=320

Statements	Rating scale	Frequency	Percentage (%)
I must obtain permission from husband/ elders in the house before leaving the house to ANC health services.	Agree	124	38.8
	Neutral	20	6.3
	Disagree	157	49.0
	No responses	19	5.9
	Total	**320**	**100**
I must be accompanied by an elder person while going out of the house (ANC etc.)	Agree	113	35.3
	Neutral	28	8.8
	Disagree	159	49.7
	No responses	20	6.3
	Total	**320**	**100**
I am usually accompanied by a family member when I go to ANC	Agree	115	36.2
	Neutral	29	9.1
	Disagree	152	47.5
	No responses	24	7.5
	Total	**320**	**100**

4.3.11. Participants level on the right to make decisions

Table 14 shows the overall level of the participants right to make decision. To generate these levels, statement scores were summed up and categorised into participants who had the right to make their own decisions and participants who had no right to make their own decisions. The scores of 3-5 indicated participants who had no right to make their own decisions while a score of 6-9 indicated participants who had the right to make their own decisions.

Table 14: Participants level to make right decision n=320

Level of decision making	Frequency	Percent
No right to make decision	112	35.0
Have right to make decision	170	53.1
Total	282	88.1
Missing System	38	11.9
Total	320	100.0

The results show that about 170 (53.1%) of the participants who took part in the study had the right to make decisions regarding visits to the antenatal health facility for services while 112 (35.0%) had no right to make decisions.

4.3.12. Quality and services satisfaction of antenatal care services

The quality of the ANC services being provided was also assessed using questions on Likert scale. The section entails quality and services satisfaction assessment on the environment, service provision and attitudes of health workers. The participants' responses are represented in Table 15.

Table 15: Quality and services satisfaction of antenatal care services n=320

Statements	Agree	Neutral	Disagree	Missing system	Total
The environment is clean.	229 (71.6%)	48 (10.0%)	82 (15.0%)	11 (3.4%)	320 100%
The toilet is clean.	213 (66.6%)	38 (11.9%)	57 (17.8%)	12 (3.8%)	320 100%
The health care workers at ANC clinic are helpful.	229 (71.6%)	46 (14.4%)	29 (9.1%)	16 (5.0%)	320 100%
Waiting too long to be seen by a nurse/ doctor.	103 (32.2%)	44 (13.8%)	159 (49.7%)	14 (4.4%)	320 100%
The queues are too long.	67 (20.9%)	45 (14.1%)	192 (60.0%)	16 (5.0%)	320 100%
Too much time being spent with a nurse/ doctor.	111 (34.7%)	38 (11.9%)	160 (50.0%)	11 (3.4%)	320 100%
The nurse/ doctor treated me with respect.	249 (77.8%)	40 (12.5%)	22 (6.9%)	9 (2.8%)	320 100%
The doctor/ nurse explained my health state and that of my unborn baby to me.	263 (82.2%)	11 (3.4%)	35 (10.9%)	11 (3.4%)	320 100%
The doctor/ nurse explained to me the prescribed medication and its benefits.	267 (83.4%)	12 (3.8%)	26 (8.1%)	15 (4.7%)	320 100%

Quality of services in any services institution plays a crucial role in the way clients view the institution The majority 229(71.6%) of the mothers indicated that the environment where the ANC services were offered was clean and only 82(15.0%) indicated that the environment was not clean. Results indicated that 213(66.6%) of the mothers asserted that the toilets were clean, while about 57(17.8%) reported that they were not clean. It was also reported by 229(71.6%) of the mothers that the health care workers at the health facilities were helpful and only 21(9.1%) stated that they were not helpful.

Regarding the services provided by health care workers during antenatal visit, 159(49.7%) of the mothers disagreed that they had to wait for a long time before they were seen by a doctor/nurse, while 103(32.2%) asserted that they waited for long before they were seen. Similarly, 192(60.0%) of the mothers responded by saying that there were no long queues during antenatal care services, while 67(20.9%) indicated that they stayed in long queues. Additionally, 160(50.0%) of the mothers did not agree that they spend too much time with the nurse/doctor.

Most of the mothers 249(77.8%) indicated that the nurses /doctors were treating them with respect, and only 22(6.9%) reported that the doctors/nurses did not treat them with respect. Most of the mothers 263(82.2%) reported that the doctor/nurse had explained to them their health status and that of their unborn baby. While 35(10.9%) indicated that their nurse/doctor did not explain anything about their health or their baby's health. Furthermost, 267(83.4%) mothers indicated that the doctor/nurse had explained to them their prescription and its benefits to them.

4.3.13. Quality of the services score

Table 16 represents the quality levels perceived by participants.

Table 16 :Quality of the services score n=320

Levels of quality	Frequency	Percent
Good	233	72.8
Poor	44	13.8
Total	277	86.6
Missing System	43	13.4
Total	320	100.0

The study revealed that about 233(72.8%) of participants indicated that the ANC service was of good quality compared to 44(13.8%) who rated it as being of poor quality. The responses regarding quality and services satisfaction were scored, summed up and categorised into two levels, good quality and poor quality. A score of 7-14 indicated good quality while a score of 15-27 indicated poor quality.

4.4. Relationship between factors and utilisation of antenatal care services

The study considered the association between ANC utilisation and different factors, testing for significance of association using Chi- square and fisher's exact test at a p-value of 0.05. Table 17 represents the association of demographic characteristics with the utilisation of ANC services. Table 18 indicates the association between obstetrics factors and utilisation of ANC services.

4.4.1. Association of demographic characteristics with the utilization of ANC services

Table 17 shows the association between demographics data in relationship with antenatal care services utilisation. Two tests were employed Chi-square and Fisher's exact test were appropriate. Fisher's exact test was used where there was a count of less than five in a cell, the result was Fisher's exact was used is marked with an * in the table.

Table 17: Demographic factors and antenatal care utilisation

Variables		Utilized	Non-utilized	p-value
Age	Below 20 years	31 (66.0%)	16(34.0%)	0.768
	21-25 years	65(73.0%)	24(27.0%)	
	26-30 years	62(71.3%)	25(28.7%)	
	31-35 years	34(66.7%)	17(33.3%)	
	36-40 years	18(78.3%)	5(21.7%)	
	41 and above years	6(85.7%)	1(14.3%)	
Marital Status	Single	199(70.6%)	83(29.4%)	0.203*
	Married	24(82.8%)	5(17.2%)	
	Divorced	5(83.3%)	1(16.7%)	
	Widowed	1(33.3%)	2(66.7%)	
Mother educational level	No Education	24(66.7%)	12(33.3%)	0.737
	Primary education	32 (74.4%)	11(25.6%)	
	Secondary education	137(70.6%)	57(29.4%)	
	Tertiary and above	36(76.6%)	11(23.4%)	
Employment status	Unemployed	106(72.1%)	41(27.9%)	0.142
	Employed	59(80.8%)	14(19.2%)	
	Self-employed	37(69.8%)	16(30.2%)	
	Student/ learner	25(61.0%)	16(39.0%)	
Ethnic group	Oshiwambo	118(75.2%)	39(24.8%)	0.147
	Nama/ Damara	43(61.4%)	27(38.6%)	
	Kavango	31(67.4%)	15(32.6%)	
	Caprivian	14(82.4%)	3(17.6%)	
	Others	20(80.0%)	5(20.0%)	
Religion	Christian	208(72.7%)	78(27.3%)	0.382*
	Muslim	7(63.6%)	4(36.4%)	
	Others	5(100.0%)	0(0.0%)	
Partner's highest education	No education	20(55.6%)	16(44.4%)	0.087
	Primary education	24(80.0%)	6(20.0%)	
	Secondary education	136(73.5%)	49(26.5%)	
	Tertiary and above	45(76.3%)	14(23.7%)	

The study shows that women aged 41 years and above utilised ANC services 6(85.7%) compared to other age groups. It also indicates that 83(29.4%) of single ANC mothers did not utilise ANC services, while the other 199(70.6%) of single mothers utilised ANC services. About 5(17.2%) of the married ANC mothers indicated that they did not utilised ANC services and the other 24(82.8%) ANC mothers utilised the services. There were about 2(66.7%) of the widowed mothers who did not utilise the services, while the other 1(33.3%) utilised the ANC services. In addition, Fisher's exact test showed no association, between marital status and ANC services utilisation (p=0.203).

Mother education level indicates that all low level of education was dominated by non-utilisation, with mothers without education represented by 12(33.3%), primary education 11(25.6%), secondary education with 57(29.4%). However, mothers with tertiary education indicated that 36(76.6%) of mothers utilize ANC services. Fishers test showed that there was no association between mothers' education and ANC utilisation (p=0.737).

In the same table it is shown that pregnant mothers whose partner's education was below tertiary level did not utilise ANC health services, while mothers whose partners' education level was tertiary level or above indicated that 45(76.3%) utilised ANC services. It is also depicted that, there was no association between ANC services utilisation and partners' highest education level (p=0.087).

Employment status shows that pregnant mothers who were self-employed did not utilise ANC services 16(30.2%), also 41(27.9%) of the unemployed mothers did not utilise ANC services. Employed participants indicated that they were utilising ANC services at a rate of 59(80.8%). Student/Learner's showed a high number of non-utilisation 16(39.0%). There was no association between employment status and ANC services utilisation for pregnant mothers (p=0.142).

The religion of participants shows that among pregnant Christians 208(72.7%) utilised and 78(27.3%) did not utilise ANC services. The study shows that there was no association between religion and the utilisation of ANC services by pregnant women (P=0.382).

Ethnic group was also one of the demographic factors that were assessed. The Nama/Damara scored the highest percentage of non-utilisation of antenatal care services at 27(38.6%) in opposite to 43(61.4%) of utilization. Furthermore, study shows that Caprivians are the most utilizers of antenatal care services during this study period, 14(82.4%) of mothers utilizes ANC compared to 3(17.6%) of non-utilizes. Thus, the study shows no association between ethnic group and ANC utilisation (p=0.147).

4.4.2. Association between obstetrics factors and utilisation of ANC services

Table 18 shows the relationship between obstetric factors and the utilisation of antenatal care services among participants. The table indicates the results of the association between obstetric factors and antenatal care utilisation. Factors like gravidity, parity, the number of previous miscarriages, sources of information about ANC, number of stillbirths and medical history did not show associations with ANC services utilisation all have a p-value that is greater than 0.05.

Table 18: Obstetric factors and antenatal care utilisation

Obstetric factors		Utilized	Non-utilized	p-value
Gravidity	1-2 pregnancy	115(68.9%)	52(31.1%)	0.082
	3-4 pregnancy	98(77.8%)	28(22.2%)	
	5 or more pregnancy	16(59.3%)	11(40.7%)	
Parity	1-2 births	135(71.1%)	55(29.9%)	0.241
	3-4 births	83(74.8%)	28(25.2%)	
	5 or more births	10(55.6%)	8(44.4%)	
Number of miscarriages	1 miscarriage	19(65.5%)	10(34.5%)	0.948*
	2 miscarriages	13(72.2%)	5(27.8%).	
	3 miscarriages	2(66.7%)	1(33.3%)	
	4 miscarriages	2(66.7%)	1(33.3%)	
Mode of delivery of a current pregnancy	Normal delivery	187(70.8%)	77(29.2%)	0.340
	Instrumental assistant delivery	13(68.4%)	6(31.6%)	
	Caesarean section (C/S)	14(87.5%)	2(12.5%)	
Source of information about ANC services	Midwife	88(73.3%)	32(26.7%)	0.594*
	Radio	31(63.3%)	18(36.7%)	
	traditional birth attendants	52(75.4%)	17(24.6%)	
	Relatives	3(75.0%)	1(25.0%)	
	Others	1(100.00%)	0(0.0%)	
Number of still births	None	163(71.5%)	65(28.5%)	0.501
	1-2 births	22(62.9%)	13(37.1%)	
	3+	13(76.5%)	4(23.5%)	
Medical history	Diabetic	11(84.6%)	2(15.4%)	0.131*
	Epilepsy	2(66.7%)	1(33.3%)	
	High blood pressure	21(60.0%)	14(40.0%)	
	Cancer	1(100.0%)	0(0.0%)	
	Joint problem (arthritis)	4(36.4%)	7(63.6%)	
	Others	22(73.3%)	8(26.7%)	

4.4.5. Association between other factors and utilisation of ANC services

Table 19 shows the association between factors like; attitude, level of knowledge, mode of transport, right to make decision and quality of the services.

Table 19:Association of factors with utilization of antenatal care services

Variables		Utilized	Non-utilized	p-value
Attitude level	Positive	85(82.5%)	18(17.5%)	0.014
	Negative	105(68.8%)	48(31.2%)	
Level of Knowledge	High	179(73.4%)	65(26.6%)	0.420
	Low	13(65.0%)	7(35.0%)	
Mode of transport	Walking	52 (76.5%)	16(23.5%)	0.883
	Taxi	145(73.6%)	52(26.4%)	
	Private car	28 (75.7%)	9(24.3%)	
Level to make right decision	Have right to make decision	128(75.3%)	42(24.7%)	0.470
	No right to make decision	80(71.4%)	32(28.6%)	
Quality of service	Good	173(74.2%)	60(25.8%)	0.917
	Poor	33(75.0%)	11(25.0%)	

Table 19 shows that women with positive attitude are more likely to utilize ANC at 85(82, 5%) compared to women with a negative attitude which only scored 105(68.8%) of utilisation. The results show a high percentage of non-utilisation in women with negative attitude at 48(31.2%)compared to 18(17.5%) of non-utilization of women with a positive attitude. Attitude toward their pregnancy has indicated that there is an association with antenatal care utilization with a p-value of P=0.014.

Level of knowledge also contributes to the utilisation of antenatal care services because the study revealed that 179(73.4%) of women with a high level of knowledge utilizes antenatal care services opposite to the women with a low level of knowledge 13(65.0.%). However, non-utilization is associated with a low level of knowledge because the study has shown that 7(35.0%) did not utilize ANC services. The study shows a p-value of 0.420, which indicate that there is no association between level of knowledge and utilization of antenatal care services.

Mode of transport to and from health facility is one of the factors that was contributing to utilisation of antenatal care services. The study shows that 16(23.5%) of mothers did not utilize

ANC because they had to walk to the antenatal health care facility. Mothers who had available transport like private cars utilised ANC services 28(75.7%) more than mothers who used a taxi 145(73.6%). The study shows no association between mode of transport and utilisation of ANC services because (p=0.883).

The right to make decisions also played role in the utilisation of ANC; according to the results of the study, women with the right to make decisions were more likely to utilize ANC services 128(75.3%) compared to 42(24.7%) of non-utilisation. The study further showed that women who had no right to make decisions were less likely to utilise antenatal care services at 32(28.6%).There was no association between the two variables.

Quality of services was also associated with the utilisation of antenatal care services. The study revealed that 173(74.2 %) of women who utilized ANC have indicated that the quality of the services being provided at ANC services was good while 60(25.8%) said that the services being offered were poor. Among those ones who did not utilize ANC services, 11(25.0%) had poor knowledge about ANC services. The shows a p-value of 0.420, which indicate that there is no association between level of knowledge and utilization of antenatal care services.

4.5. Factors that predict utilization of antenatal care services

Data were analysed using binary logistic regression model because of the binary outcome in this study (Utilization and non-utilization of ANC). The dependent variable was the utilisation of antenatal care services while independent variables were factors that influence the utilization of antenatal care services. A series of tests were conducted in a backwards stepwise manner to determine the factors which significantly affected ANC utilisation. Therefore a backwards stepwise binary logistic regression was used to generate results shown in table 20.

Table 20: Factors that predict antenatal care utilisation

Factors	B	S.E.	Wald	Df	Sig.	Exp(B)
Partner educational level	-.266	0.190	1.964	1	0.161	0.766
Level to make right decision	-.157	.338	.215	1	.643	.855
Attitude level	.757	.356	4.514	1	.034	2.132
Knowledge level	.101	.637	.025	1	.874	1.107
Constant	-1.491	1.259	1.404	1	.236	.225

The result shown in table 20 indicated that both attitude of mothers and partners educational level predicts the utilisation of ANC services. However only attitude was significant to non-utilisation of ANC services (OR=2.132) and (P=0.034).In contrast knowledge of the mothers regarding antenatal care services was also a strong predictor of non-utilisation of ANC services, increasing the odds by 1.1 but the result was not statistically significant. The level to make right decision was however shown to be a poor predictor of non-utilization of ANC services.

4.6. Summary

The chapter presents the research findings that was analysed using SSPPS version 26. The results of the study show that 28.4% of participants did not utilize ANC, while 71.6% utilized ANC services. The Chapter further discussed the association between the demographic factors, obstetric factors and other factors with the utilization of ANC services. Chi-square and Fisher's exact test were used for association. Finally, the chapter discussed the binary logistic regression to generate predictors of non-utilisation of antenatal care service

CHAPTER 5

DISCUSSION

5.1. Introduction

This chapter discusses the findings of the study that were presented in chapter 4. The discussion deals with the key findings based on the research objectives. The study findings were discussed on socio-demographic characteristics, obstetric factors, and factors affecting utilisation of antenatal care services and the association of factors and utilisation of antenatal care.

5.2. Discussion of the research findings

The discussion of the study finding was done in line with the study objectives and controlled with existing literature.

5.3. Factors affecting utilisation of antenatal care services

The study established that there are different factors that affect the utilisation of ANC services. The findings on the factors are discussed together with their effects.

5.3.1. Socio-demographic factors

Participants who took part in the study were aged between 16 to 42 years old with 89(27.8%) of the largest population aged between 21-25 years. The age of participants reflect that all participants were in childbearing age which is 15-49 years old (Ministry of Health and Social Services (MoHSS) and ICF International, 2014). The finding of the study shows that the many of participants utilized antenatal care services were aged 41 years and above 6(85.7%) and opposing 16(34.0%) of women who did not utilize antenatal care services aged below 20 years. The current study results concur with the study by, Nketiah-Amponsah et al., (2013), that older women tend to utilise ANC compared to young women.

In the current study older women utilised ANC services at a higher rate (85.7%) possibly because they were aware that pregnancy risk increases with age. Older women are at risk of developing pregnant related complications like pregnant induced hypertension, diabetic etc (Ministry of Health and Social Services, 2016). The study findings are the same with the study that was conducted in Vietnam were older women were utilizing ANC services more than other age groups (Tran et al., 2012). Furthermore, the findings are similar to the study conducted in China where women older than 30 were more likely to have adequately utilized ANC than younger women (Zhao et al., 2012). However, Pearce, (2011) disagrees with the current study findings such as that of a study conducted in rural Zambia which showed that women whose age was above 35years were less likely to utilize ANC services because they felt that they were too old to be pregnant and that they tended to believe in traditional cohorts compared to modern medicine.

The finding of the present study shows that young adolescents did not utilise ANC compared to older women. This might be because teenagers may not recognize pregnancy symptoms; they might deny that they are pregnant, fear of parents' response to the unplanned pregnancy, and lack of financial resources (Bwalya, Sitali, Baboo & Zulu, 2018). Supporting the study findings in the UK, pregnant teenagers were found to be less likely to access maternal care services because teenagers are usually having chaotic lifestyles, lack of social support and not realizing that they are pregnant (Whitworth, Cockerill, & Lamb,2017).

Marital status of participants was another factor that was assessed to determine the effects on utilisation of ANC. The results of the study indicated that the majority of participants were not married (single) (88.1%). The large numbers of participants in the study were young women below the age of 30 and mostly young women are not married in Namibia.

The study shows that women who were married utilized antenatal care services (82.8%) more than women who were single. The increase in the percentage of utilization among married women is that they mostly have partner support, sometimes their pregnancy is planned and they do not have financial problems. The above findings are supported by similar results of a study that was conducted in Zambia in 2017, which revealed that women who were married tended to utilize ANC compared to an unmarried or single women (Sealy & Roberts, 2017).

Moreover, in Ethiopia , Chol et al., (2018), found out that women who were not married had poor utilization of ANC services because they were afraid to be seen pregnant before they got married. Same applies to the current study findings, single women who did not utilize ANC were 12.2 % higher than married women 17.2%. Being single, widowed or divorced strength the chances of the women not to utilize ANC because there is lack of partner's support. This is supported by the study that was conducted in Sudan, by Mugo et al., (2015), which found that women needed a husband's support to utilize ANC services.

Mother's educational level also plays a role in the utilization of antenatal care services. To emphasise the finding, women with a high level of education are known to be well informed, able to read the information regarding pregnancy, the importance of antenatal care services and its advantage. Correlating findings was found in Nigeria where education was found to be significant with antenatal care utilisation with a $p<0.05$, this means that pregnant women who are educated tend to utilize ANC services more than uneducated women and this may increase a woman's control over her pregnancy. In addition, education may help to expose women to more health education messages and campaigns, enabling them to recognize danger signs and complications and take appropriate action (Olayinka et al., 2012). The finding of the present

study is that educated women with tertiary 76.6% education utilizers ANC services more than women with no education 66.7%.

Indeed the current study finding 11.3% of women with no education might be that these women were not exposed on the importance of ANC utilization and lack the knowledge regarding ANC services. On the other hand, in Ethiopia and China women with lower education usually have less knowledge about ANC services and more difficulties like, lack of transport money, distance to health facilities and lack of information regarding the importance ANC therefore it's difficult for them to get access to ANC services (Ali et al., 2016 & Dulla et al, 2017). A similar study that was conducted in Pakistan found out that women with primary education were less likely to utilize ANC compared to women with secondary and tertiary education (Asim et al., 2017).

Partner's educational level also affects pregnant women regarding the utilization of ANC services. The current study findings over fifty percent 57.8% of participant partners had secondary education. The study outcomes show that women whose husbands or partners were educated utilized ANC services more than those whose partners had no education level 44.4%. Findings of the study indicate that 76.3% of women who utilized ANC services their partners have tertiary education. This might be that partners who are educated may be well informed on the importance of ANC services and may encourage their women to utilize ANC services.

In Nepal, Tripathi & Singh, (2015), emphasise that women whose partners are educated are more likely to attend ANC services because partners may be well-organized in the use of available information on maternal and child care and well informed about healthy practices endorsing safe motherhood. However, women whose partners had low or no education may be less likely to

utilize antenatal care services because the husbands do not understand the importance and advantage of utilizing ANC services during pregnancy (Tekelab et al., 2019).

Employment status may also contribute to the utilization of antenatal care services. The majority of participants were unemployed 45.9% in the study. The findings of the study at hand found that 80.8% of employed women utilized antenatal care services more than women who were student/leaners who recorded the higher percentage of non-utilization 39.0%. Women who are unemployed, students or housewives were unlikely to utilize ANC because they had no money to pay for transport to and from antenatal care health facilities. Acknowledging the study finding in Nigeria, financial difficulties have been considered as a significant barrier to antenatal care for migrant women who move from one place to another place (Efendi et al., 2017). A study from India, have shown a positive association between socioeconomic status and the utilization of ANC (Roy et al., 2013).

The current study found that majority of participants were Christians. The findings show women who are Christian utilize ANC 72.8% other than women who belongs to other religion like Muslims. This was the same result that was found in Sub-Sahara Africa by , Okedo-Alex et al., (2019), who found out that women who were Christian were utilizing ANC more compared to the non-Christian. The findings might be because women who were non- Christian believed more in cultural practices, hence they found it less important to utilize antenatal care services that a traditional birth attendance.

Ethnic groups also play a role in utilization of ANC. Certain ethnic groups may utilize ANC more than other ethnic groups because they have different understating regarding utilisation of ANC services. The finding of the present study shows that Caprivian women were utilizing

antenatal care services at 82.4% higher than other ethnic groups. The study further shows the higher number of non-utilization 38.6% among the Nama/Damara tribe. These results may be because different ethnic groups may have different cultures, values, norms and beliefs, and these may affect the beneficiaries' behaviours and perceptions regarding utilization of ANC services.

The findings of this study correspond with a study done in Ethiopia conducted in Benishangul Gumuz Region indicated that the Amhara women were 3.5 times higher to receive ANC services from skilled health personnel than the Oromo women. On the other hand, the results revealed that the Gumuz women were less likely to receive the service from skilled health personnel than those of the Oromo women (Tiruaynet & Muchie, 2019). In Ghana, certain ethnic groups perform ritual before the pregnancy is revealed if this is delayed then the women will not be able to utilize ANC services (Ziblim et al., 2018).

5.3.2. Obstetric factors

Obstetric factors being current or previous may affect utilization of ANC among pregnant women. The number of pregnancy (gravidity) and parity is considered to be a factor that might affect utilization of antenatal care services (Ali et al., 2016). In the current study the finding shows that women who participated in the study had either 1-2 pregnancy or 1-2 births. Among the participants women who had 3-4 pregnancy 77.8% or had a parity of 3-4, 74.8% utilizes ANC higher than women who had 1-2 pregnancy. Though, the study findings show that non-utilization of antenatal care services was among multiparous women 44.4% because they delivered many times and knowing the previous experience they might feel less important to utilize ANC. A study conducted in rural Tanzania found out that parity is a determinant to antenatal care utilization. Results show that primigravida were utilizing ANC more compared to multiparous (Ndao-Brumblay , Mbaruku & Kruk , 2013).

Risk factors such as previous miscarriages, previous still births, previous caesarean section and certain medical condition are known to have an effect on utilization of ANC (Ministry of Health and Social Services, 2016). In the context, of this study the results display that women who had history of three or more still- birth utilized ANC 76.5% compared to women with a smaller number of still-birth 62.9%. The recent study findings might indicate that women with less risk factor or had no risk factors felt that they were healthy and there was no need to utilize ANC. Nevertheless, women with previous bad obstetric history were mostly determined to utilize ANC because they wanted to prevent complications, promote health and monitor their pregnancy.

This study outcomes concurs with the study findings in Ethiopia, a study conducted on utilization of antenatal care during the covid-19 pandemic, showed a statistically significant association between history of still-births and antenatal care service utilization. Mothers who had experienced still-births before were more likely to fully utilize ANC service than mothers who had not encountered still-birth before (Tadesse, 2020). Therefore women who had previous caesarean section 87.5% in this study tended to utilize antenatal care services often compared to women who had normal delivery 70.8%).

5.3.3. Factors that prevent women to utilize antenatal care services

The study had 91 participants who did not utilize ANC services. The participants indicated different factors that prevented them from utilizing the services. The study highlighted that 20.9% of participants were not utilizing ANC because of long distances to and from the health facilities and 13.2% of participants indicated a lack of transport money is one of the reason that prevent them from utilizing antenatal care services. This could be that there was no money available to pay for taxi fees to and from the antenatal health care facility and some participants stay at the farms far from the antenatal health care facilities.

These findings are the same with the study done in Malawi, were pregnant women are reported of not to utilizing ANC because they don't have money to pay for the services and transport (Sealy & Roberts, 2017). Yet, in Zimbabwe, pregnant women who are not financially independent were finding it difficult to pay for transport and services due to high costs (Nyathi et al., 2017). Some pregnant women needed accompany by family members therefore these would double the cost and they cannot afford.

This study also found that 9.9% of the participants did not utilize ANC services because of the negative attitude of health care workers. Participants indicated that they were afraid to be schooled by the health care providers. In Malawi, Bwalya et al., (2018), revealed that pregnant adolescents said that health workers who are older tend to disrespect them and they end up feeling ashamed and stigmatized. This is similar to the study done in Zimbabwe, where pregnant women reported midwives as hostile and have abusive behaviour (Nyathi et al., 2017). Moreover, In Nigeria, unprofessional conduct by healthcare workers such as lack of respect for the privacy, confidentiality, and traditional beliefs of patients made up 27.5% of the reasons why pregnant women did not attend ANC services (Fagbamigbe & Idemudia, 2015).

Issues related to pregnancy are also known to be one of the factors that prevent women to utilize antenatal care services. The present study revealed that 30.8% of participants did not utilize ANC services owing that ANC is not important and there are too many follow-ups, 13.2% were not aware if they were pregnant until time to deliver whereby they were not aware of the gestational age thus they thought there was still enough time to start ANC and 7.7% of participants said that they were afraid to be tested for HIV. The above results are corresponding to the study findings in South Africa, where some pregnancy is kept secret until it starts showing. Some women keep the secret until they deliver (Sibiya et al., 2018). Same findings were found in Kwa-Zulu Natal

and Mpumalanga that pregnant women fear that healthcare workers will not keep their HIV status confidential, they perceive HIV testing to be mandatory and fear that if they refuse to be tested, they will be denied access to ANC services (Drigo, Luvhengo, Lebese & Makhado., 2020).

The study revealed that Covid-19 regulations hinder 5.5% of participants to utilize ANC services due to the national lockdown. The Covid -19 restrictions like avoiding unnecessary movements, taking fewer numbers of pregnant women at antenatal care services to avoid overcrowding, fear of being infected by the virus might be the reasons of non-utilizers. In Nepal Covid -19 nationwide lockdown was found to be one of the factors that contribute to the decline in antenatal care utilization (Budhathoki, Adhikari & Ramtel., 2020). The study investigated factors that prevent pregnant women from utilizing ANC services. Factors such as long distance to and from health facility, lack of transport money and Covid-19 were identified as perceived barriers that provide negative aspects of pregnant women to engage in health promoting behaviour.

5.3.4. Factors that motivate pregnant women to utilize antenatal care services

Participants revealed numerous factors that motivate them to utilize antenatal care services such as , ANC is important, health education, to know HIV status and may more. About, 27.5% of participants indicated that they utilize ANC because it's important for their health and that of the unborn baby. Some mothers said they get motivated to utilize ANC services because of risk factors, to prevent complications, to know their HIV status, the importance of health education, knowing the estimated date of delivery of their unborn babies and because of medical conditions. The WHO, (2016) motivates pregnant women to utilize antenatal care services for the similar motives. In Ethiopia, some of the factors that motivated pregnant women to give birth in a health facility include prevention of mother to child HIV transmission service, referral service, women-friendly service, and emergency obstetric services, good interpersonal care from health workers,

and fear and experience of obstetric danger signs and complications (Shiferaw & Modiba, 2020). However in Nigeria, is an opposite because some pregnant women think that the only time to utilize ANC is when you have problem with your current pregnancy.(Eke, Ossai, Eze et al., 2021).

5.3.5. Association of other factors and utilization of antenatal care services

The current study findings show that almost fifty percent 48.1% of mothers had negative attitude toward their pregnancy. Based on the finding this could be that, most women were single and young, most young people pregnancies are unplanned and this will promote negative attitude. In Malawi young pregnant women are also known to have negative attitude toward their pregnancy because the pregnancy is unplanned, they feel like too young to be pregnant and they wish to have miscarriage so that they will get rid of the pregnancy(Sealy & Roberts, 2017). The study also discovers that 82.5% of women with positive attitude utilize ANC more than women with negative attitude toward their pregnancy. Women with positive attitude are mostly happy and feel exited therefore the possibility to utilize ANC among them is higher.

The level of attitude toward pregnancy was associated with the utilization of antenatal care services with an odd ratio OR: 2.132; and p-value p=0.014. This is similar to the findings of the study that was conducted in Mbombela, Mpumalanga province, South Africa, where they discovered that the ability of pregnant women to identify and accept that they are pregnant is one of the causes of the delay in seeking ANC services (Drigo et al., 2020). Furthermore, the study indicated that more women have a negative attitude toward their pregnancy, especially if the pregnancy is unplanned; they feel they are not prepared to make changes in their lives (Drigo, Luvhego,Lebese &Makhado, 2020). Therefore level of attitude toward pregnancy based on the

health belief model that guided the study serve as a cue of action for a pregnant women on whether to utilise ANC or not.

The current study finds out that most of the respondents have 76.3% of knowledge about ANC, above eighty percent 86.14% of mothers knew how many times should a pregnant women visit ANC and more than half 53.59% were aware when a pregnant women should start ANC. Hence, women with high knowledge level tend to utilize ANC services more likely compared to women with a low knowledge level 35.0%. Opposing study findings women with low level of knowledge have possibility to utilize ANC because they would like to know problems regarding pregnancy other than women with high level of knowledge who might be well informed and lack no information regarding the service being offered at ANC.

However, the present study findings indicate that women with high level of knowledge utilize ANC services in opposite to low level women. The same study done in Pakistan revealed that women with a high level of knowledge utilize ANC because they are mostly aware of their rights and health status in order to seek appropriate health services (Ali et al, 2018). In this current study, knowledge was found to be a strong predator of ANC utilization if knowledge is increased by 1.1 but the results were not statistically significant.

Mode of transport to and from the antenatal health care facility plays a major role in ANC utilization. The study revealed that about 26.4% of women who did not utilize ANC services were using the taxi as the mode of transport to and from antenatal health care facility. In addition, non-utilization was also found among women who were walking to and from antenatal care facilities about 23.4%. Women who are access to private transport utilize antenatal care services at 75.7%. However, the study indicated that there was no association found between mode of

transport and utilization of ANC because the p-value is greater than 0.05, with $p<0.883$. This study reported similar results with the study in Bangladesh on distance, transportation cost, and mode of transport in the utilization of facility-based maternal services where most of the women were using a taxi to access the ANC services (Keya, Rob & Rahman et al., 2014).

The right of a pregnant woman to make right decision regarding pregnancy plays an important role in decision making on whether to utilize ANC or not to utilize. About 53.1% of the mothers who participated in the study were not having right to make decision. The study revealed that women who had right to make decision were found to utilize antenatal care services 75.3% more than women with no right to make decision 24.7%.Women who have no right to make decision might suffer from gender based violence thus they cannot decide anything regarding their health (Sumankuuro ,Crockett & Wang, 2018).

However, regression results indicated that right to make decision is a poor predator of antenatal care utilization. A study done in India, a study revealed that utilization of maternal healthcare services was higher among the women having a high level of decision-making autonomy compared to those who had a low autonomy in the household. The regression results indicate that women's autonomy was significantly associated with increased odds of maternal healthcare services (Mondal, Karmakar & Banerjee., 2020). This is in contrast with the results of the current study.

The quality of the antenatal care provided plays an important role in the outcomes of the pregnancy. This study found that, 72.8% of pregnant women were satisfied with quality and services being provided at ANC. Good quality ANC services promote behaviour of utilization among pregnant women. This is in relation with the past study conducted in Namibia and Kenya

on the quality of maternal health care service in 2016, Namibia was reported to be providing good quality compared to Kenya. In both countries, the most commonly cited complaint was the waiting time, where 57.8 % of women in Kenya and 40.1 % of women in Namibia reported that the time they had to wait for their ANC visit was a problem (Diamond-Smith, Sudhinaraset, Montagu., 2016).

Moreover, in Namibia, about 12.6% of the participants were not happy regarding the way the staff treat the clients during the visit at ANC services, as they complained of not getting enough explanation regarding their problem and treatment. Furthermore, 25.0% of women who did not utilize antenatal care services during their pregnancy reported poor quality and services satisfaction. However, there was no association found between quality of services and service satisfaction, therefore not a determinates for ANC utilisation.

5.4 Summary

The chapter discussed the study findings along with the literatures. The chapter also discussed the factors that prevent and motivate women to utilize antenatal care services. Moreover the association between level of knowledge, level of right to make right decision, mode of transport and level of attitude toward pregnancy were also discussed. The level of attitude toward pregnancy was associated with the utilization of antenatal care services with an odd ratio OR: 2.132; and p-value p=0.014.

CHAPTER 6

CONCLUSION, RECOMMENDATIONS AND LIMITATIONS

6.1 Introduction

This chapter discuss conclude the study in line with the objectives, it further provide the recommendations and the limitation of the study.

6.2. Conclusion of the study

The aim of this study was to investigate the factors affecting the utilisation of antenatal health care services at Intermediate Katutura and Windhoek Central Hospitals, Khomas Region. In conclusion, the results pointed out that the factors that are associated with the utilisation of ANC services at the two hospitals in the Windhoek district. The study used Chi-square, fisher's exact test and binary logistic regression to investigate the socio-demographic factors affecting the utilization of ANC care services. The study answered the objectives of the study which are:

6.2.1. Investigate the factors affecting the utilisation of ANC services.

The study respondent to the main objective that, socio-demographics factor influences pregnant women to utilize ANC care service. The study found out that woman aged 36-40 years and 41 years above utilised ANC care services more than other age groups. However, study indicated that women who are below 20 years and 31-35 years have high percentage of non-utilization of ANC. Moreover, women who were married utilised ANC more compared to unmarried women.

Education influences women to utilize ANC because the study results show that women who were educated or their partners were educated utilizes antenatal care services more compared to other who had low or no education. Once more, the study revealed that ethnic group influences

the choice of utilization. The negative attitude of health providers, long distance to and from ANC health care facilities, fear of HIV test and results, Covid-19 regulations, inability to determine the pregnancy at the earlier stages financial constraints are among the drawbacks that prevent pregnant women from utilizing antenatal care services.

Factors such as, ensuring that the health of the mother and unborn baby is protected, monitoring the growth of the unborn baby, the importance of health education, prevention of complications. In addition, receiving medication, knowing the estimated date of delivery and having a certain medical conditions were some of the reasons that motivate pregnant women to utilised ANC services.

6.2.2. Investigate the association of the factors affecting utilisation of antenatal care services among the mothers admitted in the postnatal wards at the selected hospitals.

It is revealed that there was no association between socio-demographic factors and the utilization of ANC services. There was also no association found between obstetric factors and utilization of ANC. There was an association between attitude toward pregnancy with p=0.014 and utilization of ANC. Women with positive attitudes utilized ANC more likely than women with a negative attitudes. However the right to make decisions and the level of knowledge is a poor predator of antenatal care services utilization.

6.3. Recommendations

The following recommendations were made:

6.3.1. Practice

In order to improve ANC health care provision, the Ministry of Health and Social Services (MoHSS) may improve the provision of health care services by:

- Strengthening outreach programs so that they take services to the people who are living far from ANC facilities.
- Dissemination of information regarding the importance of ANC, who to start ANC, when to start ANC and where should be made through all forms of communication e.g., Radio services, newspaper and social media etc.

6.3.2. Education

The understand of pregnant women on the importance of utilising antenatal care services may be improved by providing health education therefore the study recommend that:

- The health care providers should enforce the health care education at all times during ANC visits to improve pregnant mothers' understanding of the importance of these services and encourage the involvement of partners during the ANC visits.
- Health care workers should be provided with in-service training on respectful maternity care.
- Community health extension care workers should be provided with an educational programme to educate all members of the community on the benefits of ANC services and shortcomings associated with non-utilization of ANC.
- MoHSS should provide implement a contextualised WHO guidelines to guide health care workers on the provision of antenatal care services.

6.3.3. Research

In order to understand the utilization of antenatal care services more studies may be conducted therefore its recommend to:

- A further intensified study needs to be carried out on the side of health providers regarding ANC utilization.
- Qualitative research utilizing interviews maybe conducted for the in-depth feedback from participants.
- MoHSS may come up with a research committee to conduct research in the field of health science.
- Finally, a country wide study maybe conducted to reflect the true picture of the whole of Namibia.

6.4. Limitations of the study

The study was limited to the two hospitals in Windhoek and the study targeted 347 participants but only collected data from 320 participants. The participants did not answer all the questions in the questionnaires. Bias might have been introduced by respondents on questions on women's attitude towards their current pregnancy (if the pregnancy was planned and if they were happy when they discovered that they were pregnant), knowledge and right to make decision. Some might have given answers to impress the researcher rather than telling the truth.

During the analysis of data, the study ends up using Fisher's exact test where there was a cell less than five. To associate factors affecting utilization, the researcher used a few older sources of reference as they gave clearer explanations on certain concepts where recent sources could not be found.

Participants attitude level, level of right to make decision, knowledge level was rated using researchers self-rating this might introduced self-desirability bias. Based on the study limitation the study findings cannot be generalized to the entire population of the country.

REFERENCES

Abraham, C., & Sheeran, P. (2014). The health belief model. *Cambridge Handbook of Psychology, Health and Medicine, Second Edition, June 2015*, 97–102. https://doi.org/10.1017/CBO9780511543579.022

Akowuah, J. A., Agyei-Baffour, P., & Awunyo-Vitor, D. (2018). Determinants of antenatal healthcare utilisation by pregnant women in third trimester in peri-urban Ghana. *Journal of Tropical Medicine*, *2018*(2000). https://doi.org/10.1155/2018/1673517

Ali, S. A., Dero, A. A., Ali, S. A., & Ali, G. B. (2016). Factors Affecting the Utilization of Antenatal Care among Pregnant Women in Moba Lga of Ekiti State, Nigeria. *International Journal of Traditional and Complementary Medicine*, *2*(2), 41–45. https://doi.org/10.28933/sina-ijtcm-2016

Alkema, L., Chou, D., Hogan, D., Zhang, S., Moller, A. B., Gemmill, A., Fat, D. M., Boerma, T., Temmerman, M., Mathers, C., & Say, L. (2016). Global, regional, and national levels and trends in maternal mortality between 1990 and 2015, with scenario-based projections to 2030: A systematic analysis by the un Maternal Mortality Estimation Inter-Agency Group. *The Lancet*, *387*(10017), 462–474. https://doi.org/10.1016/S0140-6736(15)00838-7

Asim, M., Malik, N., Siddiqui, S., Nawaz, W., & Ali, F. (2017). Antenatal Health Care; a Literature Review of Antenatal and Postnatal Health Care Utilization in Pakistan. *The Professional Medical Journal*, *24*(04), 495–499. https://doi.org/10.17957/tpmj/17.3803

Aziz Ali, S., Ahmed Dero, A., Aziz Ali, S., & Bano Ali, G. (2018). Factors affecting the utilization of antenatal care among pregnant women: A literature review. *Journal of Pregnancy and Neonatal Medicine*, *02*(02), 41–45. https://doi.org/10.35841/neonatal-medicine.2.2.41-45

Beeckman, K., Louckx, F., Downe, S., & Putman, K. (2013). The relationship between antenatal care and preterm birth: The importance of content of care. *European Journal of Public Health*, *23*(3), 366–371. https://doi.org/10.1093/eurpub/cks123

Boerleider, A. W., Wiegers, T. A., Manniën, J., Francke, A. L., & Devillé, W. L. J. M. (2013). Factors affecting the use of prenatal care by non-western women in industrialized western countries: A systematic review. *BMC Pregnancy and Childbirth*, *13*. https://doi.org/10.1186/1471-2393-13-81

Brink, H., van der Walt, C., & van Rensburg, G. (2018). *Fundamentals of research methodology for healthcare professionals* (Hilla Brink, C. van der Walt, & G. van Rensburg (eds.); 4th ed.). Juta and Company (Pty) Ltd.

Budhathoki, S., Adhikari, D. B., & Ramtel, D. R. (2020). Maternal health care services utilization amidst Covid-19 lockdown: retrospective study. *International Multispecialty Journal of Health (IMJH)*, *6*(9), 1–9. https://zenodo.org/record/4059165

Bwalya, B. C., Sitali, D., Baboo, K. S., & Zulu, J. M. (2018). Experiences of antenatal care among pregnant adolescents at Kanyama and Matero clinics in Lusaka district, Zambia. *Reproductive Health*, *15*(1), 1–8. https://doi.org/10.1186/s12978-018-0565-9

Carrasquillo O. (2013). *encyclopedia of behavioural medicine* (2013 editi). Springer, New York, NY. https://doi.org/DOI: https://doi.org/10.1007/978-1-4419-1005-9_885

Chaurasiya, S. P., Pravana, N. K., Khanal, V., & Giri, D. (2019). Factors Affecting Antenatal Care Utilization Among the Disadvantaged Dalit Population of Nepal: A Cross- sectional Study. *The Open Public Health Journal*, *12*(1), 155–163. https://doi.org/10.2174/1874944501912010155

Chimatiro, C. S., Hajison, P., Chipeta, E., & Muula, A. S. (2018). Understanding barriers preventing pregnant women from starting antenatal clinic in the first trimester of

pregnancy in Ntcheu District-Malawi. *Reproductive Health*, *15*(1), 1–7. https://doi.org/10.1186/s12978-018-0605-5

Chol, C., Hunter, C., Debru, B., Haile, B., Negin, J., & Cumming, R. G. (2018). Stakeholders' perspectives on facilitators of and barriers to the utilisation of and access to maternal health services in Eritrea: A qualitative study. *BMC Pregnancy and Childbirth*, *18*(1), 1–12. https://doi.org/10.1186/s12884-018-1665-9

Creswell, W. J., & Creswell, J. D. (2018). Research Design: Qualitative, Quantitative adn Mixed Methods Approaches. In *Journal of Chemical Information and Modeling* (Vol. 53, Issue 9). file:///C:/Users/Harrison/Downloads/John W. Creswell & J. David Creswell - Research Design_ Qualitative, Quantitative, and Mixed Methods Approaches (2018).pdf%0Afile:///C:/Users/Harrison/AppData/Local/Mendeley Ltd./Mendeley Desktop/Downloaded/Creswell, Cr

Dahiru, T., & Oche, O. M. (2015). Determinants of antenatal care, institutional delivery and postnatal care services utilization in Nigeria. *Pan African Medical Journal*, *21*, 1–17. https://doi.org/10.11604/pamj.2015.21.321.6527

Deo, K. K., Paudel, Y. R., Khatri, R. B., Bhaskar, R. K., Paudel, R., Mehata, S., & Wagle, R. R. (2015). Barriers to Utilization of Antenatal Care Services in Eastern Nepal. *Frontiers in Public Health*, *3*(August), 1–7. https://doi.org/10.3389/fpubh.2015.00197

Diamond-Smith, N., Sudhinaraset, M., & Montagu, D. (2016). Clinical and perceived quality of care for maternal, neonatal and antenatal care in Kenya and Namibia: The service provision assessment. *Reproductive Health*, *13*(1), 1–13. https://doi.org/10.1186/s12978-016-0208-y

Drigo, L., Luvhengo, M., Lebese, R. T., & Makhado, L. (2020). Attitudes of Pregnant Women Towards Antenatal Care Services Provided in Primary Health Care Facilities of

Mbombela Municipality, Mpumalanga Province, South Africa. *The Open Public Health Journal*, *13*(1), 569–575. https://doi.org/10.2174/1874944502013010569

Drost, A. E. (2015). Validity and Reliability in Social Science Research. *Education Research and Perspectives*, *38*(1), 105–123.

Dulla, D., Daka, D., & Wakgari, N. (2017a). Antenatal Care Utilization and Its Associated Factors among Pregnant Women in Boricha District, Southern Ethiopia. *Diversity & Equality in Health and Care*, *14*(2), 76–84. https://doi.org/10.21767/2049-5471.100096

Dulla, D., Daka, D., & Wakgari, N. (2017b). Antenatal Care Utilization and Its Associated Factors among Pregnant Women in Boricha District, Southern Ethiopia. *Diversity & Equality in Health and Care*, *14*(2). https://doi.org/10.21767/2049-5471.100096

Ebonwu, J., Mumbauer, A., Uys, M., Wainberg, M. L., & Medina-Marino, A. (2018). Determinants of late antenatal care presentation in rural and peri-urban communities in South Africa: A cross-sectional study. *PLoS ONE*, *13*(3), 1–16. https://doi.org/10.1371/journal.pone.0191903

Efendi, F., Chen, C. M., Kurniati, A., & Berliana, S. M. (2017). Determinants of utilization of antenatal care services among adolescent girls and young women in Indonesia. *Women and Health*, *57*(5), 614–629. https://doi.org/10.1080/03630242.2016.1181136

Eke, P. C., Ossai, E. N., Eze, I. I., & Ogbonnaya, L. U. (2021). Exploring providers' perceived barriers to utilization of antenatal and delivery services in urban and rural communities of Ebonyi state, Nigeria: A qualitative study. *PLoS ONE*, *16*(5 May), 1–18. https://doi.org/10.1371/journal.pone.0252024

Fagbamigbe, A. F., & Idemudia, E. S. (2015). Assessment of quality of antenatal care services in Nigeria: Evidence from a population-based survey. *Reproductive Health*, *12*(1), 1–9. https://doi.org/10.1186/s12978-015-0081-0

Fagbamigbe, A. F., & Idemudia, E. S. (2017). Wealth and antenatal care utilization in Nigeria: Policy implications. *Health Care for Women International*, *38*(1), 17–37. https://doi.org/10.1080/07399332.2016.1225743

Feijen-De Jong, E. I., Jansen, D. E., Baarveld, F., Van Der Schans, C. P., Schellevis, F. G., & Reijneveld, S. A. (2012). Determinants of late and/or inadequate use of prenatal healthcare in high-income countries: A systematic review. *European Journal of Public Health*, *22*(6), 904–913. https://doi.org/10.1093/eurpub/ckr164

Gebremeskel, F., Dibaba, Y., & Admassu, B. (2015). Timing of First Antenatal Care Attendance and Associated Factors among Pregnant Women in Arba Minch Town and Arba Minch District, Gamo Gofa Zone, South Ethiopia. *Journal of Environmental and Public Health*, *2015*. https://doi.org/10.1155/2015/971506

Geta, M. B., & Yallew, W. W. (2017). Early Initiation of Antenatal Care and Factors Associated with Early Antenatal Care Initiation at Health Facilities in Southern Ethiopia. *Advances in Public Health*, *2017*, 1–6. https://doi.org/10.1155/2017/1624245

Gumede, S., Black, V., Naidoo, N., & Chersich, M. F. (2017). Attendance at antenatal clinics in inner-city Johannesburg, South Africa and its associations with birth outcomes: Analysis of data from birth registers at three facilities. *BMC Public Health*, *17*(Suppl 3). https://doi.org/10.1186/s12889-017-4347-z

Heaman, M. I., Moffatt, M., Elliott, L., Sword, W., Helewa, M. E., Morris, H., Gregory, P., Tjaden, L., & Cook, C. (2014). *Heaman-2014-Barriers, motivat.pdf*. 1–16.

Hilla Brink, C. vander W. & gisela van R. (2018). *No Title Fundamentals of research methodology for healthcare professionals* (J. Singh (ed.); Fourth). Juta and Company.

Intermediate Hospital Katutura annual report. (2017).

Jones, C. L., Jensen, J. D., Scherr, C. L., Brown, N. R., Christy, K., & Weaver, J. (2015). The

Health Belief Model as an Explanatory Framework in Communication Research: Exploring Parallel, Serial, and Moderated Mediation. In *Health Communication* (Vol. 30, Issue 6, pp. 566–576). https://doi.org/10.1080/10410236.2013.873363

Kawungezi, P. C., Akiibua, D., Aleni, C., Chitayi, M., Kazibwe, A., Sunya, E., Mumbere, E. W., Mutesi, C., Kasangaki, A., & Nakubulwa, S. (2015). Multi-Center Study in Upcountry Areas of Uganda. *Open J Prev Med.*, *5*(3), 132–142. https://doi.org/10.4236/ojpm.2015.53016.Attendance

Keya, K. T., Rob, U., Rahman, M. M., Bajracharya, A., & Bellows, B. (2014). Distance, transportation cost, and mode of transport in the utilization of facility-based maternity services: Evidence from rural Bangladesh. *International Quarterly of Community Health Education*, *35*(1), 37–51. https://doi.org/10.2190/IQ.35.1.d

Khanal, V., da Cruz, J. L. N. B., Mishra, S. R., Karkee, R., & Lee, A. H. (2015). Under-utilization of antenatal care services in Timor-Leste: Results from Demographic and Health Survey 2009-2010. *BMC Pregnancy and Childbirth*, *15*(1), 1–7. https://doi.org/10.1186/s12884-015-0646-5

M Whitworth,R Cockerill, H. L. (n.d.). *Antenatal management of teenage pregnancy - ScienceDirect*. https://www.sciencedirect.com/science/article/abs/pii/S1751721416302445

Ministry of Health and Social Services. (2016). *Joint review of maternal,newborn,Child and adolescent health and nutrtition programmers in Namibia.*

Ministry of Health and Social Services (MoHSS) and ICF International. (2014). *The Demographic and health Survey ,2013*. Ministry of Health and Social Services and Namibia Statistic Agency.

MoHSS. (2018). *Every newborn action plan: A plan to end preventable newborn deaths in namibia.*

Mondal, D., Karmakar, S., & Banerjee, A. (2020). Women's autonomy and utilization of maternal healthcare in India: Evidence from a recent national survey. *PLoS ONE*, *15*(12 December), 1–12. https://doi.org/10.1371/journal.pone.0243553

Mugo, N. S., Dibley, M. J., & Agho, K. E. (2015). Prevalence and risk factors for non-use of antenatal care visits: Analysis of the 2010 South Sudan household survey. *BMC Pregnancy and Childbirth*, *15*(1), 1–13. https://doi.org/10.1186/s12884-015-0491-6

Nda Jibril, U. (2017). Awareness and Use of Antenatal Care Services among Women in Edu LGA, Kwara State, Nigeria. *Journal of Community & Public Health Nursing*, *03*(03), 3–6. https://doi.org/10.4172/2471-9846.1000184

Ndao-Brumblay, S. K., Mbaruku, G., & Kruk, M. E. (2013). Parity and institutional delivery in rural Tanzania: A multilevel analysis and policy implications. *Health Policy and Planning*, *28*(6), 647–657. https://doi.org/10.1093/heapol/czs104

Nketiah-Amponsah, E., Senadza, B., & Arthur, E. (2013). Determinants of utilization of antenatal care services in developing countries: Recent evidence from Ghana. *African Journal of Economic and Management Studies*, *4*(1), 58–73. https://doi.org/10.1108/20400701311303159

Nyathi, L., Tugli, A. K., Tshitangano, T. G., & Mpofu, M. (2017). Investigating the accessibility factors that influence antenatal care services utilisation in Mangwe district, Zimbabwe. *African Journal of Primary Health Care and Family Medicine*, *9*(1), 3–7. https://doi.org/10.4102/phcfm.v9i1.1337

Okedo-Alex, I. N., Akamike, I. C., Ezeanosike, O. B., & Uneke, C. J. (2019). Determinants of antenatal care utilisation in sub-Saharan Africa: A systematic review. *BMJ Open*, *9*(10), 1–14. https://doi.org/10.1136/bmjopen-2019-031890

Olaitan, T., Okafor, I. P., Onajole, A. T., & Abosede, O. A. (2017). Ending preventable

maternal and child deaths in western Nigeria: Do women utilize the life lines? *PLoS ONE*, *12*(5), 1–18. https://doi.org/10.1371/journal.pone.0176195

Olayinka, A., Joel, A., & Bukola, D. (2012). Factors influencing utilization of antenatal care services among pregnant women in Ife Central Lga , Osun State Nigeria National Hospital Abuja , Nigeria. *Advances in Applied Science Research*, *3*(3), 1309–1315.

Osorio, A. M., Tovar, L. M., & Rathmann, K. (2014). Factores a nivel individual y comunitario y el uso de controles prenatales en Colombia: Un análisis multinivel. *Cadernos de Saude Publica*, *30*(5), 1079–1092. https://doi.org/10.1590/0102-311X00073513

Pearce, N. (2011). O4-2.5 Discussion: complexity, simplicity and epidemiology. *Journal of Epidemiology & Community Health*, *65*(Suppl 1), A42–A42. https://doi.org/10.1136/jech.2011.142976b.18

Polit, D. F., & Beck, C. T. (2018). *Essentials of nursing research: Appraising evidence for nursing practice* (9th ed.). Wolters Kluwer. https://lccn.loc.gov/2016043994

R., N., Siddalingappa, H., & Mishra, B. (2016). Assessment of utilization of antenatal care services by mothers attending immunization sessions at a primary health centre in Mysore district, Karnataka, India. *International Journal of Community Medicine and Public Health*, *3*(9), 2561–2565. https://doi.org/10.18203/2394-6040.ijcmph20163072

Rosenstock, I. M. (1974). Historical origins of the health belief model. Health Education Monographs. *Health Education Monographs*, *2*(4), 328–335. https://doi.org/http://dx.doi.org/10.1177/109019817400200403

Roy, M., Mohan, U., Singh, S., Singh, V., & Srivastava, A. (2013). Determinants of utilization of antenatal care services in rural Lucknow, India. In *Journal of Family Medicine and Primary Care* (Vol. 2, Issue 1, p. 55). https://doi.org/10.4103/2249-4863.109946

Rurangirwa, A. A., Mogren, I., Nyirazinyoye, L., Ntaganira, J., & Krantz, G. (2017).

Determinants of poor utilization of antenatal care services among recently delivered women in Rwanda; a population based study. *BMC Pregnancy and Childbirth*, *17*(1), 1–10. https://doi.org/10.1186/s12884-017-1328-2

Sealy, D., & Roberts, J. (2017). Factors associated with delayed antenatal care attendance in Malawi: results from a qualitative study. *Medical Journal of Zambia*, *44*(1), 17–25. https://doi.org/10.4314/mjz.v44i1

Sealy, D., Roberts, J., & L, T.-M. (2017). Factors associated with delayed antenatal care attendance in Malawi: results from a qualitative study. *Medical Journal of Zambia*, *44*(1), 17–25. https://doi.org/10.4314/mjz.v44i1

Sellers, P. M. (2018). *Sellers Midwifery* (Dippenaar.Joan & da S. Dicky (Eds.); 3rd ed.). Juta and Company (Pty) Ltd.

Shiferaw, B. B., & Modiba, L. M. (2020). Women's Perspectives on Influencers to the Utilisation of Skilled Delivery Care: An Explorative Qualitative Study in North West Ethiopia. *Obstetrics and Gynecology International*, *2020*. https://doi.org/10.1155/2020/8207415

Sibiya, M. N., Ngxongo, T. S. P., & Bhengu, T. J. (2018). Access and utilisation of antenatal care services in a rural community of eThekwini district in KwaZulu-Natal. *International Journal of Africa Nursing Sciences*, *8*(January), 1–7. https://doi.org/10.1016/j.ijans.2018.01.002

Stephen Mulinge, N. (2017). Factors Influencing Utilization of Antenatal Care Services Among Teenage Mothers in Malindi Sub-County Kenya-A Cross Sectional Study. *Science Journal of Public Health*, *5*(2), 61. https://doi.org/10.11648/j.sjph.20170502.12

Sumankuuro, J., Crockett, J., & Wang, S. (2018). Sociocultural barriers to maternity services delivery: a qualitative meta-synthesis of the literature. *Public Health*, *157*, 77–85.

https://doi.org/10.1016/j.puhe.2018.01.014

Tadesse, E. (2020). Antenatal care service utilization of pregnant women attending antenatal care in public hospitals during the COVID-19 pandemic period. *International Journal of Women's Health*, *12*, 1181–1188. https://doi.org/10.2147/IJWH.S287534

Tekelab, T., Chojenta, C., Smith, R., & Loxton, D. (2019). Factors affecting utilization of antenatal care in Ethiopia: A systematic review and metaanalysis. *PLoS ONE*, *14*(4), 1–24. https://doi.org/10.1371/journal.pone.0214848

Tey, N. P., & Lai, S. L. (2013). Correlates of and barriers to the utilization of health services for delivery in South Asia and Sub-Saharan Africa. *The Scientific World Journal*, *2013*. https://doi.org/10.1155/2013/423403

Tiruaynet, K., & Muchie, K. F. (2019). Determinants of utilization of antenatal care services in Benishangul Gumuz Region, Western Ethiopia: A study based on demographic and health survey. *BMC Pregnancy and Childbirth*, *19*(1), 1–5. https://doi.org/10.1186/s12884-019-2259-x

Tolefac, P. N., Halle-Ekane, G. E., Agbor, V. N., Sama, C. B., Ngwasiri, C., & Tebeu, P. M. (2017). Why do pregnant women present late for their first antenatal care consultation in Cameroon? *Maternal Health, Neonatology and Perinatology*, *3*(1), 1–6. https://doi.org/10.1186/s40748-017-0067-8

Tran, T. K., Gottvall, K., Nguyen, H. D., Ascher, H., & Petzold, M. (2012). Factors associated with antenatal care adequacy in rural and urban contexts-results from two health and demographic surveillance sites in Vietnam. *BMC Health Services Research*, *12*(1), 40. https://doi.org/10.1186/1472-6963-12-40

Tripathi, V., & Singh, R. (2015). Ecological and socio-demographic differences in maternal care services in Nepal. *PeerJ*, *2015*(9). https://doi.org/10.7717/peerj.1215

Tripathi, V., & Singh, R. (2017). Regional differences in usage of antenatal care and safe delivery services in Indonesia: Findings from a nationally representative survey. *BMJ Open*, *7*(2). https://doi.org/10.1136/bmjopen-2016-013408

Tsegaye, B., Amare, B., & Reda, M. (2021). Prevalence and factors associated with immediate postnatal care utilization in ethiopia: Analysis of Ethiopian demographic health survey 2016. *International Journal of Women's Health*, *13*, 257–266. https://doi.org/10.2147/IJWH.S294058

United Nation International Children's Emergency Fund (UNICEF). (2016). *Antenatal care*. https://data.unicef.org/topic/maternal-health/antenatal-care/

Vanden Broeck, J., Broeck, J.V., Feijen-deJong, E., Klomp, T., Putman, K. & Beeckman, K.(2016).Antenatal care use in urban areas in two European countries: Predisposing, enabling and pregnancy-related determinants in B. and the N. B. H. S. ; https://doi. org/10. 1186/s1291.-016-1478-3 T., Putman, K., & Beeckman, K. (2016). Antenatal care use in urban areas in two European countries: Predisposing, enabling and pregnancy-related determinants in Belgium and the Netherlands. *BMC Health Services Research*, *16*(1), 1–11. https://doi.org/10.1186/s12913-016-1478-3

Wilunda, C., Scanagatta, C., Putoto, G., Montalbetti, F., Segafredo, G., Takahashi, R., Mizerero, S. A., & Betrán, A. P. (2017). Barriers to utilisation of antenatal care services in South Sudan: a qualitative study in Rumbek North County. *Reproductive Health*, *14*(1), 1–10. https://doi.org/10.1186/s12978-017-0327-0

World Health Organisation (WHO). (2016). *WHO recommendation on antenatal care for a postive pregnancy experience*. Green ink.

Yaya, S., & Ghose, B. (2019). Global Inequality in Maternal Health Care Service Utilization: Implications for Sustainable Development Goals. *Health Equity*, *3*(1), 145–154.

https://doi.org/10.1089/heq.2018.0082

Zhao, Q., Huang, Z. J., Yang, S., Pan, J., Smith, B., & Xu, B. (2012). The utilization of antenatal care among rural-to-urban migrant women in Shanghai: A hospital-based cross-sectional study. *BMC Public Health*, *12*(1), 1. https://doi.org/10.1186/1471-2458-12-1012

Ziblim, S.-D., Yidana, A., & Mohammed, A.-R. (2018). Determinants of Antenatal Care Utilization among Adolescent Mothers in the Yendi Municipality of Northern Region, Ghana. *Ghana Journal of Geography*, *10*(1), 78–97. https://dx.doi.org/10.4314/gjg.v10i1.5

Appendix A: Questionnaire

Questionnaire Number | |

AN INVESTIGATION OF THE FACTORS AFFECTING UTILIZATION OF ANTENATAL CARE IN INTERMEDIATE HOSPITAL KATUTURA AND WINDHOEK CENTRAL HOSPITAL, KHOMAS REGION

SECTION A: SOCIO-DEMOGRAPHIC CHARACTERISTICS

1.1 Age (*at last birthday*) | |

1.2. Marital Status	Single	1		Divorced	3		
	Married	2		Windowed	4		
1.3. Mother education level	No education	1		Secondary	3		
	Primary (*grade 1-7*)	2		Tertiary and above	4		
1.4 Partners highest education	No education	1		Secondary (*grade 8-12*)	3		
	Primary (*grade 1-7*)	2		Tertiary and above (*e.g., University, VTC, Colleges)*	4		
1.5 Employment status	Unemployed	1		Self employed	3		
	Employed	2		Learner or student	4		

1.6. Occupation (*if the answer in 1.5 is employed E.g., Cleaner Etc.)*.....

1.7 Religion	Christian	1		Muslim	2		
	Others (Specify)_____						
1.8 Where do you leave/ stay? _____							
1.9 Ethnic group	Vambo	1		Kavango	4		
	Nama/Damara	2		Caprivian	5		
	Herero	3		Others specify: _____			

2. Obstetric history	2.1. How many times did you fall pregnant?		
	2.2. Indicate the number of live births		

			2.3. Number of Miscarriages				
2.1 Mode of delivery at current pregnancy	Normal delivery	1	Instrumental assistant delivery	2	Caesarean section (C/S)	3	
2.2 sources of information about Antenatal care services	Midwife	1	Radio	2	Traditional birth attendants		
	relatives	3	Others specify: _____				
2.4 Number of still birth *(number of pregnancy babies delivered not alive)*					None	1	
					1 – 2 births	2	
					3 or more births	3	
2.5 Medical History	Diabetic	1			High Blood Pressure	4	
	Epilepsy	2			Cancer	5	
	Heart Disease	3			Joint Problem *(arthritis)*	6	
	Others specify: _____						

SECTION B: FACTORS AFFECTING UTILIZATION OF ANTENATAL CARE SERVICES

3.1 Did you attend antenatal care during this pregnancy	Yes	1	
	No	2	
3.2 Number of ANC visits (*Skip if "**NO**" in 3.1)*			

3.3 What are the factors that motivates you to use ANC services (Answer if "**YES**" in 3.1)

_____

_____

_____

3.4 What are the reasons that prevented you from utilizing ANC services

_____

_____

_____

SECTION C: INFORMATION ON ATTITUDE TOWARDS PREGNANCY

Express your agreement or disagreement with the statements given below

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
4.1. Right before I became pregnant with this current pregnancy, I wanted to have another baby.					
4.2 When I last became or before I become pregnant, I wanted a baby sometime in future.					
4.3 During my pregnancy, my family members were happy to know about my pregnancy					
4.4 I was scared to visit a health facility for ANC, during pregnancy					

SECTION D: KNOWLEGDE ABOUT ANTENATAL CARE SERVICES						
5 .1 How many visits should a pregnant woman make to the Antenatal Care Services during the entire period of pregnancy?	Never	1				
	Only 1 time	2				
	2 times	3				
	3 times or more	4				
5.2 In your view when should pregnant a woman starts Antenatal Care Services?	(0-3 months)	1				
	(4 -6 months)	2				
	(7-9 months)	3				
	Never	4				

What is your opinion on the following	Yes	No	Don't Know
5.3 Check-up during Pregnancy reduces risk of maternal death			
5.4 Check-up during Pregnancy reduces risk of neonatal death			
5.5 First antenatal examination should be done within the first three months			
5.6 Anaemia should be prevented by eating iron-based food during pregnancy			
5.7 Pregnant woman need to be checked blood pressure often			
5.8 Tetanus injection reduces the risk of both mother and child to get Tetanus disease			
5.9 Women delivered by a traditional birth attendance should not visit the hospital after delivery			

SECTION E: ACCESS TO AND FROM ANTENATAL CARE FACILITY			
6.1 What means of transport do you use when going to Antenatal Care services?	Walking	1	
	Taxi	2	
	Private car	3	
6.2 Indicate the distance from your house to antenatal care facility (in km). e.g., 10km			
6.3 How much do you pay for transport to and from antenatal care health facility? e.g., N$ 12.00			

Right to make decision	Strongly agree	Agree	Neutral	Disagree	Strongly agree
6.4 I must obtain permission from husband / elders in the house before leaving the house to antenatal health services					
6.5 I must be accompanied by an elder person while going out of the house (ANC etc.)					
6.6 I am usually accompanied by a family member when I go to ANC					

SECTION F: QUALITY AND SERVICES SATISFACTION OF ANTENATAL CARE SERVICES
Express your agreement or disagreement with the statements given below

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
6.4 The environment at Antenatal clinic is clean.					
6.5 The toilet at antenatal clinic is clean.					
6.6 The health care workers at ANC clinic are helpful					
Service Provision					
6.7 Pregnant women are waiting too long to be seen by a nurse/doctor at ANC facilities					
6.8 The queues are too long at antenatal care facilities					
6.9 The nurse/doctors spent too much time helping one client (pregnant women) at ANC					
Attitude of health workers					
6.10 The nurse /doctors were professional and treated me with respect.					
6.11 The doctor/nurse explained to me my health state and that of my unborn baby.					
6.12 The doctor /nurse explained to me the prescribed medication and its benefit					

Thank you for your time to participate in the study!!!

Appendix B: Permission letter from MoHSS

REPUBLIC OF NAMIBIA

Ministry of Health and Social Services

Private Bag 13198
Windhoek
Namibia

Ministerial Building
Harvey Street
Windhoek

Tel: 061 - 203 2507
Fax: 061 - 222558
E-mail: itashipu87@gmail.com

OFFICE OF THE EXECUTIVE DIRECTOR

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

Date: 30 July 2020

Ms. Mhingana E. Amungulu
PO Box 3483
Windhoek
Namibia

Dear Ms. Amungulu

Re: An investigation of factors affecting Utilization of Antenatal care services among women in Post-Natal wards in Namibia Hospitals: A case study of Katutura State and Windhoek Central Hospital.

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;

Appendix C: Permission letter to investigate factors affecting utilization of antenatal care services at Windhoek Central Hospital

Private Bag 13215
Windhoek
Namibia

Harvey Street
Windhoek Central Hospital

Tel. No: (061) 203 3024
Fax No: (061) 222886

Enquiries: Ms. A.U.MOOTU Ref. 17/3 / 3 Date: 07 AUGUST 2020

OFFICE OF THE CHIEF MEDICAL SUPERINTENDENT

Ms. Mhingana E. Amungulu
P.o.Box 3483
Windhoek
08132408
Dear Ms. Amungulu

SUBJECT: PERMISSION TO CONDUCT A RESEARCH STUDY OF FACTORS AFFECTING UTILIZATION OF ANTENATAL CARE SERVICES AMONG WOMEN IN POST-NATAL WARDS IN NAMIBIA HOSPITAL: AT WINDHOEK CENTRAL HOSPITAL.

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

2. This letter serves to inform you that permission has been granted for you to do research on the above mentioned subject as you have requested and does not include any remuneration.

3. Patient/Client's information should be kept confidential at all times.

4. Preliminary findings copy to be submitted to Customer care office, Windhoek Central Hospital upon completion of the study.

Thank you.

Yours sincerely,

DR.F.ZAM
ACTING CHIEF MEDICAL SUPERINTENDENT

Appendix D: Ethical clearance certificate from the University of Namibia

UNAM
UNIVERSITY OF NAMIBIA

ETHICAL CLEARANCE CERTIFICATE

Ethical Clearance Reference Number: SON /2/2020 **Date: 23 March**

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

Title of Project: An Investigation Of Factors Affecting Utilization Of Antenatal Care Services Among Women In Post-Natal Wards In Namibian Hospitals: A Case Study Of Katutura State And Windhoek Central Hospital

Researcher: MHINGANA ESTER AMUNGULU

Student Number: 200613511

Supervisors: *Dr E.M.Nghitanwa (Main) Ms C.Mbapaha (Co)*

Faculty: School of Nursing

Take note of the following:

(a) Any significant changes in the conditions or undertakings outlined in the approved Proposal must be communicated to the UREC. An application to make amendments may be necessary.

(b) Any breaches of ethical undertakings or practices that have an impact on ethical conduct of the research must be reported to the UREC.

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

(d) The UREC retains the right to:

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

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

UREC wishes you the best in your research.

Dr. J.E. de Villiers: Chairperson

Ms. P. Claassen: Secretary

Appendix E: Permission letter to inestigate factors affecting utilisation of antenatal care services at Intermediate Hosptal Katutra

Republic of Namibia

Ministry of Health and Social Services

Private Bag 13215 **WINDHOEK** Namibia	Intermediate Hospital Katutura Independence Avenue **WINDHOEK**	Telephone (061) 203 4004/5 Telefax (061) 222706
Enquiries: Dr. F. M. Shiweda		Date: 10 August 2020

OFFICE OF THE CHIEF MEDICAL OFFICER

Ms. Mhingana E. Amungulu
P.O. Box 3483
Windhoek
Namibia

Dear Ms. M. E. Amungulu

RE: **AN INVESTIGATION OF FACTORS AFFECTING UTILIZATION OF ANTENATAL CARE SERVICES AMONG WOMEN IN POST-NATAL WARDS IN NAMIBIA HOSPITALS: A CASE STUDY OF KATUTUTRA STATE AND WINDHOEK CENTRAL HOSPITAL**

The above mentioned subject refers:

This office hereby grants you permission to do an investigation of factors affecting utilization of antenatal care services among women in Post-Natal wards in Namibia at Intermediate Hospital, Windhoek, Khomas Region, MoHSS.

Thank you

Please provide this office with a copy of your findings.

Yours in health,

DR. F. M. SHIWEDA
ACT. MEDICAL SUPERINTENDENT

MINISTRY OF HEALTH AND SOCIAL SERVICES
PRIVATE BAG 13215
WINDHOEK NAMIBIA
12 -08- 2020

Appendix F: Letter of Proofreading and Copyediting

NOHOREKA ACADEMIC CONSULTANCY SERVICES

Diligence, Dedication & Distinction.

29 October 2021

TO WHOM IT MAY CONCERN

REF: COPYEDITING AND PROOFREADING OF MHINGANA ESTER AMUNGULU'S THESIS FOR THE DEGREE OF MASTER OF NURSING SCIENCE.

This letter serves to confirm that I copyedited and proofread **Mhingana Ester Amungulu's** Master's thesis titled: **(AN INVESTIGATION OF FACTORS AFFECTING UTILISATION OF ANTENATALCARE SERVICES AMONG WOMEN IN POST-NATAL WARDS IN NAMIBIAN HOSPITALS: A CASE STUDY OF KATUTURA STATE AND WINDHOEK CENTRAL HOSPITAL).**

I declare that I professionally copyedited and proofread this thesis, and removed mistakes and errors in spelling, grammar, and punctuation. In some cases, I improved sentence construction without changing the content provided by the student. I also removed some typographical errors from the thesis. I also declare that I am a professional copyeditor & proofreader and that I have edited numerous Masters and Doctoral theses here in Namibia, Botswana, Zimbabwe, and South Africa.

It was a pleasure proofreading and copyediting your student's thesis.

Please contact me should you need some clarification.

Yours Sincerely,

DR ARCHFORD MUSODZA
Academic Consultant, Copy Editor & Proofreader
PhD (UNISA), MPhil Arts (UZ), LLM (FELLOW) (UNISA) LLB (UNISA), BA HONS (UZ), DIP IN RS (UZ), DIP IN PS (BGC), DIP IN CE&PR (BLACKFORD CENTRE, UK)
Unit 2, Promenaden Gardens, Erf 7 Promenaden Street, Eros, Windhoek, Namibia
Email: nacs062019@gmail.com Mobile: +264818704864