

**FACTORS AFFECTING THE UPTAKE OF HIV TESTING DURING ANTENATAL CARE
IN ADDIS ABABA, ETHIOPIA**

by

ZELALEM DEMEKE BANJAW (DR)

submitted in accordance with the requirements

for the degree of

MASTER'S IN PUBLIC HEALTH

in the subject

HEALTH STUDIES

at the

UNIVERSITY OF SOUTH AFRICA

SUPERVISOR: PROF JM MATHIBE-NEKE

NOVEMBER 2022

Dedication

**I first thank God for the courage you gave me along the journey.
This achievement is unreservedly dedicated to my beloved wife and children for
being with me and encouraging me all the way.**

DECLARATION

Name: ZELALEM DEMEKE BANJAW (DR)

Student number: 44942281

Degree: MASTER'S IN PUBLIC HEALTH (MPH)

I declare that FACTORS AFFECTING THE UPTAKE OF HIV TESTING DURING ANTENATAL CARE IN ADDIS ABABA, ETHIOPIA is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

I further declare that I submitted the dissertation to originality-checking software and that it falls within the accepted requirements for originality.

I further declare that I have not previously submitted this work, or part of it, for examination at Unisa for another qualification or at any other higher education institution.

A handwritten signature in black ink on a light-colored background. The signature is stylized, starting with a large loop on the left, followed by a vertical line that curves to the right and then back down.

14/11/2022

SIGNATURE

DATE

Zelalem Demeke Banjaw (Dr)

Acknowledgement

I would like to express my sincere gratitude to my supervisor Professor JM Mathibe-Neke, University of South Africa, for her continuous support and encouragement which enabled me to complete my MPH study. Her patience, motivation, dedication, and timely follow-ups guided me to achieve my goal and continue in the right direction. Without her guidance, I could not have accomplished any of this. She has been a good supervisor and mentor to me during my MPH study. God bless you, Professor.

My sincere thanks also go to Addis Ababa City Administration Health Bureau, the ten sub-city health offices, the health centres, and all health care workers assigned in the Ante-natal Care (ANC and PMTCT clinics for their unreserved support and approval to conduct my study.

I would also like to acknowledge my colleagues at CHAI, and friends for their support and encouragement from the beginning until the end of the study.

My thanks and gratitude also go to my friends and colleagues at Ambo University, Delelegn Yilma (Assistant professor of Epidemiology) and Binyam Seifu (Assistant professor of Maternal and Reproductive Health) for their unreserved support in the analysis of my research.

Finally, I would like to extend my fervent gratitude and respect to my family (my wife – Genet, and my four children (Fikir, Kidist, Nathnael, and Ruth), for their patience, support, and understanding throughout my years of study. It would not have been possible without them.

Thank you all.

**FACTORS AFFECTING THE UPTAKE OF HIV TESTING DURING ANTENATAL CARE
IN ADDIS ABABA, ETHIOPIA**

STUDENT NUMBER: 44942281

STUDENT: Zelalem Demeke Banjaw (Dr)

DEGREE: MASTER'S IN PUBLIC HEALTH (MPH)

DEPARTMENT: HEALTH STUDIES, UNIVERSITY OF SOUTH AFRICA

SUPERVISOR: Professor J M Mathibe-Neke

ABSTRACT

The purpose of the study is to identify the factors that contribute to the low uptake of HIV testing by pregnant women during antenatal care visits in Addis Ababa, Ethiopia. The study was conducted in public health centres providing Antenatal care and prevention of mother-to-child transmission services. A total of 296 pregnant women and 140 healthcare workers enrolled in the study. The study findings indicated that most of the pregnant women and healthcare workers had a good perception of the HIV counselling and testing service provided at the health facilities during ANC visits. However, the study identified lack of privacy, and an unsympathetic approach shown by healthcare workers that led pregnant women to avoid making use of the HCT during ANC visits. Similarly, shortage of time, shortage of test kits, and the lack of a private room for counselling were the challenges faced by health professionals in providing HCT services.

KEY CONCEPTS: Factor, Factors contributing, Uptake, Antenatal care (ANC), HIV testing, Health care workers/Professionals, Pregnant woman.

Contents

CHAPTER ONE	1
1.1 INTRODUCTION	1
1.2 BACKGROUND INFORMATION ABOUT THE RESEARCH PROBLEM	1
1.2.1 The source of the research problem	2
1.3 RESEARCH PROBLEM	3
1.4 AIM OF THE STUDY	4
1.4.1 Research purpose	4
1.4.2 Research objectives	5
1.5 SIGNIFICANCE OF THE STUDY	5
1.6 DEFINITIONS OF TERMS	6
1.6.1 Factor.....	6
1.6.2 Factors contributing	6
1.6.3 Uptake.....	6
1.6.4 Antenatal care (ANC).....	6
1.6.5 HIV testing:.....	6
1.6.6 Healthcare workers and professionals.....	7
1.6.7 Pregnant woman.....	7
1.7 THEORETICAL FOUNDATIONS OF THE STUDY	7
1.7.1 Research paradigm.....	7
1.8 RESEARCH DESIGN AND METHOD	8
1.8.1 Study Setting	8
1.8.2 Study Population	9
1.8.3 Sampling.....	9
1.8.4 Data collection.....	9
1.8.5 Data Analysis.....	10
1.9 VALIDITY AND RELIABILITY	10
1.9.1 Validity.....	10
1.9.1.1 <i>Internal validity</i>	11
1.9.1.2 <i>External validity</i>	11
1.9.1.3 <i>Content validity</i>	11
1.9.2 Reliability	11
1.10 ETHICAL CONSIDERATIONS	11
1.10.1 Protecting the rights of the participants	12

1.10.2 Protecting the rights of the institution	12
1. 11 SCOPE AND LIMITATIONS OF THE STUDY	12
1.12 STRUCTURE OF THE DISSERTATION	13
1.13 CONCLUSION	13
CHAPTER TWO	15
LITERATURE REVIEW	15
2.1 INTRODUCTION.....	15
2.2 GLOBAL PERSPECTIVES ON HIV	15
2.2.1 The evolution of HIV	15
2.2.2 HIV Testing.....	16
2.3 GLOBAL REFLECTION ON PREVENTION OF MOTHER TO CHILD TRANSMISSION OF HIV	17
2.3.1 What does PMTCT imply.	17
2.3.2 Progress in addressing prevention of mother-to-child transmission of Human Immunodeficiency Virus.....	18
2.3.3 Literature on the provision of HIV testing in addressing Prevention of Mother to Child Transmission.....	19
2.4 FACTORS AFFECTING THE UPTAKE OF HIV COUNSELLING AND TESTING DURING PREGNANCY	20
2.4.1 Socio-demographic factors	21
2.4.1.1 Age	21
2.4.1.2 Education	21
2.4.1.3 Wealth.....	21
2.4.1.4 Place of residence.....	21
2.4.2 Socio-cultural Factors.....	22
2.4.3 Knowledge, awareness, and attitude as factors	23
2.4.4 Service provision factors	23
2.5 HEALTH CARE WORKER'S PERCEPTIONS OF PREVENTION OF MOTHER TO CHILD TRANSMISSION OF HIV.....	24
2.6 CONCLUSION.....	25
CHAPTER 3	25
RESEARCH DESIGN AND METHOD	25
3.1 INTRODUCTION.....	25
3.2 RESEARCH DESIGN.....	26
3.3 RESEARCH METHOD.....	26

3.3.1 Sampling	26
3.3.1.1 Study Population	27
3.3.1.2 Sampling techniques	28
3.3.1.3 Ethical issues related to sampling	29
3.3.1.4 Sample size	29
3.3.2 Data collection	29
3.3.2.1 Data collection methods and procedure	29
3.3.2.2 Data collection approach	29
3.3.2.3 Development and testing of the data collection instrument	29
3.3.2.4 Characteristics of the data collection instrument	30
3.3.2.5 Data collection process	30
3.3.2.6 Ethical Considerations During Data Collection	31
3.3.2.6.1 <i>Permission to conduct the study</i>	31
3.3.2.6.2 <i>Informed consent</i>	32
3.3.2.6.3 <i>Privacy and confidentiality</i>	32
3.3.2.6.4 <i>Protection from harm</i>	33
3.3.3 Data analysis method	33
3.4 RIGOUR OF THE STUDY: VALIDITY AND RELIABILITY	34
3.5 SUMMARY	36
CHAPTER 4	36
ANALYSIS, PRESENTATION, AND DESCRIPTION OF THE RESEARCH FINDINGS	36
4.1 INTRODUCTION	36
4.2 DATA MANAGEMENT AND ANALYSIS	37
4.3 RESEARCH RESULTS	37
4.3.1 Responses from Pregnant women	37
4.3.1.1 Sample socio-demographic characteristics	37
4.3.1.2 Socio-cultural perceptions of the pregnant women	39
4.3.1.3 Knowledge, awareness, and attitude towards mother to child transmission and prevention of mother to child transmission of HIV among women attending antenatal care	41
4.3.1.4 Programmatic Factors (antenatal care and prevention of mother to child transmission) among women attending ANC	45
4.3.1.5 Uptake of HIV counselling and testing during ANC visits	46
4.3.1.6 Factors associated with uptake of HIV counselling and testing during antenatal care visits	49

4.3.2 Responses of health care workers regarding perceptions and provision of HCT during ANC visits	52
4.3.2.1 Demographic characteristics	52
4.3.2.2 Socio-cultural perceptions	54
4.3.2.3 Programmatic Factors (ANC and PMTCT)	54
4.4 DISCUSSION OF RESEARCH RESULTS	57
4.5 CONCLUSION	60
CHAPTER 5	61
CONCLUSIONS AND RECOMMENDATIONS	61
5.1 INTRODUCTION	61
5.2 RESEARCH DESIGN AND METHOD	61
5.3 SUMMARY AND INTERPRETATION OF RESEARCH FINDINGS	62
5.4 CONCLUSIONS	64
5.5 RECOMMENDATIONS	65
5.5.1 Programmatic recommendations	65
5.5.2 Recommendations for further studies	65
5.6 CONTRIBUTIONS OF THE STUDY	66
5.7 LIMITATIONS OF THE STUDY	66
5.8 CONCLUDING REMARKS	66
List of References	67
Annexures	75
Annexure A: Ethical clearance from the Department of Health Studies, UNISA	75
Annex B: Letter requesting permission to conduct the study	77
Annex C: Letter requesting permission to conduct the study	78
Annex D: Letter granting permission to conduct the study on factors affecting the uptake of HIV testing during antenatal care in the health centres in Addis Ababa	79
Annex E: Consent form for self-administered questionnaire	80
Annex F: Assent form for minors below 18 years of age	82
Annex G: Parental Informed Consent/ Assent form	84
Annex H: Data collection tool	86
Annex H.1: Self-administered questionnaire for pregnant women – English	86
Annex H.2: Self-administered questionnaire for pregnant women – Amharic	92
Annex H.3: Self-administered questionnaire for Health care workers – English	98
Annex H.4: Self-administered questionnaire for Health care workers – Amharic	101
Annex I: Letter of assistance	105

LIST OF TABLES

Table 4. 1 Demographic characteristics of respondents37

Table 4. 2 Socio-cultural perceptions towards HIV counselling and testing during antenatal care visits.....39

Table 4. 3 Knowledge, awareness, and attitude towards mother to child transmission (MTCT) and prevention of mother to child transmission (PMTCT) of HIV among women attending ANC43

Table 4. 4 Programmatic factors (ANC and PMTCT) among women attending ANC45

Table 4. 5 Utilisation of HIV counselling and testing during ANC visits.....47

Table 4. 6 Factors associated with uptake of ANC HIV testing during ANC visits51

Table 4. 7 Demographic characteristics of healthcare workers52

Table 4. 8 Socio-cultural perceptions of health care workers towards HCT during ANC visits.....54

Table 4. 9 Programmatic factors (ANC and PMTCT) among health care workers56

LIST OF FIGURES

Figure 3. 1 Map of Addis Ababa City27

Figure 4.1: Utilisation of HIV counselling and testing during ANC visits48

Figure 4.2: Reasons for the non-utilisation of HIV counselling and testing service during ANC visits.49

Figure 4.3: Professional category of healthcare workers working in MCH on the selected health facilities53

Figure 4.4: Healthcare workers' perceived reasons for the non-utilisation of HCT by pregnant women during ANC visits.....57

LIST OF ABBREVIATIONS

AACAHB	Addis Ababa City Administration Health Bureau
AIDS	Acquired Immunodeficiency Syndrome
AOR	Adjusted Odds Ratio
ART	Ant-Retroviral Therapy
CDC	United States Center for disease control and prevention
CI	Confidence Interval
CSA	Central Statistics Agency
EDHS	Ethiopian Demographic and Health survey
EPHI	Ethiopian Public Health Institute
ETB	Ethiopian Birr
HCT	HIV counselling and Testing
HIV	Human Immunodeficiency Syndrome
MOH	Ministry of Health
MTCT	Prevention of Mother to Child transmission
PMTCT	Mother to Child transmission
POC	Point of Care
STI	Sexually transmitted Infections
UNAIDS	United Nations Programme on HIV/AIDS
WHO	World Health Organization

CHAPTER ONE

1.1 INTRODUCTION

This chapter presents the background information highlighting the rationale for the study, statement of the research problem, purpose and objectives of the study, the significance of the study, definition of concepts, and the theoretical foundations of the study. It also presents an overview of the research design and methodology, emphasising validity and reliability, ethical considerations, the scope and limitations of the study, the structure of the dissertation and finally the conclusion to the chapter.

1.2 BACKGROUND INFORMATION ABOUT THE RESEARCH PROBLEM

Human Immunodeficiency Virus (HIV) counselling and HIV testing during antenatal care (ANC) screening is essential to identify women living with HIV who may benefit from medical care and other interventions and to reduce the risk of mother-to-child transmission (MTCT) of HIV. According to the UNAIDS (2021a:67) in Ethiopia, accessing Antiretroviral Therapy (ART) increased from 25% in 2010 to 92% in 2020 and vertical transmission of HIV from mother to child decreased from 32% to 15% in 2020. Forty-four percent (44%) of pregnant women living with HIV in West and Central Africa were not receiving ART in 2020 (UNAIDS 2021b:256). HIV is the leading killer of women of childbearing age worldwide and accounts for a quarter of deaths during pregnancy and six weeks postpartum in sub-Saharan Africa (The Geneva Foundation for Medical Education and Research 2017:4). Despite significant progress in almost all regions, 54% of pregnant women are still unaware of their HIV status (UNAIDS 2014:237).

Antenatal care services provide an entry point to identify pregnant women who are living with HIV. In some countries, the utilisation of ANC is still very low, but increasing access to ANC services means increasing use of HIV counselling and testing which eventually leads to the prevention of mother-to-child transmission of HIV (UNAIDS 2011:145-146, 150-151). According to Ejigu and Tadesse (2018:1-11), Ethiopia has a low utilisation of HIV testing during pregnancy, which is linked to a missed opportunity for women who had antenatal care. The same study found that integrating HIV testing into antenatal care services and improving the quality and access to HIV testing services would increase the application of HIV testing during pregnancy, thus ensuring that the goal of eliminating MTCT is achieved.

According to UNAIDS (2020a:15, 42), HIV/AIDS is the leading cause of morbidity and mortality among women and children worldwide, with 1.7 million people being infected worldwide. It accounts for a quarter of infections in sub-Saharan Africa among adolescent girls and young women. The same report shows that women and girls account for 48% and men and boys 52% of the total percentage of new infections globally in 2019. Children (ages 0 to 14 years) accounted for 9% of new infections in 2019, and 84% of child infections occurred in sub-Saharan Africa. (UNAIDS 2020a:44). Most new HIV infections among children in the west and central African regions are due to the low use of antiretroviral therapy among HIV-infected pregnant women, with 42% of child infections occurring during pregnancy because the HIV-positive pregnant women did not receive antiretroviral drugs (UNAIDS 2020a:259). Antenatal care is an important opportunity for pregnant women and their partners to get tested and counselled. According to the UNAIDS report (2020a:47) in 2019, there were 690,000 AIDS-related deaths worldwide, of which 220,000 were women and girls in sub-Saharan Africa.

1.2.1 The source of the research problem

Burns and Grove (2015:131) define a research problem as an area of concern with gaps in knowledge necessary for nursing practice. Research is needed to address practical concerns and generate the foundational knowledge for providing evidence-based care. In Ethiopia, young women aged 15 to 49 living in urban areas were more likely (55.5%) to have been counselled on HIV, tested for HIV, and received results during ANC visits as compared to rural women (19%) (CSA 2016: 240). In Addis Ababa, 76 % of women aged 15 to 49 had received the full screening process, while in the Somali region only 5% had been fully screened. The likelihood of receiving HIV counselling and testing during ANC visits increases with education and wealth. In Ethiopia 72% of women in the age groups 15 to 49 who received HIV counselling and were tested and receive their results during ANC visits had more than secondary education. On the other hand, only 6% of women without education were tested and received results during ANC visits (CSA 2016: 240). This study, therefore, set out to investigate the reasons for the low uptake of HIV testing by pregnant women attending the ANC services.

According to the UNAIDS report on the progress towards the 'start-free, stay-free, AIDS-free' targets (2020b:14), to minimise vertical transmission of HIV, women should be diagnosed

with HIV and be treated with antiretroviral drugs. This would result in viral load suppression from conception through to the end of lactation and for the rest of their lives. A woman who acquires her HIV during pregnancy and lactation is the second major cause of transmission to her children. This results in 30,000 children being infected with HIV. To prevent this, 130,000 uninfected women have to be contacted by combining prevention interventions, such as prevention education, the distribution of condoms and partner testing. Forty-three percent (43%) of seroconverted pregnant and lactating women were young women aged between 15 and 24 years (UNAIDS 2020b:14).

According to the central statistics agency of Ethiopia Demographic and Health survey (EDHS) (CSA 2016:175) in Addis Ababa, the capital of Ethiopia, 46% of pregnant women received antenatal care from doctors, 49% from nurses and midwives, and 1.3% from health officers. Thus, 96% of pregnant women have received ANC from a skilled provider. Screening pregnant women for HIV is very important in preventing mother-to-child transmission of HIV. In the same report (CSA 2016: 240) only 23% of women who gave birth in the two years before the survey received HIV counselling during ANC visits, and only 19% of pregnant women received counselling, testing, and received results during their ANC visits. As far as the most recent birth in the two years preceding the survey are concerned 78% of pregnant women received counselling, and 76% received counselling, testing and test results during ANC visits (CSA, 2016: 240).

1.3 RESEARCH PROBLEM

According to Polit and Beck (2017:116), a research problem is an enigmatic or troubling condition, and a problem statement expresses the problem and a reason that a study is necessary. In this study antenatal care (ANC) is essential to prevent negative pregnancy outcomes when pregnant women receive the care early and continue throughout pregnancy. High-quality and timely HIV testing and counselling are essential to identify HIV-positive pregnant women who may benefit from HIV care and interventions to reduce the risk of mother-to-child transmission of HIV. According to a systematic review and meta-analysis by Endalamaw and Geremew (2021:10), 79.65% of pregnant women in Ethiopia had been HIV tested during ANC follow-up consultations, which was associated with knowledge of mother to child transmission, prevention of mother to child transmission for HIV, living in an urban area, and previous HIV testing experience. Furthermore, based on the UNAIDS data

(2021a:67), access to anti-retroviral treatment (ART) in Ethiopia increased from 25% in 2010 to 92% in 2020, which also decreased the vertical transmission of HIV from HIV-positive women to their babies from 32% to 15% in 2020. This shows that HIV testing during ANC visits and early initiation of ART for HIV-positive pregnant women has an important role in reducing mother-to-child transmission of HIV.

HIV counselling and testing during pregnancy is very crucial in the prevention of mother-to-child transmission of HIV in Ethiopia because it addresses the issue of access, quality of care, and improvement in service utilisation. However, the reasons for the lack of HIV counselling and testing during ANC visits by pregnant women at health facilities have not been fully studied. Therefore, the current study aims to identify factors affecting the uptake of HIV counselling and testing during ANC visits and to enable decision-makers to design interventions to improve the uptake of HIV counselling and testing for prevention of mother-to-child transmission (PMTCT) of HIV in Addis Ababa, Ethiopia.

1.4 AIM OF THE STUDY

The current study aimed to determine the perceptions and factors affecting the uptake of HIV testing during antenatal care among pregnant women and healthcare workers regarding HIV counselling and testing (HCT) for prevention of mother-to-child transmission of HIV in Addis Ababa.

1.4.1 Research purpose

The purpose of the research is to "solve" the research problem or contribute to its solution through the collection of relevant data (Polit & Beck 2017:116). As defined by Burns and Grove (2015:131) the research purpose is a clear, concise statement of the specific goal or focus of a study. Quantitative and outcome studies are aimed at identifying, describing, or examining the effectiveness and relationships of an intervention, or determining health care outcomes (Burns & Grove 2015:131). The purpose of this study was to determine or identify factors that contribute to the low uptake of HIV testing by pregnant women during antenatal care and to understand the perceptions of health workers concerning the provision of HIV testing to pregnant women during ante-natal care visits in Addis Ababa, Ethiopia. Furthermore, recommendations will be formulated that could improve the uptake of HIV counselling and testing among pregnant women during ANC visits.

1.4.2 Research objectives

Based on Burns & Grove (2015:146) a research objective description is a clear, concise declarative sentence expressed in the present tense.

The objectives of the study were:

To determine the perceptions of HIV testing among pregnant women attending antenatal care in Addis Ababa, Ethiopia.

To determine the perceptions of the health workers towards the provision of HIV testing to pregnant women during antenatal care visits in Addis Ababa, Ethiopia.

To develop recommendations to improve the uptake of HIV testing during ANC visits.

According to Burns & Grove (2015:147), a research question is a clear and concise question, formulated in the present tense, containing one or more variables, and constructed to guide the conduct of research. The research questions to be investigated were:

What are the perceptions of HIV testing amongst women attending antenatal care visits in Addis Ababa, Ethiopia?

What are the perceptions of health workers regarding the provision of HIV testing services for pregnant women during ANC visits in Addis Ababa, Ethiopia?

What recommendations can be applied to improve the uptake of HIV testing by pregnant women during their ANC visits?

1.5 SIGNIFICANCE OF THE STUDY

The significance of the study lies in the fact that in identifying problems that pregnant women and healthcare workers have regarding PMTCT services and the factors that contribute to the low uptake of HIV testing during ANC visits, the information that has emerged from the study would assist in planning to improve the PMTCT service delivery. It would be based on the perceptions of HIV testing amongst pregnant women and healthcare workers regarding the provision of HIV testing services. The results of the study would form the basis for the Addis Ababa City Administration Health Bureau in developing strategies to improve the uptake of HIV testing by pregnant women during their ANC visits. The study assumed that HIV counselling and testing during antenatal care (ANC) visits are essential to identifying women living with HIV who could benefit from Human Immuno-Deficiency Virus (HIV) care and other interventions and to reduce the mother-to-child transmission (MTCT) of HIV in Addis Ababa, Ethiopia.

1.6 DEFINITIONS OF TERMS

The following are the key concepts in the study:

1.6.1 Factor

According to the *New Oxford American dictionary* (2010), sv “factor” a factor is a circumstance, fact, or influence that contributes to the outcome. The study explored the factors that influence pregnant women to have or not to have HIV testing during their ANC visits.

1.6.2 Factors contributing

The *New Oxford American dictionary*, 2010. sv “factor” and “contribute” refers to a factor that contributes to any of the many aspects that influence a situation or cause a situation and contribute to something happening. The study identified factors contributing to the low uptake of HIV testing by pregnant women during their ANC visits.

1.6.3 Uptake

The *New Oxford American dictionary*, 2010. sv “uptake” defines uptake as the action of taking up or making use of something valuable. In this study, the low uptake of HIV testing by pregnant women was explored.

1.6.4 Antenatal care (ANC)

The WHO (2016:1) defines antenatal care as the care of pregnant women and adolescent girls by qualified health professionals to ensure optimal maternal and child health during pregnancy. In this study, the antenatal care service or clinic was the entry point for pregnant women who participated in the study.

1.6.5 HIV testing:

According to Jameson, Fauci, Casper, Hauser, Longo, and Loscalzo (2018:1424) HIV refers to Human immunodeficiency virus, and HIV testing refers to a laboratory test to demonstrate the antibodies to Human Immunodeficiency Virus and, or the direct detection of HIV or one of its components. In this study, the researcher aimed to identify factors that contribute to the low uptake of HIV testing by pregnant women during antenatal care visits.

1.6.6 Healthcare workers and professionals

The *Dictionary of medical terms* 2009, sv 'Healthcare workers and professionals' defines health care workers and professionals as qualified person(s) who work in an occupation related to health care. Healthcare workers are a major component of this study. They provide counselling and testing services for pregnant women during the ANC visits, and they are also participants in the study. The healthcare workers' perceptions of HIV testing for pregnant women during ANC visits were studied.

1.6.7 Pregnant woman

The Dictionary of medical terms, 2009. sv 'pregnancy' defines a pregnant woman as a woman with an unborn child in the uterus and is the period from conception to birth. It begins with the fertilisation of the ovum by a sperm that grows in the placenta and embryo, and later in a foetus. Starting on the first day of a woman's last menstrual period, pregnancy generally lasts 40 weeks. In this study, the subjects are pregnant women who visit the ANC facility and need to be tested for HIV.

1.7 THEORETICAL FOUNDATIONS OF THE STUDY

1.7.1 Research paradigm

Polit and Beck (2017:32-33) describe a positivist paradigm as a systematic approach to doing research emphasising the importance of observable facts that can be investigated and known. Furthermore, quantitative researchers use objective methods designed to reduce bias and maximise validity by controlling the research situation (Polit & Beck 2017:32-33). The authors further point out that quantitative researchers strive to go beyond the details of the research context and attempt to extrapolate research results to people not participating in the study.

The chosen research paradigm is quantitative since quantitative methods are used for objective measurements and the statistical analysis of data collected through polls and questionnaires. Quantitative research focuses on collecting numerical data which can be generalised across groups of people to explain phenomena. Quantitative research uses numbers to test hypotheses, make predictions, and finally provide a description of an event by using figures (Polit & Beck 2017:33). In this study, the quantitative method was used,

since the data were collected using questionnaires to gather information about pregnant women. Questionnaires were also used to collect data from healthcare workers about HIV and to gather numerical data from respondents.

1.8 RESEARCH DESIGN AND METHOD

In this study, a quantitative, descriptive cross-sectional research design was used.

Quantitative research: According to Nieswiadomy and Bailey (2018:6) quantitative research is focussed on objectivity, tight control over the research situation, and the ability to generalise results. Quantitative research is usually designed to collect statistically analysed numerical data to investigate research questions or hypotheses (Nieswiadomy and Bailey 2018:6).

Descriptive research: According to Polit and Beck (2017:1014) descriptive research accurately reflects the characteristics and circumstances of people and the frequency with which certain phenomena occur.

Cross-sectional design: According to Polit and Beck (2017:252) cross-sectional study design collects data at specific points in time. It is sometimes used to infer changes over time when collecting data from different age or developmental groups.

Using this study design the researcher collected numerical data and recorded descriptions of pregnant women and health care providers involved in the HIV testing of pregnant women during their ANC visits.

1.8.1 Study Setting

According to Burns and Gray (2019:470), a research setting is a place or location where research takes place. In this study, all public health centres of the Addis Ababa City Administration Health Bureau (ACAHB) providing ANC and PMTCT services formed the study setting.

1.8.2 Study Population

According to Burns and Grove (2015:250), the target population is the totality of individuals or items that meet the sampling criteria. In this study, the target population was all pregnant women and healthcare workers in Addis Ababa.

1.8.3 Sampling

According to Burns and Grove (2015:249) sampling involves selecting a group of people, events, kinds of behaviour, or other items on which to conduct research. A sampling plan or sampling method defines the selection process, and sampling defines the group of people (or items) selected. The sample should represent a population. A simple random probability sampling method was used in this study and the sampling frames were obtained from the Addis Ababa City Administration Health Bureau (AACAHB). For this study, sample sites were randomly selected from the 97 public health centres which provide ANC and PMTCT services in Addis Ababa.

Inclusion criteria for women were all pregnant women visiting health centres for ANC service who had not been tested for HIV during the current pregnancy and who did not know that their HIV status was being included in the sample until the proportional sample size of the participants was fulfilled. The sample size was calculated using Epi info sample size estimation by taking into account a significance level of 95% ($Z=1.96$) and a 5% margin of error.

Inclusion criteria for the health care workers were the health professionals that were assigned in the antenatal care unit, and the data were collected from the health care workers providing HIV counselling and testing in the ANC units working in the selected health facilities at the time of the study. For this, a self-designed questionnaire was used to collect data from healthcare workers. In each health center there are two health professionals assigned in the ANC room and, a total of 140 health care workers from the 70 health centers were selected for the study.

1.8.4 Data collection

Burns and Grove (2015:310) explain that data collection is the process of enrolling subjects and collecting data for the study. The phases of data collection are unique to each study and

depend on study design and measurement techniques, the goal being to generate high-quality data (Polit & Beck 2017:389).

In this study, data were collected from pregnant women and healthcare workers providing ANC services. The self-designed structured questionnaire which contained pre-developed items were used for data collection and the questionnaires were pre-tested (pilot-tested) in the two health centres in the same study area however, these health facilities were not included in the actual study. The questionnaires were validated using actual respondents in the two health centres who match the selection criteria but are not included in the final research sample, after which it was refined to adhere to consistency. Regarding the research tools, all the questionnaires were prepared in English and translated into Amharic, the working language of Addis Ababa, and the federal language of Ethiopia. The translation from English to Amharic was done by the researcher, who is a native speaker of the Amharic language and with a reasonable understanding of the English language with reference to reading, writing, and conversing.

1.8.5 Data Analysis

According to Grove and Gray (2019:378), quantitative research involves the management of numerical data and the statistical analysis of data to produce research results. Statistical analysis is a technique or procedure performed to examine, reduce, or add meaning to numerical data collected in a study. Analyses were performed by the researcher with close technical assistance from an experienced statistician and epidemiologist. (see Annexure I). This study used descriptive statistics to provide a comprehensive description of the quantitative data, and inferential statistics were used to interpret the factors that influence the uptake of HIV testing during antenatal care.

1.9 VALIDITY AND RELIABILITY

1.9.1 Validity

Burns and Gray (2019:253) define study validity as a measure of the truth or accuracy of the results obtained from a study. The validity of the study design is central to obtaining high-quality results and outcomes from the study. This study used a pilot-tested self-designed questionnaire prior to the actual study to confirm validity of the research tool

1.9.1.1 Internal validity

According to Burns and Gray (2019:254), internal validity is the extent to which the effects found in a study reflect reality and are not the result of extraneous variables. In this study, questionnaires were developed to demonstrate that the variables lead to outcomes that reach the research goal.

1.9.1.2 External validity

Burns and Gray (2019:255) explain that external validity relates to the extent to which research results can be generalised beyond the samples used in the study. In this study, a simple randomisation procedure was used to select health centres and study participants based on selection criteria, to ensure the generalisability of the study.

1.9.1.3 Content validity

According to Burns and Gray (2019:341), content validity examines the extent to which the measurement includes all essential elements relevant to the reality being measured. Evidence for this study was obtained from literature reviews, representatives of affected populations, and content experts. The questions in the questionnaires were compiled with appropriate variables to answer the research questions and were reviewed by an expert on the HIV programme to ensure their content validity.

1.9.2 Reliability

According to Burns and Gray (2019:338) reliability focuses on the consistency of a measurement method. In this study, the researcher pilot-tested the questionnaires to ensure their simplicity and accuracy with a similar population to the actual study population.

1.10 ETHICAL CONSIDERATIONS

The objectives chosen for research must be ethical, meaning that the rights of the subjects and those around them are protected. Ethical research outweighs the risks to its conduct and generates actionable insights (Burns & Gray 2019:175). All research ethics principles were adhered to throughout the study. Participants were informed in advance that their participation was voluntary and that they could withdraw from the study at any time. Prior to conducting the study, ethical approval was obtained from the University of South Africa with

reference number HSHDC/988/2020. All participants were guaranteed confidentiality and were not paid, coerced, or forced to participate in the study.

1.10.1 Protecting the rights of the participants

As Burns and Gray (2019:134-135) state human rights are claims and demands that are justified from the point of view of an individual or by the consensus of a group of people. In this study the following principles, namely, the right to self-determination; privacy; anonymity; confidentiality; fair choice, and treatment and protection from discomfort and harm were taken into consideration.

1.10.2 Protecting the rights of the institution

The research proposal was submitted for approval to the Research and Ethics Committee of the University of South Africa, Department of Health Studies. Ethical clearance was granted by the committee to conduct the research with reference number HSHDC/988/2020. (Annexure A)

Permission to conduct the research was granted by the Addis Ababa City Administration Health Bureau (AACAHB) ethical committee (as shown in Annexure D), after which a support letter to conduct, the research was written to all 10 sub-cities in Addis Ababa. Lastly, another support letter was written to all health facilities in their respective sub-cities. Before starting the study, the researcher communicated with all the officials of the health centre by presenting the ethical clearance certificate.

1. 11 SCOPE AND LIMITATIONS OF THE STUDY

The scope of the study is to assess factors affecting the uptake of HIV testing during antenatal care in Addis Ababa, Ethiopia. The study was conducted in the health centres located in all sub-cities located in Addis Ababa City, which is the capital of Ethiopia.

The study was undertaken during a particularly difficult period when the COVID-19 pandemic was at its peak and political instability in Ethiopia was affecting the country. There were serious limitations on movement by all to seek care and provide care at the health facilities due to the above-mentioned reasons, and this affected the data collection activities. However, the researcher spent additional time gathering the data so that the quality of the research process and the results were not compromised. The initial plan was to collect data

within two months, but due to the above-mentioned challenges, it took about eleven months to complete the data collection.

1.12 STRUCTURE OF THE DISSERTATION

The structure of this dissertation is organised into the following five chapters:

Chapter 1: Introduction and background of the study. It introduces the entire study and includes the study's objectives, its problem statement, the aims and significance of the study, the theoretical framework, and an introductory section to the study's methodology.

Chapter 2: Literature review: this encompasses both national and international findings related to the uptake of HIV testing and the theoretical framework or theory informing the study is included within the literature review.

Chapter 3: Research design and method: this section comprises all the steps followed from data collection to analysis and report writing. It includes an introduction, the research design, the research method, and the conclusion.

Chapter 4: The analysis, presentation, description, and interpretation of research findings: This chapter is made up of three main sections as indicated in the title. After the introductory paragraph the chapter deals with data management and analysis and the research results followed by a detailed description of research findings, after which a short conclusion is drawn.

Chapter 5: Summary, conclusions, limitations, and recommendations: Following the collection and analyses of the data, this chapter includes the research design and method, a summary and interpretations of the study findings, the conclusion based on the findings, recommendations, contributions of the study, limitations, and concluding remarks.

The final section of the study includes a list of references, a list of tables, a list of figures, and annexures.

1.13 CONCLUSION

In this chapter, the introduction and background of the research were presented along with national and global issues of the PMTCT. The aims and objectives of the study were outlined, the relevance of the study to clinical practice, and the impact on PMTCT quality during antenatal care were also mentioned. The key concepts used in the study were defined. This

chapter also provided an overview of the theoretical underpinnings of the study, followed by a description of the study design and methods, ethical considerations, and scope and limitations of the study. Finally, the general structure of the paper was outlined. The next chapter presents the literature reviewed that is pertinent to the current study.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

The literature review describes the current state of knowledge on HIV counselling and testing during pregnancy. International and national perspectives on HIV counselling and testing during antenatal care (ANC) visits to prevent mother-to-child transmission of HIV (PMTCT) and the status of ANC-HIV counselling and testing in Addis Ababa, Ethiopia are discussed. Global considerations regarding PMTCT and factors influencing the acceptance of HIV counselling and testing, including sociodemographic, sociocultural, knowledge, awareness and attitudes, and programmatic factors, are also discussed. Reports in the literature on how health professionals perceive PMTCT are also presented.

2.2 GLOBAL PERSPECTIVES ON HIV

2.2.1 The evolution of HIV

According to UNAIDS (2021b:198), HIV, the virus that causes AIDS, is one of the world's greatest public health problems. However, there is a global commitment to preventing new HIV infections and ensuring access to antiretroviral treatment for all people living with HIV. UNAIDS (2022b:4) also reports that in 2021 approximately 38.4 million [33.9 million–43.8 million] people were living with HIV worldwide. Of these, 36.7 million were adults, 1.7 million were children (under the age of 15) and as 54% were women and girls. HIV remains a major global public health problem with 40.1 million deaths to date (UNAIDS, 2022b:4). According to a UNAIDS (2022b:4), 650,000 people died from HIV-related causes and 1.5 million people contracted HIV, and there is no cure for HIV infection. However, with increased access to effective HIV prevention, diagnosis, treatment, and care, including opportunistic infections, HIV infection has become a manageable chronic disease that allows people living with HIV to live long and healthy lives.

According to Jameson, et al (2018:1393-1394), Human Immunodeficiency Virus targets the immune system, weakening people's defences against many infections. As viruses destroy and alter immune cell function, infected people become increasingly immunocompromised, and immune function is usually measured by CD4 cell counts (Jameson, et al (2018:1405-1406). The most advanced stage of HIV infection is acquired immunodeficiency syndrome,

which takes many years to develop depending on individual immune system functions, and AIDS is defined by the development of opportunistic infections, or other severe long-term clinical manifestations (Jameson, et al (2018:1410).

2.2.2 HIV Testing

According to WHO Consolidated Guidance for HIV Testing Services (2019:177), testing as early in pregnancy as possible helps pregnant women to maximise the benefits of prevention, treatment, and care, and to improve the outcomes for their babies and sexual partner(s). Early treatment of HIV leads to the best possible health for mothers and children. ART is most effective in preventing mother-to-child transmission of HIV when initiated before or early in pregnancy. In 2014, the U.S. Centre for Disease Control and Prevention (CDC) updated its HIV testing algorithm to encourage laboratories to adopt new tests and deviate from Western blot assay for confirmatory testing (Bernard, 2014).

Today, clinical laboratories are still at the forefront of ensuring adequate screening for HIV and the best possible treatment for HIV-positive patients. Driven by broader screening and continued technological breakthroughs by test manufacturers, the laboratory is at the centre of change. Bernard (2014) mentioned that “Rapid point-of-care (POC) molecular testing for HIV may soon become a reality”. According to UNAIDS (2022a:44), 85% of HIV-positive people worldwide know their HIV status, 75% are using ART, and 68% had viral suppression.

According to the UNAIDS (2022a:54-65), 74% of women newly infected with HIV in 2021 live in Sub-Saharan Africa, and 85% of new child infections from mother-to-child also occurred in this region. EPHI (2022:3-4) mentioned that the HIV prevalence in Ethiopia declined from 0.93 % in 2021 to 0.9 % in 2022, but the prevalence in Addis Ababa still remains high, and the decline was very small from 3.56% in 2021 to 3.51% in 2022. CSA, the Ethiopian Demographic and Health Survey report (2016) indicated that although most respondents (69% of women and 84% of men) knew where to get tested for HIV, 40% of women and 43% of men have never been tested or have received test results. The same survey indicated that only 20% of women and 19% of men were tested for HIV in the 12 months prior to the survey and received their test results.

2.3 GLOBAL REFLECTION ON PREVENTION OF MOTHER TO CHILD TRANSMISSION OF HIV

2.3.1 What does PMTCT imply.

Prevention of mother-to-child transmission (PMTCT) of HIV is the prevention of infection transmitted from an HIV-infected woman to her child during pregnancy, labour, delivery, or breastfeeding. More than five million children under the age of 15 have acquired HIV since the AIDS epidemic began, and almost 4 million children under the age of 15 have already died of AIDS. According to UNAIDS (2020b:6-14) most infected children acquire the virus from their mothers. After the success of the clinical trial on HIV treatment for babies, such as short-course Zidovudine and single-dose nevirapine, the prevention of mother-to-child transmission (PMTCT) of HIV has been the focus of global HIV prevention activities since 1998 (WHO, 2001:7-8). These activities offered a promise of a relatively simple, low-cost intervention that could substantially reduce the risk of HIV transmission from mother to child. In 2001, the United Nations General Assembly set a target to reach all HIV positive pregnant and breastfeeding women with antiretroviral therapy, where 95% achieving and sustaining viral suppression before delivery and during breastfeeding by 2025 (UNAIDS, 2021c:4-5).

According to the prevalence study by Geremew (2018:6), the HIV prevalence among pregnant women in Ethiopia (5.74%), was higher than in Brazil (0.38%) and Nigeria (3.0%). The study by Geremew (2018:4-7) also linked the high prevalence among Ethiopian pregnant women with little knowledge of, and attitude towards HIV, and the vertical transmission of HIV was higher in Ethiopian women compared to women in Brazil and Nigeria and linked the difference to socio-economic or socio-cultural variations. On the other hand, the HIV prevalence among pregnant women in Ethiopia could be compared to the report from Tanzania where prevalence was 5.6%, but the pooled prevalence report was lower than among Zambian pregnant women (22.5%). PMTCT has advanced significantly in recent years, and in 2019 an estimated 92% of HIV-infected pregnant women in eastern and southern African countries received antiretroviral (ARV) drugs to prevent HIV transmission to their children. This percentage shows an increase when compared to the data for 2010 when the percentage receiving ARV drugs was only 49%, (UNAIDS, 2019:30). Almost 85% of all HIV-infected babies vertically from their mothers in 2021 occurred in Sub-Saharan Africa (UNAIDS, 2022a:54)., and the global coverage of antiretroviral therapy in eastern and

southern Africa increased from 24% in 2010 to 54% in 2015. This result was linked to high country-level commitment and focused international support (UNAIDS 2016:3).

2.3.2 Progress in addressing prevention of mother-to-child transmission of Human Immunodeficiency Virus

According to the latest global estimates from UNAIDS (2021b), HIV and AIDS remain the leading causes of death among women of childbearing age, and pregnant women living with HIV have a greater risk of complications compared to women without HIV. In 2021, 81% of pregnant women living with HIV had access to antiretroviral therapy (ART) to protect their health and prevent transmission of HIV to their babies during pregnancy and delivery (UNAIDS 2022b:1).

Ethiopia has been conducting universal HIV screening of pregnant women since 2007 and is working to reach the 90-90-90 treatment target and to eliminate MTCT of HIV by 2020 (MOH 2021). However, the proportion of HIV-positive pregnant women receiving antiretroviral (ARV) drugs for PMTCT remained at the lowest when compared to other African countries in the past ten years, and in 2009 only 8% of HIV-positive pregnant women received antiretroviral prophylaxis (MOH 2021). But, over time the use of PMTCT services by pregnant women has increased significantly, and according to a survey conducted by Akal and Afework (2018), the percentage of women using PMTCT services reached 67.7%. According to a recent report by the MOH (2021), PMTCT services utilisation nationwide has reached 91%.

Over the past two decades, many studies were conducted focusing on the prevention of mother-to-child transmission of HIV during pregnancy and the importance of HIV testing during pregnancy. In Ethiopia the programme for the PMTCT of HIV had been implemented using single-dose Nevirapine since 2001. According to UNAIDS report (2015:50) the predominant mode of transmission of paediatric HIV infection is through mother-to-child transmission was 18%, while the recent estimates by EPHI (2022:3) show the reduction in transmission to 13.3%. Although HIV prevalence in the pregnant population is declining as in the general population, most ANC sentinel surveys find prevalence in this population to remain high (1.2%) (UNAIDS 2014:345).

In 2013, the WHO produced a manual on HCT during pregnancy (WHO 2013), which states that identifying women living with HIV and their partners is an important step in helping those in need of HIV treatment and care. All women in high-prevalence countries, especially pregnant women, should be tested for HIV and receive counselling. Counselling in routine antenatal and postnatal care is an important way to inform a woman about her HIV/AIDS and facilitates HIV testing. A new focus is on providing basic HIV/AIDS information during the first antenatal visit to ensure that as many women as possible receive the information. Provider-initiated HIV testing and counselling for all pregnant women during ANC visits is a national policy in many countries. Getting an HIV test is part of the regular ANC care package for all pregnant women, and all ANC clients are offered tests and are counselled about the benefits and risks of knowing their HIV status during pregnancy. But the test is still voluntary, and women can opt-out if they do not want a test. If a health professional approves and recommends testing, a woman is more likely to accept her HIV test.

2.3.3 Literature on the provision of HIV testing in addressing Prevention of Mother to Child Transmission.

HIV counselling and testing during pregnancy is the first step to PMTCT, and for this reason, various studies have been carried out to understand the level of participation of pregnant women in HCT services during their visits to the ANC clinics. Results of research by Fanta and Worku. (2012:8-9) have shown that pregnant women who have given birth to two to three live babies were more likely to refuse an HIV test than women who have never given birth to live babies.

Another study conducted by Kendal (2014: 1–9) in Mexico found that pregnant women did not receive HIV counselling and testing despite their regular contact with the health care system for ANC services and other reasons. For more than half of women living with HIV, the first setback was the inability of the health care facilities to offer HIV testing and counselling when pregnant women visited ANC services (Kendal 2014: 1–9).

Another study conducted in western Kenya by Ndege, Washington, Kaaria, Prudhomme-O'Meara, Were and Nyambura et al. (2016: 1-10) concluded that pregnant women who have never participated in an ANC are approximately six times more likely to be HIV-positive than women who have visited an ANC facility. In addition, the same study suggests that a

continuum of services to prevent mother-to-child transmission of HIV should be initiated optimally at the household and village level to eradicate perinatal HIV infection. In an Ethiopian study conducted by Ejigu and Tadesse (2018: 1-11) it was found that out of a total of 2,114 women who were pregnant only 35.1% of them were tested for HIV and received test results. The study also showed that among the ANC attendees approximately one-third of pregnant women missed the opportunity to be tested for HIV.

A study by Larsson (2012: 1-8) in eastern Uganda found that the majority (85%) of women who had attended health facilities that offered on-site HIV testing received counselling and HIV testing. However, 20% of women attended health facilities that did not offer on-site HIV testing compared to only 17% who attended informal facilities. The study also concluded that only 6% of pregnant women who initially went to a health facility that did not have onsite HIV testing for their ANC were not tested for HIV because the staff did not refer them, or the recommendations were not followed.

In a study by Astawesegn et al. (2021: 5-6) using a sample of 46,645 women in East African countries to determine HCT uptake levels in eligible women, more than three-quarters (80.8%), of women in East African countries used prenatal HIV testing services for HIV PMTCT between 2011 and 2017. Rwanda had the highest proportion (97.9%) of women using prenatal HIV testing services for HIV PMTCT, followed by Kenya (92.9%) and Uganda (91.5%). In contrast, the countries with the lowest rates of HIV testing services are the Comoros (17.0%), Ethiopia (34.3%), and Mozambique (59.7%). This result was similar to a recent meta-analysis study conducted in Ethiopia by Endalamaw (2021:261-266) in which 79.6% of women used HCT, and the highest use was recorded in Addis Ababa (93.06%) and the lowest use (69.32%) was found in the Amhara region. These studies show that utilisation in Ethiopia was lower than had been planned in attempting to meet the global recommendations of the 90-90-90 strategy.

2.4 FACTORS AFFECTING THE UPTAKE OF HIV COUNSELLING AND TESTING DURING PREGNANCY

This subsection reviews factors affecting the uptake of HCT during pregnancy among pregnant women into two main categories, namely, pregnant women, and healthcare professionals. Furthermore, the factors that influenced the uptake of HCT by pregnant

women were categorised into socio-demographic, and socio-cultural factors. Knowledge, awareness, attitudes, and programmatic issues also influenced the use of HCT.

2.4.1 Socio-demographic factors

Socio-demographic barriers are found to be one of the influencing factors related to the utilisation of PMTCT services. Age, educational status, wealth, place of residence, and other related socio-demographic factors have influenced the uptake of HCT.

2.4.1.1 Age

A study conducted in Gondar, Ethiopia, indicated that the uptake of HCT in the ANC clinics was negatively associated with increased maternal age (Malaju 2012:4). Thus, women in the age group 25 to 34 years were 3.9 times more likely to accept HIV testing, and women aged 15–24 years were 5.6 times more likely to accept HIV testing compared to older women (35–49 years).

2.4.1.2 Education

Low educational status and lack of information about PMTCT are believed to hinder many pregnant women from seeking PMTCT services. A meta-analysis conducted by Astawesegn et al (2021:9) in East Africa indicated that different socio-demographic factors were significantly affecting the uptake of HCT. According to the findings of this meta-analysis, women who attained at least a primary level of education were more likely to use HIV testing services for PMTCT of HIV compared to those with no formal primary education schooling or secondary or higher education. Women whose partners had at least primary, secondary or higher school education were more likely to use HIV testing services for PMTCT of HIV compared to women whose partners had no education (Astawesegn et al 2021:9)..

2.4.1.3 Wealth

Astawesegn et al (2021: 9) found that women with high household wealth indices were more likely to use HIV testing services during pregnancy than women from poor households.

2.4.1.4 Place of residence

According to Onyeneho et al. (2016: 8–9), urban or peri-urban women used public health services more frequently than rural women. Astawesegn et al (2021: 9) found that residents

living in rural areas and commuting long distances to health facilities are associated with a lack of access to prenatal HIV testing services in East African countries.

2.4.2 Socio-cultural Factors

Based on the study by Assefa (2012:23-24), dominant barriers related to socio-cultural factors were stigma, mens' beliefs, and husbands' involvement in women's HCT during ANC visits. The study also noted that stigma is a potential barrier to accessing services and achieving high coverage of HCT and other HIV services.

A study by Ejigu and Tadesse (2018: 6) found that women with stigmatising attitudes toward people living with HIV were less likely to be tested for HIV. Fear of stigma and discrimination can influence behaviour when seeking health care or disclosing one's HIV status, and lack of knowledge about HIV transmission, prevention, and available interventions, exacerbates stigma (Ejigu and Tadesse 2018: 6).

As reported by Sakala et al. (2021: 5-6) barriers to male involvement in ANC during pregnancy can be seen at multiple levels, including the individual, a couple, a community, and the health care system which play an important role in women's HCT uptake. In a systemic review in Ethiopia by Endalamaw et al. (2021: 265-267), fear and uncertainty of a husband's response to HIV-positive results, fear of stigma and discrimination, and negative community attitudes to support people living with HIV were the main reasons for pregnant women not being tested for HIV.

Similarly, a study conducted in Gambella, Ethiopia by Fanta and Worku (2012:4-8) showed that the husband's negative attitude and disagreement with his wife were among the reasons for pregnant womens' refusal of HCT during ANC visits.

In a study by Astaweseg, et al. (2021: 12) in East African countries, pregnant women do not want to have HIV testing because of their fear of negative reactions from their husbands, fear of stigma and discrimination based on positive test results, and concerns about confidentiality. A qualitative study conducted by Rujumba (2012: 41-42) explored the sociocultural factors and practices that hinder Ugandan women's behavioural change toward HIV/AIDS, where power dynamics, gender roles, and cultural practices have a negative impact on safe sexual behaviour. The issue of HIV/AIDS remains complex among Ugandan

women and begins with the complete inability to control the husband's sexual life and behaviour, especially outside of marriage (Rujumba 2012: 41-42).

Another study conducted in Gondar, Ethiopia, showed that having good knowledge of HIV and its prevention of mother-to-child transmission, and a positive partner response towards HIV-positive test results was associated with HCT uptake (Malaju 2012: 4-5).

2.4.3 Knowledge, awareness, and attitude as factors

Knowledge and awareness about HIV/AIDS, its transmission, and prevention methods are important for women in increasing their uptake of PMTCT and influencing their HCT acceptance. A study by Olugbenga-Bello (2012:5-6) in the southwest, of Nigeria, indicated a direct relationship between specific MTCT-related knowledge and a willingness to get tested among pregnant women. A study conducted in Gonder, Ethiopia by Malaju (2012:3-7) on 400 pregnant women, showed that women who have good knowledge of PMTCT were about 3.3 times more likely to accept HIV testing than those who do not have this knowledge, and women with good comprehensive knowledge of HIV were 4.3 times more likely to accept HIV testing in ANC clinics than those who are not knowledgeable. A study conducted by Ghoma-Linguissi (2015:3-4) in the Republic of Congo indicated that women who were told about HIV at a hospital or health care facility were three times less likely to be tested for HIV. On the other hand, pregnant women who were informed about the risk of getting HIV through blood transfusion were four times more likely to accept HIV testing. The same study also showed that pregnant women who mentioned the PMTCT programme as one of the prevention strategies for HIV transmission were twice as likely to accept HIV testing.

2.4.4 Service provision factors

Health professionals' attitudes and other programme-related factors are also believed to be related to the uptake of HCT during women's visits to the ANC services. A study conducted in sub-Saharan African countries by Gunn et.al. (2016) indicated that the likelihood of women's use of HCT services was dependent on the service provider. Those who received ANC with skilled attendants were 1.78 times (99% CI: 1.45, 2.18) more likely to accept HCT during visits to the ANC clinic. A qualitative study conducted by Mitiku, Addissie, and Molla (2017:5) which examined pregnant women's perceptions and experiences of routine HIV testing and counselling in the city of Ghimbi, Ethiopia, found that HIV testing was not

considered an option, but rather an obligatory service for all pregnant women as part of other routine procedures.

2.5 HEALTH CARE WORKER'S PERCEPTIONS OF PREVENTION OF MOTHER TO CHILD TRANSMISSION OF HIV.

According to the WHO (2013), healthcare workers play a vital role in informing women about PMTC, the benefits of HCT, and the provision of pre-and post-HCT counselling. Their interactions with, and approach to pregnant women have a significant influence on women's acceptance of HCT during pregnancy. According to Moyo (2009:61-63), healthcare workers have the main role of supporting women in PMTCT services, through education, peer support, and patient advocacy and assistance. Findings also identified barriers, such as concerns about privacy and stigma, and the limitations of the healthcare system, including healthcare workers' attitudes to the uptake of, and implementation of the PMTCT programme.

A qualitative study was conducted by Nguyen, et al. (2009:4-8) in health facilities in Hanoi, Vietnam to explore health workers' views on the quality of prevention of mother-to-child transmission services and postnatal care for HIV-infected women and their children. The study identified factors that lead to health workers' failure to give good quality PMTCT services. This includes their fear of HIV infection; lack of knowledge of HIV and lack of counselling skills; high workload and lack of staff; unavailability of HIV testing at the community level; shortage of antiretroviral drugs; and lack of operational guidelines (Nguyen, et al. 2009:4-8). Another study by Ntsime, Makhado, and Sehularo (2022:4-5) showed that some of the nurses have a negative attitude toward the PMTCT programme and they were not keen on working with pregnant women. And the other factor identified was the shortage of midwives in the facilities to provide holistic care for all patients. Lack of knowledge about PMTCT was also one of the factors that hindered the provision of the service according to the PMTCT guidelines. The study done by Aishat and Olubunmi (2016:3) in Oyo State, Nigeria, revealed that health care workers with five or more years of experience in PMTCT were three times more likely to have a good attitude towards PMTCT of HIV/AIDS than those with less than five years of experience.

2.6 CONCLUSION

Chapter 2 presented the reviewed literature on HIV counselling and testing for pregnant women during ANC visits and the knowledge of health professionals on providing HIV counselling and testing for pregnant women during ANC visits. The literature reflected global, regional, and national perspectives on HIV testing and the provision of HIV testing in the management of PMTCT. The review included literature pertaining to various factors that influence the uptake of HIV counselling and testing during pregnancy. Finally, the literature on healthcare workers' perceptions of PMTCT was discussed.

The next chapter outlines the study design and methodology.

CHAPTER 3

RESEARCH DESIGN AND METHOD

3.1 INTRODUCTION

This chapter discusses the research methods used to conduct this study which was aimed at identifying the factors affecting the uptake of HIV testing among women attending antenatal care in Addis Ababa, Ethiopia. The chapter covers the study design, the study

population and sample, the data collection method and research instrument, ethical considerations, validity and reliability, and data analysis.

3.2 RESEARCH DESIGN

A quantitative, descriptive cross-sectional research design was used to identify the factors affecting the uptake of HIV testing among women attending antenatal care services in Addis Ababa, Ethiopia.

Quantitative research is a formal, objective, rigorous and systematic process for producing numerical information about the world. Quantitative research is conducted to describe new situations, events, or concepts, examine relationships between variables, and determine the effectiveness of interventions on selected health outcomes (Grove & Gray 2019:54). Descriptive research aims to describe how often an action or condition occurs, rather than to examine associations (Polit & Beck 2017:304). The main purpose of descriptive research is to describe the current situation (Kothari 2021:2). A cross-sectional design is a study design that collects data at specific time points and is sometimes used to infer changes over time when collecting data from different age groups (Grove & Gray 2019:286).

This study was quantitative, descriptive, and cross-sectional in the sense that the researcher collected numerical data and documented descriptions of pregnant women and healthcare providers about the HIV testing of pregnant women during their ANC visits for the prevention of mother-to-child transmission of HIV within a single time period. The data were collected from a single group of respondents at one point in time.

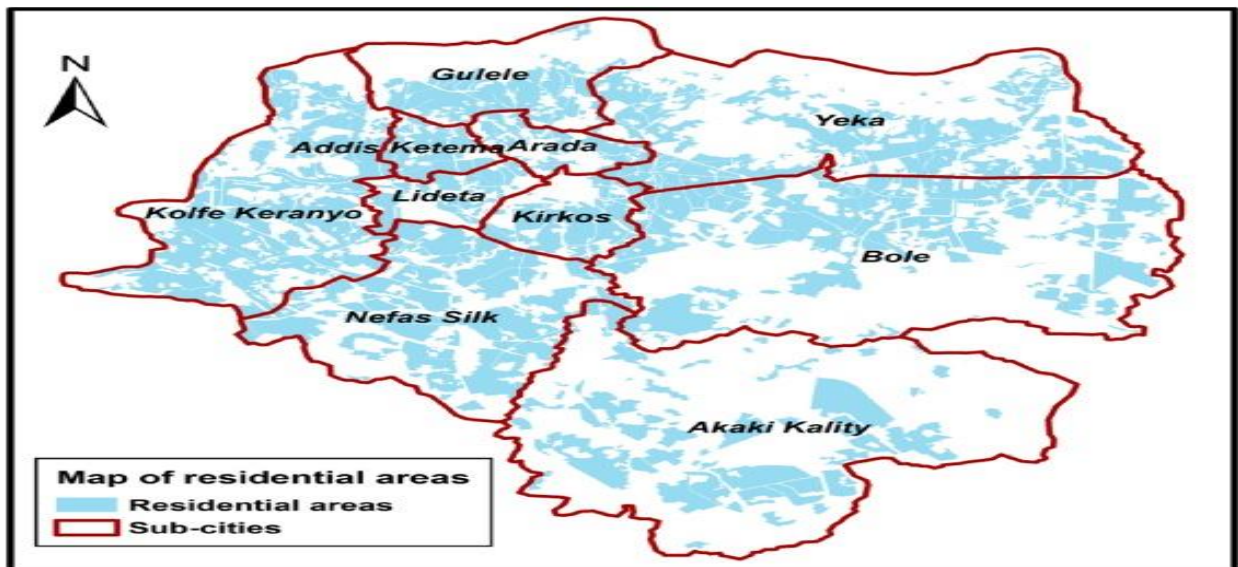
3.3 RESEARCH METHOD

Research methods refer to the actions and tools used to select and construct research design (Kothari 2021:1:8)

3.3.1 Sampling

In this study, all public health centres under the Addis Ababa City Administration Health Bureau (ACAHB) providing ANC and PMTCT services were the study settings. To select representative health facilities for this study, a simple random probability sampling method was used, and the sampling frame was obtained from Addis Ababa City Administration Health Bureau (ACAHB). For this study, 70 sample sites (health centres) were randomly

selected from the 97 public health centres, which provide ANC and PMTCT services in Addis Ababa. Addis Ababa is a capital city of Ethiopia and divided into ten sub-cities, where each has its own administrative borders. In each sub-city there are health centres which provide basic health services, where Addis ketema sub-city has 10 health centres, Arada sub-city has 8 health centres, Akaki Kality sub-city has 9 health centres, Bole sub-city has 9 health centres, Gulele sub-city has 11 health centres, Kirkos sub-city has 8 health centres, Kolfe keranyo sub-city has 12 health centres, Lideta sub-city has 5 health centres, Nifas-Silk Lafto sub-city has 10 health centres, and Yeka sub-city has 15 health centres.



Source: <https://ars.els-cdn.com/content/image/1-s2.0-S1618866720307330-gr2.jpg>

Figure 3. 1 Map of Addis Ababa City

3.3.1.1 Study Population

The target population was all pregnant women and healthcare workers in Addis Ababa. The study population was all pregnant women coming to the randomly selected health centres for ANC service during the study period. The study was conducted among pregnant women that were attending ANC between August 3, 2020, and June 30, 2021.

Inclusion criteria for women: All pregnant women visiting health centres for ANC service who had not been tested for HIV during the current pregnancy and who did not know their HIV status were included in the sample until the proportional sample size of the participants was fulfilled. Pregnant mothers who were willing to participate and who gave their consent to participate in the study were included in the study.

Inclusion criteria for the health care workers: All two-health care workers who were assigned in the Antenatal care unit of each health centre were included in the study, and the data were collected from all the 140 health care workers providing HIV counselling and testing in the ANC units working in the 70 selected health care facilities. Health care workers who were willing to participate and who gave their consent to participate in the study were included in the study.

3.3.1.2 Sampling techniques

Sampling is the process of selecting a group of people, events, kinds of behaviour, or other elements or items on which to conduct research. The sampling plan or sampling method defines the selection process, and the sample defines the group of people (or items) selected. The sample should represent a population (Burns & Grove 2015:346).

In this study, simple random sampling was used to select a representative number of health care facilities that provide ANC and PMTCT services in Addis Ababa. For this study, 70 health centres were randomly selected from the 97 public health centres, which provide ANC and PMTCT services in Addis Ababa. From the 10 sub-cities, two were selected randomly by assigning numbers for the pilot study. In these sub-cities there were a total of 17 health centers (eight in Arada sub-city, and nine in Akaki Kality sub-City). The remaining eight sub-Cities were selected for the study with their 80 Health centers and based on the exclusion criteria 10 were also excluded because the health centers were converted to Covid 19 centers and were not providing ANC service. Finally, the study used all the remaining 70 health centers to collect data. Pregnant women who attend the antenatal care service in these randomly selected health centres were selected based on the inclusion criteria set and those who fulfilled these criteria were included in the sample until the required proportional sample size of the participants was fulfilled. The data were collected from all healthcare workers providing HIV counselling and testing in the ANC units and working in these selected 70 health facilities during the study period (140 health workers). For this, a self-designed questionnaire was used to collect data from the healthcare workers about their perceptions and provision of HCT during their visits to the ANC clinic.

3.3.1.3 Ethical issues related to sampling.

The purpose of the study was explained to the study participants. Volunteer participants were asked to sign the consent form.

3.3.1.4 Sample size

The sample size was calculated using Epi info sample size estimation by considering, a significance level of 95% ($Z=1.96$), 5% margin of error, and proportion of pregnant women who received HIV counselling and testing (HCT) services during ANC visits in Addis Ababa (76%) (CSA 2016:240). The calculated minimum sample size based on the above assumptions was 280 and after adding 10% for the non-response rate the sample size for this study was 308.

3.3.2 Data collection

3.3.2.1 Data collection methods and procedure

Data collection is the process of selecting subjects and collecting data for research. The actual data collection procedures are specific to each study and depend on study design and measurement techniques (Burns & Grove 2015:423). The goal of any data collection plan is to provide excellent quality data that is accurate, valid, and meaningful according to Polit and Beck (2017:389-393). In this study, data were collected from pregnant women attending ANC clinics and health care practitioners providing ANC services.

3.3.2.2 Data collection approach

The research was conducted after obtaining approval and clearance from the Ethics Committee of the University of South Africa, Department of Health Studies (see Annexure A). Then permission to conduct the research was obtained from the Addis Ababa City Administration Health Bureau (AACAHB) ethical committee (Annexure D). Before conducting the research verbal permission from the health centre officials was obtained after the Health Bureau Ethical Committee approval letter was presented, which was also addressed to all 10 sub-city health offices of the city administration. (See Annexure D).

3.3.2.3 Development and testing of the data collection instrument

The researcher developed new data collection instruments and these questionnaires were subjected to rigorous pretesting so that they could be evaluated and refined (Polit & Beck

2017:292). A self-designed structured questionnaire (see Annexure H) which contained pre-developed items was used for data collection and the questionnaire was pre-tested in Arada health centre and Akaki Kality health centre located in the same study area. These health centres were part of the pilot study and not included in the final research sample.

To validate the questionnaires the researcher used 20 respondents in a pilot test who matched the selection criteria but were not included in the final research sample. After the pilot test, the questionnaires were refined to maintain consistency. Regarding the language of the tools, all the questionnaires were prepared in English and translated into Amharic, the official language of Addis Ababa, and Ethiopia. The researcher who is a native speaker of the Amharic language translated the questionnaires from English to Amharic.

3.3.2.4 Characteristics of the data collection instrument

The study used two types of questionnaires, one for the pregnant women who attended the ANC clinics. These questionnaires were prepared in English (Annexure H1) and in Amharic (Annexure H2). It had four categories, namely, demographic characteristics, sociocultural factors, knowledge awareness, and attitude and programmatic factors (ANC and PMTCT). The questionnaire for the health workers was prepared in English (see Annexure H3) and in Amharic (see Annexure H4), which had three sections namely, the socio-demographic characteristics of the health care workers, socio-cultural factors, and programmatic factors (ANC and PMTCT).

3.3.2.5 Data collection process

The researcher selected 70 health centres at which the data were collected. The data collection was done from August 3, 2020, to June 30, 2021, for 11 months.

Data were collected from healthcare providers after verbal permission was obtained from the health centre's medical directors. The researcher explained the purpose of the study before the commencement of the data collection stage and provided orientation for the healthcare providers at the ANC and PMTCT clinics about the questionnaire in each health care centre. The orientation and data collection were conducted in a room allocated for the ANC service when the providers were not attending to clients for the ANC service.

After the orientation, the researcher provided a self-administered questionnaire (see Annexure H3) to the healthcare workers. Two healthcare workers from each health centre were selected to complete the questionnaires, and a total of 140 HCWs completed the questionnaires after signing their consent, then the researcher collected the questionnaires and analysed the data.

Data were also collected from pregnant women: The researcher identified one senior nurse in each health facility who was not working in the ANC and PMTCT clinics and could provide orientation on the questionnaire for the pregnant women (Annex H1 and H2) on an individual basis. After the orientation, the senior nurses identified pregnant women who fulfilled the inclusion criteria and handed the self-administered questionnaires to them. Based on each individual's literacy status the senior nurses administered the Amharic and English versions of the questionnaires after obtaining consent from each participant. Data were collected from 296 pregnant women attending the ANC service after having attended consultations in ANC clinics, at the selected 70 health centres. The questionnaires were completed in a separate room which was adjacent to the ANC clinics. It was done on an individual basis to ensure confidentiality. Then the researcher analysed the collected data.

3.3.2.6 Ethical Considerations During Data Collection

The four ethical principles, respect for persons; beneficence; equity; and justice are relevant to the conduct of research involving human subjects. The principle of respect for persons indicates that people have the right and freedom of choice to participate or not in research. The principle of beneficence encourages researchers to ensure that subjects receive benefits without harm. The equity principle states that research subjects should be treated equally in terms of the benefits and risks of research. Maintaining research impartiality or justice means that subject inclusion and exclusion criteria must be scientifically and, or logically justified (Grove & Gray 2019:134-135).

3.3.2.6.1 Permission to conduct the study

The Research and Ethics Committee of the University of South Africa, Department of Health Studies provided approval and clearance to conduct the research after receiving the research proposal (see Annexure A)

Permission to conduct the research was obtained from the Addis Ababa City Administration Health Bureau (AACAHB) ethical committee and before conducting the research (see Annexure D). Verbal permission from the health centre officials was obtained after presenting the approval letter of the Health Bureau ethical committee.

3.3.2.6.2 Informed consent

Pregnant women who are aged 15-49 years (i.e., childbearing-age women) were eligible. For participants aged 18 years and older, the informed consent form for participants was prepared and attached and for participants who were younger than 18 years of age, the consent and assent form was prepared.

Informed consent is the ability of an individual to fully understand what will happen to them when they agree to participate (Portney 2020:92). This means that participants are fully informed about the research, understand the information provided, and have the opportunity to freely choose, and voluntarily consent to participate or opt-out. (Polit & Beck 2017:217). In this study, the consent forms were prepared, and before the start of data collection participants were informed about the study and asked whether they agreed to participate and if so, they were asked to sign the consent form. (Annexure E)

Assent refers to an agreement of a child or adult with limited autonomy to participate in research after permission is received from parents or guardians (Grove & Gray 2019:564), and since there were no participants younger than 18 years of age the assent forms were not used in this research. Participants who were 18 years and older were provided with clear and adequate information to help them reach informed decisions before they participated in the research. The participants were informed that participation in the study would be voluntary and assured that even if they decided to stop at any time during the data collection process they would not be judged or deprived of any services rendered in the health facility.

3.3.2.6.3 Privacy and confidentiality

Anonymity is the assured means of protecting confidentiality and occurs when researchers are unable to associate participants with data (Polit & Beck 2017: 223). Anonymity is also the inability of others, including researchers, to associate the identities of research participants with their responses (Grove & Gray 2019: 564). Confidentiality is a commitment that any information provided by a participant would

not be publicly reported or made available to others in a manner that would identify the participant (Polit & Beck 2017:223). Privacy can be maintained through anonymity (where even the researcher does not know the participant's identity) or formal confidentiality procedures that protect the information provided by the participant. (Polit & Beck 2014:96). In this study, after participants were informed of the purpose and procedures of the study, participants who agreed to write their names on the consent forms, and the information they provided, were kept confidential by the researcher only. Confidentiality and rights to participate in the study were explained in clear language that the participants could understand. Participants' names were not included in the questionnaire or any project documentation. The results would serve only scientific purposes and would be published anonymously without naming the participants.

3.3.2.6.4 Protection from harm

The study was conducted by avoiding risk as much as possible. The possible risks anticipated were psychological and social risks when the participants were asked about their HIV status. In the event that the anticipated risks should occur during the study, the health workers at the health facilities would provide support and additional counselling. The anticipated risks were communicated ahead of time to the healthcare workers who were assigned to the ANC units. In the event that there were any psychological conditions the HIV counsellors working in the health centres were informed that they should assist the pregnant women to cope with their condition through counselling. In this study, fortunately no psychological conditions were encountered. HIV counsellors were consulted before data were collected (In the health centre structure HIV counsellors were assigned to do the counselling). Therefore, this study considered all the possible consequences and solutions for the study participants.

3.3.3 Data analysis method

The data were entered after cleaning and coding, by using the computer software Epi 7.2.3.1 which is suitable for simple datasets, and controlled data entry by designing skipping patterns. The researcher entered the data when the required conditions were fulfilled.

Data were then exported to the Social Science Statistics Package (SPSS Windows version 25). Analyses were performed by the researcher with close technical assistance from an

experienced statistician and epidemiologist. Descriptive statistics were used to fully describe the quantitative data and inferential statistics were also used to interpret results for the general population using data from the sample (Larose 2015:78). The odds ratio (OR) is the ratio of the odds of an exposed group to an unexposed group, where the odds reflect the proportion of people with an adverse outcome compared to those without an adverse outcome (Larose 2015:88). Crude odds ratios (OR) and 95% confidence intervals (CI) were calculated using bivariate logistic regression analysis. For all statistical significance tests, the cut-off-value set was $P < 0.05$ because it is considered statistically reliable for the analysis. Since the crude OR does not consider the effects of confounding variables, these significant variables were fitted in a multivariate analysis to calculate adjusted odds ratios (ORs) and 95% confidence intervals (CIs), and the significant variables were explained in terms of p-values less than 0.05.

3.4 RIGOUR OF THE STUDY: VALIDITY AND RELIABILITY

Rigour is the pursuit of excellence in research that requires discipline, attention to detail, precision, and accuracy (Grove & Gray 2019:58). All information necessary to answer a research question or to achieve the goals of a proposed study were collected with strict adherence to accuracy.

Validity is related to the strength of research evidence and shows whether the results are fair and well-founded (Polit & Beck 2017:241). Validity is concerned with whether the results gathered meet all requirements of the scientific research methods, and validity determines the strength of the results and their accurate description of the actual reality.

The use of standardised questionnaires in this study increased the consistency of the information collected during the investigation. In the context of this research, the questionnaire was initially piloted in the health centres which were not selected for the research. Questionnaire validity was ensured by the careful design of research questions relevant to the research intent. The questionnaires were self-designed through the experience of the researcher and the literature review. As a result, the research instrument was comprehensive enough to deal with the research questions.

Internal validity relates to whether the independent variable has an effect on the outcome of a research study (Polit & Beck 2017:318). To ensure the internal validity of this study, the questionnaire was developed and aligned with the research objectives.

The appropriate selection techniques were used to choose the study participants based on their complete willingness to participate in the study and that they gave permission to the researcher to use the information collected.

According to Polit and Beck (2017:319) external validity concerns conclusions about whether the relationships found among study participants also apply to different people, conditions, and settings. External validity was maintained in this study by applying probability sampling techniques, specifically simple random sampling techniques to the selected healthcare settings and taking into account all the available health workers in the antenatal care unit. Pregnant women who visited the antenatal care were selected based on the inclusion criteria set and with the sample size estimation by considering, a significance level of 95% ($Z=1.96$) and 5% margin of error. The study used health workers and pregnant women to respond to the study questions in the questionnaires.

Content validity examines the extent to which the measurement includes all essential elements that are relevant to the component being measured, and the evidence comes from three sources, namely, the subject literature, representatives of relevant population groups, and content experts (Burns & Grove 2015:287). In this study, the questionnaires were reviewed by HIV programme experts to ensure the validity of their content and the questionnaire validity was linked to tools or devices designed with the right variables to answer research questions.

Reliability: Reliability refers to the accuracy and consistency of information obtained in research, and the term is most commonly associated with how variables are measured (Polit & Beck 2017:266). In this study, to ensure the reliability of the questionnaire, the researcher used self-designed standardised questionnaires and prior to applying the study, the researcher performed a pre-test on the same type of study population before collecting the actual study data. This helped the researcher to confirm the simplicity and accuracy of each question in the questionnaires, apply the document review checklist, and do appropriate modifications after the pre-testing.

Proper cross-referencing and listing of all scientific sources were done to ensure the scientific integrity of the research and the competency gained by the researcher during the study at UNISA after the completion of all theoretical modules for the master's degree in public health studies.

3.5 SUMMARY

This chapter has elaborated on the design and methodology used in this research, which employed a quantitative paradigm with a descriptive cross-sectional study design. The study used a simple random sampling method to select a representative number of public health centres providing ANC and PMTCT services in Addis Ababa.

Data were collected from 296 pregnant women attending ANC clinics at the selected health facilities who fulfilled the inclusion criteria. Data were also gathered from all 140 healthcare workers providing ANC services in these health centres to respond to the questions in the questionnaire. Data were collected using a self-designed, pre-tested structured questionnaire. Ethical and legal considerations examined in this study were also presented in this chapter. Measures to improve the validity and reliability of the study were also discussed. The researcher applied descriptive statistics to obtain a comprehensive description of the quantitative data and used binary logistic regression to generate inferential statistics related to HCT uptake in pregnant women attending ANC clinics in Addis Ababa.

CHAPTER 4

ANALYSIS, PRESENTATION, AND DESCRIPTION OF THE RESEARCH FINDINGS

4.1 INTRODUCTION

Chapter 4 discusses the results of the quantitative data collected from health facilities in Addis Ababa. This chapter is made up of three main sections as indicated in the title. After the introductory paragraph data management and analysis are discussed followed by the research results. Crude odds ratios (OR) and 95% confidence intervals (CI) were calculated using bivariate logistic regression analysis. Detailed descriptions of research findings are presented, after which a short conclusion is drawn.

4.2 DATA MANAGEMENT AND ANALYSIS

Data were collected from both pregnant women attending the ANC clinics at the selected health facilities and health care workers providing ANC services with the purpose of addressing the research questions. A self-designed structured questionnaire was used for data collection. The questionnaire was pre-tested in the Arada and Akaki Kality health centres which were not included in the actual study. After the pilot study, the same questionnaires were administered to pregnant women and healthcare workers. The completed questionnaires were cleaned, coded and entered in Epi Info version 7.2.3.1. Then, the entered data were exported to SPSS windows version 25 for data analysis.

The researcher applied descriptive statistics to have a comprehensive description of the quantitative data. Similarly, an inferential statistic was done using binary logistic regression. Bivariate analysis was computed to calculate the crude odds ratio (COR) and a 95% confidence interval (CI) of significant variables with a p-value less than 0.05. Finally, those significant variables were referred to a multivariate analysis to calculate the adjusted odds ratio (AOR) and a 95% confidence interval (CI) to describe significant variables with a P-value less than 0.05.

4.3 RESEARCH RESULTS

Among the 308 total population of pregnant women attending ANC clinics, a total of 296 pregnant women participated in this study while 12 (3.9%) did not respond, ensuring a response rate of 96.1%. On the other hand, 140 healthcare workers responded to the questionnaire and a 100% response rate was achieved.

4.3.1 Responses from Pregnant women

4.3.1.1 *Sample socio-demographic characteristics*

This section describes the selected pregnant women's socio-demographic details, which include age, marital status, ethnicity, religious affinity, educational status, occupation, family income, family size, gravida, and parity as illustrated in Table 4.1.

Table 4. 1 Demographic characteristics of respondents

Variables	Mean (SD)	Frequency	Percentage (%)
	15-20	26	8.8

Age (Years)	21-30	183	61.8
	31-40	77	26.0
	41-49	10	3.4
Marital status	Married	260	87.8
	Single	22	7.4
	Divorced	8	2.7
	Separated/ Widowed	6	2.1
Ethnicity	Amhara	100	33.8
	Oromo	83	28.0
	Gurage	48	16.2
	Tigre	17	5.7
	Others*	48	16.2
Religion	Orthodox	159	53.7
	Muslim	100	33.8
	Protestant	32	10.8
	Others	5	1.7
Education status	No education	38	12.8
	Primary (1-8)	130	43.9
	Secondary and above	128	43.2
Occupation	Employed	60	20.3
	Self-employed	60	20.3
	Housewife	166	56.1
	Other **	10	3.4
Family income (Birr)	≤1500 Birr	66	22.3
	1501-2500	95	32.1
	> 2500	135	45.6
Family size	≤ 2	115	38.9
	≥3	181	61.1
Gravida	1	87	29.4
	2	67	22.6

	≥3	142	48.0
Parity	0	117	39.5
	1	92	31.1
	≥2	87	29.4

* *Sidama, Silte, Wolyta, Somalie*

***Student, Contractual Worker, Daily labourers*

Of the overall respondents, 183 (61.8%) were in the age group of 21 to 30 years old. Most ((260(87.8%)) of the respondents, were married, belonged to Orthodox Christian religion ((159 (53.7%)) and 166 (56.1%), housewives. The majority 100 (33.8%) belonged to the ethnic group of Amhara followed by 83 (28.0%) Oromo. From the overall respondents, only 38 (12.8%) of the study participants did not have formal education, while the remaining 130 (43.9%) participants had primary education and 128 (43.2%) had secondary education and higher. The study participants were asked about their family's monthly income and the results showed that 66 (22.3%) had an income less than 1,500 ETB, 95 (32.1%) had an income of between 1,501 and 2,500 ETB and the remaining 135 (45.6%) reported that their monthly income was above 2,500 ETB. These results are shown in Table 4.1.

Regarding each respondent's current family size, 181 (61.1%) reported that their family consisted of three members or more and the remaining 115 (38.9%) reported that their family size was limited to only two members or less. The past obstetric history of the respondents showed that 87 (29.4%) women were pregnant for the first time, 67 (22.6%) were pregnant for the second time and the remaining 142 (48.0%) respondents had been pregnant at least three times. Concerning their parity (number of live children), 117 (39.5%) did not have children at the time of the study, 92 (31.1%) had one child and 87 (29.4%) had more than one child as shown in Table 4.1.

4.3.1.2 Socio-cultural perceptions of the pregnant women

Table 4. 2 Socio-cultural perceptions towards HIV counselling and testing during antenatal care visits

Variables		Frequency	Percentage (%)
How do you think a husband/ partner would react if his wife/partner becomes HIV positive?	Reject her	70	23.6
	Support her	138	46.6

	Do not know	88	29.7
How would a family/relative react if a woman becomes HIV Positive?	Reject her	45	15.2
	Support her	161	54.4
	Do not know	90	30.4
Do you think having HIV is a curse from God because of wrongdoing?	Yes	81	27.4
	No	215	72.6
Do you think it is culturally appropriate to talk about HIV with your partner?	Yes	176	59.5
	No	120	40.5
Do you think the community accepts and supports a pregnant woman if she becomes HIV-positive?	Yes	122	41.2
	No	174	58.8
Do you think you need permission from your partner to enrol in ANC and have counselling and testing for HIV?	Yes	187	63.2
	No	109	36.8
Do you think an HIV-positive woman should breastfeed?	Yes	126	42.6
	No	170	57.4
If yes, why HIV positive women should breastfeed?	Obligation	36	28.6
	Cannot afford to buy formula milk	62	49.2
	Fear of rejection	13	10.3
	Others	15	11.9

Concerning the socio-cultural perceptions of women, about 138 (46.6%) of the respondents believed that if wives or partners become HIV positive their husbands or partners would support them. While 70 (23.6%) of the women thought that they would be rejected and 88 (29.7%) did not know whether their husbands or partners would support or reject them if they were to become HIV positive, slightly more than half (161 or 54.4%) believed that their families or relatives would support them if they became HIV positive. However, 45 (15.2%) women thought that they would be rejected and 90 (30.4%) said they did not know how families or relatives would react if a woman became HIV positive. Moreover, only 122 (41.2%) of the women thought that the community would accept and support a pregnant woman who became HIV positive. However, more than half (174 or 58.8 %) of the women

believed that the community would not accept and support a pregnant woman who became HIV positive. A systemic review by Endalamaw, et al,(2021:266), also indicated that the highest self-reported reasons that pregnant women do not test for HIV in Ethiopia could be ascribed to fear and uncertainty about their husband's response to an HIV-positive result, fear of stigma and discrimination and the negative reactions of the community towards people living with HIV.

Similarly, the study found that only 176 (59.5%) of the respondents believed that it is culturally appropriate to talk about HIV with their partners. About 81 (27.4%) of the women believed that HIV is a curse from God because of wrongdoings, which is in line with the finding reported in Hawassa's study in which 202 (34.3%) pregnant women indicated that they believed that HIV is a curse from God (Adugna 2013:22). The majority, (187 or 63.2%) of the respondents were of the opinion that women need permission from their partners to be enrolled in an ANC and obtain counselling and testing for HIV. About 126 (42.6%) of the participants also believed that HIV-positive mothers should breastfeed their babies. The most common reason given for this belief was because they could not afford to buy formula milk (62 or 49.2%), while 36 (or 28.6%) women believed that it is their obligation and 13 (10.3%) feared rejection. These results are outlined in Table 4.2.

4.3.1.3 Knowledge, awareness, and attitude towards mother to child transmission and prevention of mother to child transmission of HIV among women attending antenatal care

Respondents were asked about their knowledge about sexually transmitted infections. Most (271 or 91.6%) of the study respondents mentioned at least one STI, nearly half (146 or 49.3%) mentioned at least two STIs, 65 (21.9%) mentioned at least three STIs and a small number (9 or 3.0%) of the respondents mentioned at least four STIs. Among the 296 total study participants, the majority (271 or 91.6%) mentioned HIV/AIDS as a sexually transmitted infection, 117 (39.5%) mentioned syphilis, 91(30.7%) mentioned Gonorrhoea and 12 (4.1%) respondents mentioned candidiasis as sexually transmitted infections. These results are illustrated in Table 4.3. This finding is comparable to studies conducted in Sebeta by Assefa (2012:17-19) which reported that most (95.9%) of the women attending the ANC clinic had knowledge about HIV/AIDS and in southeast Ethiopia most (94.6% of the study participants had heard about HIV/AIDS (Kassa et al. 2019:7). Similarly,

the majority (93%) of women in a study in the Congo conducted by Ghoma-Linguissi, et al (2015: 4-5) understood HIV/AIDS as a sexually transmitted infection.

Most (289 or 97.6%) of the participants knew about the modes of HIV transmission. The majority (289 or 96.3%) of the women mentioned unsafe sexual intercourse as one of the routes of HIV transmission followed by 216 (73.0%) who indicated that sharing sharp and contaminated instruments would also transmit HIV while mother-to-child transmission of HIV was mentioned as a route of transmission by 156 (52.7%) of the women and 89 (30.1%) of the respondents indicated that blood contact or transfusion could transmit the disease. However, a small number (27 or 9.1%) of the respondents also thought that HIV could be transmitted by sharing a meal with an infected person as illustrated in Table 4.3. These findings reveal that most of the study participants know about HIV transmission methods and this is consistent with a research study conducted in Addis Ababa by Alemayehu (2018) which reported that 94.4% of women knew at least one mode of HIV transmission . This result also agrees with the study conducted in the Congo; which indicates that unprotected sex with infected persons (82 %), use of contaminated instruments (70 %) and MTCT (57 %) are the most commonly reported modes of HIV transmission (Ghoma-Linguissi et al. 2015:4-5). A small percentage (9.1%) of the respondents had fewer misconceptions than those reported in CSA Ethiopian Demographic and Health survey (EDHS) (2016), which found that 26.6% of women incorrectly believe that a person can become infected by sharing food with a person who has HIV

Among the total number of study respondents, the majority, 251 (84.8%) knew about the occasions on which MTCT of HIV occurred. About half (143 or 48.3%) of the women mentioned that it occurred during pregnancy, 164 (55.4%) of them mentioned that it occurred during breastfeeding and 111 (37.5%) of the respondents indicated that HIV was transmitted from mother to child during labour and delivery, as shown in Table 4.3. The respondents' knowledge about the transmission of HIV from a mother to child is comparable with a study done in Addis Ababa which reported that 90% of the women knew that a woman with HIV can pass the virus to her child (Alemayehu 2018:8). It is also consistent with the studies done in Dire Dawa where 78.9% of women reported that HIV could be transmitted from mother to child (Nuri & Seme 2014:28). However, these respondents' knowledge about HIV was higher than among women in a study done in southeast Ethiopia (72.7%) (Kassa et al. 2019:7-8),

but slightly lower than among respondents in the study conducted in Addis Ababa where 97.6% of pregnant women knew when MTCT of HIV/AIDS occurred, 69.9% mentioned that it occurred during pregnancy, 59.4% indicated during labour, and 51.6% during delivery and breastfeeding (Alemayehu 2018:24-25). The percentage is also lower than in a study in Ghana where most (93.5%) of the respondents knew that an HIV-infected woman can transmit the virus to her baby (Nyarko et al. 2019:4). This difference could be due to variations in study setups, health information dissemination, and geographical differences.

Most (256 or 86.5%) of the participants also mentioned methods for the prevention of mother-to-child transmission of HIV. About 167 (56.4%) of the women knew that the use of ARV drugs could prevent mother-to-child transmission of HIV, about 101 (34.1%) knew that avoidance of breastfeeding can assist in the prevention of MTCT of HIV, and 11 (3.8%) of the women mentioned caesarean section delivery as a PMTCT method. Most (267, 90.2%) of the women believed that HIV-positive women can bear children (Table 4.3). Thus, in this study, the majority (86.5%) of the pregnant women knew that MTCT of HIV could be prevented. This result is comparable with the findings of studies conducted in Addis Ababa in which 81.2% (Alemayehu 2018:24) were knowledgeable about AIDS and the results of a study conducted in Ghana which found that 86.7% were knowledgeable about AIDS (Nyarko et al. 2019:4) respectively. However, the percentage is higher than the study done in southeast Ethiopia which reported that only 63.6% of the women selected for the study knew that MTCT of HIV is preventable (Kassa et al. 2019:8). However, this could be due to the difference in the study setting and the exposure of the participants to different means of information.

Table 4. 3 Knowledge, awareness, and attitude towards mother to child transmission (MTCT) and prevention of mother to child transmission (PMTCT) of HIV among women attending ANC

Variables		Frequency	Percentage (%)
Knowledge about STIs	At least one STI	271	91.6
	At least two STI	146	49.3
	At least three STI	65	21.9
	At least four STI	9	3.0
Know other STIs	Gonorrhea	91	30.7

	Syphilis	117	39.5
	Candidiasis	12	4.1
Know HIV/AIDS	Yes	271	91.6
	No	25	8.4
Know modes of HIV transmission	Yes	289	97.6
	No	7	2.4
Ways of HIV transmission	Sexual	285	96.3
	Mother to child	156	52.7
	During blood transfusion	89	30.1
	Sharing sharp instruments	216	73.0
Knew the time of MTCT of HIV	Yes	251	84.8
	No	45	15.2
Timing of MTCT of HIV	During pregnancy	143	48.3
	During labour	111	37.5
	During breastfeeding	164	55.4
Know PMTCT of HIV	Yes	256	86.5
	No	40	13.5
Preventive methods	Use ARVs for PMTCT	167	56.4
	Avoid breastfeeding	101	34.1
	Deliver by caesarean section	11	3.8
Do you Believe HIV-positive women can bear children?	Yes	267	90.2
	No	29	9.8
If no, what are your reasons	It is a waste of time the baby will get HIV	9	31.0
	Will create orphan	4	13.8
	Pregnancy weakens the woman and gets sick	11	37.9
	Others	5	17.2
	Yes	27	9.1

Can HIV be transmitted by having a meal with an infected person	No	269	90.9
---	----	-----	------

4.3.1.4 Programmatic Factors (antenatal care and prevention of mother to child transmission) among women attending ANC

Most (289 or 97.6%) of the study participants believed that pregnant women who attend the ANC should have HIV counselling and testing. Similarly, most (288 or 97.3%) thought that having HIV counselling and testing is necessary during ANC visits. Most (249 or 84.1%) of the study participants thought that getting tested with their partners in the PMTCT clinic is appropriate. The majority (234 or 79.1%) of the respondents thought that the involvement of their partners increased their confidence about attending the ANC programme and counselling and testing for HIV. The majority (230 or 77.7%) of the study participants had a good perception of ANC and PMTCT services provided at the health facility (see Table 4.4). Similarly, in a study done in southeast Ethiopia, most (93.5%) of the women agreed on the importance of knowing women's HIV status during pregnancy (Kassa et al. 2019:8). All pregnant women attending the ANC facilities in Ghana also agreed that HCT should be done for all pregnant women during pregnancy (Nyarko et al. 2019:4).

Table 4. 4 Programmatic factors (ANC and PMTCT) among women attending ANC

Variables		Frequency	Percentage (%)
Do you think pregnant women who come for ANC should have HIV counselling and testing?	Yes	289	97.6
	No	7	2.4
Do you think having HIV counselling and testing are necessary during ANC visits?	Yes	288	97.3
	No	8	2.7
Do you think getting tested with your partner in the PMTCT clinic is appropriate?	Yes	249	84.1
	No	47	15.9
Do you think the involvement of your partner increases your confidence in attending the ANC service and counselling and testing for HIV?	Yes	234	79.1
	No	62	20.9
	Good	230	77.7

What is your perception of the ANC and PMTCT services provided at the health facility?	Neutral	67	22.6
	Bad	2	0.7

4.3.1.5 Uptake of HIV counselling and testing during ANC visits

One of the objectives of this study was to identify the magnitude of pregnant women’s utilisation of HIV counselling and testing during ANC visits. Therefore, the study participants were asked about whether they utilised HIV testing and counselling during their current ANC follow-up. From the total of 296 pregnant women involved in the study, 253 or (85.5%) of them utilised HIV testing and counselling (95% CI: 81.1-89.2%), refer to Figure 4.1. This study result is similar to the overall prenatal HIV test uptake of HIV of 80.8% (95% CI: 79.8–81.8%) in east Africa (Astawesegn, et al. 2021:5). A study conducted in southern Ethiopia also showed that 84.1% (95% CI: 80.6-87.2%) of the women have used HIV Counselling and Testing (Gizaw & Gebremdhin 2018:413). Similarly, a recent systematic review and meta-analysis study conducted by Endalamaw, et al. (2021:268) in Ethiopia showed a national HIV testing uptake of 79.6% (95% CI 73.9-85.4) among pregnant women. However, according to regional analysis, the pregnant women’s uptake of HIV testing was slightly higher 93.06%, (95%CI: 91.92, 94.20%) in Addis Ababa than in the current study (Endalamaw, et al. 2021:264). The reason for this difference could be the fact that the researcher excluded those pregnant women who had already been tested for HIV before getting pregnant. This rationale was supported by the study conducted in Rwanda which noted that the HCT uptake level during ANC visits among those women who were previously tested was found to be reduced by 48% when compared to their counterparts (Kayigamba et al. 2014:5). On the other hand, the uptake of HCT among pregnant women in the Congo (72%) was lower when it was compared to this study’s findings (Ghoma-Linguissi et al. 2015:3-5). This difference could be due to the time difference between the two studies’ periods and the study areas in which the studies took place. The study in the Congo was conducted in 2015 among semi-urban dwellers but this study was conducted in 2021 among urban dwellers in Ethiopia. This rationale was supported by the findings of the study conducted in Ethiopia which reported that “those rural dwellers were 48% less likely to utilise PMTCT services compared to those urban dwellers” (Gebremedhin et al. 2021:6).

The HCT attended to 253 pregnant women. Of this number, 246 (83.1%) were satisfied with the HIV testing and counselling service they had received but the remaining group of 17 (5.7%) women reported that they were not satisfied with the HIV testing and counselling service provided in their respective health facilities. This finding agrees with the results of a study conducted in Kenya, which found that 79% of pregnant women attending ANC facilities were very satisfied (Vo, et al. 2012:4).

The forty-three pregnant women who did not utilise the HIV testing and counselling service were asked the reasons for not making use of the services. A shortage of time was given by 44.2% of the group, 18.6% indicated lack of privacy, 25.6% mentioned the unpleasant attitude of the health worker, and 11.6% of them mentioned other reasons, such as that they were not ready to get tested, had not consulted their husbands and did not think that it was necessary to get tested as they were not at risk of acquiring the HIV disease. This is illustrated in Figure 4.2. The study participants were also asked why other pregnant women do not utilize HCT facilities, and over half (156 or 52.7%) of them responded that other pregnant women were afraid that if they were tested positive their husbands or families would reject them. This is shown in Table 4.5. These perceptions about the non-use of the HCT services were also shared in healthcare workers' responses in this study. Furthermore, the above-mentioned barriers are also consistent with the findings of studies conducted in sub-Saharan African countries (Rogers, et al. 2016:3-4; Gunn et al. 2016:3-6). It is also shared in studies conducted in Ethiopia, Gonder (Malaju 2012:4) and Gambella (Fanta & Worku 2012:7).

Table 4. 5 Utilisation of HIV counselling and testing during ANC visits

Variables		Frequency	Percentage (%)
Uptake of HCT during ANC	Yes	253	85.5
	No	43	14.5
If yes, were you satisfied with pre- and post-test counselling?	Yes	236	93.5
	No	17	6.5
	Shortage of time	19	44.2
	The unpleasant approach of the health worker	11	25.6

If HCT is not utilised HCT, what is the reason?	Lack of privacy	8	18.6
	Others	5	11.6
Why do you think women do not come to the health facility for ANC and counselling and testing for HIV?	Fear that if they are positive the husband or family would reject them.	156	52.7
	The health facility is too far	10	3.4
	The health workers do not treat them well	16	5.4
	Because culturally it is not acceptable	67	22.6
	Do not know	72	24.3
	Other	18	6.1

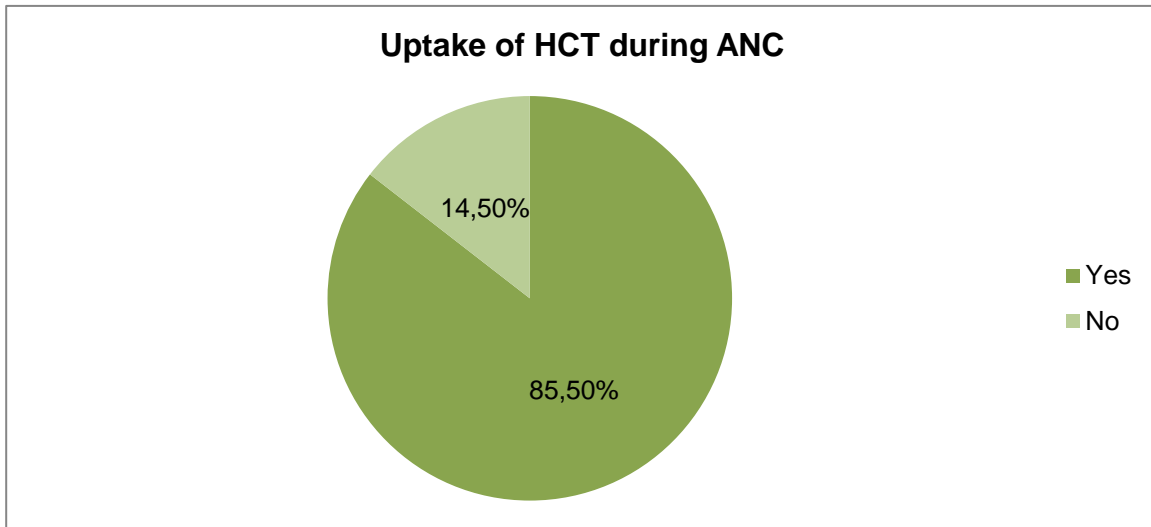


Figure 4.1: Utilisation of HIV counselling and testing during ANC visits

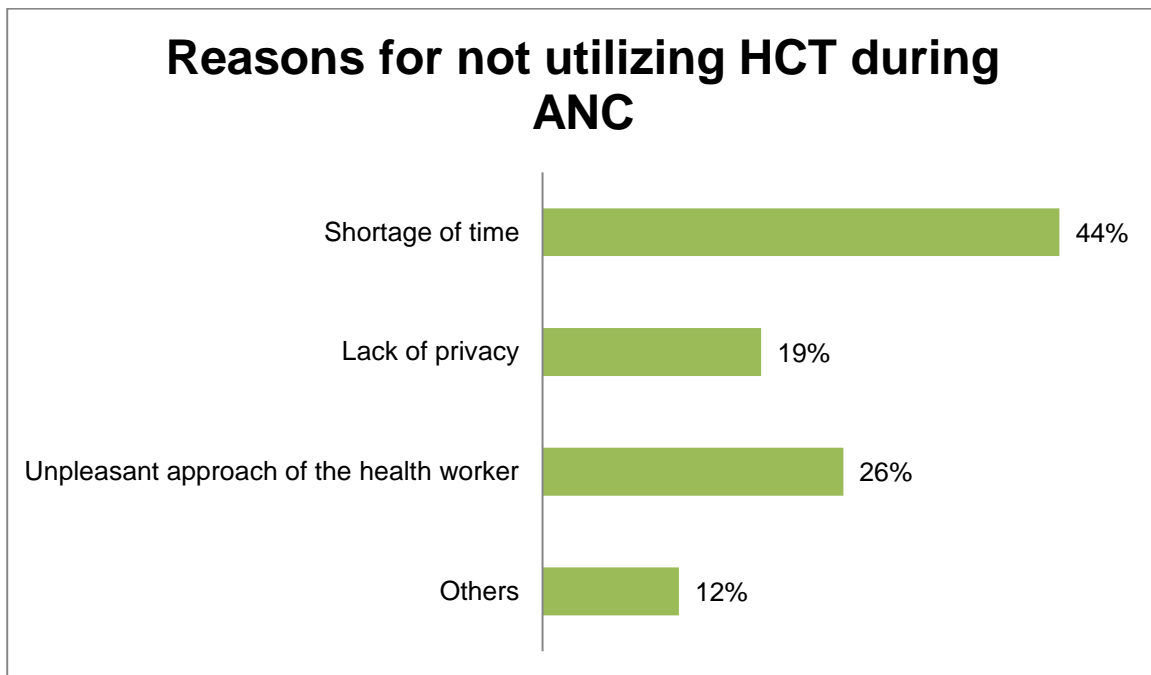


Figure 4.2: Reasons for the non-utilisation of HIV counselling and testing service during ANC visits.

4.3.1.6 Factors associated with uptake of HIV counselling and testing during antenatal care visits.

Age, knowledge of mother-to-child HIV transmission (MTCT), knowledge of prevention methods for mother-to-child HIV transmission (PMTCT), perception of community acceptance of HIV-positive women, Perceptions about HCT during ANC visits, and husband involvement in the HCT were candidate variables for the multivariate logistic regression analysis. In multivariate analysis, four variables were found to be significantly associated with the uptake of HIV testing during ANC visits with a p-value less than 0.05.

Pregnant women who knew about MTCT of HIV were 2.9 times more likely to utilise the HCT services during ANC visits than those women who do not know about MTCT [AOR=2.9, 95%CI: 1.3-6.3]. This finding is consistent with a meta-analysis conducted in east Africa (Astawesegn et al. 2021:9), Nigeria (Olugbenga-Bello 2012:109) and from studies conducted in northern Ethiopia (Alemu, Ambaw, and Wilder-Smith 2017:4) and Gonder, Ethiopia (Malaju 2012:5). A recent study conducted by Gebremedhin, et al. (2021:6) in Addis Ababa also supports the positive effect of PMTC knowledge on the uptake of HCT among pregnant women.

Those women who have a positive perception about HCT during ANC visits were 3.8 times more likely to utilise HCT services than their counterparts [AOR=3.8, 95%CI: 1.8-8.1]. A cross-sectional study conducted in Ethiopia also shows that pregnant women who have a positive attitude towards persons living with HIV were 2.4 times more likely to be tested for HIV (Alemu, Ambaw, and Wilder-Smith 2017:4). Another study conducted in the Gambella region, Ethiopia also reported that attitude-related factors were associated with a refusal to have HIV testing (Fanta & Worku 2012:4). However, a study conducted in Ghana shows that there is no significant association between positive perceptions and the utilisation of HCT when multivariate analysis is applied to the data (Nyarko et al. 2019:4). This could be due to the fact that other similar variables confound perceptions in the final regression model. But numerous studies conducted to investigate the relationship between perceptions and health service utilisation indicated that perceptions about the service was a powerful drive to utilise the specific health service (Sofaer and Firminger 2005:519-520) (Onyeneho et al. 2016:6).

Finally, those women whose husbands were involved in their HCT were 2.6 times more likely to utilise HCT during ANC visits than those women whose husbands were not involved [AOR=2.6, 95%CI: 1.2-5.6]. The information obtained by the researcher from the health care workers also shows that about 82 (58.6%) of the respondents were of the opinion that the husband of a pregnant woman would support her if she became HIV positive. The study conducted by Kalembo, et al. (2012:37-38) also noted that the overall effectiveness of PMTCT programmes in sub-Saharan Africa depends on the engagement of male partners because men are decision-makers in African families and are critically important in influencing women's health. The same study concludes that involvement of male partners increases the use of PMTCT services (Kalembo, et al 2012:37-38). This finding is also supported by a study conducted in Uganda by Larsson, et al. (2012:74). Similarly, a study conducted in Gonder, Ethiopia also showed that husband involvement is positively associated with the utilisation of HCT services (Malaju 2012:5) as shown in Table 4.6.

Table 4. 6 Factors associated with uptake of ANC HIV testing during ANC visits

* *P-value less than 0.05*

Variables	Uptake of ANC HIV testing		COR	AOR
	Yes N (%)	No N (%)	(95% CI)	(95% CI)
Age group				
<=30	183 (87.6)	26 (12.4)	1.7 (1.1-3.3)	2.0 (0.9-4.4)
>30	70 (80.5)	17 (19.5)	1	1
Know the MTCT of HIV				
Yes	144 (92.3)	12 (7.7)	3.4 (1.6-6.9)	2.9 (1.3-6.3) *
No	109 (77.9)	31 (22.1)	1	1
Perception of community acceptance of HIV-positive women				
Yes	9 (7.4)	113 (92.6)	3.1 (1.4-6.2)	1.6 (0.7-3.9)
No	34 (19.5)	140 (80.5)	1	1
Know PMTCT				
Yes	229 (89.5)	27 (10.5)	5.6(2.6-11.9)	2.9 (1.3-6.3) *
No	24 (60.0)	16 (40.0)	1	1
Perception towards HCT during ANC visits				
Good	209 (90.9)	21 (9.1)	4.9 (2.5-9.8)	3.8 (1.8-8.1) *
Neutral/bad	44 (66.7)	22 (33.3)	1	1
Husband involvement				
Yes	211 (90.2)	23 (9.8)	4.4 (2.2-8.6)	2.6(1.2-5.6) *
No	42 (67.7)	20 (32.3)	1	1

4.3.2 Responses of health care workers regarding perceptions and provision of HCT during ANC visits

4.3.2.1 Demographic characteristics

A total of 140 healthcare workers were asked about their perception and provision of HCT during ANC visits. Most (102 or 72.9%) of the health workers were in the age group of 21 to 30 years old age, The majority (98 or 70.0%) were female, and more than half (73 or 52.1%) were married. Regarding their professional backgrounds, 9 (or 6.4%) healthcare workers were medical doctors (general practitioners), 100 (71.4%) were health officers and the remaining 31 (22.1%) were midwives (see Figure 4.3). Of the overall healthcare workers involved in the study; 113 (80.7%) had graduated after 2011, and 43 (30.7%) had been working for more than five years in the health facility. Most of the healthcare workers reported that they had received their training in the previous five years, 4 (3.3%) on ART, 96 (79.5) on voluntary counselling and testing (VCT), 21 (17.5%) on PMTCT, and the same number of health workers had received training within the previous five years. Most of the healthcare workers attend to 15 to 30 ANC clients per day and 120 (85.7%) of them reported that they work at the ANC clinic for more than three days per week. This is shown in Table 4.7.

Table 4. 7 Demographic characteristics of healthcare workers

Variables		Frequency	Percentage (%)
Age in full years	21-30	102	72.9
	31-40	32	22.9
	41 and above	6	4.3
Gender	Female	98	70.0
	Male	42	30.0
Marital status	Married	73	52.1
	Never married	64	45.7
	Divorced	3	2.1
What is your professional category?	Medical doctor: GP	9	6.4
	Health Officer	100	71.4
	Midwife	31	22.1
Year of graduation	before 2005 G.C	8	5.7
	2005 to 2010 G.C	19	13.6

	2011 G.C and later	113	80.7
How long have you worked in this facility? Years Months	less than 1 year	24	17.1
	1 to 3 years	31	22.1
	4 to 5 years	42	30.0
	more than 5 years	43	30.7
Have you ever received training in the following	ART	4	3.3
	VCT	96	73.6
	PMTCT	21	17.4
In the last 5 years, did you receive training in	ART	4	3.3
	VCT	92	79.5
	PMTCT	21	17.5
How many total patients/clients do you typically see in an average day?	Less than 15 patients/clients	24	17.1
	15 to 30 patients/clients	78	55.7
	More than 30 patients/clients	38	27.1
How many ANC patients/clients in total do you typically see on an average day?	Less than 15 ANC clients	32	22.9
	15 to 30 ANC clients	78	55.7
	More than 30	30	21.4
How many days do you work in an average work week at ANC services?	Up to 3 days	20	14.3
	More than 3 days	120	85.7

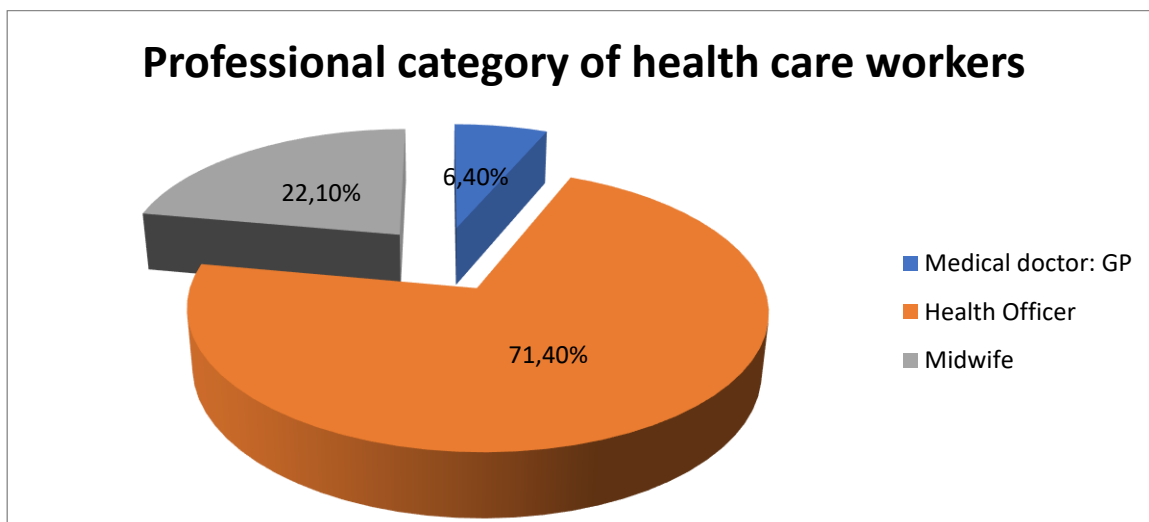


Figure 4.3: Professional category of healthcare workers working in MCH on the selected health facilities

4.3.2.2 Socio-cultural perceptions

All the healthcare workers perceived that testing for HIV of a pregnant women who is visiting the ANC clinic is appropriate. Over half (82 or 58.6%) of the respondents perceived that the husband would support a pregnant woman if she became HIV positive. However, 83 (59.3%) perceived that the community would not accept the woman if she became HIV positive as illustrated in Table 4.8. These socio-cultural perceptions were also mentioned by pregnant women in this study.

Table 4. 8 Socio-cultural perceptions of health care workers towards HCT during ANC visits

Variables		Frequency	Percentage (%)
Do you think that testing pregnant women for HIV is appropriate during visits to the ANC?	Yes	140	100.0
How do you think a husband/ partner would react if his wife/partner became HIV positive?	Reject her	35	25.0
	Support her	82	58.6
	Do not know	22	15.7
	Other	1	.7
How would a family/relative react if a woman became HIV positive?	Reject her	10	7.1
	Support her	87	62.1
	Do not know	41	29.3
	Other	2	1.4
Do you think the community would accept and support a pregnant woman if she became HIV-positive?	Yes	57	40.7
	No	83	59.3

4.3.2.3 Programmatic Factors (ANC and PMTCT)

Nearly all of the health care workers perceived that visit to the ANC clinics as a means to prevent mother-to-child transmission of HIV is very important, and all the health care workers believed that pregnant women who visit the ANC clinic should have HIV counselling and testing. Similarly, most (138 or 98.6%) of the healthcare workers believed that HIV counselling and testing are necessary during ANC visits. This is consistent with the study

done by Rujumba (2012:42-44) in Uganda which concluded that “Health workers were supportive and perceived HCT during ANC visits as beneficial, especially for HIV-positive women and their babies”.

According to more than half (86 or 61.4%) of the healthcare workers the majority of the pregnant women who do not visit the ANC clinics for HCT were because of their fear that if they tested positive their husbands or families would reject them. Furthermore, the distance from the health centre, poor treatment by healthcare workers, and cultural barriers are also some of the reasons that these women do not visit the health facility for ANC counselling and testing for HIV (see Figure 4). Nearly all (136 or 97.1%) of the 140 healthcare workers provided HCT and most (134, 95.7%) perceived that the ANC and PMTCT services provided at the health facilities are good. Fear of rejection and poor-quality treatment by health care workers was also mentioned by pregnant women in this study as the reason for not receiving HCT during ANC visits. The four healthcare workers who do not provide counselling before and after the HIV tests were asked to give the reasons that they do not offer the service and they mentioned the shortage of time, shortage of test kits, and the lack of private rooms for counselling (see Table 4.9. The challenge of shortage of kits was also reported in studies conducted in countries with low socio-economic status. The study conducted in Uganda to assess the lessons from healthcare providers to improve PMTCT shows that “narratives of health workers indicate that having a successful PMTCT programme requires that the government and donors should take seriously the need to address the perpetual state of critical PMTCT supplies that are out of stock, especially HIV test kits and ARVs” (Rujumba 2012:52).

Table 4. 9 Programmatic factors (ANC and PMTCT) among health care workers

Variables		Frequency	Percentage (%)
How do you explain the importance of the ANC for the prevention of mother-to-child transmission of HIV?	Very important	139	99.3
	Medium	1	0.7
Do you think pregnant women who come for ANC should have HIV counselling and testing?	Yes	140	100.0
Do you think having HIV counselling and testing necessary during ANC visits?	Yes	138	98.6
	No	2	1.4
Why do you think pregnant women do not come to the health facility for ANC, counselling, and testing for HIV? <i>*Select all that apply</i>	Fear that if they are positive the husband or family would reject them	86	61.4
	The health facility is too far	17	12.1
	The health workers do not treat them well	10	7.1
	Because culturally it is not acceptable	18	12.9
	Do not know	13	9.3
	Others	8	5.7
Did you provide counselling before and after the HIV test?	Yes	136	97.1
	No	4	2.9
If No, what is the reason? <i>*Select all that apply</i>	Shortage of time	3	75.0
	Shortage of test kits	3	75.0
	Lack of private room for counselling	1	25.0
What is your perception of ANC and PMTCT services provided at the health facility?	Good	134	95.7
	Neutral	6	4.3

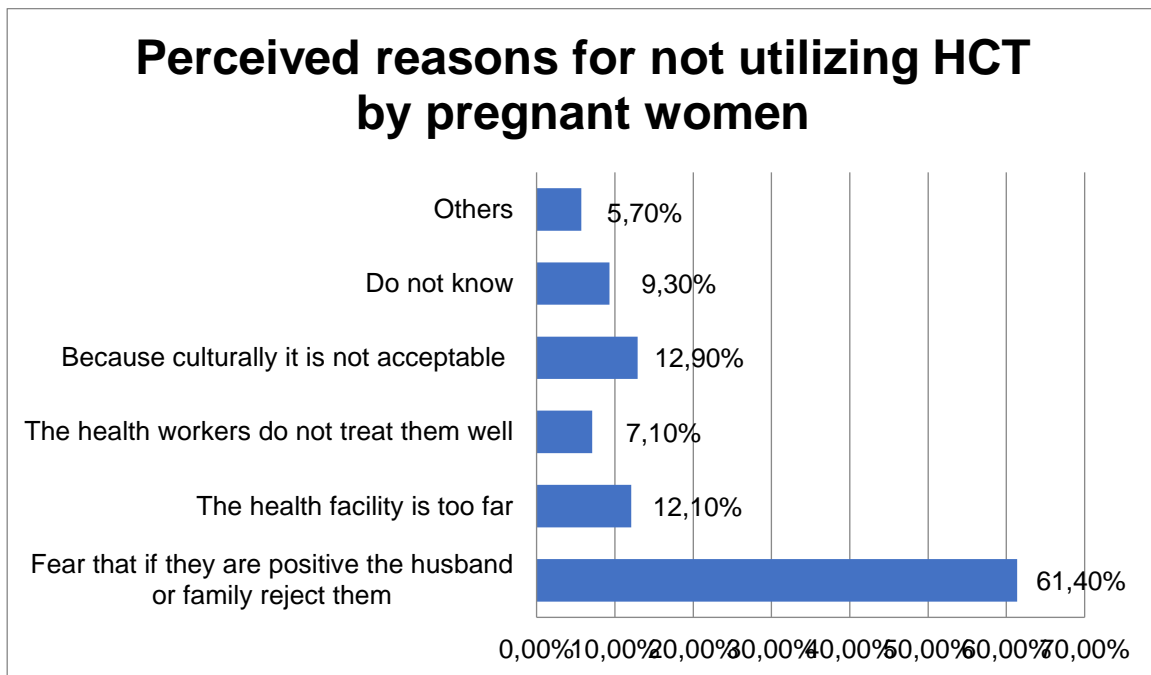


Figure 4.4: Healthcare workers’ perceived reasons for the non-utilisation of HCT by pregnant women during ANC visits

4.4 DISCUSSION OF RESEARCH RESULTS

The findings in respect of pregnant women indicated that nearly half (138 or 46.6%) of the respondents believed that if wives or partners become HIV positive their husbands or partners would support them. Nearly two-thirds (187 or 63.2%) of respondents were of the view that women need permission from their partners to be enrolled in ANC and have HCT. About 126 (42.6%) of the respondents supported the belief that HIV-positive mothers should breastfeed their babies. These findings concur with a systemic review in Ethiopia that emphasised that fear and uncertainty of their husbands’ reactions towards HIV-positive results and fear of being stigmatised and suffering discrimination and negative responses by the community towards the support of people living with HIV are the main self-reported reasons that some pregnant women did not receive HIV tests in Ethiopia (Endalamaw, et al. 2021:265-266).

Findings concerning knowledge and attitude towards MTCT and PMTCT showed that the majority, (271 or 91.6%) of women mentioned HIV/AIDS as a sexually transmitted infection. This finding is comparable with the findings of studies conducted in Sebeta (Assefa 2012:27) where 96.9% of women were knowledgeable about the causes of AIDS and southeast

Ethiopia where 94.6% knew that HIV is sexually transmitted (Kassa et al. 2019:5-7). Similarly, the majority of women attending the ANC 82% in the Congo understood HIV/AIDS as a sexually transmitted infection (Ghoma-Linguissi, et al. 2015:3). Most (251 or 84.8%) of the pregnant women also knew when MTCT of HIV/AIDS occurred. Nearly half (143 or 48.3%) mentioned that it occurred during pregnancy, 111 (37.5%) indicated that it was transmitted during delivery, and 164 (55.4%) indicated that transmission occurred during breastfeeding. The respondents' knowledge about the transmission of HIV from mother to child is consistent with the studies conducted in Addis Ababa (90%) (Alemayehu 2018:24-25) and in Dire Dawa (78.9%) (Nuri & Seme 2014:28). However, the result was higher than that of a study done in southeast Ethiopia (72.7%) (Kassa et al. 2019:7-8). The findings of studies conducted in Ghana (93.5%) were slightly lower (Nyarko et al. 2019:4). This difference could be due to variations in study set-ups, health information dissemination, and geographical differences.

Most (256 or 86.5%) of the respondents also mentioned prevention methods for mother-to-child transmission of HIV. The PMTCT methods mentioned by the respondents were the use of ARV drugs (56.4%), avoiding breastfeeding (34.1%), and caesarean section delivery (3.8%). This finding is comparable with the findings of a study conducted in Addis Ababa in which 81.2% of pregnant women were aware of PMTCT methods (Alemayehu 2018:24-25) and Ghana in which 86.7% (Nyarko et al. 2019:4) of the women were knowledgeable about these methods. However, it is higher than the results of a study conducted in southeast Ethiopia which reported that only 63.6% of women knew that MTCT of HIV is preventable (Kassa et al. 2019:8). This could be due to the difference in the study setting and the exposure of the participants to different means of information communication.

The findings regarding programmatic factors (ANC and PMTCT) among women attending ANC indicated that most (289 or 97.6%) of the study respondents, believed that pregnant women who attend ANC clinics should have HCT. Most (249 or 84.1%) of the respondents thought that getting tested with their partners in the PMTCT clinic is appropriate. The majority (230 or 77.7%) of the study respondents had a good perception of ANC and PMTCT services provided at the health facility. These findings are consistent with a study done in southern Ethiopia, which reported that most (93.5%) of the women agreed on the importance of knowing their HIV status during pregnancy (Kassa, et al. 2019:8). Similarly, all pregnant

women attending ANC clinics in Ghana also agreed that HCT should be offered to all pregnant women during pregnancy (Nyarko et al. 2019:4).

The results also revealed that out of the total of 296 pregnant women involved in this study the majority (253 or 85.5%) utilised HIV testing and counselling. Concerning the reasons for not using the HCT services, 44.2% of respondents mentioned the shortage of time, lack of privacy (18.6%), unpleasant attitudes of health workers (25.6%). Other reasons were mentioned by 11.6% of the respondents, such as that they were not ready to get tested, did not consult their husbands and they thought that they are not at risk of acquiring HIV. This result is similar to the prenatal HIV test uptake of 80.8% in East Africa (Astawesegn, et al. 2021:5) and 84.1% in a study conducted in southern Ethiopia (Gizaw & Gebremdhin 2018:417). Similarly, a recent systematic review and meta-analysis study in Ethiopia shows that the national uptake of HIV tests among pregnant women is 79.6%. However, the sub-regional analysis shows the uptake of HIV tests among pregnant women in Addis Ababa as slightly higher (93.1%) than the current study (Endalamaw, et al. 2021:264). The reason for this slight difference could be the fact that the researcher excluded those pregnant women who had already been tested for HIV before they became pregnant (Kayigamba, et al. 2014:5).

Factors significantly associated with the uptake of HIV testing and counselling (HCT) during ANC visits were that women who knew about MTCT of HIV were 2.9 times more likely to utilise the HCT services during ANC visits than those women who are not knowledgeable about MTCT [AOR=2.9, 95%CI: 1.3-6.3].

Those women who have a good perception about HCT services during ANC visits were 3.8 times more likely to utilise HCT than their counterparts [AOR=3.8, 95%CI: 1.8-8.1]. This finding is consistent with studies conducted in northern Ethiopia (Alemu, Ambaw, & Wilder-Smith 2017:4) and Gambella (Fanta & Worku 2012:4). Several other studies also indicated that perception of the service was a powerful drive to utilise the specific health service (Onyeneho et al. 2016:6; Sofaer & Firminger 2005:519-520). Finally, those women whose husbands were involved in their HCT were 2.6 times more likely to utilise HCT during ANC visits than those women whose husbands were not involved [AOR=2.6, 95%CI: 1.2-5.6]. This finding is supported by studies done in Gonder, Ethiopia (Malaju 2012:5) and in Uganda (Larsson, et al. 2012:74).

A total of 140 healthcare workers were asked about their perceptions about, and provision of HCT during ANC visits. All the healthcare workers believed that testing for HIV in a pregnant woman who is visiting the ANC clinic is appropriate. More than half (82 or 58.6%) of the respondents believed that the husband would support a pregnant woman if she became HIV positive but 83 (59.3%) perceived that the community would not accept the woman if she became HIV positive. According to 86 (61.4%) of the healthcare workers the majority of the women who do not attend the ANC clinics for HCT are afraid that if they are tested positive their husbands or families would reject them. Furthermore, the distance to health centres, poor treatment by healthcare workers, and cultural barriers are also the reasons indicated that pregnant women do not attend health facilities for ANC counselling and testing for HIV. The challenge of shortages of medical kits was also reported in studies conducted in countries with low socio-economic status (Rujumba 2012:52). Nearly all (136 or 97.1%) of the 140 healthcare workers provided HCT services and most (134 or 95.7%) perceived that the ANC and PMTCT services provided at the health facilities are good. This is consistent with the findings of a study done by Rujumba (2012:44) in Uganda who concluded that “Health workers were supportive and perceived HCT during ANC visits as beneficial, especially to HIV-positive women and their babies”.

4.5 CONCLUSION

This chapter discussed the analysis and interpretation of data. The data analysis was based on responses to questions in respect of 296 pregnant women and 140 Health care workers in the selected health facilities of Addis Ababa. The analysis was conducted with the help of statistical software and the results of the analysis were presented according to questionnaire items.

Results from the analysis of data on pregnant womans’ demographic characteristics, the influence of socio-cultural perception, the influence of knowledge, awareness, and attitude-related factors, the influence of programmatic factors, and the determinant factors identified by inferential statistics are all discussed in this chapter with illustrative tables and figures.

Results from the analysis of healthcare workers also presented and discussed healthcare workers’ demographic characteristics, socio-cultural perception, and the influence of programmatic factors.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter discusses the study findings, the conclusions of the study concerning the three research questions, the recommendations drawn from the findings, the contributions of the study, and the study limitations.

5.2 RESEARCH DESIGN AND METHOD

The researcher employed a quantitative, descriptive cross-sectional research design to identify factors that contribute to the low uptake of HIV testing by pregnant women during antenatal care visits in Addis Ababa, Ethiopia. For this study, sample sites which are health facilities, were randomly selected from the 97 public health centres, which provide ANC and PMTCT services in Addis Ababa. The inclusion criteria for women were all pregnant women attending health centres for ANC services who had not been tested for HIV during their current pregnancies and who did not know their HIV status.

Participants were included in the sample until the proportional sample size of the participants was reached. The data were collected using a face-to-face structured questionnaire administered to 308 pregnant women and 140 healthcare workers. The collected data were entered into Epi 7.2.3.1 software and then exported to SPSS 25 windows version for data processing and analysis. Descriptive statistics were employed to describe study variables using frequency tables and graphs. Inferential statistics were applied to identify factors affecting the uptake of HCT during visits to ANC facilities using binary logistic regression analysis. The relationship between the independent variables and the outcome variables was assessed and the odds ratio (OR) with p-value was presented. Those variables with p-value less than 0.05 during the bivariate analysis were further entered into multivariate analysis to control potential confounder variables and threats to internal validity. Finally, those variables with p-value less than 0.05 were identified as significant factors and presented with their AOR and 95% CI.

5.3 SUMMARY AND INTERPRETATION OF RESEARCH FINDINGS

This study aimed to investigate the perceptions of HIV testing amongst women attending ANC facilities, to assess the perceptions of health workers regarding the provision of HIV testing services for pregnant women during visits to the ANC clinic and to formulate recommendations that would increase the uptake of HIV testing by pregnant women during their ANC visits. The findings of the study indicate that most of the respondents have good knowledge of HIV/AIDS as 91.6% of the women responded that HIV/AIDS is a sexually transmitted infection. This high awareness of HIV/AIDS can be attributed to the many educational programmes that have been initiated over the years. However, about 8.4% of the study population were not able to identify HIV/AIDS as a sexually transmitted infection, about 9.1% of them think that HIV can be transmitted by having a meal with an infected person and 27.4% believe that HIV is a curse from God because of wrongdoings. These findings suggest that health and HIV/AIDS awareness programmes may need to be further strengthened.

The study also demonstrated that most pregnant women knew modes of HIV transmission as 96.3% of the women identified unsafe sexual intercourse as an influencing factor followed by the sharing of sharp and contaminated instruments (73.0%), MTCT (52.7%), and blood contact/transfusion (30.1%) as HIV transmission modes. These results suggest that the risks of an infected woman transmitting HIV to her unborn child, and the sharing of needles and other sharp objects, are not as widely understood as that of the sexual transmission of the disease. The study also revealed that pregnant women who understand MTCT of HIV were 2.9 times more likely to utilise the HCT during ANC visits than those women who do not know about MTCT [AOR=2.9, 95%CI: 1.3-6.3]. This finding supports the argument in various published papers that higher HIV knowledge predicts a positive attitude toward HCT and enhances testing. Hence, HIV prevention interventions are necessary to reduce HIV transmission from pregnant women to their babies.

The findings revealed that the level of knowledge amongst respondents about PMTCT methods was good. Most (86.5%) of the respondents also mentioned methods to prevent mother-to-child transmission of HIV. Most of the respondents knew that MTCT can occur during pregnancy and breastfeeding and were aware that ARV drugs can reduce the chances of MTCT. But only 34.1% mentioned that breastfeeding should be avoided and only

a small percentage (3.8%) mentioned that delivery by caesarean section can also reduce the chances of MTCT of HIV. These findings may suggest that an increase in knowledge and awareness about PMTCT may have a positive influence on women's HCT uptake. The further inferential analysis also showed that those women who know about the PMTCT of HIV were 2.9 times more likely to utilise HCT than those women who do not know about PMTCT [AOR=2.9, 95%CI: 1.3-6.3]. This finding suggests that interventions that increase knowledge about HIV prevention can also expand HCT uptake and should thus be promoted.

The findings about the socio-cultural perceptions of women indicated that only 46.6% of the respondents believed that their husbands or partners would support them and 54.4 % thought that their family/relatives would support them if they became HIV positive. Most of the respondents also thought that the community would not accept and support a pregnant woman who became HIV positive (58.8 %) but believe that it is culturally appropriate to talk about HIV with their partners (59.5%). The bivariate logistic regression analysis also indicated that women's perception of the community's acceptance of HIV-positive women was significantly associated with HCT uptake (P-value < 0.05) although it was not statistically significant in a multivariate model. More than half (59.3%) of the healthcare providers also perceived that the community would not accept a woman if she became HIV positive. These findings may suggest that socio-cultural beliefs and opinions may have a negative influence on pregnant women's attitudes towards the uptake of HCT during ANC follow-ups.

The findings regarding programmatic factors (ANC and PMTCT) also indicate that most of the respondents thought that HIV counselling and testing are necessary during ANC visits. The majority (77.7%) of the study participants had a good perception of the ANC and PMTCT services provided at the health facility. The multivariate logistic regression analysis also indicated that those women who have a good perception of HCT during visits to the ANC facilities were 3.8 times more likely to utilise HCT than their counterparts [AOR=3.8, 95%CI: 1.8-8.1].

Most (84.1%) of the study participants were of the opinion that getting tested with their partners in the PMTCT clinic is appropriate and that involvement of their partners increases their confidence about attending the ANC programmes and HCT (79.1%) services. The study also indicated that those women whose husbands were involved in their HCT were 2.6 times

more likely to utilise HCT services during ANC visits than those women whose husbands were not involved [AOR=2.6, 95%CI: 1.2-5.6].

The results also revealed that most (85.5%) of the pregnant women involved in the study utilised HIV testing and counselling. The most common reasons reported for not using the HCT services were a shortage of time (44.2%), lack of privacy (18.6%), and the unpleasant attitudes of the health workers (25.6%). A small percentage (11.6%) of the respondents mentioned other reasons, such as they were not ready to get tested, had not consulted their husbands and did not think that they were at risk of acquiring HIV. Over half (52.7%) of them also responded that other pregnant women do not utilise HCT due to the fear that should they become HIV positive their husbands or families would reject them. This finding is also supported by the results of the health care providers' responses which reported that 61.4% of the women do not visit the ANC facilities for HCT due to their fear that if they are tested positive their husbands or families would reject them.

5.4 CONCLUSIONS

In general, the findings indicate that most of the pregnant women have gained a good perception of HIV counselling and testing provided at the health facilities during their visits to the ANC services. The study also indicated that most pregnant women attending ANC facilities utilised the HIV testing and counselling services. Factors significantly associated with the uptake of HCT during ANC visits are women's knowledge of MTCT of HIV, knowledge of PMTCT, perceptions about HCT, and husbands' involvement in the HCT services. Nearly all the healthcare workers perceived that HCT during ANC visits are very important for the prevention of mother-to-child transmission of HIV and all the healthcare workers believe that pregnant women who attend the ANC facilities should have HIV counselling and testing. However, the findings of this study also indicated that a shortage of time, lack of privacy, and unpleasant attitudes of the health workers would make pregnant women reluctant to utilise the HCT services during ANC visits. Similarly, a shortage of time, shortage of test kits, and a lack of private rooms for counselling were the challenges faced by health professionals in providing HCT services during ANC visits.

5.5 RECOMMENDATIONS

Based on the above findings, the following recommendations are proposed for improving pregnant women's HCT uptake during ANC programmes.

5.5.1 Programmatic recommendations

To increase pregnant women's knowledge and awareness about mother to child transmission and prevention of mother to child transmission of HIV, information about the programme should be given to all reproductive-age women.

To reduce the negative influence of sociocultural factors on women, context-specific and culturally sensitive messages should be formulated and disseminated by means of health education on reproductive health and PMTCT of HIV.

PMTCT clinics should be made male-friendly and service providers should ensure that all efforts are made to involve men from the beginning in every PMTCT of HIV intervention.

To improve the staff attitude and unpleasant behaviours of the health care workers the compassionate and respectful care trainings should be given to the professionals who are working in the ANC units.

Privacy is one of the most important factors for the pregnant mothers to come for the ANC and HIV testing in the health facilities, and the health facilities managers should give due attention to this and allocate a private room for HCT services.

Where there are many pregnant women coming for ANC services the health centre managers should assign additional health care workers to minimize the waiting time of the pregnant women coming for ANC services.

5.5.2 Recommendations for further studies

A comparative study among public and private health institutions including both rural and urban areas using both quantitative and qualitative data collection methods to extensively assess sociocultural and programmatic factors affecting the utilisation of PMTCT services is recommended.

5.6 CONTRIBUTIONS OF THE STUDY

This study sheds some light on the understanding of the perceptions of pregnant women about HIV counselling and testing provided at the health facility during ANC services; perceptions of health care workers towards HIV counselling and testing during visits to the ANC; HIV counselling and testing utilisation among pregnant women; and socio-cultural, knowledge and programmatic factors affecting HCT utilisation. The findings of the study have provided evidence to help decision-makers design interventions to improve the uptake of HIV testing for the PMTCT of HIV in Addis Ababa.

5.7 LIMITATIONS OF THE STUDY

The study was conducted among pregnant women attending ANC service in Addis Ababa health facilities, and, therefore, the results may not necessarily be generalisable to other pregnant women attending ANC services in rural areas. Since the study is cross-sectional, it may not show cause-effect relationships between the independent factors and the dependent variable.

5.8 CONCLUDING REMARKS

In general, there is a good perception of HCT during visits to ANC facilities by both pregnant women and healthcare workers. Factors significantly associated with the uptake of HCT during ANC visits were women's knowledge of MTCT, knowledge of PMTCT, perceptions about HCT, and husbands' involvement in the HCT. Addressing the challenges faced by pregnant women and healthcare workers would improve the level of uptake of HCT during visits to ANC facilities. However, the findings of this study reflect the situation in public health facilities in urban settings and may not be generalisable to other settings.

List of References

- Aduugna, F 2013. Factors influencing utilization of PMTCT service and referral linkage among HIV positive pregnant women before delivery in Hawassa public health facilities. Master's thesis, Addis Ababa University, Addis Ababa. From: <http://etd.aau.edu.et/handle/123456789/10990>. (Accessed on June 14, 2022)
- Aishat, U & Olubunmi, A. 2016. Prevention of mother-to-child transmission of HIV/AIDS: Perception of health care workers in rural areas of Oyo State, Nigeria. *Scientifica* (Cairo) 2016; Jan 19:2016: 4257180.doi:10.1155/2016/4257180. (Accessed on July 5, 2022)
- Alemayehu, Y. 2018. Assessment of knowledge, utilization and associated factors on prevention of mother-to-child transmission of HIV/AIDS among antenatal care users at selected public hospitals in Addis Ababa, Ethiopia. From: <http://etd.aau.edu.et/handle/123456789/14893>. (Accessed on June 15, 2022)
- Alemu, YM, Ambaw, F & Wilder-Smith, A. 2017. Utilization of HIV testing services among pregnant mothers in low-income primary care settings in northern Ethiopia: a cross-sectional study. *BMC Pregnancy and Childbirth* 17 (1): 1–8. From: <https://doi.org/10.1186/s12884-017-1389-2>. (Accessed on June 10, 2022)
- Assefa, B. 2012. Assessment of factors affecting utilization of PMTCT services among Pregnant Women in Sebeta and Alemgena health centers, Fin Fine Zurya Special Zone of Oromia, Ethiopia. Master's thesis, Addis Ababa University, Ethiopia. From: <http://etd.aau.edu.et/handle/123456789/6899> (Accessed on June 10, 2022)
- Astawesegn, FH, Stulz, V, Agho, KE, Mannan, H, Conroy, E & Ogbo, FA. 2021. Prenatal HIV test uptake and its associated factors for prevention of mother to child transmission of HIV in East Africa. *International Journal of Environmental Research and Public Health* 18 (10): 1–17. From: <https://doi.org/10.3390/ijerph18105289>. (Accessed on June 10, 2022)
- Bernard B. 2014. Laboratory testing for the diagnosis of HIV infection: updated recommendations, Atlanta, USA: Centre for Disease Control.
- Burns, N & Grove, SK. 2015. *Understanding nursing research*. 6th edition. Pretoria: Saunders/Elsevier.

Grove, SK, & Gray, JR. 2019. *Understanding nursing research: building an evidence-based practice*. 7th edition. St. Louis, Missouri: Elsevier.

Central Statistical Agency Ethiopia see Ethiopia. Central Statistical Agency

Dictionary of Medical Terms. 2009. London: A&C Black

Ejigu, Y, & Biniyam, T. 2018. HIV testing during pregnancy for prevention of mother-to-child transmission of HIV in Ethiopia. *PLoS ONE* 13 (8): 1–11. From: <https://doi.org/10.1371/journal.pone.0201886>. (Accessed on June 14, 2022)

Endalamaw A, Geremew, D, Alemu, SM, Ambachew, S, Tesera, H & Habtewold, TD. 2021. HIV test coverage among pregnant women in Ethiopia: a systematic review and meta-analysis. *African Journal of AIDS Research* 20 (4): 259–69. DOI: 10.2989/16085906.2021.1980066 (Accessed on June 14, 2022)

Ethiopia. Central Statistical Agency (CSA) Ethiopia. 2016. Ethiopia demographic and health survey, 2016. Addis Ababa, Ethiopia.

Ethiopia. Ministry of Health (MOH). 2021. National-Strategic-Plan-Triple-Elimination of Mother to Child Transmission of HIV, Syphilis and Hepatitis B-Oct-2021. Addis Ababa: Ministry of Health.

EPHI see Ethiopian Public Health Institute

Ethiopian Public Health Institute. 2022. HIV Related Estimates and Projections in Ethiopia for the Year 2021-2022. Addis Ababa: Ethiopian public health institute.

Fanta, W & Worku, A. 2012. Determinants for refusal of HIV testing among women attending antenatal care in Gambella Region, Ethiopia. *Reproductive Health*, 9 (1): 1–13. From: <https://www.researchgate.net/publication/230571575>. (Accessed on June 14, 2022)

Gebremedhin T, Alamneh TS, Hagos A, Beimnet D, and Nigusu W. 2021. A multilevel analysis of determinants of PMTCT service utilisation among women during the antepartum, intrapartum, and postpartum period in Ethiopia. *BMC Pregnancy and Childbirth* 21 (1): 1–10. From: <https://doi.org/10.1186/s12884-021-03896-1>. (Accessed on June 14, 2022)

Geremew, D, Tajebe, F., Ambachew, S, Endalamaw A and Eshetie S. 2018. Seroprevalence of HIV among pregnant women in Ethiopia: a systematic review and meta-analysis. *BMC*

Research Notes 11, 908. From: <https://doi.org/10.1186/s13104-018-4022-1>. (Accessed on June 14, 2022)

Ghoma-Linguissi, L Sa, Ebourombi, DF, Sidibe, A, Kivouele, TS, Vouvougui, JC, Poulain, P & Ntoumi, F. 2015. Factors influencing acceptability of voluntary HIV testing among pregnant women in Gamboma, Republic of Congo. *BMC Research Notes* 8 (1): 1–7. From: <https://doi.org/10.1186/s13104-015-1651-5>. (Accessed on June 14, 2022)

Gizaw, R, & Gebremedhin, S. 2018. Acceptance of HIV counselling and testing among antenatal clinic attendees in southern Ethiopia. *Ethiopian Journal of Health Sciences* 28 (4): 413–22. From: <https://doi.org/10.4314/ejhs.v28i4.7>. (Accessed on July 1, 2022)

Gunn, JKL, Ibitola, O Asaolu, KE. Center, Steven J. Gibson, Patrick Wightman, Echezona E. Ezeanolue, and John E. Ehiri. 2016. Antenatal care and uptake of HIV testing among pregnant women in sub-Saharan Africa: a cross-sectional study. *Journal of the International AIDS Society* 19 (1). From: <https://doi.org/10.7448/IAS.19.1.20605>. (Accessed on July 1, 2022)

Jameson, JL, Fauci, AS, Kasper, SL, Longo, DL, & Lascenzo, J. 2018. *Harrison's principles of internal medicine*. 20th edition. New York: McGraw-Hill.

Kalembo, F W, Yukai, Du Zgambo, M & Jun, Q. 2012. Male partner involvement in prevention of mother-to-child transmission of HIV in sub-Saharan Africa: successes, challenges and way forward. *Open Journal of Preventive Medicine* 02 (01): 35–42. From: <https://doi.org/10.4236/ojpm.2012.21006>. (Accessed on June 15, 2022)

Kassa S, Chala, D, Eshetu E, Morka G, Olani G, Lette A, Abdulkadir A, & Yassin A. 2019. Knowledge, attitude and practice towards prevention of mother-to-child transmission of HIV among pregnant women attending antenatal care in southeast Ethiopia. *Nursing & Healthcare International Journal* 3 (5). From: <https://doi.org/10.23880/nhij-16000201>. (Accessed on June 15, 2022).

Kayigamba FR, Bakker MI, Lammers J, Mugisha V, Bagiruwigize E, Asimwe A, van der Loeff MF. (2014). Provider-initiated HIV testing and counselling in Rwanda: acceptability among clinic attendees and workers, reasons for testing and predictors of testing. *PLoS ONE* 9(4) 1-9

Kendall T. 2014 Consequences of missed opportunities for HIV testing during pregnancy and delayed diagnosis for Mexican women, children, and male partners. *PLoS ONE* 9(11) 1-9.

Kothari, CR. 2021. *Research methodology: methods and techniques*. 2nd revised edition. New Delhi: New Age International.

Larose, DT. 2015. *Discovering statistics*. 3rd edition. New York: WH Freedman

Larsson, EC, Thorson, A, Pariyo, G, Conrad, P, Arinaitwe, M, Kemigisa, M, Eriksen, J, Tomson, G & Ekström, AM. 2012. Opt-out HIV testing during antenatal care: experiences of pregnant women in rural Uganda. *Health Policy and Planning* 27 (1): 69–75. From: <https://doi.org/10.1093/heapol/czr009>. (Accessed on December 25, 2020)

Malaju, MT & Alene, GD. 2012. Assessment of utilization of provider-initiated HIV testing and counselling as an intervention for prevention of mother-to-child transmission of HIV and associated factors among pregnant women in Gondar town, northwest Ethiopia. *BMC Public Health*, 1–8. From: <http://www.biomedcentral.com/1471-2458/12/226/>. (Accessed on June 15, 2022)

Ministry of Health, Ethiopia see Ethiopia. Ministry of Health

Moyo, P. 2009. Factors influencing the attendance of voluntary counselling and HIV-testing (VCT) among women in Glen View High-Density Suburb in Harare, Zimbabwe..MA dissertation, University of South Africa.

Mitiku, I, Addissie, A & Molla, M. 2017. Perceptions and experiences of pregnant women about routine HIV testing and counselling in Ghimbi Town, Ethiopia: qualitative study. *BMC Research Notes* 10 (1): 1–7. From: <https://doi.org/10.1186/s13104-017-2423-1>. (Accessed on June 15, 2022)

Ndege S, Washington S, Kaaria, A, Prudhomme-O’Meara W, Were E, Nyambura, M, et al. (2016). HIV prevalence and antenatal care attendance among pregnant women in a large home-based HIV counselling and testing Program in western Kenya. *PLoS ONE* 11(1) 1-10

New Oxford American Dictionary. 2010. New York: Oxford University Inc.

Nguyen, TA, Oosterhoff, P, Pham, YN, Hardon, A & Wright, P. 2009. Health workers' views on quality of prevention of mother-to-child transmission and postnatal care for HIV-infected women and their children. *Human Resources for Health* 7:39 1–11. From: <https://doi.org/10.1186/1478-4491-7-39>. (Accessed on June 15, 2022)

Nieswiadomy, RM & Bailey, C. 2018. *Foundations of nursing research*. 7th edition. New York: Pearson.

Ntsime NR, Makhado L & Sehularo LA. 2022. Barriers in implementing the PMTCT in Moretele Sub-District, South Africa: an exploratory study. *Health Services Insights*, 15:1-10. From <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8922188/>. (Accessed on July 15, 2022)

Nuri, Aliya. 2014. College of Health Sciences. Facilitating factors for the prevention of Mother-to-child transmission of HIV service utilization among antenatal care attending pregnant women in public health facilities in Dire Dawa. MA in Public Health, Addis Ababa University, Ethiopia. From: <http://etd.aau.edu.et/handle/123456789/3982> (Accessed on July 15, 2022)

Nyarko, V, Pencille, L, Akoku, DA & Tarkang, EE. 2019. Knowledge, attitudes, and practices regarding the prevention of mother-to-child transmission of HIV among pregnant women in the Bosome Freho district in the Ashanti region of Ghana: a descriptive cross-sectional design. *PAMJ Clinical Medicine* 1: 1–13. From: <https://doi.org/10.11604/pamj-cm.2019.1.69.20659>. (Accessed on July 15, 2022)

Olugbenga-Bello, AI. 2012. Perception about HIV testing among women attending antenatal clinics at Primary Health Centres in Osogbo, southwest, Nigeria. *Journal of AIDS and HIV Research* 4 (4): 105–12. From: <https://doi.org/10.5897/jahr11.063>. (Accessed on July 15, 2022)

Onyeneho, NG, Amazigo, UV, Njepuome, NA, Nwaorgu, OC & Okeibunor, JC. 2016. Perception and utilization of public health services in southeast Nigeria: implication for health care in communities with different degrees of urbanization. *International Journal for Equity in Health* 15 (1): 1–11. From: <https://doi.org/10.1186/s12939-016-0294-z>. (Accessed on June 15, 2022)

Polit, DF & Beck, CT. 2014. *Essentials of nursing research: appraise evidence for nursing practice*. 8th edition. New York: Wolters Kluwer Health/Lippincott/Williams & Wilkins

Polit, DF & Beck, CT. 2017. *Nursing research: generating and assessing evidence for nursing practice*. 10th edition. New York: Wolters Kluwer Health/Lippincott Williams & Wilkins.

Portney, LG. 2020. *Foundations of clinical research: applications to evidence-based practice*. 4th edition. Philadelphia, PA: F.A. Davis.

Rogers, AJ, Weke, E, Kwena, Z, Bukusi, EA Oyaró, P, Cohen, CR & Turan, JM. 2016. Implementation of repeat HIV testing during pregnancy in Kenya: a qualitative study. *BMC Pregnancy and Childbirth* 16 (1): 1–11. From: <https://doi.org/10.1186/s12884-016-0936-6>. (Accessed on June 15, 2022)

Rujumba, J. 2012. The social context of prevention of mother-to-child transmission of HIV (PMTCT) in Uganda: mothers' and health care providers' experiences and lessons for programme improvement. PhD thesis, University of Bergen, Bergen. From: <https://bora.uib.no/handle/1956/6277>. (Accessed on June 15, 2022)

Sakala, D, Kumwenda, MK, Conserve, DF, Ebenso, B & Choko, AT. 2021. Socio-cultural and economic barriers, and facilitators influencing men's involvement in antenatal care including HIV testing: a qualitative study from urban Blantyre, Malawi. *BMC Public Health* 21 (1): 1–12. From: <https://doi.org/10.1186/s12889-020-10112-w>. (Accessed on June 13, 2022)

Sofaer, S & Firminger, K. 2005. Patient perceptions of the quality of health services. *Annual Review of Public Health* 26 (35): 513–59. From: <https://doi.org/10.1146/annurev.publhealth.25.050503.153958>. (Accessed on June 15, 2022)

The Geneva Foundation for Medical Education and Research. HIV in pregnancy 2017. Geneva. <https://www.geneve-intch/Geneva-foundation-medical-education-and-research-gfmer> (Accessed on November 25, 2020)

UNAIDS see United Nations Programme on HIV/AIDS

United Nations Programme on HIV/AIDS (UNAIDS). 2011. *Global HIV/AIDS response, Epidemic update, and health sector progress towards Universal Access*. Geneva: UNAIDS.

United Nations Programme on HIV/AIDS (UNAIDS). 2014. *The Gap Report*. Geneva: UNAIDS.

United Nations Programme on HIV/AIDS (UNAIDS). 2015. *Progress report on the global plan, towards the elimination of new HIV infections among children and keeping their mothers alive*. Geneva: UNAIDS. United Nations Programme on HIV/AIDS (UNAIDS). 2016. *Global AIDS update*. Geneva: UNAIDS. From: <https://www.unaids.org> (Accessed on June 26, 2020)

United Nations Programme on HIV/AIDS (UNAIDS). 2019. *UNAIDS data 2019*. Geneva: UNAIDS. From: <https://www.unaids.org> (Accessed on June 26, 2020)

United Nations Programme on HIV/AIDS (UNAIDS). 2020a. *Global AIDS Update, Seizing the moment: progress report*. Geneva: UNAIDS. From: <https://www.unaids.org> (Accessed on August 20, 2021)

United Nations Programme on HIV/AIDS (UNAIDS). 2020b. *Progress towards the Start Free, Stay Free, AIDS Free targets: Report on 2020 targets*. Geneva: UNAIDS. From: <https://www.unaids.org> (Accessed on August 20, 2021)

United Nations Programme on HIV/AIDS (UNAIDS). 2021a. *The data*. Geneva: UNAIDS. From: <https://www.unaids.org> (Accessed on January 12, 2022)

United Nations Programme on HIV/AIDS (UNAIDS). 2021b. *Global AIDS Update, Confronting Inequalities*. Geneva: UNAIDS. From: <https://www.unaids.org> (Accessed on January 12, 2022)

United Nations Programme on HIV/AIDS (UNAIDS). (2021c). *Ending inequalities and getting on track to end AIDS by 2030. A summary of the commitments and targets within the United Nations General Assembly's 2021 Political Declaration on HIV and AIDS*. Geneva: UNAIDS.

United Nations Programme on HIV/AIDS (UNAIDS). 2022a. *IN DANGER: UNAIDS Global AIDS Update 2022*. Geneva: UNAIDS.

United Nations Programme on HIV/AIDS (UNAIDS). 2022b. *Fact sheet: UNAIDS Global AIDS Update 2022*. Geneva: UNAIDS.

Vo, BN, Cohen, CR, Smith, RM Bukusi, EA, Onono, MA, Schwartz, K, Washington, S & Turan, JM. 2012. Patient satisfaction with integrated HIV and antenatal care services in rural

Kenya. *AIDS care - psychological and socio-medical aspects of AIDS/HIV*, 24 (11): 1442–47. From: <https://doi.org/10.1080/09540121.2011.652357>. (Accessed on June 15, 2022)

WHO see World Health Organization

World Health Organization. 2001. *Prevention of mother-to-child transmission of HIV: selection and use of nevirapine*. Geneva: World Health Organization. From: <https://apps.who.int/iris/handle/10665/66808> (Accessed on January 24, 2019)

World Health Organization. 2013. *Counselling for maternal and new-born health care: a handbook for building skills*. Geneva: World Health Organization. From: <https://apps.who.int/iris/handle/10665/44016> (Accessed on May 24, 2019)

World Health Organization. 2016. *WHO recommendations on antenatal care for a positive pregnancy experience*. Geneva: WHO Press, World Health Organization. From: <https://apps.who.int/iris/handle/10665/250796> (Accessed on August 10, 2022)

World Health Organization. 2019. *WHO consolidated guidelines on 2019 HIV testing services*. Geneva: WHO Press, World Health Organization. From: <https://apps.who.int/iris/handle/10665/336323>. (Accessed on August 10, 2022)

Annexures

Annexure A: Ethical clearance from the Department of Health Studies, UNISA



UNISA HEALTH STUDIES HIGHER DEGREES ETHICS REVIEW COMMITTEE

Date 5 June 2020

Dear Banjaw Zelalem Demeke

NHREC Registration # : REC-012714-039
ERC Reference # : **HS HDC/988/2020**
Name : Banjaw Zelalem Demeke
Student # : 44942281
Staff # :

Decision: Ethics Approval from 5 June 2020 to 5 June 2023

Researcher(s): Name Banjaw Zelalem Demeke

Address
E-mail address zdemeke@clintonhealthaccess.org, telephone # +251911670062

Supervisor (s): Name Prof JM Mathibe-Neke

E-mail address mathijm@unisa.ac.za, telephone # 072 154 5086

Working title of research:

Factors affecting the uptake of antenatal care HIV testing in Addis Ababa, Ethiopia

Qualification: MA

Thank you for the application for research ethics clearance by the Unisa Health Studies Higher Degrees Ethics Review Committee for the above mentioned research. Ethics approval is granted for three (3) years.

*The **medium risk application** was **reviewed** by a Sub-committee of URERC on 2 June 2020 in compliance with the Unisa Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment. The decision will be tabled at the next Committee meeting on 7 July 2020 for ratification.*

The proposed research may now commence with the provisions that:

1. The researcher will ensure that the research project adheres to the relevant



University of South Africa
Preller Street, Muckleneuk Ridge, City of Tshwane
PO Box 392 UNISA 0003 South Africa
Telephone: +27 12 429 3111 Facsimile: +27 12 429 4150
www.unisa.ac.za

guidelines set out in the Unisa Covid-19 position statement on research ethics attached.

2. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.
3. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the Health Studies Research Ethics Committee HSREC@unisa.ac.za.
4. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
5. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing, accompanied by a progress report.
6. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.
7. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data require additional ethics clearance.
8. No field work activities may continue after the expiry date (5 June 2023). Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.

Note:

The reference number **HSHDC/988/2020** should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.

Yours sincerely,

Signatures :



Chair of HSREC : Prof JM Mathibe-Neke

E-mail: mathijm@unisa.ac.za

Tel: (012) 429-6443



Executive Dean : Prof K Masemola

E-mail: masemk@unisa.ac.za

Tel: (012) 429-6825

Annex B: Letter requesting permission to conduct the study



June 24, 2020

UNISA-ET/KA/ST/29/24-06-20

Addis Ababa City Administration Health Bureau

Addis Ababa

Dear Madam/Sir,

The University of South Africa (UNISA) extends warm greetings. By this letter, we want to confirm that Dr. Zelalem Demeke Banjaw (student number: 44942281) is a Master of Public Health (MPH) student in the Department of Health Studies at UNISA. Currently, he is at the stage of data collection on his Master's research entitled "**Factors affecting the uptake of antenatal care HIV testing in Addis Ababa, Ethiopia**".

This is therefore to kindly request you to assist the student in any way that you can. We would like to thank you in advance for all the assistance that you will provide to the student. Attached, please find the ethical clearance that he received from the Department of Health Studies.

Sincerely,

Dr. Tsige GebreMeskel Aberra

Director

UNISA REGIONAL LEARNING CENTRE	
PO BOX 13836 ADDIS ABABA ETHIOPIA	
TEL	+251-114-350141
	+251-114-350078
FAX	+251-114-351243
MOBILE	+251-912-191483



University of South Africa
Regional Learning Center
P.O. Box: 13836, Addis Ababa, Ethiopia
Telephone: +251 11 435 2244 / +251 11 435 0078
Facsimile: +251 11 435 1242/ 43/ 44
Mobile: +251 912 19 1483
www.unisa.ac.za

Annex C: Letter requesting permission to conduct the study

Date June 24, 2020

To: Addis Ababa City Administration Health bureau

Addis Ababa

Ethiopia

Subject: - Request to conduct a study on factors affecting the uptake of HIV testing during antenatal care in Addis Ababa, Ethiopia.

Dear Sir/Madam

I am a student at the University of South Africa, Department of Health Studies. The study is aimed at meeting the requirements of the MPH degree.

I kindly request permission to collect data in the health facilities of Addis Ababa. The data will be collected from pregnant women attending antenatal care services, using a self-administered structured questionnaire as the administrative tool.

The purpose of the study is to identify factors affecting the uptake of HIV testing during antenatal visits for women who do not know their HIV status in Addis Ababa and based on the results, to develop recommendations to enhance the uptake of HIV.

All respondents will be given full information about the study, and they will sign a written consent which indicates issues of confidentiality and anonymity. They will also be informed that they have a right to withdraw from the study if they feel uncomfortable.

Please use the contact below for communication regarding the above request.

Yours Sincerely



Dr Zelalem Demeke Banjaw

Researcher

Annex D: Letter granting permission to conduct the study on factors affecting the uptake of HIV testing during antenatal care in the health centres in Addis Ababa



በአዲስ አበባ ከተማ አስተዳደር ጤና ቢሮ
CITY GOVERNMENT OF ADDIS ABABA



ቁጥር: 4/4/11/10949/227
 Ref. No.
 ቀን: 18/10/2012
 Date

- Addis ketema sub-city health office ✓
- Akaki sub-city health office ✓
- Arada sub-city health office ✓
- Bole sub-city health office ✓
- Gulele sub-city health office ✓

- Kirkos sub-city health office ✓
- Kolfe Keranio sub-city health office ✓
- Lideta sub-city health office ✓
- Nifasilk lafto sub-city health office ✓
- Yeka sub-city health office ✓

Addis Abeba

Subject: Request to access Facilities to conduct approved research

The letter is to support Dr zelalem Demeke of "factors affecting the uptake of antenatal care HIV testing IN ADDIS ABABA ETHIOPIA". The study proposal was duly reviewed and approved by Addis Ababa health bureau IRB, and the principal investigator is informed with a copy of this letter to report any changes in the study procedures and submit an activity progress report to the Ethical committee as required .Therefore, we request the facility and staffs to provide support to the principal investigator.



With Regards
 Daniel Jantew witeklie
 Public Health Research and
 Emergency Management
 Directorate Director

CC
 Dr zelalem Demeke
 Ethical Clearance Committee
 Addis Ababa



መልስ ሲጻፉ የእኛ ቁጥር ይጠቀሱ In replaying please quote our Ref.No.

Annex E: Consent form for self-administered questionnaire

Research Information and Consent form

Research Title: Factors affecting the uptake of HIV testing during antenatal care in Addis Ababa, Ethiopia.

Researcher: Banjaw, Zelalem Demeke

Dear participant.

The purpose of this study is to identify factors affecting the uptake of HIV testing during antenatal visits for women does not know their HIV status to prevent the transmission of HIV from mother to child in Addis Ababa.

Procedures

If you agree to participate, you will be asked some general questions about your background such as your age, marital status, education level, and occupation. You will also be asked specific questions regarding PMTCT. The questionnaire will take about 30 to 40 minutes.

Risks and discomforts

Some of the questions asked relate to knowledge, awareness, attitudes, and socio-cultural practices. These questions do not have right or wrong answers and there are no risks in providing this information. HIV counsellors will be available in case you need counselling support. You can refuse to answer any question or stop the interview at any time (before or during) and you should feel free to do so.

Benefits

The study has no immediate benefits to the respondents, but what we learn from the research will be used to identify the main reasons that pregnant women do not want to have HIV testing counselling during their antenatal visits at Addis Ababa health facilities and improve PMTCT services and decrease mother-to-child transmission of HIV. When filling out the form, you may learn new information about PMTCT as well.

Confidentiality

Your name will not be recorded on the questionnaire nor reported in any project document and all your answers will be strictly confidential. It will be only written on the consent form because by accepting to participate it is a requirement that you write your name and sign it.

If you have, any questions please feel free to ask at any time. Further information regarding the research can be obtained from the researcher Dr.Zelalem Demeke Banjaw Tell. +251 911 670062, E-mail: fikirzele@yahoo.com Or research Supervisor Prof J M Mathibe-Neke, University of South Africa, Tel +27 12 429 6688, E-mail: mathijm@unisa.ac.za.

Thank you for agreeing to participate in this study, your participation is greatly appreciated.

Consent Form

I, the undersigned, understand the nature of the study, its benefits, my rights to voluntarily participate, confidentiality, and withdrawal from the study without any penalties.

I have had the opportunity to ask questions and to be answered to my satisfaction.

I hereby freely consent to take part in this study.

Name of Participant

Signature

Date

Witness Name

Signature

Date

Annex F: Assent form for minors below 18 years of age

Research Title: Factors affecting the uptake of HIV testing during antenatal care in Addis Ababa, Ethiopia.

Investigator: Banjaw, Zelalem Demeke

We are doing a research study to identify factors affecting the uptake of HIV testing during antenatal visits for women who do not know their HIV status to prevent the transmission of HIV from mother to child in Addis Ababa. A research study is a way to learn more about pregnant women coming for antenatal care. If you decide that you want to be part of this study, you will be asked some general questions about your background, such as your age, marital status, education level, and occupation. You will also be asked specific questions regarding PMTCT. The questionnaire will take about 30 to 40 minutes to complete.

There are some things you should know about this study:

Risks and discomforts

Some of the questions asked relate to knowledge, awareness, attitudes, and socio-cultural practices. These questions do not have right or wrong answers and there are no risks in providing this information. HIV counsellors will be available in case you need counselling support. You can refuse to answer any question or stop the study at any time (before or during filling of the questionnaire) and you should feel free to do so.

Benefits

The study has no immediate benefits to the respondents, but what we learn from the research will be used to identify the main reasons that pregnant women do not want to have HIV testing and counselling during their antenatal visits at Addis Ababa health facilities and improve PMTCT services and decrease mother to child transmission of HIV. While filling out the form, you may learn new information about PMTCT as well.

If you do not want to be in this research study, you can choose not to participate in part or all of the study and you can withdraw at any stage of the study without being penalized or disadvantaged in any way.

When we are finished with this study, we will write a report about what was learned. This report will not include your name or that you were in the study. All your answers will be strictly confidential. Your name will be only written on the consent form because by agreeing to participate it is a requirement that you write your name and sign.

You do not have to be in this study if you do not want to be. If you decide to stop after we begin, that is okay too. Your parents know about the study too.

If you decide you want to be in this study, please sign your name.

I, _____, want to be in this research study.

(Sign your name here)

(Date)

Annex G: Parental Informed Consent/ Assent form

Research Title: Factors affecting the uptake of HIV testing during antenatal care in Addis Ababa, Ethiopia.

Investigator: Banjaw, Zelalem Demeke

INTRODUCTION

Your child has been invited to join a research study to identify factors affecting the uptake of HIV testing during Antenatal visits for women who do not know their HIV status to prevent the transmission of HIV from mother to child in Addis Ababa. Please take whatever time you need to discuss the study with your child, or anyone else you wish. The decision to let your child join, or not join, is up to you.

We are doing a research study to identify factors affecting the uptake of HIV testing during Antenatal visits for women who do not know their HIV status to prevent the transmission of HIV from mother to child in Addis Ababa.

Your child will be asked some general questions about her age, marital status, education level, and occupation. She will also be asked specific questions regarding the prevention of mother-to-child transmission of HIV. We think this will take her about 30 to 40 minutes.

The investigators may stop the study or take your child out of the study at any time they judge that it is in your child's best interest. If your child does not want to be in this research study, she can choose not to participate in part or all of the study and can withdraw at any stage of the study without being penalised or disadvantaged in any way.

When we are finished with this study, we will write a report about what was learned. This report will not include your child's name or that she was in the study. All the answers will be strictly confidential. Your child's name will be only written on the consent form because by agreeing to participate it is a requirement that she writes her name and signs the form.

She does not have to be in this study if she does not want to be. If she decides to stop after we begin, that is okay too.

Risks and discomforts

Some of the questions asked relate to knowledge, awareness, attitudes, and socio-cultural practices. These questions do not have right or wrong answers and there are no risks in providing this information. HIV counsellors will be available in case you need counselling support. You can refuse to answer any question or stop the study at any time (before or during filling of the questionnaire) and you should feel free to do so.

Benefits

The study has no immediate benefits to the respondents, but what we learn from the research will be used to identify the main reasons that pregnant women do not want to have HIV testing and counselling during their antenatal visits at Addis Ababa health facilities and improve PMTCT services and decrease mother to child transmission of HIV. While filling out the form, you may learn new information about PMTCT as well.

Permission for a Child to Participate in Research

As a parent or legal guardian, I authorise _____
(child's name) to become a participant in the research study described in this form.

Participant's Name: _____ (please print)

Participant's Age: ____ Parent's/Guardian's Name: _____

Your relationship to participant: _____ If
appropriate, reason(s) why s/he cannot give written consent:

Signature of Parent/Guardian: _____ Date: _____

If you have questions about the study or any problems, if your child experiences any unexpected physical or psychological discomforts, or any injuries, or think that something unusual or unexpected is happening, please contact the researcher at any time.

Annex H: Data collection tool

Annex H.1: Self-administered questionnaire for pregnant women – English Questionnaire on: Factors affecting the uptake of HIV testing during antenatal care in Addis Ababa, Ethiopia.

All the information provided will be treated confidentially, indicating your name is not necessary.

Instructions

Please answer all the questions by providing honest and objective answers in the space provided by putting a mark “X” or in writing when applicable.

Section One: Demographic characteristics

Reference Number			
Date			
Name of the health centre			
Name of data collector			
1	Age in full years 1. 15-20 2. 21-30 3. 31-40 4. 41-49		
2	Marital status 1. Married 2. Never married 3. Divorced 4. Separated 5. Widowed		
3	Ethnicity 1. Amhara 2. Oromo 3. Gurage 4. Tigre 5. Others/Specify		
4	Religion 1. Orthodox 2. Muslim 3. Catholic 4. Protestant 5. Others/Specify		
5	Education status 1. Secondary and Above 2. Primary (1-8) 3. No education		

6	Occupation 1. Employed 2. Self-employed 3. Housewife 4. Other (Specify)		
7	Family income 1. Less than or equal to 500 ETB 2. 501-1500 ETB 3. 1501-2500 ETH 4. Greater than 2500 ETB		
8	Family size 1.		
9	Gravida (Number of pregnancies) 1. 1 st 2. 2 nd 3. 3 rd 4. 4 th 5. 5 and above		
10	Para (Number of Born Babies) 1. 0 2. 1 3. 2 4. 3 5. 4 6. Above 4		

Section Two: Socio-cultural Factors

1	Do you think getting tested with your partner in the PMTCT clinic is appropriate? 1. Yes 2. No 3. Do not know		
2	Do you think an HIV-positive woman should breastfeed? 1. Yes 2. No 3. Do not know		
3	If yes, why? 1. Obligation 2. Cannot afford to buy formula milk 3. Fear of rejection		

	4. Others		
4	How do you think a husband/ partner would react if his wife/partner becomes HIV positive? 1. Reject her 2. Support her 3. Do not know 4. Other		
5	How would a family/relative react if a woman becomes HIV Positive? 1. Reject her 2. Support her 3. Do not know 4. Other		
6	Do you think having HIV is a curse from God because of wrongdoing? 1. Yes 2. No 3. Do not know		
7	Do you think it is culturally appropriate to talk about HIV with your partner? 1. Yes 2. No 3. Do not know		
8	Do you think the community accepts and supports a pregnant woman if she becomes HIV-positive? 1. Yes 2. No 3. Do not know		
9	What is your perception of ANC and PMTCT services provided at the health facility? 1. Good 2. Neutral 3. Bad		
10	Do you think you need permission from your partner to enrol in ANC and have counselling and testing for HIV? 1. Yes 2. No 3. Do not know		

Section Three: Knowledge, Awareness, and attitude

1	<p>Do you know any sexually transmitted infections</p> <ol style="list-style-type: none"> 1. Yes 2. No 		
2	<p>If yes which one/s do you know</p> <ol style="list-style-type: none"> 1. Gonorrhoea 2. Syphilis 3. HIV/AIDS 4. Candidiasis 5. Others (specify) 		
3	<p>Do you know ways that HIV can be transmitted?</p> <ol style="list-style-type: none"> 1. Sexual 2. Mother to child 3. During blood transfusion 4. Sharing sharp instruments 5. Do not know 6. Others 		
4	<p>How can HIV be transmitted from a mother to her baby?</p> <ol style="list-style-type: none"> 1. During pregnancy 2. During labour 3. During breastfeeding 4. Do not know 		
5	<p>What can be done to prevent mother-to-child transmission of HIV?</p> <ol style="list-style-type: none"> 1. Use ARVs for PMTCT 2. Avoid breastfeeding 3. Deliver by caesarean section 4. Other 5. Do not know 		
6	<p>Do you think an HIV-positive woman can bear children?</p> <ol style="list-style-type: none"> 1. Yes 2. No 		
7	<p>If your answer is no, what are your reasons</p> <ol style="list-style-type: none"> 1. It is a waste of time the baby will get HIV 2. Will create orphan 3. It is her right and up to her 4. Pregnancy weakens the woman, and she gets sick 		

	5. Others		
8	Can transmission of HIV from mother to child be prevented? 1. Yes 2. No 3. Do not know		
9	Can HIV be transmitted by having a meal with an infected person? 1. Yes 2. No 3. Do not know		

Section Four: Programmatic Factors (ANC and PMTCT)

1	Do you think pregnant women who come for ANC should have HIV counselling and testing? 1. Yes 2. No		
2	Do you think having HIV counselling and testing necessary during ANC visits? 1. Yes 2. No		
3	Why do you think women do not come to the health facility for ANC and counselling and testing for HIV? 1. Fear that if they are positive the husband or family will reject them. 2. The health facility is too far 3. The health workers do not treat them well. 4. Because culturally it is not acceptable 5. Do not know 6. Others		
4	Did you get counselling before and after the HIV test? 1. Yes 2. No		
5	If yes, were you satisfied with pre- and post-test counselling? 1. Yes		

	2. No		
6	<p>If No, what is the reason?</p> <ol style="list-style-type: none"> 1. Shortage of time 2. Unpleasant approach of the health worker 3. Lack of privacy 4. Others 		
7	<p>Do you think the involvement of your partner increases your confidence to attend the ANC programme and counselling and testing for HIV?</p> <ol style="list-style-type: none"> 1. Yes 2. No 3. Makes no difference 4. Do not know 		

Thank you for your time and the valuable information you gave us. If you have any questions, please do not hesitate to ask.

Annex H.2: Self-administered questionnaire for pregnant women – Amharic

መጠይቅ ስነ ፍልግ ጡር ሲት

መጠይቅ ርዕስ: factors affecting uptake of antenatal HIV testing for prevention of mother to child transmission of HIV in Addis Ababa Ethiopia.

በመጠይቁ ውስጥ ስቀረቡት ፕሮግራም የሚሰጡትን መረጃዎች በሙሉ በሚሰጥረዎት ሲሆኑ፣ ስምዎንም መገለጫ ስለሚገባዎት ስለይደሉም

የአዎንታዊ መመሪያ

አባዛዎ በተቀመጡት ቦታዎች ውስጥ ገልጻል የሆኑ መረጃዎችን የ“X” ምልክት በማስቀመጥ ወይንም በሰፊ ይገልጹ/ያስቀምጡ

ክፍል አንድ: የዲሞግራፊ ሁኔታዎች

ቁጥር			
ቀን			
የጤና ጣቢያው ስም			
የመረጃ ሰብሳቢው ስም			
1	ዕድሜ በአመት 1. 15-20 2. 21-30 3. 31-40 4. 41-49		
2	የጋብቻ ሁኔታ 1. ያገባች 2. ያላገባች 3. የተረታች 4. ተለያይተው የሚኖሩ 5. ባል የሞተባት		
3	ብሄር 1. አማራ 2. ትግራይ 3. ጉሪጌ 4. ትግራይ 5. ሌላ/ይገለጹ		
4	ጾምነት 1. ጾታዊነት 2. መስሪያ 3. ካቶሊክ 4. ፕሮቴስታንት 5. ሌላ/ይገለጹ		
5	የትምህርት ደረጃ 1. ሁለተኛ ደረጃና ከዚያ በላይ 2. አንደኛ ደረጃ (1-8) 3. ያልተማረች		

6	<p>ሥራ</p> <ol style="list-style-type: none"> 1. ተቀጣሪ 2. በገባ ስራ የምትተዳደር 3. የቤት ለመቤት 4. ለሳ/ደገሰሰ 		
7	<p>የቤተሰብ ገቢ መጠን</p> <ol style="list-style-type: none"> 1. 500 ብርና ስና ከዚያ በታች 2. ከ501 - 1500 ብር 3. ከ1501 - 2500 ብር 4. ከ2500 ብር በላይ 		
8	<p>የቤተሰብ ቁጥር</p> <ol style="list-style-type: none"> 1. 		
9	<p>የሕርገዝና ቁጥር</p> <ol style="list-style-type: none"> 1. ስንደኛ1st 2. ሁለተኛ2nd 3. ሦስተኛ3rd 4. ስራተኛ4th 5. ለምስተኛና ከዚያ 		
10	<p>የውልደት መጠን (የተወለዱ ቁጥር)</p> <ol style="list-style-type: none"> 1. 0 2. 1 3. 2 4. 3 5. 4 6. ከሕራት በላይ 		

ክፍል ሁለት: ማህበራዊና ባህላዊ ሁኔታዎችን የተመለከቱ ጥያቄዎች

ቁጥር			
ቀን			
የጤና ጣቢያው ስም			
የመረጃ ሰብሳቢው ስም			
1	<p>ከአጋርዎ ጋር እኛ እይቢ መመርመር ተገቢ ነው ብለው ያምናሉ?</p> <ol style="list-style-type: none"> 1. አዎ 2. አይ 3. አሳውቅም 		
2	<p>እኛ እይ ቢ በደሚ ያለባት ሌት ጡት ማጥባት አለባት ብለው ያምናሉ?</p> <ol style="list-style-type: none"> 1. አዎ 2. አይ 3. አሳውቅም 		
3	<p>አዎ ከዚያ መልስዎት ስምን?</p> <ol style="list-style-type: none"> 1. ገዳታ ስለዚያ 		

	<p>2. ፎርሙላ ወተት መገዛት ስለማይቻል (ውድ ስለሆነ)</p> <p>3. መገሰሰን ፍራቻ</p> <p>4. ሲሳ/ይገሰሰ</p>		
4	<p>ባሕ/ንደኛ ሚስቱ /ንደኛው በእኛ እይቼ ብትያዝ ምን ሊያደርግ ይችላል ብለው ይገምታሉ?</p> <p>1. ይተዋታል</p> <p>2. ይደገፈታል</p> <p>3. አላውቅም</p> <p>4. ሲሳ/ይገሰሰ</p>		
5	<p>ቤተሰብ/ዘመድ የቤተሰቡ አካል የሆነች ሴት በእኛ እይቼ ብትያዝ ምን ሊያደርግ ይችላል ብለው ይገምታሉ?</p> <p>1. ይተዋታል</p> <p>2. ይደገፈታል</p> <p>3. አላውቅም</p> <p>4. ሲሳ/ይገሰሰ</p>		
6	<p>በእኛ እይቼ መያዝ ከዚህ በፊት ሳጠፋት ጥፋት ከአምላክ የመጣ ቅጣት ነው ብለው ያምናሉ?</p> <p>1. አዎ</p> <p>2. አይ</p> <p>3. አላውቅም</p>		
7	<p>ስለ እኛ እይቼ ከንደኛም ጋር መነጋገር ተገቢ ነው ብለው ያምናሉ?</p> <p>1. አዎ</p> <p>2. አይ</p> <p>3. አላውቅም</p>		
8	<p>ማህበረሰቡ እንዲት ነፍሰ ጡር በእኛ እይቼ ብትያዝ ሊቀበልና ሊደገፍት ይችላል ብለው ያምናሉ?</p> <p>1. አዎ</p> <p>2. አይ</p> <p>3. አላውቅም</p>		
9	<p>በጤና ተቋማት ስለሚሰጠው የነፍሰጡር እናቶች ክትትልና እኛ እይቼ ከእናት ወደ ልጅ እንዲያተላለፍ በሚሰጠው አገልግሎት ላይ ምን አስተያየት አለዎት?</p> <p>1. ጥሩ ነው</p> <p>2. መካከለኛ</p> <p>3. መጥፎ ነው</p>		
10	<p>በጤና ተቋማት በሚሰጠው የነፍሰጡር እናቶች ክትትልና እኛ እይቼ ከእናት ወደ ልጅ እንዲያተላለፍ በሚሰጠው የምክርና ምርመራ አገልግሎት ተጠቃሚ ስመሆን</p>		

የባልዎን /የንደኛዎን ፈቃድ የሚያስፈልገዎ ደምስሰዎታል? 1. አዎ 2. አይ 3. አላውቅም		
---	--	--

ክፍል ሦስት: ውቅትና አመሰካክትን የተመሰከቱ መጠይቆች

ቁጥር		
ቀን		
የጤና ጣቢያው ስም		
የመረጃ ሰብሳቢው ስም		
1	በግብረ ስጋ ግንኙነት ጊዜ የሚተላለፉ በሽታዎችን ያውቃሉ? 1. አዎ 2. አይ	
2	መዕሰዎ አዎ ከሆነ የትኛቱን ያውቃሉ 1. ጨብጥ 2. ቂጥኝ 3. አች አይ ቪ/ አደስ 4. ካንዲዲያሲስ 5. ሲሳ/ይግሰፀ	
3	አች አይ ቪ የሚተላለፉባቸውን መንገዶች ያውቃሉ? 1. በግብረሰገጋ ግንኙነት ውቅት 2. ከእናት ወደ ልጅ 3. ደምና የደም ውጤቶች በሚለጡበት ውቅት 4. ስሰታማ ነገሮችን በጋራ በመጠቀም 5. አላውቅም 6. ሲሳ/ይግሰፀ	
4	አች አይ ቪ ከእናት ወደ ልጅ እንዲት ሲተላለፍ ይችላል? 1. በእርግጠና ውቅት 2. በወሲድ ጊዜ 3. ጡት በማጥባት 4. አላውቅም	
5	አች አይ ቪ ከእናት ወደ ልጅ እንዲይተላለፍ ምን መደረግ አለበት ይላሉ? 1. ከእናት ወደልጅ አችአይቪ እንዲይተላለፍ የሚያገዙ የፀረአችአይቪ መደሃኒቶችን መጠቀም 2. ጡት አሰማጥባት	

	3. በቀድሞ ማህበራዊ 4. ሲባ 5. አሳውቅም		
6	አቶአይቪ በደሚ ውስጥ ያለባት ነፍሰጡር ሲት ማርገዝ ትችላለች ብለው ያምናሉ? 1. አዎ 2. አይ		
7	መሰረድ አትችሉም ከሆነ ምክንያትም ምንድን ነው? 1. ልጄ አቶአይቪ ሲይዘው ስለሚችል ጊዜ ማባከን ነው 2. ወላጅ አልባ ህፃናትን ስለሚፈጥር 3. የራሷ መብትና በሷ የሚወሰን ስለሆነ 4. እርግዝና ሰውነት መከላከያ ህይዲን ስለሚቀንስ 5. ሲባ ምክንያት (ይገለጹ)		
8	አቶ አይ ቪ ከእናት ወደ ልጅ እንዲይተላለፍ መከላከል ይቻላል? 1. አዎ 2. አይ 3. አሳውቅም		
9	የአቶ አይ ቪ ቫይረስ ካለበት ሰው ጋር ምንብል አብር በመብላት ቫይረሱ ሲተላለፍ ይችላል? 1. አዎ 2. አይ 3. አሳውቅም		

ክፍል አራት: ፕሮገራውን የሚመለከቱ መጠይቆች (የእርግዝና ክትትል፣ አቶ አይ ቪ ከእናት ወደ ልጅ እንዲይተላለፍ መከላከል)

ቀጥር			
ቀን			
የጤና ጣቢያው ስም			
የመረጃ ሰብሳቢው ስም			
1	የእርግዝና ክትትል ከዚህ በፊት አድርገው ያውቃሉ? 1. አዎ 2. አይ		
2	የአቶአይቪ ምክርና ምርመራ አገልግሎት በእርግዝና ክትትል ወቅት ማግኘት አስፈላጊ ነው ብለው ያምናሉ? 1. አዎ 2. አይ		

3	<p>እናቶች ስእርገዝና ክትትል፣ ለእናቸው ምክርና ምርመራ እገልግሉት ወደ ጤና ተቋም የሚመጡት ስምን ይመስሉዎታል?</p> <ol style="list-style-type: none"> 1. ድንገት እናቸው በደማቸው መኖሪያ ቤታቸው ላይ ባሉት ጊዜ ለተሰጡት ምርመራ የሚሰጡ ፍራንስ ስላላቸው 2. ጤና ድርጅቶች ረቅ በመሆናቸው 3. ጤና ባለሙያዎች በደንብ ስለሚያስተናግዷቸው 4. በባህላቸው ተቀባይነት ስለሌላቸው 5. እሳውቅም 6. ሌላ (ይጠቀሱ) 		
4	<p>የእናቸው ምክር ክምርመራ በፊትና በኋላ ይገኛሉ?</p> <ol style="list-style-type: none"> 1. አዎ 2. አይ 		
5	<p>መሰረት አዎ ከሆነ ክምርመራ በፊትና በኋላ በሚሰጠው ምክር ረክተዋል?</p> <ol style="list-style-type: none"> 1. አዎ 2. አይ 		
6	<p>መሰረት አይ ከሆነ ምክንያታት ምንድን ነው?</p> <ol style="list-style-type: none"> 1. የሰለጠነ ማኅበር 2. በጤና ባለሙያዎች ላይ የሚታዩ ጥሩ ያልሆነ አቀራረብ 3. ግለሰባዊ ነጻነት ስለሚሰጥ 4. ሌላ (ይገልጹ) 		
7	<p>ነፍሰሙር እናቶች የእርገዝና ክትትል እንዲሁም የእናቸው ምክርና ምርመራ እገልግሉት ለማግኘት ከባሉት ወይም ከጋራዎቻችን ጋር ቢመጡ በራስ መተማመናቸውን ሲጨምር ይችላሉ ብለው ያምናሉ?</p> <ol style="list-style-type: none"> 1. አዎ 2. አይ 3. ምንም ለውጥ አያመጣም 4. እሳውቅም 		

ጊዜዎትን ሰውተው ይህንን ጠቃሚ መረጃ ስለሰጡን ክፍል ናመሰግናለን። ጥያቄዎች ካለዎት ከመጠየቅ ወደጎሳ እይበሉ።

Annex H.3: Self-administered questionnaire for Health care workers – English

Questionnaire on: Factors affecting the uptake of HIV testing during antenatal care in Addis Ababa, Ethiopia.

All the information provided will be treated confidentially, indicating your name is not necessary.

Instructions

Please answer all the questions by providing honest and objective answers in the space provided by putting a mark “X” or in writing when applicable.

Section One: Demographic characteristics

Reference Number			
Date			
Name of the health centre			
Name of data collector			
1	Age in full years 5. 18-20 6. 21-30 7. 31-40 8. 41-49		
2	Gender 1. Female 2. Male		
3	Marital status 6. Married 7. Never married 8. Divorced 9. Separated 10. Widowed		
4	What is your professional category? 1. Medical doctor: Specialist 2. Medical doctor: GP 3. Health Officer 4. Midwife 5. Nurse 6. Counsellor 7. Other. Specify: _____		
5	What year did you complete your studies?		
6	How long have you worked in this facility? Years Months: _____		
7	Have you ever received training in the following: 1. ART		

	2. VCT 3. PMTCT 4. ANC		
8	In the last 5 years, did you receive training in: 1. ART 2. VCT 3. PMTCT 4. ANC		
9	How many total patients/clients do you typically see in an average day? _____		
10	How many total ANC patients/clients do you typically see in an average day? _____		
11	How many days do you work in an average workweek on ANC services? 6. 1 7. 2 8. 3 9. 4 10.5		

Section Two: Socio-cultural Factors

1	Do you think that testing pregnant women for HIV is appropriate during visits to the ANC? 4. Yes 5. No 6. Do not know		
2	How do you think a husband/ partner would react if his wife/partner becomes HIV positive? 5. Reject her 6. Support her 7. Do not know 8. Other		
3	How would a family/relative react if a woman becomes HIV Positive? 5. Reject her 6. Support her 7. Do not know 8. Other		
4	Do you think the community accepts and supports a pregnant woman if she becomes HIV-positive? 4. Yes 5. No		

	6. Do not know		
5	What is your perception of ANC and PMTCT services provided at the health facility? 4. Good 5. Neutral 6. Bad		

Section three: Programmatic Factors (ANC and PMTCT)

1	How do you explain the importance of the ANC for the prevention of mother-to-child transmission of HIV? 1. Very important 2. Medium 3. Less important 4. Not important		
2	Do you think pregnant women who come for ANC should have HIV counselling and testing? 3. Yes 4. No		
3	Do you think having HIV counselling and testing necessary during ANC visits? 3. Yes 4. No		
4	Why do you think pregnant women do not come to the health facility for ANC, counselling, and testing for HIV? 7. Fear that if they are positive the husband or family would reject them. 8. The health facility is too far 9. The health workers do not treat them well. 10. Because culturally it is not acceptable 11. Do not know 12. Others		
5	Did you provide counselling before and after the HIV test? 3. Yes 4. No		
6	If No, what is the reason? 5. Shortage of time 6. Shortage of test kits 7. Lack of private room for counselling 8. Others		

Annex H.4: Self-administered questionnaire for Health care workers – Amharic

መጠይቅ ስጢና ባስጠይቅ

መጠይቅ ርፍስ: factors affecting uptake of antenatal HIV testing for prevention of mother to child transmission of HIV in Addis Ababa Ethiopia.

በመጠይቁ ውስጥ ስቀረቡት ፕዎቹ የሚሰጡት መረጃዎች በመብቱ በሚስጥር የሚያዙ ሲሆኑ፣ ስምዎችንም መገሰጠስ አስፈላጊ አይደለም

የአሞላ ማስመሪያ

አባዛዎ በተቀመጡት ቦታዎች ውስጥ ገልጻል የሆኑ መረጃዎችን የ"X" ምልክት በማስቀመጥ ወይንም በፊርማ ይገልጹ/ያስቀምጡ

ክፍል አንድ: የዲሞግራፊ ሁኔታዎች

ቁጥር			
ቀን			
የጾታ ጣቢያው ስም			
የመረጃ ሰብሳቢው ስም			
1	<p>ሰደሚ በአመት</p> <p>1. 18-20</p> <p>2. 21-30</p> <p>3. 31-40</p> <p>4. 41-49</p>		
2	<p>ጾታ</p> <p>1. ሴት</p> <p>2. ወንድ</p>		
3	<p>የጋብቻ ሁኔታ</p> <p>1. ያገባ/ች</p> <p>2. ያላገባ/ች</p> <p>3. የተፈታ/ች</p> <p>4. ተሰያይተው የሚኖሩ</p> <p>5. ባል የሞተባት/ሚስት የሞተበት</p>		
4	<p>ሞያ/ ፕሮፎሽን</p> <p>1. ስፐሻሊስት ህኪም</p> <p>2. ጠቅላላ ህኪም</p> <p>3. ጤና መከኛ</p> <p>4. ሚዲካል</p> <p>5. ነርስ</p> <p>6. የሌሎች ሌሎችም ሌሎችም አማካሪ</p> <p>7. ሌላ/ይገሰጠስ</p>		
5	ትምህርት የጨረሱበት ዘመን/አመት		

6	የአገልግሎት ዘመን ለሁን ባሉበት ጤና ተቋም በወራት:		
7	በአጠቃላይ ሥልጠና የወሰዱት ካሉ 1. የፀረእንግዳሽ መድሃኒቶችን በመጠቀም እንግዳሽ ሊደደስን ማከም ሥልጠና 2. የእንግዳሽ ምክርና ምርመራ አገልግሎት ሥልጠና 3. እንግዳሽ ስለ ከላናት ወደ ልጅ እንዲይተላለፍ መከላከል ሥልጠና 4. እርግዝና ከትትል ሥልጠና		
8	ሥልጠና የወሰዱት ባሉት 5 አመታት ካሉ 1. የፀረእንግዳሽ መድሃኒቶችን በመጠቀም እንግዳሽ ሊደደስን ማከም ሥልጠና 2. የእንግዳሽ ምክርና ምርመራ አገልግሎት ሥልጠና 3. እንግዳሽ ስለ ከላናት ወደ ልጅ እንዲይተላለፍ መከላከል ሥልጠና 4. እርግዝና ከትትል ሥልጠና		
9	በቀን ምን ያክል በስተኛ በአማካይ ያያሉ		
10	በቀን በአማካይ ምን ያክል ለእርግዝና ከትትል የሚመጡ ነፍሰጡር እናቶችን ያያሉ?		
11	በአማካይ በላምንት ምን ያክል ቀናት በእርግዝና ከትትል ክፍል ውስጥ ተመድበው እናቶችን ያያሉ? 1. 1 2. 2 3. 3 4. 4 5. 5		

ክፍል ሁለት: ማህበራዊና ባህሳዊ ሁኔታዎችን የተመለከቱ ጥያቄዎች

1	ነፍሰጡር እናቶች ለእርግዝና ከትትል ሲመጡ የእንግዳሽ ምክርና ምርመራ አገልግሎት ማግኘት አለባቸው ብለው ያምናሉ? 1. አዎ 2. አይ 3. አሳውቅም		
---	---	--	--

2	<p>ባል/ጓደኛ ሚስቱ /ጓደኛው በእኛ ስይ ቪ ብትያዝ ምን ሊያደርግ ይችላል ብለው ይገምታሉ?</p> <ol style="list-style-type: none"> 1. ይተዋታል 2. ይደገፋታል 3. ስላውቅም 1. ሲላ/ይገሰሰ 		
3	<p>ቤተሰብ/ዘመድ የቤተሰቡ ስካል የሆነች ሴት በእኛ ስይቪ ብትያዝ ምን ሊያደርግ ይችላል ብለው ይገምታሉ?</p> <ol style="list-style-type: none"> 1. ይተዋታል 2. ይደገፋታል 3. ስላውቅም 4. ሲላ/ይገሰሰ 		
4	<p>ማህበረሰቡ ስንዲት ነፍሰ ጡር በእኛ ስይ ቪ ብትያዝ ሲቀበልና ሲደገፍት ይችላል ብለው ያምናሉ?</p> <ol style="list-style-type: none"> 1. አዎ 2. አይ 3. ስላውቅም 		
5	<p>በጤና ተቋማት ስለሚሰጠው የነፍሰጡር እናቶች ክትትልና ሌኛ ስይ ቪ ክእናት ወደ ልጅ እንዲይተላለፍ በሚሰጠው ስገልገሎት ላይ ምን ስስተያየት ስለዎት?</p> <ol style="list-style-type: none"> 1. ጥሩ ነው 2. መካከለኛ 3. መጥፎ ነው 		

ክፍል ሦስት: ፕሮገራሙን የሚመለከቱ መጠይቆች (የእርግዝና ክትትል፣ ሌኛ ስይ ቪ ክእናት ወደ ልጅ እንዲይተላለፍ መከላከል)

1	<p>የእርግዝና ክትትል ሌኛ ስይ ቪ ክእናት ወደ ልጅ እንዲይተላለፍ መከላከል ያለውን ጠቀሚታ እንዲት ይገልጹታል?</p> <ol style="list-style-type: none"> 1. በጣም ይጠቅማል 2. መካከለኛ 3. ስነስተኛ 4. ምንም ጠቀሚታ የለውም 		
2	<p>ነፍሰጡር እናቶች ስለእርግዝና ክትትል ሲመጡ የሌኛ ስይቪ ምክርና ምርመራ ስገልገሎት ማግኘት ስለባቸው ብለው ያምናሉ?</p> <ol style="list-style-type: none"> 1. አዎ 		

	2. አይ		
3	የኢትዮጵያ ምክርና ምርመራ አገልግሎት በእርግጠኛ ክትትል ወቅት ማገኘት አስፈላጊ ነው ብለው ያምናሉ? 1. አዎ 2. አይ		
4	እናቶች ለእርግጠኛ ክትትል ለኢትዮጵያ ምክርና ምርመራ አገልግሎት ወደ ጤና ተቋም የማይመጡት ለምን ይመስልዎታል? 1. ድንገት ኢትዮጵያ በደማቸው መኖሩ ቢረጋገጥ ባሉቻቸውና ቤተሰቦቻቸው ያርቀናል የሚል ፍራቻ ስላላቸው 2. ጤና ድርጅቶች ሩቅ በመሆናቸው 3. ጤና ባለሙያዎች በደንብ ስለማያስተናገዷቸው 4. በባህላቸው ተቀባይነት ስለሌላቸው 5. አላውቅም 6. ሌላ (ይጠቀስ)		
5	የኢትዮጵያ ምክር ክምርመራ በፊትና በኋላ ይሰማሉ? 1. አዎ 2. አይ		
6	መወሰን አይ ከሆነ ምክንያቶች ምንድን ነው? 1. የሰለጠነ ማኅከል 2. የምርመራ ኪት አለመኖር 3. ገለልተኛ ነፃነት ስለሚያንሱ/ በቀ. ምርመራ ክፍል አለመኖር 4. ሌላ (ይገለጹ)		

ጊዜዎትን ሰውተው ይህንን ጠቃሚ መረጃ ስለሰጡን ክብር ናመሰግናለን። ጥያቄዎች ካለዎት ከመጠየቅ ወደጎሳ አይበሉ።

Annex I: Letter of assistance

Date: November 17, 2022

To whom it may concern

Subject: Letter of Assistance

Dear Sir/Madame

Based on the request from Dr Zelalem Demeke Banjaw, regarding assistance on the analysis of the research project with a Title: "**FACTORS AFFECTING THE UPTAKE OF ANTENATAL CARE HIV TESTING IN ADDIS ABABA, ETHIOPIA**"; Delelegn Yilma and Benyam Seifu, Assistant professors from Ambo University, We have Dr Zelalem assisted in the statistical analysis of the data collected for the above-mentioned research.

Sincerely,

Delelegn Yilma (Assistant professor of Epidemiology)

Department of Public Health,

College of Medicine and Health Sciences,

Ambo University, Ethiopia

Tel: +251912310083

Email: delelegn.yilma@ambou.edu.et

Signature:  _____

Benyam Seifu (BSc, MSc M&RH, GMPH)

Assistant Professor of Maternal and Reproductive health,

College of Medicine and Health Science

Ambo University

Phone number: +251 910 45 11 84

Email: benyam.seifu@ambou.edu.et

Signature:  _____

Annex J: Certificate for academic editing and proofreading

Department of Health Studies

University of South Africa

17 December 2022

**Re: EDITING OF DISSERTATION
BY ZELALEM DEMEKE BANJAW**

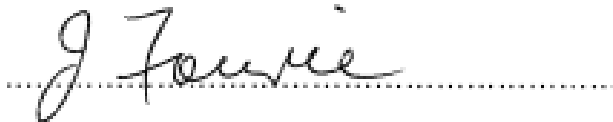
This is to confirm that I edited and proofread the manuscript entitled:

**FACTORS AFFECTING THE UPTAKE OF ANTENATAL CARE HIV TESTING IN
ADDIS ABABA, ETHIOPIA**

by the abovementioned student of the Department. It was submitted in
accordance with the requirements for the degree of Master's in Public

Health in the subject Health Studies

Yours faithfully



Dr JA Fourie

Member of the Professional Editors' Guild

0825121841

jackie.j.fourie@gmail.com