MEKELLE UNIVERSITY

SCHOOL OF PUBLIC HEALTH

DEPARTMENT OF ENVIRONMENTAL HEALTH AND BEHAVIORAL SCIENCES

MAGNITUDE OF UNINTENDED PREGNANCY AND ASSOCIATED FACTORS AMONG HIV-POSITIVE PREGNANT AND LACTATING WOMEN ATTENDING PREVENTION MOTHER TO CHILD TRANSMISSION (PMTCT) SERVICES IN MEKELLE PUBLIC HEALTH FACILITY , TIGRAY, ETHIOPIA, 2025.

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A THESIS SUBMITTED TO MEKELLE UNIVERSITY, COLLEGE OF HEALTH SCIENCES, SCHOOL OF PUBLIC HEALTH, DEPARTMENT OF ENVIRONMENTAL HEALTH AND BEHAVIORAL SCIENCE, IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE IN GENERAL PUBLIC HEALTH.

August 2025

Tigray, Ethiopia

MEKELLE UNIVERSITY

COLLAGE OF HEALTH SCIENCES

SCHOOL OF PUBLIC HEALTH

DEPARTMENT OF ENVIRONMENTAL HEALTH AND BEHAVIORAL SCIENCE

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DURATION OF PROJECT	FEBRUARY 2025– JUNE 2025
STUDY AREA	SELECTED HEALTH FACILITIES, IN MEKELLE, TIGRAY, ETHIOPIA.
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Advisor approval sheet

This is to certify that the thesis entitled “To Assess the Magnitude of Unintended Pregnancy and Associated Factors Among HIV-Positive Pregnant and Lactating Women Attending Mekelle Public Health Facilities, Tigray, Ethiopia, 2025” is a facility-based cross-sectional study. This thesis will be submitted in partial fulfillment of the requirements for the degree of MPH with a specialization in “General Masters of Public Health” to the graduate program of the Department of Public Health at the College of Health Sciences, Mekelle University. This work has been carried out by Mebrahtom G. Mariam under my supervision. The student has fulfilled the thesis requirements and may therefore submit it to the department.

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Assurance of Principal Investigator

I, the undersigned, agree to accept all responsibilities for the scientific and ethical conduct of the MPH thesis and for providing required progress reports in accordance with the terms and conditions set by the department. I will provide timely progress reports to my advisors and seek the necessary advice and approval from my main advisor and co-advisors throughout the thesis development process.

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Examiners' Approval Sheet

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Examiners' Approval Sheet

We, the undersigned members of the Board of Examiners for the final open defense of Mebrahtom Genremariam (BSC), have read and evaluated his thesis titled "Magnitude of Unintended Pregnancy and Associated Factors Among HIV-Positive Pregnant and Lactating Women Attending Mekelle Public Health Facilities, Tigray, Ethiopia, 2025," and assessed the candidate. Therefore, we certify that the thesis has been accepted in partial fulfillment of the requirements for the MPh Degree in General MPh.

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Name of Chairperson	Signature	Date
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Name of Major Advisor	Signature	Date
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Name of Internal Examiner	Signature	Date
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Final approval and acceptance of the thesis are contingent upon the submission of the final copy of the thesis to the candidate's department through the office of the Department Graduate Program Coordinator.

Thesis Approved by

_____	_____	_____
Graduate Program Coordinator	Signature	Date

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Acknowledgement

I would like to extend my heartfelt thanks to Mekelle University College of Health Sciences, School of Public Health, for providing me with this opportunity. I am especially grateful to my advisor, Dr. Gebremeskel Mirutse Sebagadis (BSc, MPh, PhD) in Health and Social Behavior, and my co-advisor, Ms. Mulu Eyasu (BSc, MPH in Health Education and Promotion), for guiding me in this research project.

I would also like to thank my best friends for their unwavering support throughout this journey. My heartfelt appreciation goes to all my data collectors, participants, and supervisors for their invaluable contributions.

Got it You'd like a thank-you/acknowledgment text you can use in your thesis or manuscript to appreciate your examiners and advisers. Here's a polished draft you can adapt:

Acknowledgment

I would like to extend my deepest gratitude to my examiners for their invaluable comments, constructive criticism, and insightful guidance that greatly enriched this work. Your thoughtful feedback has strengthened the quality of my research and broadened my academic perspective.

My heartfelt appreciation also goes to my advisers, whose continuous support, encouragement, and mentorship have been instrumental throughout this journey. Your patience, expertise, and

guidance have not only shaped this study but have also inspired me to grow both academically and personally.

I am truly grateful for the time, effort, and dedication you have invested in helping me achieve this milestone.

Would you like me to make it short and formal (for a thesis acknowledgment page) or slightly warmer and personal (to show more gratitude)?

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List of Abbreviations

AIDS: Acquired Immune Deficiency Syndrome

ANC: Antenatal Care

AOR: Adjusted Odds Ratio

ART: Antiretroviral Therapy

CD4: Cluster of Differentiation

COR: Crude Odds Ratio

DHS: Demographic and Health Survey

EDHS: Ethiopian Demographic and Health Survey

EPHI: Ethiopian Public Health Institute

HIV: Human Immunodeficiency Virus

PhD: Doctor of Philosophy

PMTCT: Prevention of Mother to Child Transmission

PNC: Postnatal Care

WHO: World Health Organization

List Acronyms

PLWHIV: People Living With Human Immunodeficiency Virus

WLwHIV: Women Living With Human Immunodeficiency Virus

SDGs: Sustainable Development Goals

Abstract

Background:-Unintended pregnancy is a pregnancy that is untimely or unplanned at the time of conception but may be wanted later. The burden and negative consequences of unintended pregnancy can be severe, especially among women living with HIV. There is a lack of evidence regarding unintended pregnancy among HIV-positive women in the study area.

Objective: - To assess the magnitude of unintended pregnancy and associated factors among HIV-positive pregnant and lactating women attending PMTCT services in Mekelle public health facilities, Tigray, Ethiopia, in 2025.

Methods and materials: - An institution-based cross-sectional study was conducted from February 1st to April 30th, 2025. A simple random sampling technique was used to select 278 eligible women. Data were collected using a structured, pretested, interviewer-administered questionnaire and chart review. Data were entered into Kobo Toolbox, exported to Excel, and analyzed using SPSS version 27. Independent variables with $p < 0.25$ were included in the binary logistic regression analysis, and a multivariable logistic regression model was fitted to identify factors associated with unintended pregnancy. Statistical significance was declared based on adjusted odds ratios (AORs) with 95% confidence intervals (CIs) and a p-value ≤ 0.05. .

Results:- The magnitude of unintended pregnancy among HIV-positive pregnant and lactating women in Mekelle Town public health facilities was 57.2% (95% CI: 51.3–63.1). Factors significantly associated with unintended pregnancy included primary education (AOR = 12.57; 95% CI: 2.17–72.65), no desire for additional children (AOR = 3.27; 95% CI: 1.48–7.23), and non-disclosure of HIV status (AOR = 3.48; 95% CI: 1.56–12.93). Women with no prior history of unintended pregnancy were significantly less likely to experience it (AOR = 0.12; 95% CI: 0.03–0.50), suggesting that previous experience may enhance awareness and consistent contraceptive use.

Conclusion and Recommendations: - Unintended pregnancy remains a major concern among HIV-positive women in Mekelle, influenced by education, HIV disclosure, fertility intentions,

and prior pregnancies. Strengthening education, promoting safe disclosure of HIV status, and improving access to family planning services are essential to reduce unintended pregnancies and improve maternal and child health outcomes in this population.

1. Introduction

1.1 Background

Unintended pregnancy is a pregnancy that is either mistimed or unplanned, such as the pregnancy occurred when no children or no more children were desired(1). Human Immunodeficiency is a virus (HIV) that damages the immune system. Untreated HIV affects and kills CD4 cells, which are a type of immune cell Called T cell(2). Acquired immune deficiency syndrome (AIDS) is a disease that can develop in people with HIV. It's the most advanced stage of HIV(3).

According to the national HIV/AIDS summary 2020, the prevalence of HIV in Ethiopia was approximately 0.91%–0.93%, with an estimated 610,000–620,000 people living with the virus, of whom around 60% were women of reproductive age(4, 5). In contrast, the Tigray region experienced a significantly higher prevalence—rising from a pre-conflict figure of approximately 1.4% to about 3% post-conflict, with internally displaced persons and survivors of mass sexual violence exhibiting even higher rates(6). Within some hotspot areas like Mekelle, HIV prevalence was notably elevated, with urban estimates around 3.3% (7).

Among women living with Human Immunodeficiency Virus (HIV), unintended pregnancy poses additional challenges. HIV is a virus that weakens the immune system by destroying CD4 T cells, leaving individuals vulnerable to opportunistic infections. If untreated, HIV progresses to Acquired Immune Deficiency Syndrome (AIDS), which represents the most advanced stage of the infection (8, 9). Women of reproductive age are disproportionately affected by HIV, particularly in sub-Saharan Africa, where both fertility and HIV prevalence remain high. Consequently, the intersection between HIV and unintended pregnancy has become a critical reproductive health issue, with implications for maternal health, child survival, and HIV prevention programs(10)

Unintended pregnancy in HIV-positive women increases the risk of mother-to-child transmission (MTCT) of HIV, especially when women are not using antiretroviral therapy (ART) consistently(11). Furthermore, unintended pregnancies can reduce adherence to ART, disrupt follow-up care, and increase the likelihood of unsafe abortion, particularly in resource-limited

settings(12). For lactating women, unintended pregnancies complicate infant feeding practices and may increase the risk of vertical transmission during breastfeeding. Addressing unintended pregnancy in this population is therefore essential to advancing maternal and child health, reducing HIV transmission, and achieving global commitments such as the Sustainable Development Goals (SDGs)(13, 14).

Globally, it is estimated that nearly half of all pregnancies are unintended, with particularly high rates observed in low- and middle-income countries(15). Among women living with HIV (WLHIV), the burden of unintended pregnancy is disproportionately higher, with global estimates suggesting that up to 38–44% of pregnancies in this group are unintended(16, 17). This elevated prevalence is attributed to limited access to modern contraceptive methods, poor integration of family planning and HIV services, and persistent stigma surrounding both HIV infection and reproductive health (18, 19).

The consequences of unintended pregnancy among WLHIV are severe. Unintended pregnancies increase the risk of mother-to-child transmission (MTCT) of HIV, especially when adherence to antiretroviral therapy (ART) is inconsistent or delayed (20). Furthermore, they are associated with poor maternal outcomes, reduced ART adherence, and adverse neonatal health outcomes such as low birth weight, preterm delivery, stillbirth, and unsafe abortion (17, 21). Addressing unintended pregnancy is therefore critical for reducing MTCT, improving maternal and child health outcomes, and ensuring that the reproductive rights of WLHIV are upheld.

In Sub-Saharan Africa, which bears the greatest burden of the HIV epidemic, the prevalence of unintended pregnancy among women living with HIV ranges from 30% to 60%, depending on the country and study setting (16, 19, 22). Studies in Uganda, Zimbabwe, South Africa, and Malawi have consistently reported high levels of unintended pregnancy, often exceeding 40%(22, 23). In Ethiopia, the problem is equally pressing, with facility-based studies reporting unintended pregnancy prevalence ranging from 20% to 42% among HIV-positive women(24, 25). The situation is particularly concerning in post-conflict regions such as Tigray, where healthcare systems have been disrupted, and women face compounded risks due to both limited reproductive health services and increased vulnerability to sexual violence(26)

1.2 Statement of the Problem

Unintended pregnancy, defined as a pregnancy that is either mistimed or unwanted at the time of conception, remains a significant public health issue globally and in Ethiopia(1). Women living with HIV (WLHIV) are disproportionately affected, with global estimates indicating that approximately 38% of pregnancies in this population are unintended(12). The persistence of unintended pregnancies among WLHIV is attributed to limited access to modern contraceptives, weak integration of HIV and reproductive health services, fear of HIV-related stigma, and sociocultural barriers to family planning utilization (20, 27).

Unintended pregnancy in HIV-positive women carries serious health risks, including increased chances of mother-to-child transmission (MTCT) of HIV, poor adherence to antiretroviral therapy (ART), maternal morbidity, and adverse neonatal outcomes such as low birth weight, preterm delivery, and unsafe abortion(21, 22). These risks are compounded in resource-limited and post-conflict settings, where access to reproductive health services is constrained.

Sub-Saharan Africa, which carries the highest burden of HIV, reports unintended pregnancy prevalence among WLHIV ranging from 44.9% to 68.5%, with studies in South Africa, Uganda, Zimbabwe, Malawi, and Swaziland consistently showing high rates(23, 28, 29). In Ethiopia, facility-based studies indicate that unintended pregnancy among HIV-positive women ranges between 20% and 42% in areas such as Addis Ababa, Gondar, and Ilu Aba Bora Zone(27-29). Mekelle town, located in the Tigray region, is considered an urban HIV hotspot, with adult HIV prevalence estimated at 3.3% (6). However, there is limited evidence on the magnitude of unintended pregnancy and its associated factors among HIV-positive pregnant and lactating women in Mekelle, particularly in the post-conflict context where healthcare services have been disrupted.

The lack of updated, context-specific data hinders effective program planning and intervention. Understanding the prevalence and determinants of unintended pregnancy among WLHIV in Mekelle is crucial for guiding reproductive health strengthen, strengthening family planning integration within HIV care, improving ART adherence, and reducing MTCT of HIV. Therefore, this study aims to assess the magnitude of unintended pregnancy and its associated factors

among HIV-positive pregnant and lactating women attending public health facilities in Mekelle town.

1.3 Significance of the Study

Unintended pregnancy among women living with HIV (WLHIV) remains a major public health concern due to its significant implications for maternal and child health. Such pregnancies increase the risk of mother-to-child transmission (MTCT) of HIV, compromise adherence to antiretroviral therapy (ART), and contribute to adverse outcomes such as unsafe abortion, maternal morbidity, preterm birth, and low birth weight (30, 31). Despite the global progress in reducing new HIV infections and scaling up prevention of mother-to-child transmission (PMTCT) services, unintended pregnancies continue to threaten these gains, particularly in Sub-Saharan Africa where both HIV prevalence and fertility rates remain high(32).

In Ethiopia, although efforts have been made to integrate reproductive health services with HIV care, unintended pregnancy among WLHIV persists as a challenge(33, 34). This problem is further exacerbated in conflict-affected regions like Tigray, where health system disruptions have limited women's access to family planning and PMTCT services(35). Mekelle, being one of the urban centers with relatively high HIV prevalence, represents an area where evidence on the magnitude of unintended pregnancy and its determinants is urgently needed(36).

This study is significant for several reasons. First, it will provide updated and context-specific evidence on the magnitude of unintended pregnancy among HIV-positive pregnant and lactating women attending PMTCT services in Mekelle public health facilities. Such information is essential for identifying gaps in service delivery and strengthening the integration of family planning within HIV care. Second, by identifying associated factors, the study will help health providers and policymakers design targeted interventions to address the unique reproductive health needs of WLHIV, improve ART adherence, and reduce MTCT of HIV. Finally, the findings will contribute to the broader academic knowledge base, serving as a reference for future researchers and program planners interested in improving reproductive health outcomes among WLHIV in Tigray and similar settings.

2. Literature Review

2.1 Magnitude of Unintended Pregnancy among HIV-Positive Women

Unintended pregnancy, defined as a pregnancy that is either mistimed or unwanted at conception, remains a pressing global public health concern. It accounts for nearly half of all pregnancies worldwide, with serious health and socioeconomic implications for women, children and families. Among women living with HIV, the consequences are even more severe due to risks of vertical HIV transmission, adverse maternal health outcomes, and additional challenges in family planning access(1).

Globally, evidence suggests that unintended pregnancy among HIV-positive women is more common than in the general population. Studies indicate that despite the availability of effective contraceptive methods, a significant proportion of women on antiretroviral therapy (ART) continue to experience unplanned pregnancies. For instance, a global review of reproductive health among HIV-positive women reported unintended pregnancy rates ranging between 30% and 65%, highlighting persistent unmet needs for contraceptive services in this population(37).

In sub-Saharan Africa, where both HIV prevalence and fertility rates remain high, unintended pregnancy among women living with HIV is particularly concerning. A national study from South Africa reported that 51.6% of pregnancies were unintended, with HIV-positive women more likely to report unintended pregnancy than their HIV-negative counterparts. Women who initiated ART before pregnancy or during antenatal care had higher odds of unintended pregnancy compared to HIV-negative women (38). Similarly, cross-sectional studies conducted in Nigeria and Uganda have documented unintended pregnancy prevalence of 37% to 41%, reflecting a substantial burden in the region(39, 40). In South Africa, up to two-thirds of HIV-positive women report unplanned pregnancies (41).

A systematic review and meta-analysis conducted in East Africa further demonstrated that unintended pregnancy among HIV-positive women is consistently high. The pooled prevalence was estimated at 40.98%, with considerable variation across studies ranging from 19.3% in Kenya to 74% in another Kenyan study. Studies from Ethiopia reported unintended pregnancy prevalence between 22.4% and 41.7%, while Rwanda and Uganda documented 62.7% and

41.1%, respectively(42). Studies in Zimbabwe indicate a substantial rate of unintended pregnancies among WLHIV were significantly more likely to report unintended pregnancies compared to HIV-negative women (44.9% vs. 33.8%, $p<0.01$)(41)

SSA carries a disproportionate burden of HIV, with over 70% of people living with HIV worldwide residing in the region (43). Studies in SSA have revealed a range of unintended pregnancy prevalence among HIV-positive women, from 35% to 65%(44).

2.2 Associated Factors of Unintended Pregnancy among HIV-Positive Pregnant and Lactating Women

Unintended pregnancy among HIV-positive women is influenced by a wide range of socio demographic, clinical, and behavioral factors. Evidence from cross-sectional studies across sub-Saharan Africa consistently shows that young maternal age, low educational attainment, unmarried or divorced marital status, and unemployment are strongly associated with higher risk of unintended pregnancy(38, 45).

Clinical and reproductive characteristics also play a significant role. High parity and a greater number of previous pregnancies are frequently linked with unintended pregnancy, reflecting unmet needs for contraception among multiparous women(29). Similarly, women who have not disclosed their HIV status to their partners are at significantly higher risk, as non-disclosure limits partner involvement in reproductive choices and reduces negotiation power for contraceptive use(28, 40).

Contraceptive-related factors are another critical dimension. Inconsistent use of family planning methods, reliance on short-acting contraceptives, and limited uptake of long-acting reversible contraceptives (LARCs) have all been reported as predictors of unintended pregnancy among HIV-positive women(27, 45). Health system gaps, such as inadequate integration of family planning counseling into antiretroviral therapy (ART) services, stock-outs of contraceptive supplies, and limited male partner involvement, further exacerbate the problem (46).

2.3 Magnitude of Unintended Pregnancy among HIV-Positive Women in Ethiopia

Studies in Ethiopia have reported varying rates of unintended pregnancy among WLHIV. A facility-based cross-sectional study in the Ilu Aba Bora zone, South Western Ethiopia, found that 40.9% of pregnancies among HIV-positive women were unintended(47). Similarly, a study in Debre Markos Town, Northwest Ethiopia, reported a prevalence of 34.8%(48). However, a study in Bahirdar town public health facilities, Northwest Ethiopia, reported a lower prevalence of 22.4%(49). A systematic review and meta-analysis of studies in East Africa indicated that the pooled prevalence of unintended pregnancy among WLHIV in Ethiopia was 28.38%(50). These variations in prevalence may be attributed to differences in study settings, data collection methods, and population characteristics.

A facility-based study in Addis Ababa reported that 46% of HIV-positive women experienced unintended pregnancies(28). In Ethiopia, similar determinants have been identified. Studies in Addis Ababa, Gondar, and Mekelle found that non-disclosure of HIV status, lack of partner support, younger age, and non-use of modern contraceptives were independent predictors of unintended pregnancy among HIV-positive women(27, 28, 46).

Were us A study in Tigray the prevalence of unintended pregnancy among HIV-positive pregnant women in Tigray Region, particularly in Saesie Tsaeda Emba Woreda, was reported to be 24.9%. This finding highlights a significant public health concern, especially in a post-conflict setting where access to reproductive health services may be disrupted(51).

2.4 Conceptual framework

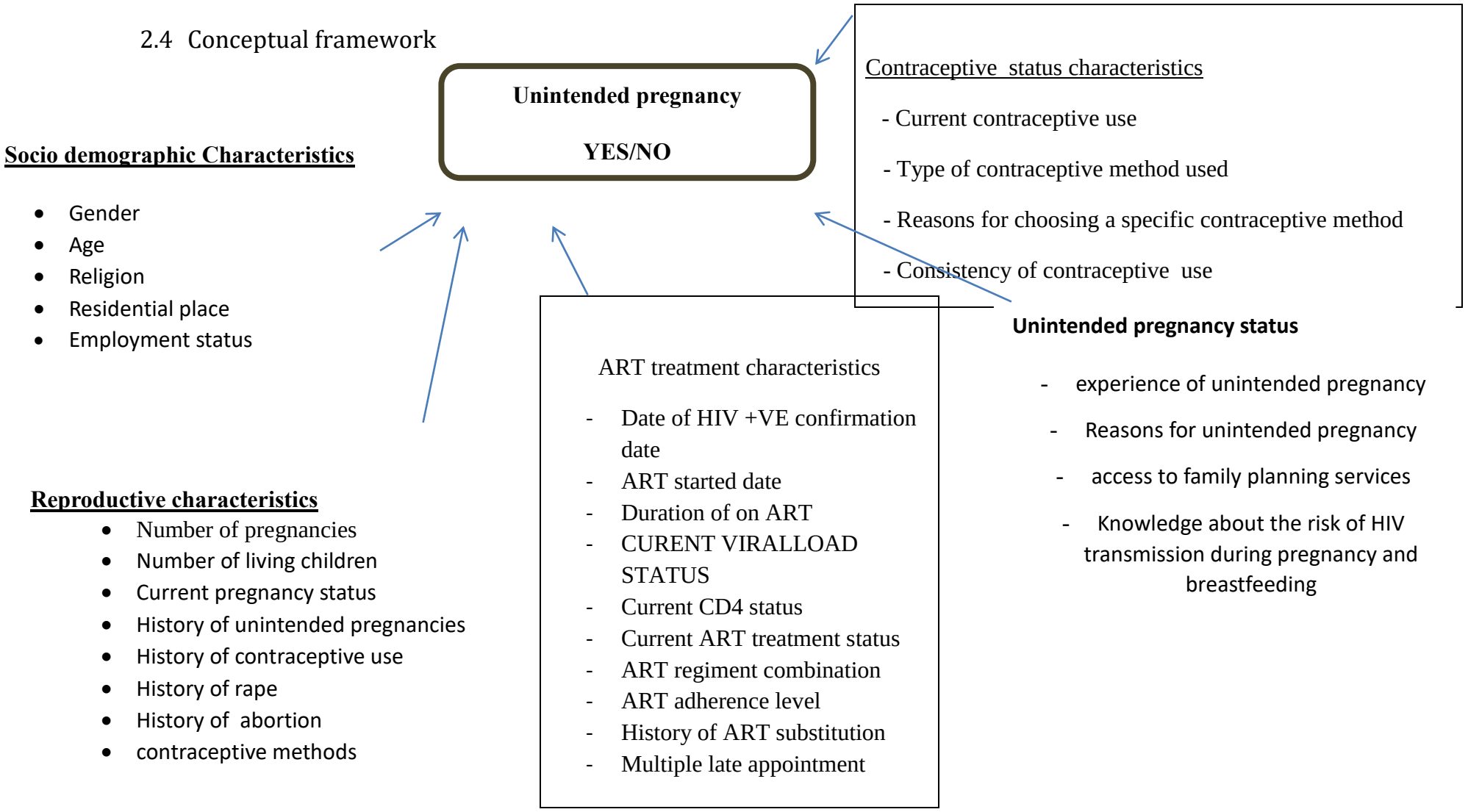

Figure 1:-Conceptual framework of factors associated with unintended pregnancy

3. Objective of the study

3.1 General Objective:

To assess the magnitude of unintended pregnancy and its associated factors among HIV-positive pregnant and lactating women attending public health facilities in Mekelle, Tigray, Ethiopia 2025.

3.2 Specific objectives

I. To determine the prevalence of unintended pregnancy among HIV-positive pregnant and lactating women attending public health facilities in Mekelle, Tigray, Ethiopia 2025.

II. To identify factors associated with unintended pregnancy among HIV-positive pregnant and lactating women attending public health facilities in Mekelle, Tigray, Ethiopia 2025.

4. Methods and Materials

4.1 Study setting

This study was conducted in Mekelle town, specifically at PMTCT public health facilities in Tigray Ethiopia. Mekelle is the capital city of the Tigray Regional State and is one of the developing cities in Ethiopia.

Mekelle is situated at an altitude of 2,254 meters (7,395 feet) above sea level, approximately 780 km north-northwest of Addis Ababa, the capital city of Ethiopia. According to the Central Statistical Agency of Ethiopia's population estimation in 2022, the total population of Mekelle was approximately 565,000, with around 180,530 females of reproductive age (15-49 years) in the urban area.

In Mekelle, there is one public referral hospital, two general hospitals, two primary hospitals, and ten public health centers. All of these facilities serve as PMTCT/ART sites, providing continuous care for more than 12,255 HIV-positive individuals at the time of the study.

4.2 Study design and period

An institution-based cross-sectional study was conducted from February 1st to April 30th 2025.

4.3 Source Population

The source population for this study included all HIV-positive pregnant and lactating women who were receiving care and support services, at public health facilities in Mekelle City.

4.4 Study Population

The study population included all HIV-positive pregnant and lactating women who visited the selected public health facilities in Mekelle City and met the eligibility criteria.

4.5 Study Unit

The study unit was each individual HIV-positive pregnant or lactating woman who participated in the study and from whom data were collected through interviews and/or medical record review.

4.6 Inclusion and Exclusion criteria

4.6.1 Inclusion criteria

Participants were included in the study:

- HIV positive Pregnant and lactating women
- Having at least one PMTCT follow-up.
- Registered in the PMTCT cohort.
- Providing informed consent to participate in the study.

4.6.2 Exclusion criteria

The following individuals were excluded from the study:

- Sever health conditions like current opportunistic infection
- Lack of informed consent.

4.7 Sample size determination

The sample size for this study was determined using a single population proportion formula, considering the following assumptions: A 22.7% magnitude of unintended pregnancy among HIV-positive women (49, 52) A 95% level of confidence. A 5% margin of error

4.8 Sample Size Calculation

To calculate the sample size for p = 22.7% (or 0.227), we use the single population proportion formula(49)

Where:

- ✓ n = required sample size
- ✓ α = level of significance
- ✓ Z = standard normal distribution curve value for 95% confidence level = 1.96
- ✓ p = proportion(49)
- ✓ d = margin of error.

$$n = \frac{1.96)2 \cdot 0.227 \cdot (1-0.227)}{(0.05)^2}$$

$$n = \frac{3.8416 \cdot 0.227 \cdot 0.793}{0.0025}$$

$$n = \frac{0.633}{0.0025} = 253$$

Final =253

Add 10% for non-response:

= 253+ (253×0.10) =253+25.3=278.3 = **278**

For the second objective sample size was calculated by using Epi Info version7.1 and by considering different assumptions.

Table 1:- Summary of sample size for factors associated with unintended pregnancy among HIV positive women in Mekelle town health facilities 2025(49).

Associated Factors	Confidence Interval	Power %	Outcome in Unexposed	COR	Non-Response Rates	Total Sample Size
Knowledge About Dual Protection	95	80	45.6	2.51	10%	206
Contraceptive Use	95	80	49.6	3.10	10%	139
Disclosure	95	80	48.9	3.32	10%	128

Hence the sample size obtained from the first objective was used to determine the final sample size. After considering a 10% contingency for non-response rate, the minimum adequate sample size was 278.

4.9 Sampling Technique and Procedures

At the time of the study, there were 15 public health care facilities in Mekelle city providing PMTCT services consistently. A six-month report of HIV-positive women attending the PMTCT clinics was obtained from each health facility. The average monthly performance was calculated, and the calculated sample size was proportionally allocated to each health facility.

Simple random sampling was used to select the study participants. Based on the average monthly report, the ratio of participants selected was calculated as follows: 572/278≈2. This means that, on average, every second woman was selected, but in this selection bias was happen due to clients flow. Then sampling was going for 2 month.

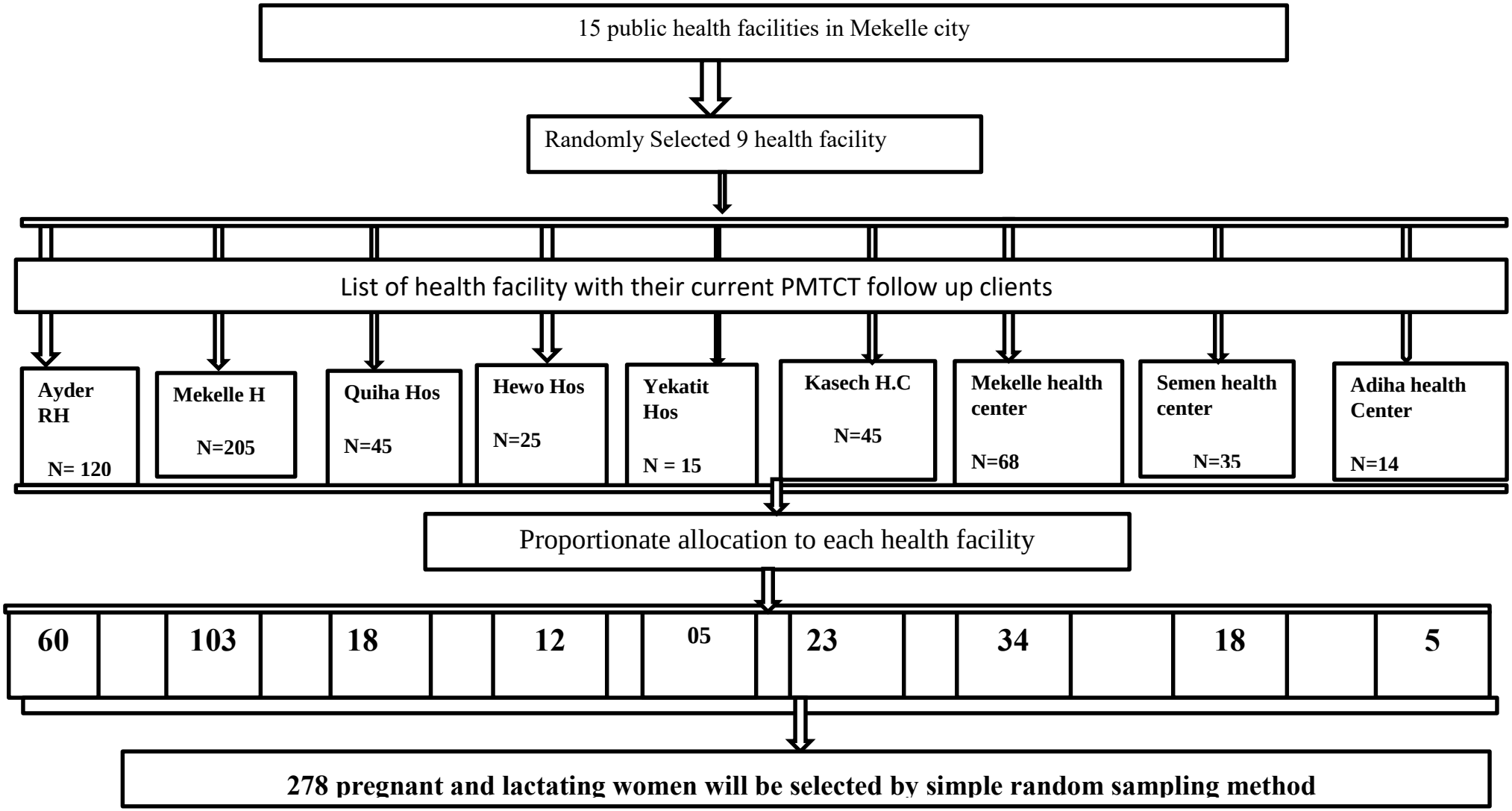

Figure 2:- Schematic diagram of sampling procedure

4.10 Operational definitions and definition of terms

Dual method: - The use of family planning methods can prevent both unwanted pregnancies and HIV/STI infections during sexual intercourse. This involves using a barrier method, such as a male or female condom, in conjunction with another contraceptive method(1).

Mistimed: - A pregnancy that occurs when the woman does not wish to become pregnant at that specific time, although she desires to have children in the future(1).

Unintended Pregnancy:-An unintended pregnancy is a pregnancy that occurs when it is either mistimed (the woman became pregnant earlier than planned) or unwanted (the woman did not want to become pregnant at any time) at the time of conception(9).

Unwanted Pregnancy:-Unwanted pregnancy is a subset of unintended pregnancy and refers specifically to pregnancies that occur when a woman did not want to have any (more) children at all(9).

4.11 Study Variables

4.11.1 Dependent Variable

- Unintended Pregnancy: Whether the woman have an Intended pregnancy while using PMTCT services (YES/NO).

4.11.2 Independent Variables

1. Socio-Demographic Variables:
    - Age
    - Women's educational status
    - Residence
    - Marital status
    - Women's occupation
    - Estimated time to walk to the nearest health facility
    - Number of children (family size)
    - Household annual income
2. Reproductive and Maternity Health Service-Related Factors:
    - Parity

- Gravidity
- Partner's desire for children
- Ideal number of children
- History of abortion
- History of rape
- Desire for more children

3. Contraceptive-Related Factors:
    - Type of contraceptive used
    - Use of dual method
    - Availability of family planning
    - Knowledge of contraceptives
4. HIV care and treatment Related Factors:
    - Duration of HIV diagnosis
    - ART duration
    - ART regimen
    - Knowledge of HIV transmission
    - Viral load
    - CD4 count
    - Disclosure of HIV status
    - Regimen change
5. Reproductive History
    - ✓ Desire for more children
    - ✓ Are you currently pregnant or lactating?
    - ✓ Number of live births
    - ✓ Number of pregnancies

4.12 Data Collection Tool and Procedures

The data collection tool was developed based on a review of relevant literature and implemented using a structured questionnaire administered through face-to-face interviews and chart reviews. The questionnaire included sections on socio-demographic characteristics, reproductive and maternal health service-related factors, HIV and ART-related factors, contraceptive-related factors, and characteristics associated with unintended pregnancy.

Two diploma-level nurses were recruited for data collection, and one nurse with a Bachelor of Science (BSc) degree was recruited as a supervisor.

4.13 Data Quality Control

To ensure consistency and clarity, the questionnaire was initially prepared in English, then translated into the local Tigrigna language, and subsequently back-translated to English. Before the actual data collection, a pretest was conducted with 5% HIV-positive pregnant and lactating women in Adigirat General Hospital, which was not included in the data analysis. Based on the pretest findings, issues related to language clarity, skipping patterns, and measurement were addressed.

Prior to data collection, a half day training session was conducted for the data collectors and supervisors. During the data collection process, the questionnaire was checked for completeness daily by the supervisors.

4.14 Data Processing and data Analysis

Data were collected and entered using kobo toll collect mobile application. After data entry, the dataset was exported to excel and Statistical Package for the Social Sciences (SPSS) version 27 for analysis. Descriptive statistics including frequencies, percentages, measures of central tendency (mean, median), and measures of variability (standard deviation) were used to summarize and describe the socio-demographic and socio-economic characteristics of the respondents. The results were presented using tables and figures.

Associated factors of unintended pregnancy were identified by fitting a binary logistic regression model. Initially bivariate analysis was conducted to compute Crude odds ratios (COR) with 95% confidence intervals (CI) and identify candidate variables for multivariable analysis. Variables with a p-value less than 0.25 in the bi-variable analysis were considered for inclusion in the multivariable logistic regression model, in order to control for potential confounders.

In the final model, adjusted odds ratios (AOR) with 95% CI were computed, and statistical significance was declared at a p-value less than 0.05. Multi collinearity among the independent variables was assessed using the Variance Inflation Factor (VIF), and all variables with a VIF < 10 were retained in the final analysis, as no variable exceeded the threshold. Confounding was managed through multivariable adjustment. The Hosmer-Lemeshow goodness-of-fit test was used to assess the model fitness.

4.15 Ethical consideration

Ethical approval for this study was obtained from the Institutional Review Board (IRB) of the University of Mekelle by the delegation of the School of Public Health Ethical Review Committee. A formal letter of cooperation was written from the School of Public Health School to the TRB and approval was obtained accordingly. Formal administrative approval was obtained from each health facility. Finally, verbal informed consent was obtained from each study participant after a clear explanation of the purpose of the study. Meanwhile, participants reported that the privacy and confidentiality of study participants were maintained and that they had the right to withdraw from the study at any time if they wished to withdraw. All necessary procedures were performed according to institutional guidelines.

4.16 Dissemination of Result

The finding of the study will be disseminated to concerned bodies; Mekelle University College of health since, school of public health, and further it will be submitted to TRHB, to all public health facilities included in this study. Finally, efforts will be made to publish on scientific journals and to make presentation on different meetings and conference.

5. Results

5.1 Socio-Demographic Characteristics

From 278 women living with HIV participated in the study, resulting in a response was the minimum age of participants was 22, while the maximum age was 42, with a mean age of 33 years (SD ± 4.609).

The majority of respondents, 182 (65.5%), were between the ages of 31 and 42. Most respondents, 200 (71.9%), identified as Orthodox Christians, Regarding marital status, 47.5% of women were married, while 33.5% were not married.

More than 68% of the women had attended secondary and above education, and 24.5% had completed elementary education. In terms of employment, 102 (36.7%) were private employees, 64 (23%) were housewives, and 54 (19.4%) were government employees.

Regarding accessibility, 37.1% of women lived more than 10 kilometers from the nearest health facility, 33% lived 5–10 km away, and 29.9% lived within 5 km. In terms of annual income, 72.7% earned between 20,000 and 50,000 birr, 23.4% earned less than 20,000 birr, and only 4.0% reported earning more than 50,000 birr annually.

Participants received ART services from various health facilities: 45.3% from general hospitals, 24.1% from health centers, 22.3% from referral hospitals, and 8.3% from primary hospitals. The vast majority of participants lived in urban areas (86.4%), with only 13.6% residing in rural settings.

Table 2:-Socio Demographic characteristics for magnitude and factor associated with unintended pregnancy among pregnant women living with HIV in mekelle town public health facilities 2025 N=278

Variables (n=278)	Categories	Frequency	Percentage (%)
Marital Status	Not Married	93	33.5
	Married	132	47.5
	Divorced	40	14.4
	Separated	11	4.0
	Widowed	2	0.7
Educational Level	No Formal Education	20	7.2
	Primary	68	24.5
	Secondary and Above	190	68.3
Religion of the Women	Catholic	18	6.5
	Muslim	50	18.0
	Orthodox	200	71.9
	Protestant	10	3.6
Women's Occupation	Unemployed	9	3.2
	Government Employee	54	19.4
	Private Employee	102	36.7
	Merchant	34	12.2
	Sex Workers	15	5.4
	Housewife	64	23.0
Place of Residence	Rural	38	13.6
	Urban	240	86.4
Facility Type for ART	General Hospital	126	45.3
	Health Center	67	24.1
	Primary Hospital	23	8.3
	Referral Hospital	62	22.3
Age Group	22-30	96	34.5
	31-43	182	65.5
Distance from Home to Health Facility(kilo metro)	<5	83	29.9
	5-10	92	33
	>10	103	37.1
Annual Income (birr)	<20,000	65	23.4
	20,000-50,000	202	72.7
	>50,0000	11	4.0

5.2 Pregnancy and child birth characteristics

The intention of pregnancy appears to be strongly associated with the number of children a woman already has. Among women with no children, only 7.9% reported the current pregnancy as intended, while 92.1% reported it as unintended. In contrast, among those with 1–2 children, 50.5% reported the pregnancy as intended and 49.5% as unintended. For women with three or more children, 55.4% reported their pregnancy as intended, while 44.6% reported it as unintended. These results suggest that the likelihood of reporting a pregnancy as unintended is highest among women with no children and decreases as the number of children increases.

Pregnancy intention also varies notably by gravidity status. Among primi-gravida women (first-time pregnant), only 8.8% reported the pregnancy as intended, while 91.2% reported it as unintended. In comparison, among multigravida women (those who have had previous pregnancies), 47.5% intended the pregnancy and 52.5% did not. This indicates that first-time pregnancies are much more likely to be unintended compared to pregnancies among women who have been pregnant before.

Women with a history of miscarriage or abortion reported a lower rate of pregnancy intention: only 17.8% of them reported their pregnancy as intended, compared to 51.7% of women with no such history. Correspondingly, 82.2% of women with a history of pregnancy loss had an unintended pregnancy, versus 48.3% among those with no history. This suggests that a history of miscarriage or abortion is associated with a significantly higher rate of unintended pregnancy.

Pregnancy intention also differed based on the woman's desire for more children. Among women who did not desire more children, 47.2% still reported the current pregnancy as intended, while 52.8% did not. Interestingly, among those who did desire more children, only 35.9% reported the current pregnancy as intended, and 64.1% as unintended. This finding may reflect a mismatch between fertility desires and pregnancy timing or contraceptive access, as even women who want more children may not have planned their current pregnancy.

Table 3:-Pregnancy and Childbirth Characteristics for the Magnitude and Factors Associated with Unintended Pregnancy among Pregnant and Lactating Women Living with HIV in Mekelle Town Public Health Facilities, 2025. N=278

Variable	Category	Was this pregnancy intended (n (Row %)		Total n (column %)
		Yes	No	
number of children	0	5(7.9)	58(92.1)	63(22.6)
	1-2	52(50.5)	51(49.5)	103(37.1)
	≥3	62(55.4)	50(44.6)	112(40.3)
Number of pregnancies_	Prim-gravida	3(8.8)	31(91.2)	34(12.2)
	Multigravida	116(47.5)	128(52.5)	244(87.8)
history of miscarriage or abortion	Yes	13(17.8)	60(82.2)	73(26.3)
	No	106(51.7)	99(48.3)	205(73.3)
women dose not desire more children	Yes	77(47.2)	84(52.2)	161(57.9)
	No	42(35.9)	75(64.1)	117(42.1)

5.3 Magnitude of unintended pregnancy

The proportion of unintended pregnancies among pregnant and lactating women attending PMTCT services was 57.2%, with (95%CI=51.4-63.0) while only 42.8% of the pregnancies were intended. This indicates that more than half of the pregnancies in this group were not planned or desired at the time of conception.

Several reasons were reported by these women for experiencing unintended pregnancies-. The most frequently cited reason was lack of access to contraceptives, accounting for 72 cases (45.3%), which highlights a significant gap in availability and accessibility of family planning services. Incorrect use of contraceptives was the second most common reason, reported by 34 participants (32.1%), reflecting issues related to knowledge, counseling, or proper utilization of contraceptive methods. Spousal or partner influence was also reported by 24 participants (15.1%), suggesting the role of relationship dynamics and partner support in contraceptive use. A smaller proportion of participants attributed unintended pregnancy to lack of family support (7 cases, 4.4%) and forced sexual intercourse (5 cases, 3.1%), indicating the impact of social and gender-based factors. Additionally, 17 participants (10.69%) mentioned other reasons, such as failure of contraceptive methods. Overall, underscores that unintended pregnancy is multifactorial, with structural, behavioral, and social determinants playing critical roles.

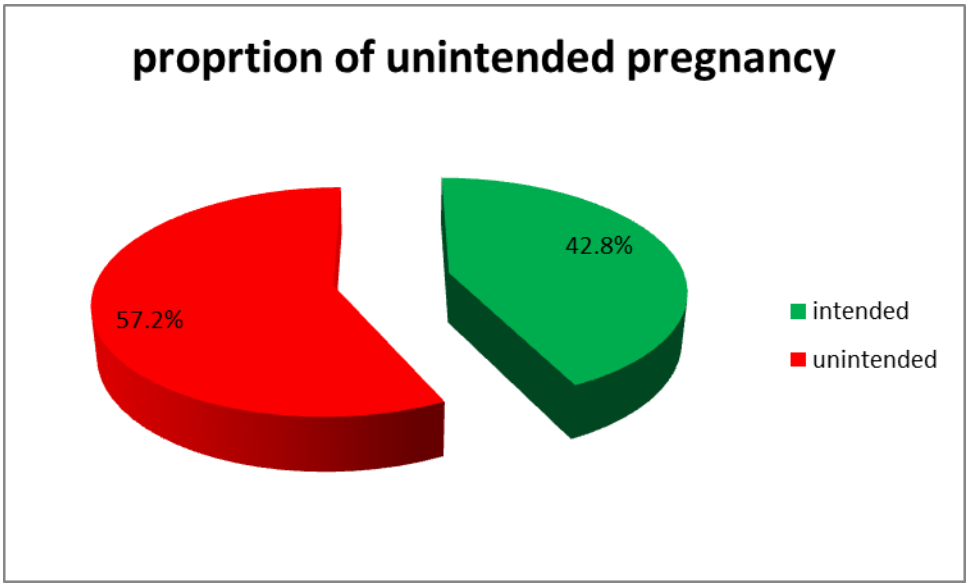

Figure 3:- Magnitude of unintended pregnancy among pregnant and lactating women attending PMTCT for PMTCT service in mekelle town public health facilities 2025. (278)

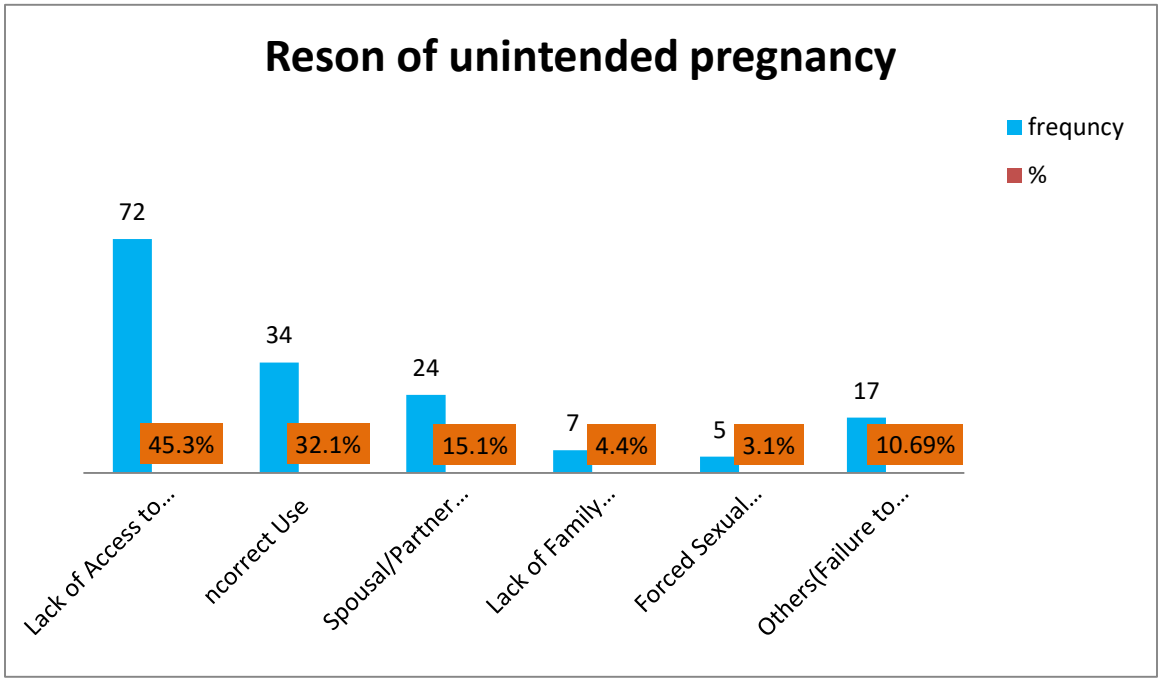

Figure 4:- Reason for Not Avoiding Unintended Pregnancy for HIV positive women's attending PMTCT in Mekelle town public health facility in 2025(n=159)

5.4 Family Planning use and source of information

Out of 278 participants, 187 (67.3%) reported using contraceptives after their HIV diagnosis, while 91 (32.7%) did not. Among those who used contraception, the most preferred method was injectable (61.5%), followed by implants (26.7%), pills (7.5%), and IUCD/condoms (4.3%). When asked about their current family planning method, the majority reported using injectables (69.5%), followed by pills (18.9%), implants (6.9%), condoms (4%), and IUCD (0.7%).

The majority of respondents (95.3%) believed that contraception is important for HIV-positive women, while only 4.7% disagreed. Similarly, 92.1% agreed that access to family planning can prevent unintended pregnancies. However, only 30.2% had knowledge about dual protection, whereas 69.8% lacked such awareness.

Regarding reasons for not using contraceptives among non-users, the most commonly cited barrier was lack of access (20.5%), followed by contraceptive failure (5.8%), lack of knowledge (2.5%), the belief that family planning is not important (2.2%), and partner pressure (1.4%). These findings indicate that while the majority of HIV-positive women recognize the importance of contraception, challenges such as limited access, inadequate knowledge, and method failure remain significant barriers to consistent contraceptive use.

Table 4:-Family Planning Utilization for the Magnitude and Factors Associated with Unintended Pregnancy among Pregnant and Lactating Women Living in Mekelle Town Public Health Facilities, 2025.

Variables (n=278)	Categories	Frequency	Percentage (%)
Contraceptive Use After HIV Positive	Yes	187	67.26
	No	91	32.7
Women's Preferred Method of Contraception n=(187)	Injectable	115	61.5
	Pill	14	7.5
	Implant	50	26.7
	IUCD/Condom	8	4.3
what type of family planning do you now	Injectable	191	69.5
	Pill	52	18.9
	Implant	19	6.9
	IUCD	2	0.7
	Condom	11	4
Do You Think Contraception Is Important for HIV Positive Women?	Yes	265	95.3
	No	13	4.7
Access to Family Planning Prevents Unintended Pregnancies (n=278)	True	256	92.1
	False	22	7.9
Do You Have Knowledge About Dual Protection? (n=278)	Yes	84	30.2
	No	194	69.8
Reasons why Women Do Not Use Contraceptives (n=90)	No Access to Contraceptives	57	20.5
	Partner Pressure	4	1.4
	Lack of Knowledge	7	2.5
	Belief That Family Planning Is Not Important	6	2.2
	Others (Contraceptive Failure)	16	5.8

5.5 HIV Testing and Counseling

Among the 278 participants included in the study, the majority (95.6%) were receiving first-line ART treatment, while only 4.4% were on second-line regimens. Regarding the ART regimen combinations, 93.9% of the participants were taking the 1J regimen (TDF + 3TC + DTG), with only 6.1% using other regimens In terms of daily drug dosage intake, 95.7% of the respondents took their ART medication once daily, and the remaining 4.3% took it twice daily.

A significant proportion (65.1%) of the participants reported that they had changed their ART regimen at some point, while 34.9% had not. Among those who changed their regimen (n=181), the primary reason was the availability of a new drug, reported by 91.2%. Side effects and other reasons were each cited by 4.4% of participants.

When looking at duration on ART, 45.3% of participants had been on ART for more than 5 years, 33.1% for 2 to 5 years, and 21.6% for less than 2 years. Regarding HIV status disclosure, 42.1% had disclosed their status, while a larger proportion (57.9%) had not. Nearly all participants (99.6%) had their viral load measured, with only one individual (0.4%) reporting otherwise.

For the most recent viral load test results, 78.8% had a non-detectable viral load, 17.3% had low viremia, and 1.8% had a high viral load, while 2.2% did not have the test done. Lastly, when assessing ART adherence, the vast majority (97.5%) were categorized as having good adherence, 2.2% had fair adherence, and only 0.4% had poor adherence.

Table 5:- HIV Testing and Counseling Pregnancy and lactating Women Living in Mekelle Town Public Health Facilities, 2025 N=278

Variables (n=278)	Categories	Frequency	Percent%
Current ART Treatment Status	First Line	266	95.6
	Second Line	12	4.4
ART Regimen Combination	1J (TDF + 3TC + DTG)	261	93.9
	Others	17	6.1
Daily Drug Dosage Intake	Once	266	95.7
	Twice	12	4.3
Do You Change Drug Regimen?	No	97	34.9
	Yes	181	65.1
Reason for Regimen Change (n=181)	New Drug Available	165	91.2
	Side Effects	8	4.4
	Others	8	4.4
Years on ART	< 2year	60	21.6
	2-5 year	92	33.1
	>5 year	126	45.3
Disclosure	Yes	117	42.1
	No	161	57.9
Viral Load Measured	No	1	0.4
	Yes	277	99.6
Recent Viral Load Test Result	Not Detected	219	78.8
	Low Viremia	48	17.3
	High Viral Load	5	1.8
	Not Done	6	2.2
Latest ART Adherence	Good	271	97.5
	Fair	6	2.2
	Poor	1	0.4

5.6 Binary Logistic Regression: Factors Associated with Unintended Pregnancy

In Binary logistic regression, Educational Level, Marital status, When were you diagnosed with HIV, duration on ART in years, ART Regimen , Daily drug Dosage intake, History of regimen change, Reason for Regimen change, Reason for viral load test, Disclosed, Baseline WHO clinical staging on ART initiation, Number of pregnancies, Pregnancy status, desire more children, History of rape, history of miscarriage or abortion, prefer method contraceptive, Do you think contraception is important for HIV positive women, are you current pregnant or lactating , Experience of unintended pregnant , if you have experience pregnancy in the past what do you do, age group, Number of children and duration on ART were statistically associated with unintended pregnancy, with a p-value of less than 0.25. A backward likelihood ratio multivariable logistic regression model was fitted to control for confounding effects on the outcome variable. For detail see in annex 1

5.7 Multivariable logistic regression: Factors Associated with Unintended Pregnancy

Among the variables included in the multivariable logistic regression Educational Level, Discloser, experience of pregnancy and fertility desire more children were fitted which is the p value is <0.05.

In this study women with primary education were 12.57 times more likely to experience unintended pregnancy compared to women with no formal education (AOR = 12.57, 95% CI: 2.17–72.65, p = 0.005). This indicates that even limited education, without adequate reproductive health knowledge, may increase risk of unintended pregnancy. The wide confidence interval suggests variability, but the strong statistical significance highlights education as a major factor.

HIV-positive women who did not disclose their HIV status to their partners were 3.48 times more likely to report unintended pregnancy than those who disclosed (AOR = 3.48, 95% CI: 1.56–12.93, p = 0.003). This suggests that nondisclosure limits partner communication and joint decision-making on family planning, thereby raising the likelihood of unintended pregnancies.

Women who reported not desiring more children were 3.26 times more likely to experience unintended pregnancy compared to those who still desired children (AOR = 3.27, 95% CI: 1.48–

7.23, p = 0.003). This paradox indicates a high unmet need for contraception among women who want to stop childbearing, suggesting gaps in access to or use of effective contraceptive methods.

Interestingly, women with no prior history of unintended pregnancy were significantly less likely to experience unintended pregnancy in the current study (AOR = 0.12, 95% CI: 0.03–0.50, p = 0.004). This implies that prior experience may increase awareness and motivation to use contraceptives more consistently to avoid recurrence.

Table 6:- Multi variable logistic analysis of Factors Associated with Unintended Pregnancy among Pregnant and Lactating Women Living with HIV in Mekelle, Tigray, Ethiopia in 2025 (N=278)

Variable	Category	Unintended pregnancy		COR (95 %CI)	AOR (95 %CI)	p. value
		yes	No			
Educational Level	No formal education	14	7	1	1	
	Primary	26	42	3.231(1.153-9.056)	12.57 (2.17–72.65)	0.005
Discloser	Yes	79	82	1	1	
	NO	40	77	1.855(1.135-3.031)	3.48 (1.557 –12.929)	0.003
Desire more children	YES	77	84	1	1	
	NO	42	75	1.637(1.005-2.667)	3.268 (1.477–7.230)	0.003
Experience of unintended pregnancy	Yes	86	68	1	1	
	No	33	91	0.287(0.172-0.477	0.116 (0.027–0.495)	0.004

6. Discussion

In this study, the overall prevalence of unintended pregnancy among HIV-positive pregnant and lactating women was 57.2 %%), with a 95% confidence interval of (51.3- 63.1). This figure is higher than the global estimate of 44% of pregnancies being unintended in 2012(53), and exceeds the pooled prevalence of 29–40% reported in Sub-Saharan Africa(54). In Ethiopia, unintended pregnancy among HIV-positive women has been reported between 32% and 42% in various settings(55), suggesting that the burden remains a serious challenge. The comparatively high rate observed in the current study may be linked to post-conflict disruptions of healthcare services in the Tigray region, which likely reduced access to integrated family planning and HIV care. These findings underscore the persistent unmet need for contraception in HIV care programs.

The same This result was higher compeer study seen in Amhara and oromia region unintended pregnancy rate 27.1 and 22.7% respectively(47, 49). It was higher than study done in Egu,Nigeria (37.2%)(56). The magnitude of this study was also higher than the study done on four countries in Sub Saharan Africa the prevalence of unintended pregnancy among women living with HIV was ranged between 44.9–55.5% which are 44.9% in Zimbawe(57), 45.4% in Uganda (58), 55.5% Enugu, southeast Nigeria(59),. But It was less than study done in South African study 71% (60) and 67.9% Swaziland(61).

The proportion of unintended pregnancy among HIV-positive pregnant and lactating women in Mekelle Town is alarmingly higher than both global and regional averages. Globally, approximately 38% of pregnancies are unintended(1). and the rate exceeds 60% in Sub-Saharan Africa(62). Although several studies among HIV-positive women in East Africa have documented high rates 41% in Uganda(58),the burden in Mekelle is notably higher.

The difference could be attributed to the study population. This study focused on pregnant and lactating women living with HIV who were on active follow-up for PMTCT (Prevention of Mother-To-Child Transmission). Since PMTCT services begin after a woman decides to carry her pregnancy to term, cases of unintended pregnancies that were terminated would not be

captured in this study. Under such circumstances, the true magnitude of unintended pregnancy may actually be higher than reported.

Women with primary education were 12.7 times more likely to experience unintended pregnancy compared to those with no formal education (AOR = 12.57, 95% CI: 2.17–72.65), p = 0.005). This finding contrasts with several other studies, which have generally shown that higher educational attainment tends to reduce the likelihood of unintended pregnancy. For instance, a study in Addis Ababa found that women with secondary and above education had lower odds of unintended pregnancy compared to those with no education (AOR = 0.59, 95% CI: 0.35–0.99)(63). Similarly, research in Kenya reported that women with higher education levels were significantly less likely to experience unintended pregnancy (AOR = 0.37, 95% CI: 0.22–0.63)(64).

This finding suggests that education alone does not guarantee protection against unintended pregnancy among HIV-positive women unless coupled with strong health service integration, access to a wide range of contraceptive options, and supportive gender norms. Tailored interventions are needed to ensure that women with partial education are not disproportionately burdened by unintended pregnancies.

HIV-positive women who did not disclose their HIV status to their partners were 3.48 times more likely to report unintended pregnancy than those who disclosed (AOR = 3.48, 95% CI: 1.56–12.93, p = 0.003). This result is consistent with evidence from Ethiopia and other Sub-Saharan African countries. For instance, a study in Southern Ethiopia found that HIV-positive women with no fertility desire were 3.1 times more likely to experience unintended pregnancy compared to those desiring children (AOR = 3.1, 95% CI: 1.7–5.8(65). Similarly, a study in Uganda showed that HIV-positive women who did not want more children were twice as likely to experience unintended pregnancy (AOR = 2.01, 95% CI: 1.12–3.61)(66). These findings suggest that unmet need for contraception remains particularly high among HIV-positive women who either conceal their HIV status or do not desire more children.

The findings of this study underscore the dual importance of HIV status disclosure and partner communication in preventing unintended pregnancy among women living with HIV.

HIV-positive women who did not disclose their HIV status to their partners were 3.48 times more likely to report unintended pregnancy than those who disclosed (AOR = 3.48, 95% CI: 1.56–12.93, p = 0.003). Similar A study in South Africa found that nondisclosure of HIV status to partners was associated with reduced contraceptive use and a significantly higher risk of unintended pregnancy (AOR = 3.20, 95% CI: 1.46–6.98)(67).A study conducted in Addis Ababa revealed that women who had not disclosed their HIV status were more likely to experience unintended pregnancy (AOR = 2.56, 95% CI: 1.18–5.58)(68).

Women who did not desire more children were 3.268 times more likely to experience unintended pregnancy compared to those who wanted more children (AOR = 3.268 4.340, 95% CI: 1.477–7.230, p < 0.003). The present finding is consistent with a study in Southern Ethiopia reported that HIV-positive women with no fertility desire were 3.1 times more likely to report unintended pregnancy than their counterparts who wanted more children (AOR = 3.1, 95% CI: 1.7–5.8) A similar pattern was observed in Southern Ethiopia, where women with no fertility desire had 3.1 times higher odds of unintended pregnancy (AOR = 3.1, 95% CI: 1.7–5.8)(69). In Uganda**,** HIV-positive women who reported no fertility desire were found to be twice as likely to experience unintended pregnancies compared to those desiring more children (AOR = 2.01, 95% CI: 1.12–3.61) (66). Women who no longer desire additional children are generally more motivated to prevent pregnancy; however, their capacity to achieve this intention is strongly influenced by the availability of contraceptive options, the level of partner support, and the quality of counseling services they receive.

Interestingly, women with no prior experience of unintended pregnancy were significantly less likely to report unintended pregnancy (AOR = 0.116, 95% CI: 0.027–0.495). This finding is consistent with evidence from Tanzania and Zambia, which indicated that prior unintended pregnancy increases the likelihood of subsequent unintended pregnancies among women living with HIV(70). Prior experiences may influence future contraceptive behavior and reproductive decision-making, highlighting the need for targeted interventions, follow-up, and counseling for women with a history of unintended pregnancy.

The magnitude of unintended pregnancy among HIV-positive pregnant and lactating women in Mekelle has shown a concerning increase in the post-war period. In the current study conducted in 2025, during the post-conflict recovery phase, 57.2% of HIV-positive women their pregnancy

was unintended. This marks a significant rise compared to pre-war estimates, where studies conducted before the outbreak of the Tigray conflict reported lower prevalence rates, reported 35.6%(71).

Overall, this study's findings align with global and national evidence demonstrating that unintended pregnancy among HIV-positive women is shaped by educational attainment, disclosure practices, fertility intentions, and past reproductive experiences. Addressing these factors through integrated family planning and HIV services, promoting safe disclosure, enhancing access to contraceptive options, and providing tailored counseling is critical to reduce unintended pregnancy and improve maternal and child health outcomes in Mekelle, particularly in the post-conflict recovery context.

7. Limitation of the Study

The cross-sectional nature of the study limits the ability to infer the consequences of unintended pregnancy among women living with HIV. Women with unintended pregnancies are more likely to seek abortion, which was not captured in this study. Some participants may have reported pregnancies as intended to align with societal or cultural expectations, leading to possible underreporting.

8. Conclusion

This study revealed that unintended pregnancy remains a significant public health concern among HIV-positive pregnant and lactating women in Mekelle. Several factors were found to be independently associated with unintended pregnancy. Women with only primary education were more likely to experience unintended pregnancy compared to those with no formal education, highlighting the influence of limited educational attainment on reproductive choices.

Non-disclosure of HIV status to partners was also strongly associated with unintended pregnancy, underscoring the importance of open communication and partner involvement in reproductive health decision-making. Similarly, women who reported no desire for more children were at greater risk, indicating unmet family planning needs in this group.

In contrast, women with no prior history of unintended pregnancy were significantly less likely to report experiencing it, suggesting that past reproductive experiences may shape contraceptive behavior and fertility intentions. These findings emphasize the need to strengthen integrated family planning and HIV services, with particular attention to counseling, disclosure support, and tailored interventions for women with lower education levels and those wishing to limit childbearing. Addressing these factors is essential to reduce unintended pregnancies and improve maternal and child health outcomes in the post-conflict recovery context of Mekelle.

Overall, this study's findings align with global and national evidence demonstrating that unintended pregnancy among HIV-positive women is shaped by educational attainment, disclosure practices, fertility intentions, and past reproductive experiences. Addressing these factors through integrated family planning and HIV services, promoting safe disclosure, enhancing access to contraceptive options, and providing tailored counseling is critical to reduce unintended pregnancy and improve maternal and child health outcomes in Mekelle, particularly in the post-conflict recovery context.

9. Recommendations

1. Strengthen educational and awareness programs

Women with only primary education were significantly more likely to experience unintended pregnancy compared to those with no formal education. This highlights the need for enhanced health education on family planning and reproductive health tailored to women with low educational attainment.

Responsible bodies: Regional Health Bureau, Health Extension Workers, and Community Leaders.

2. Promote HIV status disclosure and partner involvement

Non-disclosure of HIV status was strongly associated with unintended pregnancy. Strengthening counseling services that encourage safe disclosure and partner participation in reproductive decision-making is essential.

Responsible bodies: ART clinic staff, Counselors, Ministry of Health (MoH).

3. Improve family planning services for women who do not desire more children

Women who reported no desire for additional children were still at higher risk of unintended pregnancy, suggesting gaps in access to or consistent use of contraceptive methods. Tailored counseling, long-acting contraceptive options, and regular follow-up should be prioritized.

Responsible bodies: Family Planning Service Providers, Health Facility Managers, NGOs working on reproductive health.

4. Target women with a history of unintended pregnancy for preventive interventions

Women with a prior history of unintended pregnancy remained at increased risk, while those without such history were significantly less likely to experience it. This indicates that targeted interventions—such as intensified counseling and follow-up for women with past unintended pregnancies—are needed.

Responsible bodies: ART program coordinators, Maternal and Child Health (MCH) units.

5. Strengthen integration of family planning with HIV services

Integrating family planning counseling into routine ART and maternal health services will ensure women living with HIV receive comprehensive care that addresses both treatment adherence and reproductive choices.

Responsible bodies: Ministry of Health, Regional Health Bureau, Health Facility Administrators.

By addressing these identified areas such as improving educational opportunities, promoting HIV status disclosure, strengthening family planning services, and targeting women with prior unintended pregnancies the aim is to reduce the prevalence of unintended pregnancies among women living with HIV in Mekelle City. Implementing these interventions is expected to enhance women's ability to make informed reproductive choices, improve access to and utilization of contraceptive methods, and foster supportive partner involvement. Ultimately, these measures will contribute to better reproductive health outcomes; reduce the risk of vertical HIV transmission, and support overall maternal and child health in this population.

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11.Annexes

11.1 Annex –I Binary logistic regression Associated with Unintended Pregnancy

Table 7:- **Binary Logistic Regression: Factors Associated with Unintended Pregnancy**

Variable	Category	Was this pregnancy intended (n (Row %)		Total n (column %)	COR (95% CI)	p-value
		Yes	No			
Marital status	Married	82(62.1)	50(37.9)	132(47.5)	1	
	Never married	14 (15.1)	79(84.9)	93(33.5)	3.224(0.833 – 12.483)	0.090
	Divorced	19(47.5)	21952.5)	40(14.4)	0.348(0.097 – 1.25)	0.106
Educational level	No formal education	14(66.7)	7(33.3)	21(7.6)	1	
	Primary education	24(35.3)	44(64.7)	68(24.53)	3.231(1.153-9.056)	0. 026
	Secondary and above	81(42.9)	108(57)	189 (68)	2.785(1.075-7.217)	0.035
When were you diagnosed with HIV	> 10 years	95(49)	99(51)	194(69.8)	1	
	< 10 years	24(28.6)	60(41.4)	84(30.2)	2.399(1.383, 4.161)	0.002
ART Regimen	1J	105(40.2)	156(58.6)	261(93.9)	1	
	Others	14(82.4)	3(17.6)	17(6.1)	0.144(0.040-0.514)	
Daily drug Dosage intake	Once	110(41.4)	156(58.6)	266(95.7)	1	
	Two and above	9(75)	3(25)	12(4.3)	.235(0.062-0.888)	0.033
History of regimen change	No	16(	81(	97(	1	
	Yes	103(	78(	181(	0.150 (0.081 – 0.276)	
Discloser	Yes	40(34.2)	77(65.8)	117(42.1)	1	
	No	79(49.1)	82(50.9)	161(57.9)	1.855(1.135-3.031)	
number of children	0	5(7.9)	58(92.1)	63(22.6)	1	
	1-2	52(50.5)	51(49.5)	103(37.1)	0.085 (0.031 – 0.228)	<0.001
	≥3	62(55.4)	50(44.6)	112(40.3)	0.070 (0.026 – 0.186)	<0.001
Number of pregnancies	Prim-gravida	3(8.8)	31(91.2)	34(12.2)	1	
	Multigravida	116(47.5)	128(52.5)	244(87.8)	0.107 (0.032 – 0.359)	<0.001

History of miscarriage or abortion	Yes	13(17.8)	60(82.2)	73(26.3)	1	
	No	106(51.7)	99(48.3)	205(73.3)	0.2(0.1-0.39)	<0.001
women dose not desire more children	Yes	77(47.2)	84(52.2)	161(57.9)	1	
	No	42(35.9)	75(64.1)	117(42.1)	1.63(1.0-2.66)	0.048
Prefer method contraceptive	Injectable	41(35.7)	74(64.3)	115(41.4)	1.805(1.028 – 3.167)	
	Pill	5(26.3)	14(73.7)	19(6.8)	2.80 (0.931 – 8.425)	
Do you think contraception is important for HIV+ women	Yes	109(41.1)	156(58.9)	265(95.3)	1	
	No	10(76.9)	3(23.1)	13(4.7)	0.2(0.056 – 0.779	0.02
Currently status	Pregnant	49(35.3)	90(64.90	139(50)	1	
	Lactating	70(50.4)	69(49.6)	139(50)	0.537(0.332 – 0.868)	0.011
Experience of unintended pregnancy	YES	33(26.6)	91(73.4)	124(44.6)	1	
	NO	86(55.8)	68(44.2)	154(55.4)	0.29(0.17- 0.47)	
Experience of unintended pregnancy action	Give birth	23(45.1)	28(54.9)	51(41.1)	1	
	Had an Abortion	10(13.7)	63(86.3)	73(58.9)	1.5(0.815-2.91)	<0.01
AGE GROUP	22-30	19(19.80	77(80.20	96(34.5)	1	
	31-43	100(54.9)	82(	182(65.50	0.202(0.113 – 0.36)	
number of children's	0	5(7.9)	58(92.1)	63(22.7)	0.070(0.026 – 0.186)	<0.001
	1-2	52(50.5)	51(49.5)	103(37.1)	0.085(0.031 – 0.228)	<0.001
	≥3	62(55.4)	50(44.6)	112(40.3)	1	
Duration on ART	< 2year	8(13.3)	52(86.7)	60(21.6)	1	
	2-5 year	39(42.4)	53(57.6)	92(33.1)	0.209 (0.089, 0.490)	<0.001
	>5 year	72(57.1)	54(42.9)	126(45.3)	0.115 (0.051, 0.263)	<0.001

Mekelle university College of Health Sciences department of General Public Health Study questionnaire prepared to collect data about the to assess the Determinants and its level of unintended Pregnancy among HIV-Positive Pregnant and Lactating Mothers Mekelle Public Health Institutions, Tigray, Ethiopia

My name is Mebrahtom Gebremariam I am a postgraduate student in Mekelle University College of Health Sciences department of General public health. I am here to join and interview eligible study participants, and administer a questionnaire. The purpose of this study is to assess the Level of unintended Pregnancy among HIV-Positive Pregnant and it determinant among HIV-positive pregnant and lactating women's Mekelle Public Health Institutions, Tigray, Ethiopia. I am glad to inform you that you are one of the eligible study participants, and you are chosen to take part in this study.

I am also happy to tell you that, I really value your contribution, as your individual involvement to the study output and private, you are honest and genuine response will highly be respected and accepted, as it will help to make realistic analysis and to propose very practical suggestions. However, it is up to you to adopt whether to participate in this study or not. I will definitely admire and respect what so ever your decision will be. I would also like to inform you that your name and the name of the establishment you work in will not be written anywhere in this paper. No information you are giving will be revealed to anyone.

Filling in questionnaire does not take more than a half an hour.

Would you like to participate in this research?

1. Yes 2. No

2.1. Reason (……..…)

Interviewers code No…….

Time of end of questionnaire _____

11.2 Annex II: - Information sheet and informed voluntary consent form (English version)

My name is _____ I am working as a data collector for the study being conducted To Assess the Level of unintended Pregnancy among HIV-Positive Pregnant and it determinant among HIV-positive pregnant and lactating women's in Mekelle town in public health institutions, for the fulfillment of Master's degree Mekelle University College of Health science and department of general public health. I kindly request you to lend me your attention to explain you about the study and being selected as the study participant.

The study title: magnitude of unintended pregnancy and associated factors among HIV-Positive Pregnant and Lactating women in Mekelle Public Health Institutions, Tigray, Ethiopia. Cross sectional study.

The purpose of the study: The purpose of this study will be to assess the magnitude of unintended Pregnancy and associated factors among HIV-Positive Pregnant and Lactating women's Mekelle Public Health Institutions, Tigray, Ethiopia.

Procedure and duration: A study was used a facility based cross sectional study through structured questionnaire and data review. The interviewer was taken range of 30-45 minutes. Harm and beneficence: Participating in this study is not any harm except, only taking your time. However, participating in this study will be increasing your awareness.

Confidentiality: Information that you will provide us will be kept confidential and secure. No reference will be made that could link participants to the research directly.

Rights: Participation in this study is voluntary. You have the right declare to continue if you decide to participate, to withdraw and skip at any time.

Contact address: If there are any questions or enquires any time about the study or the Procedures, you can contact by using the following addresses.

Name of PI: mebrahtom Gebremariam

E-mail: mebrahtom2005@gmail.com

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Review Committee: Office phone: ---------- P. O. Box: ----------

Table 8:- Questioners for data collection for levels of unintended pregnancy and its determinants

Part One: Socio-Demographic Characteristics

S.N	Background Information	Response	Skip
1	Age (in years)	_____	
2	Marital status	1. Not married 2. Married 3. Divorced 4. Widowed 5. Separated	
3	Educational Level	1. No formal education 2. Primary 3. Secondary and above	
4	Occupation	1. Unemployed 2. Government employee 3. Private 4. Housewife 5. Merchant 6. Commercial sex worker	
5	Religion	1. Orthodox 2. Muslim 3. Protestant 4. Catholic 5. Other (specify)_____	
6	Annual Income	_____	
7	Place of Residence	1. Urban 2. Rural	
8	Distance from home to health facility	_____	
9	Facility ART Used Type	1. Referral Hospital 2. General Hospital 3. Primary Hospital 4. Health Center	

Part Two: Treatment and Related Characteristics

Question	Response
1. Age at ART initiation (in years)	_____
2. Duration on ART (in years)	_____
3. Current ART treatment status	1. First line 2. Other
4. ART Regimen Combination	1. TDF+3TC+DTG 2. Other
5. Daily drug dosage intake	1. Once 2. Twice 3. Other (specify)_____
6. History of ART regimen change	1. Yes 2. No
7. Reason for regimen substitution (multiple answers possible)	1. Side effect 2. New drug available 3. Due to tuberculosis 4. Drug stock out 5. Other (specify)_____
8. Is the woman on Cotrimoxazole (CPT) prophylaxis?	1. Yes 2. No
9. Is the woman taking TPT prophylaxis?	1. Yes 2. No
If the answer is 'No', skip to Q# 19	
If the answer for Q# 17 is 'Yes', what type of TPT?	1. INH (6H) 2. 3HP 3. 3HR
10. Latest ART adherence (pill count percentage rate)	1. Good 2. Fair 3. Poor
If the answer is 'Good', skip to Q# 21	
If the answer for Q# 19 is poor or fair, what is the reason? (multiple answers possible)	1. Toxicity or side effect 2. Forget 3. Felt better 4. Too ill 5. Delivery or traveling problem

Question	Response
	6. Drug stock out 7. Others (specify)_____
11. Multiple lost appointments in the last year (more than three consecutive missed appointments)	1. Yes 2. No
12. Was the viral load measured?	1. Yes 2. No
13. Date of viral load measurement?	_____
14. Reason for viral load test?	1. Baseline 2. Annual 3. Targeted 4. Every 6 months
15. Recent viral load test result?	1. Suppressed (not detectable or <50 copies/ml) 2. Low viremia (50-999) 3. Unsuppressed (>1000 copies/ml) 4. Not returned
16. Disclosed	1. Yes 2. No

Part Three: Clinical and Related Characteristics

Question	Response
1. Baseline WHO clinical stage at ART initiation	1. Stage I 2. Stage II 3. Stage III 4. Stage IV
2. CD4 count at ART initiation?	_____
3. Current/recent CD4 count?	_____
4. Current opportunistic infection?	1. Yes 2. No
5. If yes to Q# 28, what type of OI? (multiple answers possible)	1. Herpes Zoster 2. Oral candidiasis 3. Pneumocystis pneumonia (PCP) 4. Toxoplasmosis

Question	Response
	5. Tuberculosis (all forms of TB) 6. Other (specify) _____
6. Has the woman ever had active TB?	1. Yes 2. No

Part Four: Reproductive History

Question	Response
1. Number of pregnancies	_____
2. Are you currently pregnant or lactating?	1. Pregnant 2. Lactating
3. Number of live births	_____
4. History of rape	1. Yes 2. No
5. History of miscarriages or abortions	1. Yes 2. No
6. Desire for more children	1. Yes 2. No

Part Five: Knowledge and Attitudes toward Family Planning

Question	Response
1. Do you know about modern contraceptive methods?	1. Yes 2. No
2. Have you ever used contraception?	1. Yes 2. No
3. What is your preferred method of contraception? (if applicable)	1. Condoms 2. Pills 3. Injectable 4. IUD 5. Implants 6. Other (please specify) _____
4. Do you think contraception is important for women living with HIV?	1. Yes 2. No
5. If you do not use contraception, what are the main reasons? (Select all that apply)	1. Fear of side effects 2. Lack of access to

Question	Response
	contraception 3. Partner opposition 4. Belief that contraception is not needed 5. Religious/cultural reasons 6. Other (please specify): ___
6. Access to family planning methods can help reduce the rate of unintended pregnancies	1. True 2. False
7. Do they have knowledge of combined contraception?	1. Yes 2. No

Part Six: Pregnancy and Lactation Details

Question	Response
1. Are you currently pregnant or lactating?	1. Pregnant 2. Lactating
2. Was this pregnancy planned?	1. Yes 2. No
3. If the pregnancy was unplanned, why? (Select all that apply)	1. Lack of access to contraception 2. Forced sexual encounter/rape 3. Lack of family planning knowledge 4. Spousal/partner pressure 5. Desire for children despite HIV status 6. Other (please specify): ___
4. Experience of unintended pregnancy	1. Yes 2. No
5. If yes, why?	1. I had an abortion 2. It was born

Thank you!

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12. Annex III: - ሕዛል:ትግርኛ መሕተት

መቐለ ዩኒቨርስቲ

ጥዕና ሳይንስ ኮሌጅ

ሕብረተሰብ ጥዕና ትምህርቲ ክፍሊ

ሕዛል ሓደ:ውልቀ ሓበሬታ

ናይቲ መዕናዕቲ በዓል ዋና: መብራህቶም ገብረማርያም

ርእሲ እቲ መዕናዕቲ:- ኣብ 2017 ዓ.ም ንምፍላጥ ደረጃን መበገስታትትን ዘይተሓሰበ ጥንሲ ኣብ ደመን ኤች ኣይ ቪ ዘለወን ጥንሳትን መጥቦብትን ተጠቀምቲ ፀረ ኤች ኣይቪ መድሓኒት ኣብ መቀለ ዝርከባ ዝተሓረያ መንግስታዊ ጥዕና ትካላትእዩ።

መግለፂ ሓበሬታ ቅጥዒ:- ጥዕና ይሃበለይ ስመይ _____ይበሃል። ኣነ መረዳእታ ሰብሳቢ ኮይነ እዚ መረዳእታ ዝስብስቦ ን ኣይተ መብራህቶም ገብረማርያም ኣብ መቀለ ዩኒቨርስቲ, ጥዕና ሳይንስ ኮሌጅ, ሕብረተሰብ ጥዕና ትምህርቲ ክፍሊ ናይ ድሕረ-ምረቃ ትምህርቲ ብ ሓፈሻዊ ናይ ሕብረተሰብ ጥዕና ናይ 2ይ ድግሪ ተመራቂ ተምሃሪ ናይ መመረቂ ፅሕፎን ንምድላው እዩ። ንሰን ኣብዚ ፅንዓት ንኽሳተፉ ብኽብሪ ተሓታትየን እየን። ቅድሚ ፍቃደኝነተን ብዛዕባ እዚ ዳህሳስ ፅንዓት ክፈልጥኡ ዝደልያ ነገር እንተሃልዩ ክሓታኸም ዝኽእላ ብኽብሪ ንዕድም።

ናይዚ ፅንዓት ዕላማ:- ንምፍላጥ ደረጃን መበገስታትትን ዘይተሓሰበ ጥንሲ ኣብ ደመን ኤች ኣይ ቪ ዘለወን ጥንሳትን መጥቦብትን ተጠቀምቲ ፀረ ኤች ኣይቪ መድሓኒት ኣበ መቀለ ዝርከባ ዝተሓረያ መንግስታዊ ጥዕና ትካላትእዩ።

ጥቕሚ ናይዚ መዕናዕቲ:- ኣብዚ መዕናዕቲ ምስታፍ ዋላሓንቲ ክፍሊት ዘይብሉ ወይ ከኣ ንዓኹም ፍሉይ ጥቕሚ ኣይወሃብኩምን። ነገር ግን ኣብዚ መዕናዕቲ ምስታፍ ክን ንዝተሓተቱ ሕቶታት መልሲ ምሃብን ናይ ዘይተሓሰበ ጥንሲ ከመይ ከም ዘጋጥምን ደረጃኡን ንምርኣይን መፍትሒታቱ ንምቅማጥን ይሕግዝ።

ሳናዊ ጉድኣት:- እዚ መዕናዕቲ ዝካየደሉ ቀዲሙ ዝተዳለዉ ከምኡውን ዝተሃነፅ ሕቶታት ብምሕታት እዩ ። ናይ ኣገባብ መስርሑ ዋላሓንቲ ኣካላዊ ኽነ ስነኣእምራዉን ቅልውላው የብሉን። ብተወሳኺ ዘይተረደኦም ሕቶ ሓበሬታ ንኽህቡ ኣይግደዱን። ብዘይካ ንከባቢ 30 ደቒቓ ዝከውን ግዜ ምጥፋእ ኣብዚ መዕናዕቲ ብምስታፍ ዝመፅእ ምንም ጉድኣት የለን።

ሚስጢር ምሕላው:- ሓሳበን ብነፃነት ንምግላፅ ዝኽእላ ስመን ምፅሓፍ ኣየድልን። ነገር ግን ስለናየን ሓቀኛ ዝኮነ መልሲ ኣድላዩ እዩ። ኩሉ ንዝህበኡ ሓበሬታ ሚስጥራዊነቱ ዝተሓለወ እዩ።መሰል ተሳተፍቲ እዚ ቃለመሕትት ዝምልኣሉ ፍቓደኛታት ንዝኮኑ ሰባት ጥራሕ እዩ። ፍቓድኛ ብዘይምኽኣነን ቅፅዓት ወይ እውን ዝስእንዎ ጥቕሚ የለን። ንምስታፍ ፍቃደኛ

እንተዘይኮይነን ኣብ ዝኾነ ግዘ ምቁራፅ ይኽእላ እየን። ፅንዓቱ ዝምልከት ሕቶ እንተሃልይዎን በዓል ዋና ኣማኸርቲ እዚ ፅንዓት ዝኾኑ በዚ ስልኪ ቑፅሪ ደዊሎም ምጥያቕ ይኽእሉ እየን።

1) **መብራህቶም ገብረማሪያም** 0962588780

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ኣማኸርቲ 1) **ዶ/ር ገብረመስቀል ምሩፅ ኤምፒኤች ፒኤችዲ ስልኪ ቁፅሪ** 0979406314

2) **ሙሉ እያሱ ኤምፒኤች ስልኪ ቁፅሪ** 0914819566

ሕዛል ክልተ

ቅጥዒ ስምምዕነት

እዚ መዕናዕቲ ኣብ 2017 ዓ.ም ንምፍላጥ ደረጃን መበገስታትትን ዘይተሓሰበ ጥንሲ ኣብ ደመን ኤች ኣይ ቪ ዘለወን ጥንሳትን መጥቦብትን ተጠቀምቲ ፀረ ኤች ኣይቪ መድሓኒት ኣብ መቀለ ዝርከባ ዝተሓረያ መንግስታዊ ጥዕና ትካላትኣዩ።ንምፍላጥ ዝካየድ ዕንዓትን ንናይ ሕብረተሰብ ጥዕና ካልኣይ ድግሪ መመረቂ ፅሑፍ ንምስራሕ ምኻኑ ፈሊጠ እዚ ኽዓ ብኾሌጅ ጥዕና ሳይነስ ዓይደር ሕብረተሰብ ጥዕና ቤት ትምህርቲ ናይ ሓፈሻዊ ናይ ሕብረተሰብ ጥዕና ክፍሊ ዝድገፍ ምኻኑ ናይዚ መዕናዕቲ በዓል ዋና ኣይተ መብራህቶም ገብረማርያም ከም ዝኾኑ ዕላማ እቲ ዕንዓት እውን ብዝፈልጦ ቋንቋ ተነፂሩለይ እዩ።

መሕትት ንዝገብረለይ ኣካል ዝህቦ ኩሉ ዓይነት ሓበሬታ ብምስጢር ክተሓዝ ምኻኑ ከም ዝተረዳእክዎ ኣብዚ ዕንዓት ብምስታፈይ ዘምፀኣለይ ጉድኣት የለን፤ከምኡ እውን ኣብ ዝደለክዎ ግዜ ሓበሬታ ዘይምሃብ፣ሕቶ ዘይክምልስ ወይ ከዓ ክቋርፆ መሰል ኣለኒ፤ንምንታይ ከም ዘቋርፅ ንማንም ክገልፀሉ ዘገድደኒ ኣይህሉን። ካብዚ መዕናዕቲ ዝረክቦ ቀጥታዊ ዝኾነ ጥዕናዊ ወይከዓ ምምሕዳራዊ ጥቕሚ የለን። ብዛዕባ እዚ ዕንዓት ዘይተረዳኣኒ ነገር እንተሃሊዩ ኣብ ዝኾነ ግዜ እዞም ዝስዕቡ ኣካላት ክሓትት መሰል ከም ዘለኒ ተገንዚበ ኣለኩ። ዩኒቨርስቲ መቐለ ኮለጅ ጥዕና ሳይንስ ዓይደር ትካላዊ ናይ ምርምርን መዕናዕትን ቦርድ

ሽም ዋና ተማራማሪ : መብራህቶም ገብረማርያም

ቴሌፎን ቁ.: 0962588780

እዚ ኣብ ላዕሊ ዝተጠቀሰ ቅጥዒ ኣንቢበዮን ብዝርደኡ ቋንቋ ዝተፀሓፈን ብቀሊሉ ዝተረዳእክዎን እዩ፤በዚ መሰረት ንክሳተፍ ፍቃደኛ እየ።

ክሳተፉ/ፋ ፍቃደኛ ድዮም: እወ ---------- ኣየፋል ----------

ቃለ-መሕተት ክፍሊ ሓደ ፡- ማሕበራዊን ስነ-ህዝባውን ዝምልከት

1. **ዕድመ** (ብዓመታት) _____ .
2. **ኩነታት ሓዳር**
    1. **ዘይተመርዓወ**
    2. **በዓል ሓዳር**
    3. **ዝተፋትሑ**
    4. **መበለት**
    5. **ተፈላልዮም**
3. **ደረጃ ትምህርቲ**
    1. **ወግዓዊ ትምህርቲ ዘይብሉ**
    2. **ቀዳማይ ደረጃ**

3. ካልኣይ ደረጃን ልዕሊኡን

4. ስራሕ
    1. ስራሕ ኣልቦ
    2. ሰራሕተኛ መንግስቲ
    3. ናይ ውልቀ ስራሕ
    4. በዓልቲ ሓዳር
    5. ነጋዲት
    6. ንግዳዊ ሰራሕተኛ ጸታዊ ርክብ
5. ሃይማኖት
    1. ኦርቶዶክሳዊ
    2. ኣስላማይ
    3. ፕሮቴስታንት እዩ።
    4. ካቶሊካዊ
    5. ካልኣ (ግለጽ)_____
6. ዓመታዊ እቶት_____
7. መንበሪ ቦታ _____
    1. ከተማ
    2. ገጠር
8. ካብ ገዛ ናብ ትካል ጥዕና ዘለኦ ርሕቀት _____
9. መሳለጥያ ኤርቲ ዝጥቀመሉ ትካል
    1. ሪፈራል ሆስፒታል
    2. ሓፈሻዊ ሆስፒታል
    3. መባእታ ሆስፒታል
    4. ማእከል ጥዕና

ካልኣይ ክፋል፡ ሕክምናን ተዛመድቲ ባህርያትን

10. ዕድመ ኣብ ምጅማር ART (ብዓመታት) _____ .
11. ንውሓት ግዜ ኣብ ART (ብዓመታት) _____
12. ህሉው ኩነታት ሕክምና ኤርቲ
    1. ቀዳማይ መስመር
    2. ካልኣ
13. ውህደት ስርዓት ኤርቲ

1. TDF+3TC+DTG
2. ካልእ

14. መዓልታዊ መጠን መድሃኒት ምውሳድ
    1. ሓደ ግዜ
    2. ክልተ ግዜ
15. ታሪኽ ለውጢ ስርዓት ኤርቲ
    1. እወ
    2. ኣይፋልን።
16. ምኽንያት ምትካእ ስርዓት (ብዙሕ መልስታት ይከኣል እዩ)
    1. ጎናዊ ሳዕቤን
    2. ሓድሽ መድሃኒት ምህላዉ
    3. ብሰንኪ ሕማም
    4. መድሃኒት ምስእን
    5. ካልእ (ግለጽ)_____ .
17. ሰበይቲ ኮትሪሞክሳዞል (CPT) ፕሮፊላክሲስ ትወስዲ ዶ?
    1. እወ
    2. ኣይፋልን።
18. 9. ፕሮፊላክሲስ TPT ትወስዲ ዶ?
    1. እወ
    2. ኣይፋልን።

መልሱ 'ኣይፋልን' እንተኾይኑ

መልሲ ንሕቶ 'እወ' እንተኾይኑ እንታይ ዓይነት TPT

1. INH (6H)
2. 3HP
3. 3HR

19. 10. ናይ መወዳእታ ኣወሳስዳ ART
    1. ጽቡቕ
    2. ደሓን
    3. ደካመ

መልሲ ንሕቶ ደካማ ወይ ደሓን እንተኾይኑ እቲ ምኽንያት እንታይ እዩ? (ብዙሕ መልስታት ይከኣል እዩ)

1. ጎናዊ ሳዕቤን።

2. ምርሳዕ
3. ዳሕናዝኮይንኩ ተሰሚዑኒ።
4. ኣዝዩ ሓሚመ
5. ናይ ምብጻሕ ወይ ናይ መግሻ ከይደ
6. መድሃኒት ምስኣን
7. ካልኦት (ግለጽ)_____

20. 11. ኣብ ዝሓለፈ ዓመት ብዙሕ ግዜ ዝጠፍአ ቆጸራታት (ልዕሊ ሰለስተ ተኽታተልቲ ቆጸራታት ዝሰኣኑ)
1. እወ
2. ኣይፋልን

21. 12. ቫይራል ሎድ ተለኪዑ ድዩ?
1. እወ
2. ኣይፋልን

22. 13. ዕለት ምልካዕ ቫይራል ሎድ? _____ .

23. 14. ምኽንያት መርመራ ቫይራል ሎድ?
1. መበገሲ ድሕሪ 3ተ ወርሒ
2. ዓመታዊ
3. ዕላማ ዝገበረ
4. ኣብ ነፍሲ ወከፍ 6 ወርሒ

24. 15. ኣብ ቀረባ እዋን ውጽኢት መርመራ ቫይራል ሎድ?
1. ዝተዓፈነ (ዘይረአ ንመሳርሒ ወይ <50 ቅዳሓት/ሚሊ ሊትር)
2. ትሑት ቫይረሚያ (50-999)
3. ልዑል(>1000 ቅዳሓት/ሚሊ ሊትር)
4. ዘይተመልሰ

25. 16. ዓርስን ኣፋሊጠን
1. እወ
2. ኣይፋልን።

ሳልሳይ ክፋል፡ ክሊኒካውን ተዛመድትን ባህርያት

ሕቶ መልሲ

26. መበገሲ WHO ክሊኒካዊ ደረጃ ኣብ ምጅማር ART
1. ደረጃ ሓደ
2. ካልኣይ ደረጃ

3. ሳልሳይ መድረኽ
4. ደረጃ IV

27. ቁጽሪ CD4 ኣብ ምጅማር ART? _____ .
28. ናይ ቀረባ እዋን ቁጽሪ CD4? _____ .
29. ህሉው ኩነታት ረኽሲ?
    1. እወ
    2. ኣይፋልን።
30. ንሕቶ ኣብ ላዕሊዘሎ እወ እንተኾይኑ እንታይ ዓይነት OI? (ብዙሕ መልሲ ይከኣል እዩ)
    1. ኑን
    2. ፋንገስ
    3. ቲቢ
    4. ኒሞንያ
    5. ካሊእ
31. ቲቢ ኣጋጢሙወን ኔሩ ድዩ

ራብዓይ ክፋል፡ ስነ ተዋልዶ

32. ብዝሒ ጥንሲ _____ .
33. ኣብዚ ሕጂ እዋን ነፍሰጸር ዲኻ ወይስ ትጥብው?
    1. ነፍሰጸር
    2. ምጥባው
34. ብዝሒ ብህይወት ዝተወልዱ _____ .
35. ፀታዊ ዓመፅ ኣጋጢሙወን ፈልጥ
    1. እወ
    2. ኣይፋልን
36. ምውራድ ጥንሲ ወይ ምንጻል ጥንሲ ጌረን ፈልጣ ዶ?
    1. እወ
    2. ኣይፋልን።
37. ድሌት ተወሳኺ ቆልዑ ኣለወን ዶ?
    1. እወ
    2. ኣይፋልን።

ሓሙሻይ ክፋል፡ ፍልጠትን ኣረኣእያን ኣብ ውጥን ስድራቤት

38. ብዛዕባ ዘመናዊ ኣገባብ መከላኸሊ ጥንሲ ትፈልጣ ዶ?
    1. እወ
    2. ኣይፋልን።
39. መከላኸሊ ጥንሲ ተጠቂምካ ትፈልጥ ዲኻ?
    1. እወ
    2. ኣይፋልን።
40. ትመርጽዎ ሜላ መከላኸሊ ጥንሲ እንታይ እዩ?
    1. ኮንዶም
    2. ከኒናታት
    3. ብመርፍእ ዝውሰድ
    4. IUD
    5. ኣብ ቆርበት ዝቅበር መድሓኒት
    6. ካልእ (በጃኹም ግለጹ) _____
41. ኣብ ደመን ኤችኣይቪ ዘለወን ደቂ ኣንስትዮ መከላኸሊ ጥንሲ ኣገዳሲ ዶ ይመስለን?
    1. እወ
    2. ኣይፋልን።
42. መከላኸሊ ጥንሲ እንተዘይተጠቂምክን፡ ቀንዲ ምኽንያታት እንታይ እዮም?
    1. ፍርሒ ጎናዊ ሳዕቤናት
    2. መከላኸሊ ጥንሲ ዘይምርካብ
    3. መሻርኽቲ ተቓውሞ
    4. መከላኸሊ ጥንሲ ከምዘየድሊ ምእማን
    5. ሃይማኖታዊ/ባህላዊ ምኽንያታት
    6. ካልእ (በጃኹም ግለጹ)፡ ___
43. ኣገባብ ውጥን ስድራቤት ምርካብ፡ መጠን ዘይተሓሰበ ጥንሲ ንምንካይ ክሕግዝ ይኽእል
    1. ሓቂ
    2. ሓሶት
44. ኣፍልጦ ጥሙር መካላከሊ ጠንሲ ኣለወን ዶ?
    1. እወ
    2. ኣይፋልን

ሻድሻይ ክፋል፡ ዝርዝር ጥንስን ምጥባውን

45. ኣብዚ ሕጂ እዋን ነፍሰጸር ዲክን ወይስ ተጥቡባ
    1. ነፍሰጸር
    2. ምጥባው
46. እዚ ጥንሲ ተሓሲቡ ድዩ ነይሩ?
    1. እወ
    2. ኣይፋልን።
47. እቲ ጥንሲ ዘይተሓሰበ እንተኾይኑ ንምንታይ? (ኩሉ ዝምልከቶ ምረጽ)
    1. መከላኸሊ ጥንሲ ዘይምርካብ
    2. ግዱድ ጸታዊ ርክብ/ምዕማጽ
    3. ፍልጠት ውጥን ስድራቤት ዘይምህላው
    4. ጸቕጢ መጻምድቲ/መጻምድቲ
    5. ናይ ኤችኣይቪ ኩነታት እናሃለወ ንህጻናት ዘለካ ድሌት
    6. ካልእ (በጃኹም ግለጹ)፡ ____
48. ተመኩሮ ዘይተሓሰበ ጥንሲ ነይሩወን ዶ
    1. እወ
    2. ኣይፋልን።
49. መልሰን እወ እንተኾይኑ እንታይ ገይረንኦ ?
    1. ምንጻል ጥንሲ ገይረ
    2. ወሊደዮ

የመስገን

መዳለዊ መብራህቶም ገብረማርያም ስልኪ ቁ.ስ 0962588780