JIMMA UNIVERSITY, INSTITUTE OF HEALTH, FACULTY OF PUBLIC HEALTH, DEPARTMENT OF EPIDEMIOLOGY

FERTILITY DESIRE AND ASSOCIATED FACTORS AMONG ATTENDANTS OF ART CLINIC AT PUBLIC HEALTH FACILITIES OF JIMMA ZONE, OROMIA REGION, SOUTH WEST ETHIOPIA.

BY YISAK SHEWAYE (BSc.)

A THESIS SUBMITTED TO JIMMA UNIVERISITY, INSTITUTE OF HEALTH, FACULTY OF PUBLIC HEALTH, DEPARTMENT OF EPIDEMIOLOGY; PARTIAL FULFILLMENT FOR THE REQUIREMENT OF THEMASTER'S DEGREE IN GENERAL PUBLIC HEALTH

JANUARY, 2022

JIMMA, ETHIOPIA

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ABSTRACT

Background: The reproductive decision made by human immune virus infected patients have a long term consequences for survival and well beings of their families and societies at large. So, a better understanding of the fertility desire and service provision for individuals living with human immune virus offers many opportunities for them and others. However, the extent of fertility desire of peoples living with human immune virus and as well as factors determining it were not well studied. Thus, the main objective of this study is to assess the fertility desire and associated factors among attendants of anti-retro-viral clinics in public health facilities of Jimma zone.

Methods: A facility-based cross-sectional study was employed to assess the magnitude of fertility desire and associated factors among attendants of anti-retro-viral clinics from July 8 to August 9, 2022. The study was carried out on 421 study participants who were selected by simple random sampling technique. Data was collected by face-to-face interview using a structured and pre-tested questionnaire. After checking the completeness and consistency of epidemiological data and SPSS soft wares were used for data entry and statistical analysis respectively. Descriptive statistics were used to present the study findings. Bi-variable and multivariable logistic regression analysis was carried out to identify a statistical association between dependent and independent variables. Finally, adjusted odds ratios with a 95% confidence interval was used to measure the strength of association between dependent and independent variables, and a P-value of <0.05 was used to declare statistical significance.

RESULTS: A total of 421 eligible HIV-positive individuals were recruited with a 100% response rate. The mean (±SD) age was 33.31(±8.821) years. A total of 280 (66.0%) with 95% CI (61.5%, 70.5%) have desire to have children, Age category 25-34yrs (AOR=3.67,95% CI:1.99, 11.24), being married (AOR= 11.74, 95% CI: 4.01, 34.34), having no child (AOR: 4.17, 95% CI: 1.67, 10.34), having higher education (AOR=8.96, 95% CI: 2.68, 29.90) good self-attitude, participant's occupation and income were the factors associated with fertility desire.

CONCLUSION: This study indicated that a large proportion of the HIV-positive individuals desired to have children. Adult age, educational, marital and occupational status, income, number of children and self-attitude towards child bearing practice were factors that show significant association with fertility desire. So sexual and reproductive service designed for HIV patients should address these factors.

Key words: Fertility desire, PLWHIV, Jimma, Ethiopia.

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ACRONYMS AND ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
ART	Antiretroviral therapy
ARV	Antiretroviral
CDC	Communicable Diseases Control
DCs	Data Collectors
EDHS	Ethiopian Demography and Health Survey
ETB	Ethiopian Birr
IRB	Institutional Review Board
FP	Family Planning
HAART	Highly active antiretroviral therapy
HIV	Human Immune-Deficiency Virus
HIVST	Human Immune Virus Self Testing
MTCT	Mother to child transmission
MOH	Minister of Health
NGO	Nongovernmental organization,
PI	Principal Investigator
PICT	Provider Initiated Counselling and Testing
PLWHA	People living with HIV/AIDS
PMTCT	Prevention of Mother-To-Child Transmission
Pre-ART	Pre-Antiretroviral Therapy
SHCS	Swiss HIV Cohort Study
SSA	Sub Saharan Africa
TND	Target Not Detected
UNAIDS	United Nations Program on HIV/AIDS
VCT	Volunteer Counselling and Testing
WHO	World Health Organization

CHAPTER ONE

INTRODUCTION

1.1. BACKGROUND

Acquired Immuno-deficiency Syndrome (AIDS) which is caused by the Human Immune virus (HIV) remains a global public health crisis and world's most developmental challenges (1). Globally in 2020, there were 37.7 million people living with HIV, including 10.2 million who were not on treatment, 1.5 million new HIV infections and 680 thousand people died of AIDS-related illnesses. Around 19.2 million (more than 50%) were women who were at least 15 years old and the majority of them (15.9 million) were residing in Sub-Saharan Africa (SSA) and of childbearing age (1). HIV continues to be a major public health issue in Ethiopia. According to HIV related estimates and projections in Ethiopia for the year-2020 there was a gradual decline in people living with HIV (PLWHIV) that were estimated to 669,236 for the year 2019 to 622,326 in 2020, also adult HIV new infection declined from 11,613 to 8,921 for the year 2019 and 2020 respectively and currently there are an estimated 138,646 and 6,600 adult populations living with HIV in Oromia region and Jimma zone respectively (2).

As long as the impact of HIV/AIDS on reproductive health is concerned, it has been affecting the perceived value of marriage, the age of sexual debut, frequency of sexual intercourse, safer sex and contraceptive practices, social norms, fertility desire and intentions of PLWHIV at individual and population levels (3). Fertility refers to the actual number of births in a population whereas, fertility desire is a value that occurs under certain socio-economic, cultural, psychological, physiological and physical health-related conditions and it describes people's will and desire regarding the number of children, sex of children, quality of children and childbearing time (4). HIV/AIDS is associated with fertility in either direction, one affects the other and vice versa. Fertility of PLWHIV can be affected by HIV infection and associated infections in terms of biological, social and psychological aspects (3).

Previously the high prevalence of horizontal and vertical transmission, stigma and discrimination, concerns about increased risks of pregnancy-related complications, concern for birth and parenting in the context of HIV infection and its socio-cultural consequences influenced HIV-infected women to avoid pregnancy and childbearing (5). As a result, early in

HIV/AIDS epidemics, pregnancy in HIV-infected women was considered as morally problematic. Additionally, it was stated that there were high-risk behaviours, unplanned pregnancies and pregnancy termination among this population in the pre ART period (5,6). But after the introduction of ART, the overall health and immune status of HIV-infected people was improved and the rates of elective pregnancy termination after HIV diagnosis were decreased from the pre ART period (7). Therefore, health care providers should assist PLWHIV who seek pregnancy when optimal precautions to prevent HIV transmission are utilized (8,9). So currently, fertility desire among PLWHIV may be associated with socio-demographic and economic status, personal health status, concern about HIV transmission, ART use and socio cultural factors (9). PLWHIV have an increased desire for fertility because of different reasons; some consider bearing children as a way of covering their HIV-infected status and raising their feelings of self-worth. Others stated that being diagnosed as HIV positive increased their desire for children at an earlier age before their health status get worse and some others also decide to have children following progress in HIV care and treatment (9). So, the desire and intent to have children among HIV-infected individuals increased mainly because of improved quality of life resulting in long term survival following initiation of ART and high concern for reproduction being essential to life courses (10). However, the desire of HIV-infected persons to have children in the future has significant implications for the horizontal and vertical transmission of HIVAIDS. So knowledge about ways HIV transmission and prevention is a corner stone for effective implementation of its prevention (11). So, health care providers should consider the promotion and protection of reproductive rights of PLHIV along with preventive strategies for HIV/AIDS.

1.2. STATEMENT OF THE PROBLEM

HIV infection causes a significant impact on health, social life, sexual and reproductive issues, fertility desire, and intentions of the affected individuals and community (12).

In studies done in sub-Saharan Africa, behaviours that have been largely influenced by AIDS education, such as the delayed onset of sexual relations, increased condom use and fewer premarital sexual relations, have driven down fertility desires. Within the same population stigma and discrimination brought lower rates of remarriage among the surviving partners who lost their partner due to the AIDS-related death and diminished fertility levels (13). In societies with high magnitude of HIV/AIDS, behavioural changes and socio-cultural issues may also lead to higher or lower fertility desire. Some couples may desire larger families to ensure the survival of children, though others limit family size due to concerns about leaving orphans behind after an early death (9). Positive parenting is on the rise in countries where HIV/AIDS treatment is widely available (10).

The fertility rate in HIV-positive women and men is also influenced by HIV through biological mechanisms. Research has shown that there were more difficulties in conception among women with HIV than their HIV-negative counterparts. Furthermore, HIV-infected women experience reduced pregnancy rates and higher rates of both planned abortion and miscarriage. HIV/AIDS may induce sterility, infertility, decrease production of spermatozoa, increase foetal mortality and sometimes decrease the frequency of sexual intercourse, all contributing to declining fertility (14).

Studies of fertility desire among PLHIV have found equivocal and varied results while some studies revealed a strong desire to have children, consistent with the high social value placed on children. On the other hand, HIV-positive men and women report strong pressure from family members, people in their community and health care providers to give up the idea of having children, either because of the risk of prenatal HIV transmission or out of concern for the welfare of children raised by parents who may die prematurely of AIDS. The relative strength of these self-contradictory feelings varies according to individual and contextual factors. For instance, married women who report pressure from husbands to have children express less confidence in their ability to stop childbearing than unmarried women (15).

Studies in both developing and developed countries indicate that PLWHIV desire children at different levels. A study in USA revealed that the prevalence of fertility desire was 59% while the intention was 66%; of those who desire a child was high among Africa American women whose culture values childbirth (16).

The Swiss HIV Cohort Study (SHCS) in Switzerland stated that 45% of HIV-positive women and 38% of HIV-positive men expressed the desire for children. Irrespective of this wish, half of the study participants felt that health care providers would not sufficiently address their concerns regarding the relationship, sexuality fertility desire and intentions (17). Similarly, a Client Needs and Provider Perspectives study in Los Angeles showed that 39 % of the clients surveyed reported a desire to have children; however, two-thirds of clients had not discussed their desires, or methods of safe conception, with providers (18). Even though multiple studies have been conducted on fertility desire among PLWHIV in the world, SSA and Ethiopia, there is a great discrepancy between developed and developing countries, especially in SSA. It still needs further and detailed extraction of factors associated with the fertility desire of PLWHIV (19).

A systematic review and meta-analysis of 26 studies conducted in Ethiopia revealed that the pooled prevalence of fertility desire was 42.21% (20). Most of the studies conducted in Ethiopia showed that there was an increasing trend of desire for fertility among PLWHIV, for instance study conducted in Mekelle town, Tigray indicate that (66.1%) expressed a desire to procreate, among this 61.5% are women in the reproductive age group has a plan to give birth in the future (21). Even though, the advent of ART/PMTCT service have been reducing the level of vertical and horizontal transmission of HIV (22). It has been challenged along with fertility issues due to different influencing factors.

Besides this, there is a growing body of evidence indicating that many benefits can accrue to the overall reproductive health of families when men critically examine norms of power, acquire new knowledge and skills and challenge prevailing gender norms. In reproduction men are half of the equation. But most HIV prevention literature considers women as especially vulnerable to HIV infection due to biological susceptibility and the risk of transmission (23). Similarly, studies that had been conducted so far in Jimma town focused solely on women's fertility desire despite men's essential role they play in deciding about their family size (24) and the prevalence of male partner involvement in PMTCT service utilization for their partner was low in Ethiopia as well (25). So, this study is aimed to address these stated problems and research gaps. Thus, the main objective of this study is to assess the prevalence of fertility desire and associated factors among attendants of ART clinic at public health facilities of Jimma zone.

1.3. Significance of the study

It is relevant to investigate fertility desire and associated factors among PLHIV because HIV can be transmitted in the same way that pregnancy is achieved, that is, through unprotected hetero-sexual intercourse. Thus, unprotected sex among PLHIV, in order to conceive, carries the risk of transmitting HIV to sexual partners and subsequently to children during birth or breast feeding. The reproductive decisions made by PLHIV and their partners have long-term consequences for the survival and wellbeing of their families and society at large. So, access to HIV prevention, care, and treatment services for men and women which will help to reduce MTCT is ensured by understanding fertility desire of men and women. Since the extent of fertility desires and it vary by different factors are not well understood, the findings generated from this study will contribute to the understanding of the magnitude and factors associated with fertility desire among PLHIV in the study area. The information obtained from this study will be useful in program designing and policy-making to address counselling and service needs of such people to bring about change in fertility desire and improve quality of PMTCT service for people living with HIV. Moreover, the information will be used by any interested organization or researcher working on this area as a reference for the further investigations.

CHAPTER-TWO

2. LITERATURE REVIEW

2.1. The Overview of HIV/ AIDS and Fertility Desire

There are several distinct facets to the association between HIV/AIDS and fertility.

To begin with, the causality underlying the association can run in either direction –HIV/AIDS can affect fertility desires and outcomes, and fertility desire can affect the risk of HIV/AIDS. The two may also share common causes that induce an association between HIV/AIDS and fertility. Indeed, the major proximate determinants of HIV infection and pregnancy are virtually the same i.e., sexual exposure and for this reason, an empirical association between the two seems almost unavoidable (26).

2.2. Situations of HIV/AIDS and Reproductive Health needs of PLWHIV

Reproductive possibilities were much restricted in the first years of the HIV pandemic. For example, the Centres for Disease Control and Prevention (CDC) discouraged any reproductive attempt in HIV-infected persons due to the poor prognosis of the disease and the risk of transmission. However, even in those difficult times, many HIV-positive individuals chose to seek pregnancy, assuming the risk of sexual and/or vertical transmission of HIV (27). In recent years, the sexual and reproductive health rights of PLHIV have been revised, especially the responsibilities of governments to ensure that health care and legal systems should support these rights (28). However, the interaction between HIV status and childbearing desires is complicated. On one hand, HIV-positive men and women report strong pressure from family members, people in their community and health care providers to give up the idea of having children, either because of the risk of prenatal HIV transmission or out of concern for the welfare of children raised by parents who may die prematurely of AIDS. As a result some people living with HIV will prevent pregnancy, either to time and space their childbearing or to avoid it entirely (29). On the other hand, many of the PLWHIV want to rear and care for the next generations with the advent of ART and improvements in their health status and their economic and socio cultural living status (29). Since HIV had brought profound negative consequences in health, economic and socio-cultural aspects.

2.3. Prevalence of fertility desire in PLHIV

After the introduction of ART worldwide, the HIV/AIDS-related illnesses and deaths have decreased considerably and in addition, the quality of life of PLHIV has significantly been improved leading to a rise in the need for having children (30).

A Cross-Sectional Study conducted among HIV-positive women of reproductive age living in Ontario, Canada, has shown that 69% desire and 58% intend to become pregnant in the future. 20% of women expected the pregnancies to be within one year, 12% between one and two years and 7% between two and four years (31). In the same study area, it was found that 35.0% of men desired to have children and other similar studies also demonstrated that 43.8 % of women and 38.0% of men living with HIV desire and intended to have children in the future (32). More ever, a study conducted in urban clinics in the USA stated that about 44% of the surveyed women intended future pregnancy, whereas women who did not intend or desire future pregnancy cited HIV status and sero-discordance as the most common reasons 56% and 35%, respectively (33).

Another study conducted in southern India revealed that (33.5%) of patients had fertility desire (34). A study conducted SSA (Kenya, Tanzania and Namibia) revealed that among the 3375 participants in the fertility desire analysis Overall, 565 (17%) participants reported desiring a pregnancy within the next 6 months and respondents from Tanzania and Namibia were twice as likely to desire a pregnancy compared to those in Kenya (35). In Ethiopia, different studies at different times and places indicated different levels of fertility desire among HIV-positive women and men. Evidences from Jimma town, Addis Ababa, Nekemt town, Tigray and Finote selam demonstrated that the proportions of women living with HIV who had fertility desire were 46.8, 54.6%, 42.1%, 45.5% and 33.4% respectively (24, 30,36–38)

2.4. Factors influencing fertility desire in PL HIV

Fertility desire is influenced by a myriad of socio-demographic factors, clinical HIV and health-related factors, Sexual and reproductive-related factors and socio-Cultural factors (39).

2.4.1. Socio-economic & demographic factors influencing fertility desire

The people most affected by HIV/AIDS are those who are sexually active and economically more productive falling within the 15–49 age groups. In SSA 15-24 years of age is the commonly affected age group. This is specifically higher for young females where more than 60% of HIV-infected PLHIV are younger females (24). The pattern is similar in

Ethiopia where the high proportion of HIV-infected people are those in younger age group, 15-24 years old (40). Different literatures conducted on factors associated with fertility desire among PLHIV in different settings such as Systematic Review from Ethiopia and Uganda, Brazil, Addis Ababa, Hawassa city, western Shewa and JUMC revealed that younger age in both sexes is associated with the desire for future childbearing (20,39,41–45) A systematic review on the same issues from Ethiopia and Uganda (21,39) and another studies from Addis Ababa and Tanzania (42,46) indicated that marital status and educational level were predictors for desiring fertility (AOR = 2.78, 95% CI: 1.21, 6.40) and(AOR = 2.89, 95% CI: 1.39, 5.99). PLHIV who were male, were married/cohabiting, have received secondary education or above have a higher prevalence of fertility desire. Additionally, different studies indicated that race of study participants, occupation and marital length (47) was associated with a higher level of fertility desire.

2.4.2. Sexual and reproductive related factors

The value of having a lot of children in Africa is there for a long. Nevertheless, having a lot of children in an era of HIV, especially, after the advance of ART among PLHIV is not an easy decision. Pieces of evidence have shown that there is a strong relationship between the number of children owned and future fertility desire. A research conducted in Mana district, Jimma zone, has stated that lifetime risk of not having live births and number of live children is the most important predictor of fertility (48). A study conducted in the Afar region of Northeast Ethiopia stated that not having a living child, having 1 or 2 children alive and contraceptive use were predictors of fertility desire (AOR= 5.1 95% CI:1.31-20.20) (49).

A similar study conducted in the Bale zone stated that having a child who died of HIV, discussion with health workers about fertility intention and sexual partner pressure were significantly associated with fertility desire of adult ART users (50). Additionally, different studies conducted in USA (34), Addis Ababa (42), Brazil (43), Tanzania (46), South Africa (51), Uganda (52) and Fiche hospital (47) revealed that an increased fertility desire was associated with the absence of biological children and another study from South Africa indicated that PLHIV seek fertility for children of a particular sex (51). On the other hand studies also revealed that fertility desire of PLHIV was associated with a history of abortion, sexual practice in the last six months(AOR = 3.00 95% CI:1.46 , 6.16) (41,43) and use/not use of family planning (AOR= 2.3; 95% CI: 1.4, 4.0), (45–47). Evidence from JUMC, Tanzania, and fiche hospital also reveal that PLHIV Having a sexual partner and being in

sexual relation demonstrates higher odds of fertility desire compared to those who are not in sexual relation (AOR=1.9; 95% CI: 1.1, 3.2) (45–47).

2.4.3. Clinical HIV and health related factors

Many women and men decide to have a baby when they are already on therapy because Pregnancies that occurred during ART generally end with live births accompanied by inclusion of Care packages for HIV-infected women of childbearing age that address reproductive health services (49). Pieces of evidence indicated that the desire of PLHIV for fertility increased after ART initiation (AOR = 1.11, 95% CI:1.00– 1.23), (AOR = 0.45, 95% CI: 0.24–0.81)) (20, 33, 39, 41, 42, 51). Similarly, studies from Finote selam hospital and Hawasa city and Bale zone reveal that there is an increased desire for fertility after discussion with ART providers (AOR=2.4,95% CI:1.22-4.65) (38, 41, 50). Additionally studies from Addis Ababa, Finote selam hospital, western Shewa zone and Fiche hospital, also showed that being on ART for less than five years was associated with higher fertility desire (30, 38, 44, 47). The odds of fertility desire among those voluntarily tested to know their HIV status is also high (44). Inversely some studies revealed that Initiating ART may not be the leading factor influencing fertility desires (53). Furthermore, evidence also noted that people who were recently diagnosed with HIV (less than one year) were five times more likely to desire children than those who were diagnosed with HIV more than five years ago (20). Additionally, a considerable number of PLHIV in a study conducted in Addis Ababa reported that Current health status and partner being tested for HIV were found to be factors associated with the fertility desire among PLHIV (AOR=2.03; 95% CI: 1.01–4.07) (30).

Similar study conducted in Tanzania also revealed that increased fertility desire was associated with living and having sex with a partner, HIV disclosure, good perceived health status and CD4 count ≥200 cells for both sexes (46). Similarly undetectable viral load of study participants in Brazil and Tanzania was a predictor of higher fertility desire (43,46). Disclosure and Knowledge of HIV Status of Once Partner is the other challenge and influencing issues regarding clinical HIV and health-related factors (49). When HIV-positive partners fail to disclose their status to their HIV-negative or untested partner, unprotected sex was more likely. A study in rural Tanzania and Ethiopia indicated that disclosing HIV status was positively associated with fertility desire (46). Additionally, a study conducted in Fiche hospital stated that duration of HIV diagnosis, discordant HIV test and disclosure of HIV sero-status to partner were demonstrated to have higher fertility desire among PLHIV(AOR=3.9,95% CI:1.37-11.10) (47).

2.4.4. Socio-cultural Factors Influencing Fertility Desire

Analyses of fertility desires among men and women living with HIV/AIDS in Nairobi Slums showed that fertility desires are complex and ambivalent, reflecting tensions between familial and societal pressures to have children versus pressures for HIV (re-)infection prevention (22). The evidence from fiche hospital showed a significant association of fertility desire with partner fertility desire and community pressure (AOR=3.67,95%CI:1.84-8.70) (47). Descriptive cross-sectional research in Kenya stated that Society influenced the number of children a woman should have. The community held a negative perception of childless women, especially HIV positive women; the community members did not attach value and pride to the childless HIV positive women. So, the socio-cultural and societal demand for HIV positive women influenced pregnancy (54). Research has shown that expectations from an individual's culture and community greatly influenced their desire to have children. In Ethiopia, people facing community pressures to have a family were four times more likely to desire children than those without external pressures from a close-knit community (20).

2.4.5. Knowledge level of MTCT/PMTCT service influencing fertility desire

Despite the desire for children in the future the transmission and prevention ways of HIV to sexual partners and new-born and associated consequences should be given priority(9). So knowledge about ways HIV transmission and prevention is a corner stone for effective implementation of its prevention (11). Analysis of national Demographic and Health Survey (EDHS, 2016) data reveal that about 41.1% of the Ethiopian reproductive-age women have adequate knowledge and 59.9% have inadequate knowledge MTCT of HIV (55).

Studies conducted in Africa and in Ethiopia, stated that having knowledge of PMTCT was found to be associated with fertility desire. A study conducted in antiretroviral therapy clinic of Teku hospital, Nepal reveal that fertility desire was 5.4 times higher among the participants having moderate knowledge of PMTCT than in those having poor knowledge (COR: 5.4, 95% CI: 2.3–12.7) (56). Another evidence from study western Shewa revealed that study participants who had good knowledge of PMTCT wanted to have at least one child for future. Knowledge of MTCT /PMTCT, knowledge of Service type provided accompanied by Exposure to HIV education, accessibility to source of information, which decreases the fear of transmission from mother to child made fertility desire more likely (44). The following conceptual framework which was developed by reviewing different literatures and which were adapted to current study illustrate more about factors affecting fertility desire among PLWHIV attending ART clinics. These factors were assessed and investigated

whether they show direct association with outcome variable and those were shown by solid arrows and presence of indirect association that might exist among the categories of independent variables were indicated by broken arrows.

A Conceptual Framework

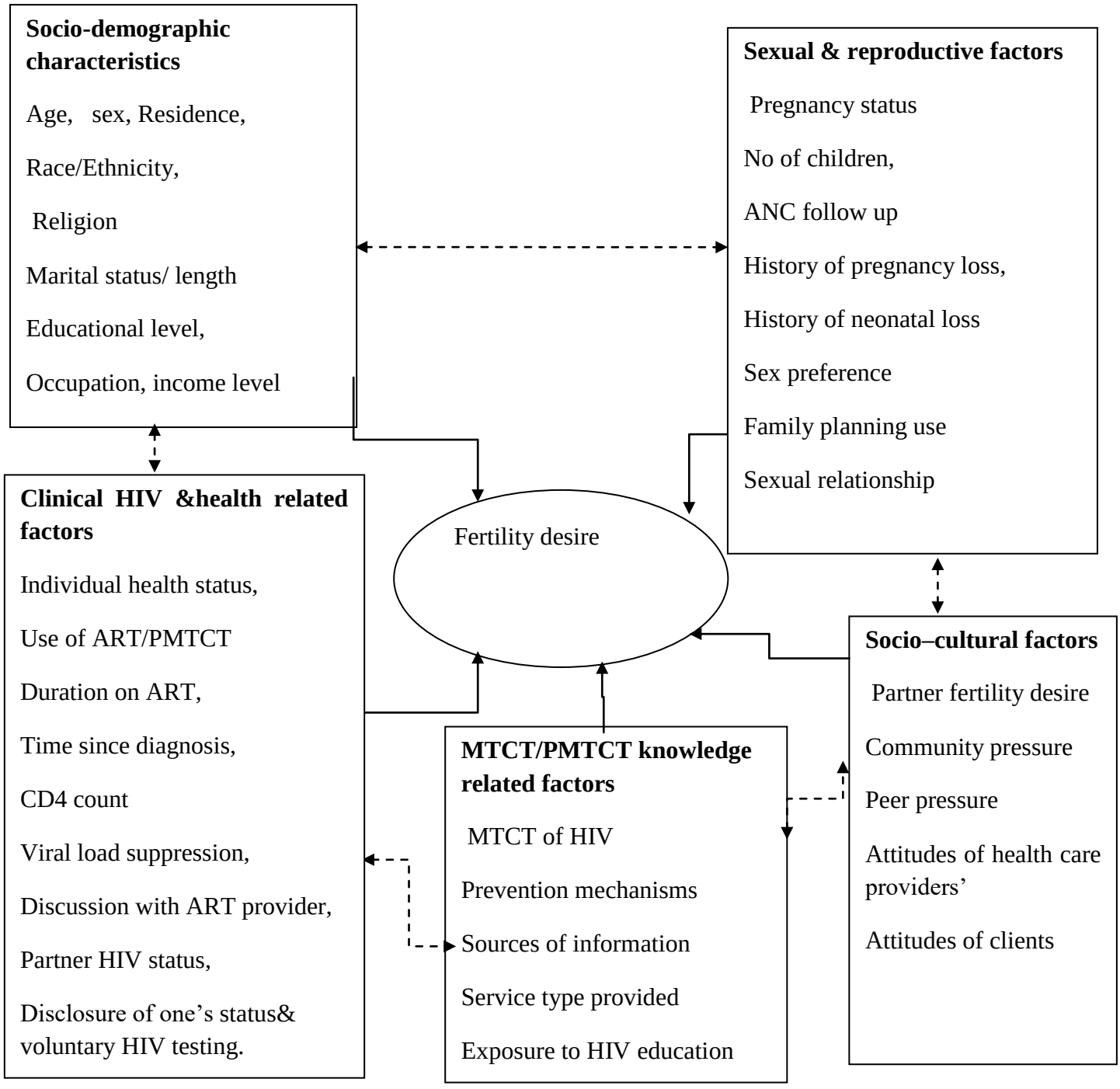


Figure1: Diagrammatic representation of conceptual framework for the study factors affecting fertility desire among PLWHIV attending ART clinics in Jimma zone, Southwest Ethiopia adapted from different literatures (20, 21, 30, 33, 38, 39, 41–56)

CHAPTER THREE

OBJECTIVE

3.1. GENERAL OBJECTIVE

To assess the magnitude of fertility desire and associated factors among PLWHIV attending ART clinics at public health facilities of Jimma zone, Oromia Region, Southwest Ethiopia, 2022.

3.2. SPECIFIC OBJECTIVES

1. To determine the magnitude of fertility desire among PLWHIV attending ART clinic at public health facilities of Jimma zone, Oromia Region, Southwest Ethiopia, 2022.
2. To identify factors associated with fertility desire among PLWHIV attending ART clinic at public health facilities of Jimma zone, Oromia Region, Southwest Ethiopia, 2022.

CHAPTER -FOUR

4. Methods and Materials

4.1. Study Area and Study Period

The study was conducted at public health facilities of Jimma zone from July 8 to August 9, 2022. Jimma is the largest zone in the Oromia Region which is bordered on the south by the South west Region, in the northwest by Illubabor zone, in the north by East Welega zone and in the northeast by West Shewa zone (57).

Based on the regional conversion factor of 2021 the current population of the Jimma zone was 3,717,629. Jimma zone has 21woreda's and there are7 gov't hospitals, 121health centres and 548 health posts. Currently, according to the zone's health department, 22 health facilities are providing ART services for a total population of 3,225 people in the zone.

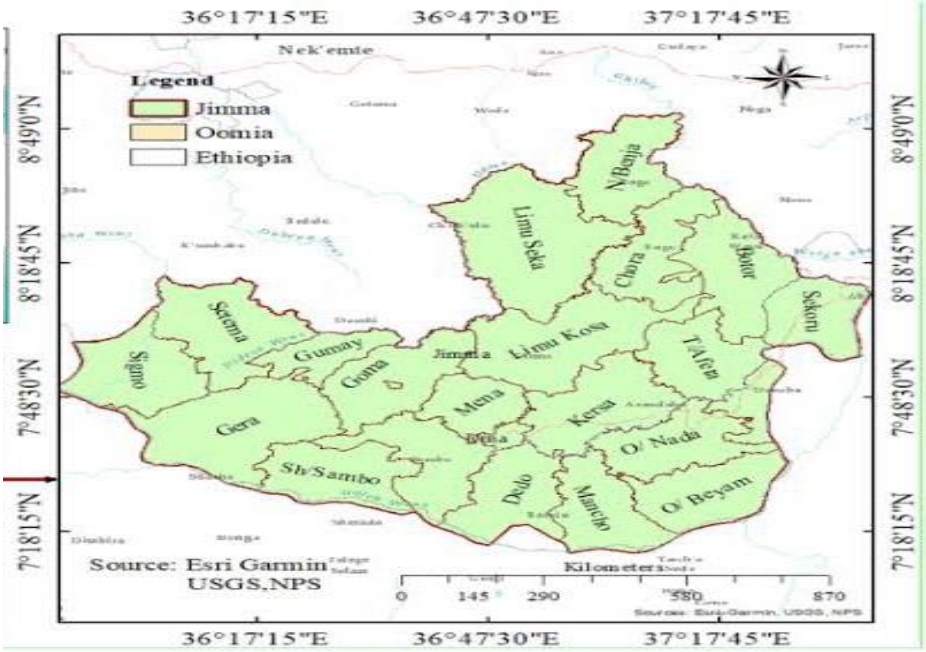


Figure2: Map of Jimma zone during the assessment of fertility desire and associated factors among attendants of ART at public health facilities of Jimma zone, Oromia Region, South west Ethiopia, August, 2022 (57).

4.2. Study Design

An institution based cross-sectional study design was used to conduct the study.

4.3. Population

4.3.1. Source population

All HIV positive individuals of reproductive age group (15-49 years for women and 15 years and above for men) and who have enrolled in ART program at public health facilities of Jimma zone, were the source population (43).

4.3.2. Study Population

HIV positive individuals in a reproductive age group who were attending ART clinics during the study period at the selected public health facilities of Jimma zone.

4.3. Inclusion and Exclusion Criteria

Inclusion criteria:

All HIV positive individuals in the reproductive age group and who had already enrolled to ART service at the selected ART facility and are currently on ART follow-up and care.

Exclusion criteria:

PLWHIV in reproductive age group who with drowned recently/previously from ART service and women who were infertile or hysterectomy/vasectomy done and partners with current pregnancy status while on follow up were excluded from the study.

4.4. Sample Size Determination

The sample size was determined for each objective of the study, and the highest sample size was taken as the final sample size. Accordingly, for the first objective (prevalence of fertility desire) sample size was determined by using a single population proportion formula with the assumption of fertility desire among HIV-positive women of 46.8% from the study conducted in Jimma town (24) and using 5% of marginal error with 95% confidence level.

Sample size calculation for the magnitude of fertility desire was as follows.

$$n = \frac{(Z\alpha/2)^2 p (1-p)}{d^2}$$

n= $(1.96)^2 0.468(1-0.468)/ (0.05)^2$

n = 383 (fertility desire, p = 46.8%)

n = the required sample size,

Z= standard score corresponding to 95% confidence interval,

d = allowable marginal error, however correction formula was not applied because of further decrement of sample size, while maximum sample size was required for accurate representativeness of the population. For the second objectives, the sample size was calculated by using epi info version 7.2.4.0 by taking the parameters from the studies conducted in west Shewa zone for the fertility desire (44).

Table 1: Showing sample size calculation for the research on the assessment of fertility desire among Women attending ART clinic in Jimma in the zone. South west Ethiopia, April; 2022.

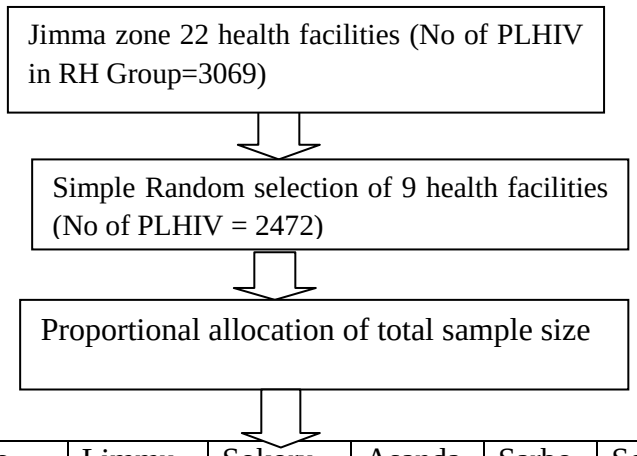
S.n	Variables on fertility desire	Power %	CI %	%Outcome in exposed	% Outcome in Unexposed	Total sample size	Reference
1	Being on ART<5yrs	80	95	40.33	17.29	136	(44)
2	Voluntary tested	80	95	67.1	32.9	76	(44)
3	Age (26-35years)	80	95	23.97	5.12	130	(44)

As shown in the Table1 above, the sample size calculated using double population proportion formula was so minimum and since maximum sample size was required for better representation of the population. So, the sample size which was calculated using single

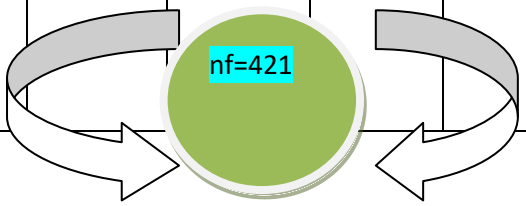
population proportion formula with highest value (**383**) was considered and a 10% non-response rate was added and the final calculated sample size was **421.**

4.5. Sampling Technique

Simple random sampling technique was applied to select study participants. There were 22 health facilities in Jimma zone which provide ART services. Among them 9 health facilities were selected randomly. Then the calculated total sample size is proportionally allocated to these randomly selected health facilities based on their specific monthly ART report. At the last, study participants were selected by simple random sampling technique.



H.facility	Agaro G.hos.	Agaro h/c	Limmu G.hos.	Sokoru h/c	Asandabo h/c	Sarbo h/c	Seka h/c	Shebe h/c	Yebu h/c
N	389	810	583	170	121	105	70	123	101
Ni	66	138	99	29	21	18	12	21	17



Simple random sampling

Fig 3: Schematic presentation of sampling procedure on assessments of fertility desire and associated factors among attendants of ART in Jimma zone, Southwest Ethiopia, 2022

4.6. Data Collection Instrument, Personnel and Technique

The questionnaire was first developed in English and translated into Amharic and Afan Oromo and then back-translated to English to ensure its consistency. The translation of the data collection instrument into local language afan Oromo and Amharic was made by expertise. Content validity of the data collection instrument was achieved by assessing its contents whether did it cover all relevant parts of the subject it aimed to measure and this was cross checked with previously validated survey tool which was used to conduct studies on similar problems in Harari regional state (15). The primary data for this study was collected by face-to-face interviews using a structured and pre-tested questionnaire. Secondary data (HIVtest and test result, CD4 count, viral load, viral load category) was obtained from patient follow up registration form. One day training was given for the data collectors and supervisors on their respective sites. Data collectors were selected based on their language ability (those who speak and write Amharic and afan Oromo), ART/PMTCT training and work experiences especially those who were already providing the service. This is due to their confidentiality and their increased cooperativeness and trust. Accordingly, nine nurses (5 diplomas and 4 BSc) serving as ART focal person collected the data and other ART providers were assigned to collect the data in case they were not available. Two supervisors with a first degree in HO were selected to supervise the data collection process, the data collectors were supervised physically and there were also regular phone contacts as well as emails between the principal investigator, data collectors and supervisors to discuss any problems that arose during the data collection period.

4.7. Study Variables

Dependent Variables: Fertility desire (No, Yes)

Independent variables:

Socio-demographic factors such as age, sex, education, residence, marital status, occupation and income. Sexual and reproductive related variables such as a history of pregnancies, ANC follow up, history of abortion, history of stillbirth, history of neonatal loss, number of alive children, sex preference, FP use and sexual relations. Clinical HIV and health related factors such as the use of ART/PMTCT, years since diagnosis, voluntary HIV testing & disclosure status, individual health status, partner's HIV status viral load suppression, CD4count, discussion with ART provider, and MTCT/PMTCT knowledge related factors such as ways of MTCT of HIV, prevention mechanisms, sources of information, service type provided,

exposure to HIV education and some other variables are related to socio-cultural factors such as partner fertility desire, community pressure, peer pressure, attitudes of health care providers' and clients.

4.8. Measurements and Operational Definitions

Fertility Desire: is described as HIV-positive women or men who feel or want to have a child in the future and investigated using the question "Would you like to have children in the future?" and the variable was dichotomized into "had no desire" if a participant answered "No", and "had fertility desire" if they answered "Yes" (44).

Viral Load: The amount of HIV in a sample of blood. Viral load (VL) is reported as the number of HIV RNA copies per millilitre of blood. It has three categories. The first category is TND which means target not detected or the virus is not at a detectable level. The second and third categories are the detectable level which is less than 20 copies and greater than 20 copies HIV RNA copies per millilitre of blood, respectively (45)

Fertility Intention: having a plan for conception or pregnancy within a specified period which ranges between months or years since when started ART and assessed by using the question ''How many (more) children would you like to have in the future? and 'When did you like to have another child?''

Reproductive decision: refers to the intention and choices of the PLWHIV to take an action in any reproductive process.

Reproductive age group: is defined as a woman within age range between 15-49 years and men age greater than 15 years and above (44).

PLWHIV Attending ART clinics: is defined as women/men of reproductive ages who are on ART follow-up care and who visited the ART follow up care at least once during the study.

Improved Health Status: is defined as women/men on ART who perceived or reported that their health status was improved either clinically, virologically or immunologically after they had started ART.

Clinical improvements: no longer the clinical symptoms of AIDS was manifested and subsidized to be as normal.

Virological improvements: whenever the viral load substantially supressed to NDT level than before the start of the medication.

Not Improved Health Status: women / men on ART who did report their status was no longer improved either clinically, immunologically or virologically deteriorated after they had started ART.

CD4 Count: the number of CD4 cells per cubic millimetre of blood reported in a laboratory.

4.9. Data quality control

The translation of the data collection instrument into local language afan Oromo was made by expertise and its consistency was checked before collection. The prepared questionnaire was pretested with a similar study population of HIV positive men and women in Saja primary Hospital, nearby Jimma zone which is not included in the study area. The appropriate modifications were made based on the findings. Data collecting instruction was develop by principal investigator and training was given for the data collectors and supervisors on their respective sites for one day. The training focused on the objective of the study, how to collect data (technique of data collection), ethical issues and descriptions of inclusive and exclusive criteria, definition of terms, concepts and related issues. All filled questionnaires were reviewed each night and morning sessions by the data collectors for checking missing values, incorrect data entry and then error was corrected accordingly. On the other hand, supportive supervision by supervisors and the principal investigator was undertaken throughout data collection period.

4.10. Data Processing and Analysis

After checking the completeness, cleanness and consistency of data, first, the pre-coded responses were double entered into EPI data software; then, exported to SPSS for statistical analysis. Tables, charts, graphs and statistical summaries were used for presenting study findings. The association between fertility desire and each covariate was assessed first by bivariable logistic regression to identify candidate variables for the final model. Variables with a P value < 0.25 were taken into multivariable logistic regression analysis to identify independent predictors of fertility desire. Finally, adjusted odds ratios with a 95% confidence interval was taken to measure the strength and directions of association between dependent and independent variables and a P-value of <0.05 was used to declare statistical significance. During the analysis, back ward elimination regression procedure was proceeded to identify the significant variables that show a strong association with outcome variables. Adjusted

odds ratio using a multivariable logistic regression model was used to control for possible confounding effects and to assess the separate effect of the variables and the interaction among significant predictor variables was checked by entering interaction terms to logistic regression and identifying any significant model that would appear. Multi co-linearity was also assessed using the Variance Inflation Factor (VIF) and there was no identified multi-co linearity problem among the factors. The Omnibus test for model coefficient and the Hosmer and Lemeshow test statistics indicated that a good fit of the model since its significance value was found to be 0.000 and 0.855 respectively.

4.11. Ethical consideration

Ethical clearance was obtained from the Institutional Review Board of Jimma University and the Institute of Health, and a Letter of support was written from Jimma University to the Jimma zone health office turn by turn, Jimma zone health office wrote a permission letter to selected woreda ART sites. In all the study areas before the commencement of this study, head of the woreda health office and head of the health facility were contacted after presenting letters of support. The study was carried out under the principles of the declaration of Helsinki. As the study participants included PLWHIV attending the ART clinic, the ethical principles of respect, beneficence and justice were maintained throughout the data-collection process.

Informed written consent was obtained verbally from every participant before the start of this research activities and confidentiality of information was assured by excluding names from identification of study subjects and by selecting data collectors who were already involved in ART follow up care units. Similarly, participants were informed that they had the choice of not participating, the right to escape any question they might not want to answer or the right to discontinue the interview at any time. Besides, privacy was assured by preparing a room separated from the routine workplace and pieces of information collected from each participant was kept in a folder that is primarily prepared and labelled as per the study areas.

In addition, all the benefits related to referrals and linkages for eligible clients was made as appropriate for participants, which includes provision of adequate counselling on sexual & Reproductive health issues, PMTCT, drug adherence issues, nutritional issues, safe conceptions and family planning service utilization.

CHAPTER FIVE

5. RESULT

Totally 421 study participants were included in the study. All 421 eligible clients in the ARV treatment units agreed to participate in the study, giving response rate of 100%. The mean (±SD) age of the respondents was 34.8 (±8.9) years and most 140 (33.3%) of them lie in the age category 25-34 years. One hundred eighty two of the participants were males and most of the study participants were Muslims 165(39.2%), urban dwellers, Oromo in ethnicity 149 (36.8%) and about 21.6% and 20.0% had enjoyed primary and secondary education respectively. With regard to occupational status 83 (19.7 %) were farmers followed by others which consists of unemployed and who were on street, commercial sex workers and derivers. The rest of them were government employee 66 (15.7%), day labourers 61 (14.5%) and merchants 59 (14%) and the majority of study the participants without income were mainly house wives, students and street children.

Table 2: Socio-demographic characteristics of PLHIV attending in ART clinics in public health facilities of Jimma zone, south western Ethiopia, 2022 (n = 421)

Characteristics	Frequency	Percent
Sex		
Male	182	43.2
Female	239	56.8
Age (in years)		
15-24	92	21.9
25-34	140	33.3
35-44	118	28.0
44+	71	16.9
Residence		
Urban	272	64.6
Rural	149	35.4
Educational status		
Can't read & write	82	19.5
Can read& write	90	21.4
Primary	91	21.6
Secondary	84	20.0
College /university	74	17.6
Religion		
Muslim	165	39.2
Orthodox Christian	105	24.9
Protestant	90	21.4

Others	61	14.5
Marital status		
Single	94	22.3
Married	79	18.8
Cohabiting	42	10.0
Divorced or separated	88	20.9
Widowed	118	28.0
Ethnicity		
Oromo	149	35.4
Amhara	67	15.9
Yem	39	9.3
Keffa	42	10.0
Gurage	41	9.7
Dawuro	37	8.8
Tigre	10	2.4
Others	36	8.6
Monthly income		
No income	144	34.2
<1000 ETB	142	33.7
>1000ETB	135	32.1

Repr

oductive health related characteristics and fertility desire

The magnitude of fertility desire in the current study was 278(66.0%) and 95% confidence interval for this population proportion is (61.5%, 70.5%). This study found out that male participants who desired and didn't desire for children account (61.5%) and 38.5% respectively.

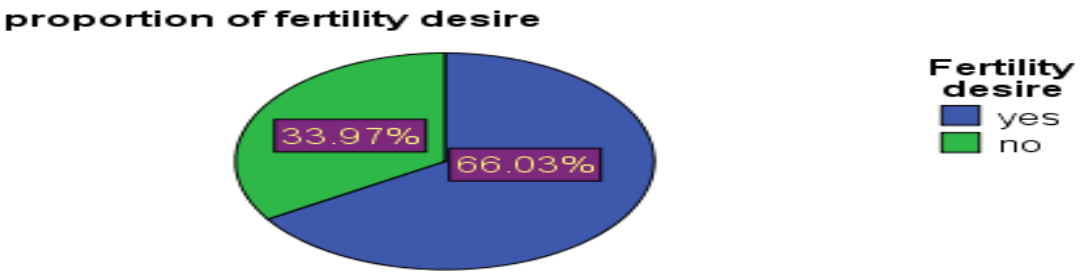
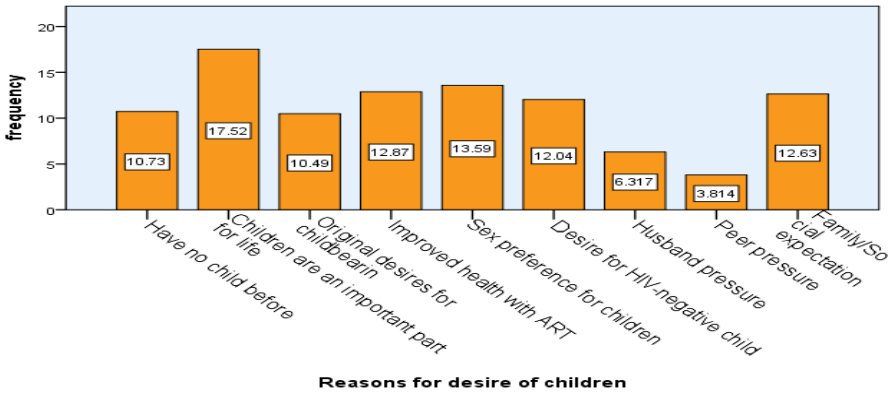


Fig 4. The proportion of fertility desire among attendants of ART clinics in public health facilities of Jimma zone, south west Ethiopia, 2022.

The main reasons mentioned to have children was the high familial and social value of children (52.9%) followed by sex preference (41.1%) and the main reason mentioned for not desiring for children was fear of further compromission of one's health status (30.51%) and

fear of mother to child transmission (21.45%). The others were illustrated by bar graph



below.

Fig.5. Graph representing the reason for desiring children among attendants of ART clinics in public health facilities of Jimma zone, south west Ethiopia, 2022.

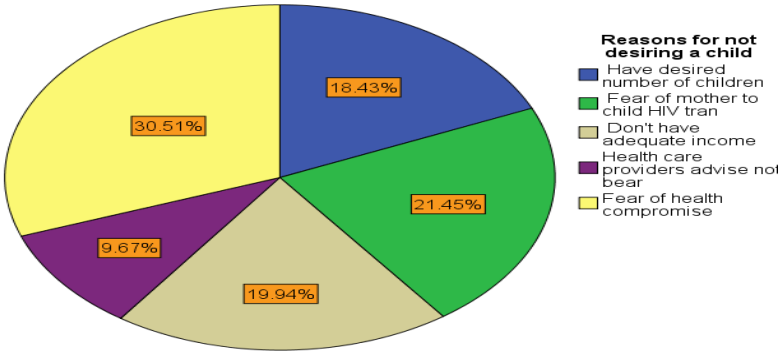


Fig6. A pie chart representing the reason for not desiring for children among attendants of ART clinics in public health facilities of Jimma zone, south west Ethiopia, 2022.

Regarding the current number of children that study participants have, about 152(36.1%) of the respondents had no child and given birth at all and 90 (21.4%) had one live birth, while 110 (26.1%) and 69 (16.4) had two to four live births and more than four live births respectively.

Among the study participants about 197 (46.8%) explained that their partner desire for children and 50 (11.9%) explained that their partner don't desire for fertility while 174 (41.3%) had no partner. Most of the study participants intended to bear a child with in one year and less, while the rest of them intended to have two and more children two to three years later. Among the female attendants of ART clinics 151 (35.9%) have had experienced

pregnancy after they had known their HIV positive status regardless of its outcome. Among these about 50 (11.9%) of them had experienced pregnancy termination with abortion or still birth. The main reason for the pregnancy termination was lack of adequate support and care (38.3% followed by fear of stigma and discrimination (35.3%) and fear of letting a child orphaned (26.3%)

Family planning usage of the study participants

Regarding family planning service utilization the majority 252 (59.9%) used any type of family planning method while 134 (31.8%) didn't used and 34 (8.1%) didn't remember whether they had used or not. Among the users most of the study participants used condom 165 (32.7%) in combination (dual service) with other methods.

The main reason for not using family planning method mentioned include lack of knowledge 140 (29.3%), absence of partner 246 (30.5%), unavailability of service 70 (14.6%), fear of side effects 53(11.1%) and the rest include partner opposition 43 (9.0%), religious prohibition, 23 (4.8%) and parent opposition 3 (0.6%).

Regarding sexual experiences of study participants about half of them have had experienced sexual intercourse in the last six month and more than half (26.1%) used condom during sexual practice.

Table 3: Family planning service utilization of ART attendants in public health facilities of Jimma zone South West Ethiopia; 2022

Types of family planning ever used	Frequency	Percent
Yes	252	59.9%
No	134	31.8%
Don't remember	34	8.1%
Method used		
Abstinence	97	23.4%
Condom	82	19.47%
Pills	121	28.7%
Injectable	56	13.66%
Implants	46	10.9%
IUCD	16	3.8%
No response	3	0.07%

Knowledge of mother to child transmission and prevention

A total of 390 (92.6%) of the study participants said that HIV can be transmitted from mother to child of which 137 (35.2) indicated the transmission to be during pregnancy, 130 (33.4%) during labour and delivery while 123 (31.4) during the time of breast feeding. Around 400 (95%) study participants knew and explain the availability of medication to prevent mother to child transmission and 240 (57.0%) of them believe that the medication actually reduces the viral transmission to their offspring. Regarding knowledge of PMTCT services of study participants about 259 (61.5%) of the participants have good knowledge PMTCT service. Among those about 83 (31.9) study participants have awareness on institutional delivery, 66 (25.5%) awareness on adherence to ART drug, 66 (25.7) awareness on exclusive breast feeding and 44 (17.0) early initiation of ART. As a result, about 262 (62.2%) of the study participants decided their fertility after awareness of PMTCT services. Regarding source of information for PMTCT services, more than half 211 (54.12%) of the study participants get the information from health professionals followed by health extension workers and mass media 70 (17.8%).

Table 4: Knowledge of study participants on prevention of mother to child transmission of HIV/AIDS among the attendants of ART clinic in Jimma zone south west Ethiopia, 2022.

Characteristics	Frequency	Percent
Transmission of HIV MTCT		
Yes	390	92.6
No	31	7.4
Times of HIV MTCT of HIV		
During pregnancy	137	35.2
During labour and delivery	130	33.4
through breast feeding	123	31.4
Do you know presence of medications to prevent MTCT	400	95.0
Yes	21	5.0
No		
Sources of information about PMTCT		
Mass media/social media	69	17.8
Health professional	211	54.1

Health extension workers	70	17.8
From friends	40	10.3
HIV medications actually reduce the risk of transmission Yes	240	57.0
No	181	43.0
Knowledge of PMTCT service Yes	259	61.5
No	162	38.5
Types of PMTCT service		
Early initiation of ART	44	17.0
Adherence to ART drugs	66	25.5
Institutional safe delivery service	83	31.9
EBF while adhering to ART	66	25.7
Decision to have children after awareness of PMTCT Yes	262	62.2
No	128	37.8

Clinical HIV and treatment conditions

The majority 254 (60.3) of study participants had known their HIV positive status by PICT followed by VCT 139 (33.0%) and HIVST 28 (6.7) and most of them 204 (48.5%) started ART from the time of diagnosis and within four years and about 136 (32.3%). study participants within five to nine years. Regarding partner's HIV status the majority 318 (75.6%) participants explained that their partners were tested and have known their status. Out of them about 168 (38.7%) tested negative, 150 (35.6%) tested positive while 105 (25%) their status not known. The majority 343 (81.5%) of the participants disclosed their status while 78 (18.5) did not disclose due to one or more reasons.

Regarding health status of study participants, about 317(75.3%) of them reported improvements health status, while some 80 (19%) of them explained no change in their health status and the least 24 (5.7%) of them reported aggravation/deterioration of their health condition. Most of the study participants did not measure their CD4 count but almost all 406 (96.4%) of them had checked for viral load recently and most 306 (72.7%) of them lie in the category target not detected (TND) and the rest 91 (21.6%) and 24 (5.7%) lie in the category <20 copies and >20 copies respectively. About 396 (94.1%) of the participants have

discussed about sexuality, child bearing and family planning services with their ART provider and 275 (65.3%) of them reported that the discussion was adequate and had addressed their reproductive health issues and HIV status but the least 25 (5.9%) didn't discuss about their RH issues.

Socio cultural issues. Regarding socio-cultural issues especially the attitudes of the participants about child bearing issues in relation to their culture, the majority 310 (73.6%) of them have positive attitude. About half 202 (48.0%), 208 (49.4%) and 212 (50.4%) of them explained that their sexual partner, family members and health care providers encourage them to engage in child bearing practice respectively while less than half 174 (41.3%) of the participants reported that their community would encourage to engage in child bearing practice.

Table 5: Clinical HIV/AIDS and Related Characteristics of the Study Participants Attending ART Clinic in public health facilities of Jimma zone south western Ethiopia, 2022.

Characteristics	Frequency	Percent
HIV status known by		
PICT	254	60.3
VCT	139	33.0
HIVST	28	6.7
Time since HIV diagnosis		
<=1years	133	31.6
1-4 years	165	39.2
5-9 years	76	18.1
>=10years	47	11.2
Time since ART started		
<=1years	76	18.1
1-4 years	128	30.4
5-9 years	136	32.3
>=10years	81	19.2
Partner HIV test	318	75.6
Yes	32	7.6
No	71	16.8
I don't know		
Partner HIV test result		
Negative	146	34.75
Positive	154	36.51
Unknown	121	28.74

Disclosure of the sero-status Yes No	 343 78	 81.5 18.5
Overall health status Improved No change Deteriorated	317 80 24	75.3 19.0 5.7
Recent CD4 count Yes No	53 368	12.6 87.4
Recent viral load Yes No	406 15	96.4 3.6

Table 5 continued...

Characteristics	Frequency	Percent
Category for viral load TND <20 copies >20 copies	306 91 24	72.7 21.6 5.7
Discussion about RH issues Yes No	396 25	94.1 5.9
Adequacy of discussion Yes No I don't know	275 99 47	65.3 23.5 11.2
Self-attitude to bear child Very good Good Poor	159 151 111	37.8 35.9 26.4
Partner perception about child bearing Encourage Discourage I don't know	 202 139 80	 48.0 33.0 19.0
Family member perception Encourage Discourage I don't know	208 155 58	49.4 36.7 13.8

Community perception Encourage Discourage I don't know	174 170 77	41.3 40.4 18.3
Health care provider's perception Encourage Discourage Neither encourage nor discourage I don't know	212 119 81 9	50.4 28.3 19.2 2.1

Factors associated with fertility desire

The association between fertility desire and different variables (socio demographic backgrounds and HIV related characteristics) were first seen by bi-variable analysis. Sex, age, marital status, educational status, number of a live child, occupation, current number of live births, partners fertility desire, history of pregnancy, family planning utilization, sexual intercourse in the last six months, condom use during sexual intercourse, knowledge of PMTCT, believe that ART actually reduce HIV transmissions, exposure to HIV education, types of test to know HIV status, time since HIV diagnosis, duration since ART started, partner HIV test result, health status since ART initiation, self-attitude towards child bearing practice, partners', family, community and health care providers' perception about child bearing practice showed association with fertility desire at p-value <0.25. But when adjusted, the predictors of fertility desire were age, educational status, marital status, occupation, number of live children, income and participants' attitude towards child bearing practice which remained significant in multivariate analysis. Study participants in the age group 25-34 years (AOR: 3.67; 95% CI: 1.99, 11.24) and 35-44 years (AOR: 3.58; 95% CI: 1.18, 10.85) had a higher fertility desire for children as compared to age group above 44 years. Marital status was also associated with fertility desire; those who were married (AOR: 11.74; 95% CI: 4.01, 34.34), single (AOR: 6.08; 95% CI: 2.28, 16.19), cohabiting (AOR: 3.32; 95% CI: 0.97, 11.29) had a desire for children more likely than participants who were widowed. Another factor related to fertility desire was the number of live children. For those participants who had no live child had almost four times higher to desire for a child than participants who had four and more children (AOR: 4.17; 95% CI: 1.67, 10.34). Study participants who had attended secondary education (AOR: 5.83; 95% CI: 1.82, 18.69) and higher education (AOR: 8.96; 95% CI: 2.68, 29.90) had more likely to desire for child when compared to participants who couldn't read and write.

Occupational status was another predictor of fertility desire. The odds of fertility desire among government employers were higher (AOR: 7.20; 95% CI: 1.82, 28.55) than other occupations such as day labours (AOR: 5.41; 95% CI: 1.51, 19.40), students (AOR: 6.51; 95% CI: 1.12, 37.88) merchants (AOR: 4.50; 95% CI: 1.17, 17.33) and house wives (AOR: 5.92; 95% CI: 1.55, 22.56). Likewise, participants who have had income more than 1000ETB had higher desire for fertility than those who had no income (AOR: 3.35; 95% CI: 1.44 - 7.78). Additionally, positive status of partners for HIV (AOR: 3.22; 95% CI:1.22, 8.53), longer duration since HIV diagnosis (>=10) years (AOR: 7.59; 95% CI: 2.12, 27.20), volunteer counselling and testing (AOR: 0.31; 95% CI: 0.14, 0.71), non-detected viral load category (AOR: 0.097; 95% CI: 0.015, 0.621) and improved health status (AOR: 0.10; 95% CI: 0.012, 0.914) of study participants had showed significant association with fertility desire.

Table 6: Bi-variable and multi-variable logistic regression analysis of factors associated with fertility desire among attendants of ART clinic in public health facilities of Jimma zone, 2022 (n=421).

Characteristics	Fertility desire			
	No	Yes	COR (95%CI)	AOR (95% CI)
Age category 15-24 25-34 35-44 >44	 9(9.8) 68(48.6) 49(41.5) 17(23.9)	 83(90.2) 72(51.4) 69(58.5) 54(76.1)	 1 8.7 (4.10, 18.69)* 6.5 (3.0, 14.30)* 2.9 (1.21, 6.98)*	 1 3.6(1.99, 11.24)* 3.6(1.18, 10.85)* 1.12(0.34, 4.03)
Sex Male Female	70(38.5) 73(30.5)	112(61.5) 166 (69.5)	1 0.70 (0.5, 1.06)	1 1.31(0.64,2.68
Educational status Can’tread &write Can read &write Primary Secondary	 13(15.9) 21(23.3) 36(39.6) 36(42.9)	 69 (84.1) 69(76.7) 55(60.4) 48 (57.1)	 1 1.62(0.749,3.48) 3.47(1.68,7.2)* 3.98 (1.91, 8.30)*	 1 1.21(0.38, 3.82) 2.38(0.81, 7.10) 5.83(1.82, 18.69)*

Higher educ.	50(50.0)	50(50.0)	5.31 (2.51,11.21)*	8.96(2.68, 29.90)*
Marital status				
Single	46(48.9)	48(51.1)	6.11(3.14,11.87)*	6.08(2.5, 16.19)*
Married	44(55.7)	35(44.3)	8.01(4.02,15.96)*	11.7(4.01, 34.3)**
Cohabiting	15(35.7)	27(64.3)	3.54(1.55, 8.06)*	3.32(0.97,11.29)**
Divorced	22(25.0)	66(75.0)	2.13(1.04, 4.34)*	1.69(0.59, 4.86)
Widowed	16(13.6)	102(86.4)	1	1
Income				
No income	26(18.1)	118(81.9)	1	1
<1000ETB	52(36.6)	90(63.4)	2.62(1.52, 4.52)*	2.07(0.86, 5.02)
>=1000ETB	65(48.1)	70(51.9)	4.21(2.45, 7.25)*	2.97(1.18, 7.47)*
Occupation			1	1
Farmer	11(13.3)	72(86.7)	3.44(1.496,7.93)*	5.92(1.55, 22.56)*
House wife	20(34.5)	38(65.5)	3.109(1.35, 7.18)*	4.50(1.17,17.33)*
Merchant	19(32.2)	40 (67.8)	6.55(2.95,14.53)*	7.20(1.82, 28.55)*
Gov.t employee	33(50.0)	33(50)	3.44(1.51, 7.85)*	5.41(1.51,19.40)*
Day labourer	21(34.4)	40(65.6)	2.06(0.67, 6.31)	6.51(1.12, 37.88)*
Student	6(24.0)	19(76.0)	6.00(2.72,13.23)*	11.29(3.05, 41.8)*
Others	33(47.8)	36(52.2)		
Number of live births				
No child at all	56(45.2)	68(54.8)	3.48(2.00, 6.07)*	4.17(1.67, 10.34)*
1 live birth	37(48.7)	39(51.3)	4.04(2.16, 4.55)*	6.42(2.17, 18.99)*
2-4 live birth	24(28.2)	61(71.8)	1.67(0.88, 3.15)	2,21(0.77, 6.25)
>4 live birth	26(19.1)	110(80.9)	1	1
Partner HIV test result				
Negative	31(21.2)	115(78.8)	1	1
Positive	65(42.2)	89(57.8)	2.7(1.62, 4.5)*	2.2(1.22,8.53)*
Unknown	47(38.8)	74(61.2)	2.35(1.37, 4.04)*	1.7(0.93,7.76)
Duration since HIV dx				
<=1yrs	32(24.1)	101(75.9)	1	1
2-4yrs	43(26.1)	122(73.9)	1.12(0.65,1.88)	1.33(0.59, 2.99)
5-10yrs	33(43.4)	43(56.6)	2.42(1.32, 4.43)*	1.65(0.63, 4.33)
>=10yrs	35(74.5)	12(25.5)	9.2(4.27,19.82)*	7.59(2.12, 27.20)*
HIVstatus				

known by				
PICT	105(41.3)	149(58.7)	1	1
VCT	31(22.3)	108(77.7)	0.41(0.25, 0.65)*	0.31(0.14,0.71)*
HIVST	7(25.0)	21(75.0)	0.47(0.19, 1.15)	0.52(0.13, 2.2)
Viral load category				`
TND	68(22.7)	231(77.3)	0.06(0.02, 0.16)*	0.09(0.02, 0.62)*
<20 copies	46(51.1)	42(46.7)	0.2(0.08, 0.65)*	0.29(0.04, 2.02)
>20 copies	25(83.3)	5(16.7)	1	
Current Health status				
Improved	87(27.6)	228(72.4)	0.03(0.007, 0.14)*	0.10(0.01, 0.91)*
No change	32(40.0)	48(60.0)	0.06(0.01, 0.25)*	0.29(0.04, 2.02)
Aggravated	25(83.3)	5(16.7)	1	
Self-attitudes				
Very good	42(31.1)	93(68.9)	0.49 (0.31, 0.79)*	0.31(0.14, 0.64)**
Good	22(18.2)	99(81.8)	0.24 (0.14, 0.42)*	0.16(0.07,0.38**
Poor	86(52.1)	79(47.9)	1	1

- *p-value < 0.05, **p-value < 0.01.

5.1. Discussion

The study was tried to assess magnitude of fertility desire and associated factors among PLWHIV who were attending ART service in public health facilities of Jimma Zone. The study found out that more than half (66.0%) of the PLWHIV had a desire for children. The proportion of fertility desire in current study was closer (69%) to study conducted among HIV-positive women of reproductive age living in Ontario, Canada (31) higher than the same study conducted in USA (59%) (16), in Switzerland (17), northern India (34) and the findings reported in Ethiopia from Jimma town (46.8%), Addis Ababa (54.6%), Nekemte town (42.1%), Tigray region (45.5%) and Finote selam (33.4%) (24, 30, 36–38). Similarly, the magnitude of fertility desire in this study was lower than similar study findings in Nigeria in which 68.4% of women receiving ART desired children and it was consistent with study findings in Ethiopia, Mekele town (66.1%) (21). These differences may be explained by the socio-cultural differences between the countries and the differences in the study population with in the country; current study used both men and women as study participants and the trend change in awareness of people about mother to child transmission and prevention through time has created great opportunity for PLWHIV seeking for fertility. This suggests that fertility desire might change through time. So, it requires on-going attention as part of long-term care.

In this study 48.5% of the study participants intended to bear a child with in one year and less, while 34.7% of them intended to have a/another child two years later and the rest of them intended to have a child three years later and this result was higher than the research findings in Ontario, Canada in which 20% of women expected the pregnancies to be within one year, 12% between one and two years and 7% between two and four years (31). This might be related to lack of awareness on child spacing or higher expectation of a child in one's life. In this study, the major reasons of HIV positive women for a desire to have child was related to the value of children for current and future marriage (52.9%), sex preference of the child (41.1%), improved health with ease and access of ART service (38.9%), family or social expectation (38.2%), having no children at all (32.5%) and the rest includes different reasons like husband and peer pressure 87(31.1%) and among respondents whom didn't desire for fertility mentioned ; perception of that childbearing might further compromise self/partner's health status (67.9%), fear of mother to child transmission (49.3%), having desired number of children (44.8%) followed by inadequacy of income to bear another child (44.0%) and health care providers advise for the sake of one's health status (25.4%).These

mentioned reasons were almost similar with studies reported from Bale zone (50) , Nekemte (36) and Harari region (16) but vary in proportion. The difference in magnitude might be related to high proportion of fertility desire in current study.

Different studies indicated that a high proportion of HIV positive men and women desire for children. However their fertility desire was dependent on different factors besides their HIV status. Thus, age (20,39,41–45), marital status (42,46), educational status (21,39), number of live birth (48,49), discussion with ART providers (38, 41, 50), being voluntarily tested (44) living and having sex with a partner, HIV disclosure, good perceived health status and CD4 count ≥200 cells for both sexes (46), partner fertility desire (47) were strong determinants of fertility desire.

As with other studies, age was an important factor that was associated with fertility desire in PLWHIV. In this study, study participants in the age category 25-34 years (AOR: 3.67; 95% CI: 1.99, 11.24) and 35-44 years (AOR: 3.58; 95% CI: 1.18, 10.85) had a higher odds of fertility desire than those above 44 years. This finding was consistent with other study findings from Uganda, Brazil, Addis Ababa, Hawassa city, western Shewa and JUMC which stated that younger age in both sexes was associated with the desire for future childbearing (20,39,50–54). This shows that there is a higher expectation of child in adult age category.

Respondents who married (AOR: 11.74; 95% CI: 4.01, 34.34), single (AOR: 6.08; 95% CI: 2.28, 16.19), cohabiting (AOR: 3.32; 95% CI: 0.97, 11.29) were high likely to desire for fertility than participants who were widowed. Likewise, Study participants who had attended secondary education (AOR: 5.83; 95% CI: 1.82, 18.69) and higher education (AOR: 8.96; 95% CI: 2.68, 29.90) had more likely to desire for child than participants with low or no educational level. Similar studies from Ethiopia and Uganda (21,39) and other studies from Addis Ababa and Tanzania (42, 46) indicated that marital status and educational level were predictors for desiring fertility. PLWHIV who were married/single, have received primary or secondary education have a higher odds of fertility desire. This may be related to the expected norms and values of Ethiopian cultural society, where the main value of marriage is to bear child and replace oneself and to continue generation. The significant association of educational level with fertility desire suggests that the likelihood of increased awareness on HIV about its transmission, prevention ways, treatment options and care and this implies that clients who were in marriage and well educated might desire more, requiring an attention and appropriate care in order to address their RH needs.

Another important factor associated with fertility desire in our study was the number of children study participants have had. Regarding the current number children participants have and their fertility desire, For those participants who had no live child had almost four times higher to desire for a child than participants who had four and more children (AOR: 4.17; 95% CI: 1.67, 10.34) throughout their life. This is in line with research conducted on child spacing and fertility planning behaviour among women in Manna district, Jimma zone, that stated that not having live births and number of live children is the most important predictor of fertility (48) and study conducted in the Afar region of Northeast Ethiopia, which states that women who did not have living children and women with 1 or 2 children alive were (AOR = 5.1; 95% CI: 1.31-20.2) and 2.7 (AOR = 2.7; 95% CI: 1.39-5.27) more likely to express fertility desire than women who had more than two children, respectively (49) and it is also consistent with other studies from USA (34), Addis Ababa (42), Brazil (43), Tanzania (46), South Africa (51), Uganda (52) and Fiche hospital (47). This may be explained by the fact that those who had no children had strong desire for parenthood and desire for children to achieve their social status by being a father or a mother and to maintain their current or future marriage since it is considered as having a child among partners tighten the marriage and increase their belongingness. Partner's desire for fertility was also a predictor for the outcome of the study. In this study 46.8% of the participants reported that their partner desire and influence them for fertility, while 11.9% and 41.3% had no desire for fertility and had no partner respectively. This result was in line with study findings of fiche hospital and Bale zone (47,50).

Another factor related to fertility desire in this study was an improved health status after ART initiation. This implies that PWLHIV who reported their health status improved were more likely to desire for children than PLWHIV whose health status was not improved. This shows that many peoples decide to have a child when they feel better and healthier on ART and this result is consistent with a study conducted Tanzania (46) and Addis Ababa (30) which revealed an increased fertility desire with good perceived health status of study participants. This is because with improved health status there is less likelihood of occurrences of complications related to pregnancy and the disease status. Regarding knowledge of PMTCT study participants who have good knowledge about PMTCT had greater odds of fertility desire than those who have no knowledge. Accordingly, this study indicated a total of 386 (91.7%) of the study participants who knew about PMTCT. Out of them 82.3%, 78.7% and 76.6% and 59.4% of the study participants had knowledge of HIV transmission during

pregnancy, delivery, breast feeding and reduction of MTCT risk with ART drug respectively. This result was comparable to the study findings in Jimma University where 80.5% of the study participants knew about MTCT during breast feeding and 63.7% during pregnancy (45). However, this result is more than national survey which stated that 42% of women knew the transmission of HIV during breastfeeding and 47% knew minimization of risk of vertical transmission using ART (56).This difference might be related to study area, study methodology and study population in which the current study was specific to Jimma zone, which comprises of both male and female population. With regard to counselling, About 94.1% of the participants discuss about sexuality, child bearing and family planning and about 65.3% of them reported that the discussion was adequate and address the issues related to their reproductive health and HIV status but the least 25 (5.9%) didn't discuss about their RH issues. This result was consistent with study findings Finote selam and Bale zone (48, 50).This implied that clients who had fertility desire seek advice from service provider and had discussion to approve their desire in relation to their health status and their offspring before they engaged to child bearing issues. Regarding Socio-cultural factors influencing fertility desire of participants nearly half of the study participants explained that their sexual partner, family members and health care providers encourage them to engage in child bearing practice. This findings is consistent with study conducted in Nairobi Slums (22) which showed that fertility desire was complex and ambivalent, reflecting tensions between familial and societal pressures to have children and similar study in Ethiopia (fiche hospital) also reveal a significant association of fertility desire with partner fertility desire and community pressure (47). This reflects high societal value, pride and recognitions given for those who bear child. In this study participants who have good attitude about child bearing issues, have a greater odds of fertility desire than those having poor attitude. The positive attitude of study participants that showed significant association with fertility desire is related to having hopefulness to bear child and maintain normal life as every person which in turn related to access of treatment choice and care that minimizes HIV transmission and complications regardless of HIV status.

5.2. Conclusion

As far as desire for children is concerned, the present study showed that a large proportion (66.0%) of the HIV-positive individuals desired to have at least one child in future. The desire and intent to have children among HIV-infected individuals increased mainly because of improved quality of life and survival following initiation of antiretroviral treatment (ART) and high concern for reproduction being essential to life courses (10).Therefore, the fact that many HIV infected adults' desire and expect to have children has important implications for the prevention of vertical and heterosexual transmission of HIV and the future demand for social services for children born to infected parents. According to this study future fertility desire of PLHIV was independently associated with marital, educational and occupational status of the respondents, number of live births and amount of income they had and good self-attitude towards child bearing practice. Study participants who were adult, have no child or one child, married or cohabiting, literate, government employed and those who had adequate income desire more for children. Generally, the reproductive decisions made by PLHIV and their partners have long-term consequences for the survival and wellbeing of their families and society at large.

5.3. Recommendations

According to this study finding it is forecasted that there could be an increase in children born to parents living with HIV, thus there could be an increased demand for public health and social systems to ensure and offer appropriate care and support to these families and their babies. Hence, Health professionals who work with HIV positive women in HIV care and treatment units should play a crucial role to provide accurate, non-judgmental, reproductive health information and they and should strength counselling on reproductive issues and by providing adequate information on practicable reproductive options such as safer sexual practices in order to make an informed reproductive choice rather than risk taking. Members of the governmental and non-governmental organizations at regional, zonal and woreda level should work to address the reproductive needs of PLWHIVand HIV preventive strategies by designing different policies and programs that maximize their standards of living and which help to develop personal responsibilities among HIV pts.

An additionally attention should be given for both partners by encouraging communication between couples and involving men in family planning, and increasing men's commitment, and joint responsibility in all areas of sexual and reproductive health by sensitizing men to

gender issues. Furthermore, Fertility related services should be integrated with HIV/AIDS intervention programs in order to safeguard the health and welfare of PLWHAs and their offspring. RH services given for HIV positive individual should be given with special consideration for those who were adult, have no child or one child, married in relation cohabiting, literate, government employed and those who had adequate income. More emphasis and focus should also be given for psychological, medical and economic support for PLWHIV. Further this study should be conducted for future with inclusion of qualitative aspects of the subject matter.

LIMITATION OF THE STUDY

This study was expected to be prone to following limitations; since the respondents were asked about their history, and a recall bias was obvious. Additionally, due to healthcare workers' encouragement of individuals on ART to have a protected sexual practice and use of contraceptives, there might be a social desirability bias. The failure to support the study with a qualitative finding was also the limitation of this study.

STRENGTH OF THE STUDY

The involvement of males, who are a significant stakeholder of fertility desire in the study, was a strength of this study because only women are involved in most studies.

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ANNEX I

English Information Sheet and Consent Form

My name is _____. I am working as a data collector for the research being conducted to assess the magnitude of fertility desire and associated factors among attendants of ART clinic in public health facilities of Jimma zone, Southwest Ethiopia by **Yisak shewaye** who is a MPH student in GPH in the Faculty of Epidemiology, Jimma University. I kindly request you to lend me your attention to explain to you the study and study participants.

The objective of the study: To assess the magnitude of fertility desire and associated factors among attendants of ART clinics in public health facilities of Jimma zone, Southwest Ethiopia, July 8-August 9 /2022 G.c

Purpose of the study: The main aim of this study is to write a thesis as a partial requirement for the fulfilment of a master's degree in GPH for the principal investigator. The result of the study will be used as evidence and input for woreda health Office, Zonal health department, RHB and other governmental and non-governmental organizations working in the area. Moreover, it is important to fill the information gap and provide empirical evidence for program planners, and decision-makers at different levels by enabling them to access baseline data on HIV/AIDS prevention and control strategies in line with reproductive needs of HIV patients.

Procedure and duration: The data collectors will collect the necessary information from clients using structured data extraction tools to have pertinent data that is helpful for the study. The duration of data collection will be one month.

Risk: The study will not have any physical, social and economic risk to participants except a very minimal psychological/emotional discomfort.

Benefit: The research has direct benefit to those who have participated in this project and also, the indirect benefit of the research for the all-other community in the program is great. As identifying areas of improvement and taking appropriate actions and decisions helps to improve the service, increase access and overall effectiveness of the program and reduce the risks transmission of HIV.

Confidentiality: The information acquired from the participant will be confidential. There will be no information that will identify in particular. The findings of the study will be

general for the study population and will not reflect anything, particularly of individual persons.

The data extraction tools will be coded to exclude showing names and other personal information. No reference will be made in oral or written reports that could link participants to the study.

Rights to refusal or Withdrawal: Giving permission for this study is fully voluntary. You have the right to permit or not for this study. If you decide to permit the study, you have the right to terminate the study at any time if you consider something related to the study is wrong.

Contact address: This research project will be reviewed and approved by the IRB of the Institute of Health, Jimma University. If in any case, you want to know more information about the research and its undertakings, you can contact the committee through the address of the principal investigator.

Principal investigator: Yisak shewaye, Mobile phone: +251-932019906

E-mail: shewayisamph2022gc@gmail.com

Declaration of Informed Voluntary Consent:

I have read/was read the participant information sheet. I have clearly understood the purpose of the research, the procedures, the risks and benefits, issues of confidentiality, the right of participation, and the contact address for any queries. I have been allowed to ask any questions about things that may have been unclear. I was informed that I can terminate the study at any time. Therefore, I declare my voluntary consent to permit the study to be conducted in with my signature as indicated below.

Participant Name: ____ Signature: _____ate: _____

Interviewer Name ---------Signature----------Date---------

Supervisor Name ----------Signature--------- Date----------

Thank you for your cooperation!

ASSURANCE OF PRINCIPAL INVESTIGATOR

The undersigned agrees to accept responsibility for the scientific, ethical, and technical conduct of the research project and for the provision of required progress reports as per terms and conditions of the Faculty of Public Health in effect at the time of grant is forwarded as the result of this application.

Name of the student: **Yisak Shewaye Gumbul**

Date: 09/06/2022 Signature: _____

Approval of advisor(s)

Mr. Teshome Kebeta (BSc, MPH, Asst. Professor)

Date: _____ Signature: _____

Mr. Abrham Lomboro (BSc, MPH)

Date: _____signature_____

Approval internal examiner

Name: Mr. Yohannis Zewudu (BSc, MPH)

Date: _____signature_____

Approval of external examiner

Name of examiner _____

Date: _____signature_____

English Version Questionnaire

Name of the institution----------Address of the institution------- Institution code No ----------

Participant code.....

General Instruction: On this questionnaire, there is no need to write the name or the Addresses of the respondents. Ask each question exactly as it is written on the questionnaire and Circle the response that best matches the answer of the respondent. Ask the client if and only if she is in RH age group, volunteer to participate and give consent. But if the client is unwilling to participate, go to the next participant.

Questions

Part I. Socio Demographic & Economic conditions

No.	Question	Responses	Remark/Skip to
100	Where is your residence	1.Urban 2 Rural	
101	How old are you?	_____in complete years	
102	Sex?	1. Male 2. Female	
103	What is your religion?	1. Muslim 2. Orthodox 3. Protestant 4. Others (specify)----------	
104	What is you educational level?	1.can't read and write 2. Can read and write 3. Primary 4. Secondary 5. College/university	

105	What is your ethnicity	1. Oromo 2. Amhara 3. Yem 4. Kefa 5. Gurage 6. Dawuro 7. Tigre 8. Other (specify)_____	
106	What is your current marital /relationship status?	1. Married 2. Single/never married 3. Widow/widowed 4. Divorced or separated 5. Cohabiting/partner	
107	What is your current occupation?	1. Farmer 2. House wife 3. Merchant 4. Governmental employee 5. Day labourer 6. Student 7. Other (specify	
108	What is your monthly total house hold income?	_____Eth.Birr 1.No income 2.Don't know 4.Other (specify	

Part II. Information on Child/Fertility Desire

No.	***Question***	***Responses***	
201	How many live births have you had in your Life?	1._____Live births 2.I did not give birth at all 3. I do not have any live birth 4. No response	
202	How many live children do you have currently?	1. ____Male 2. ____Female	
203	Would you like to have children in the future?	1. Yes 2. No 3. Don't know/not decided	If no → Q 206
204	If the answer for question'203' yes, How many (more) children would you like to have in the future?	1. one 2. Two 3. three	

		4. more than three	
205	When did you like to have another child?	1._____moths later 2._____years later	
206	If the answer in question'203' is 'yes' reasons for wanting (more) children in the future	1. Have no child before 2. Children are an important part of marriage, either for present or future marriage 3. Original desires for chil dbearing unchanged by HIV 4. Improved health with ART 5. Sex preference for children 6. Desire for HIV-negative child 7. Husband pressure 8. Peer pressure 9. Family/Social expectation	
207	If the answer for question '203' is no why you do not want to have children in the future?	1. Have desired number of children 2. Fear of mother to child HIV transmission risk 3. Don't have adequate income to add another child 4. Health care providers advise not to have a child 5. Child bearing may further compromise my/my partner health	
208	Does your husband /wife/ partner want to have a child in the future?	1. Yes 2. No 3. Do not know 4. Don't have partner	

209	Have you ever been pregnant after you had known your HIV status?	1. Yes 2. No	
210	Have you ever experienced a pregnancy terminated with abortion, still birth?	1.Yes 2.No 3.I don't remember 4.Unwilling to respond	
211	Have you (your partner) ever used family planning method after HIV diagnosis?	1. Yes 2. No 3. Don't remember	If no → Q 215
212	If yes for Q211 specify the method you /your partner used?(More than one answer can be possible)	1. Abstained from sex 2. Condom 3. Pill (Ocp) 4. Injectable 5. IUD 6. Implants 7. Tuba legation /Vasectomy 8. No response	
213	Have you had sexual Intercourse In the past six months?	1. Yes 2. No	If no → Q2014
214	(If yes for Q 213) Have you used condom?	1. Yes 2. No 3. I don't remember 4. No response	
215	If no to Q no 211 what are the reasons for not using contraceptives? (More than one is possible)	1. Fear of side effects 2. Husband/partner opposed 3. Parents opposed 4. Religious Prohibition 5. Lack of knowledge 6. Service not available	

		7.Others specify_____	

Part III Information on Knowledge level of PMTCT

301	Does HIV transmit from mother to child?	1. Yes 2. No 3. Don't know	If no → Q 306
302	If you response in question 301 is yes when do you think dose HIV transmissions occur from mother to child?	1. During pregnancy 2. During labor 3. Through breastfeeding 4. I don't know	
303	Is there any medication, which may help to prevent mother to child HIV transmission?	1. Yes 2. No 3. Don't know	
304	From where did you get the information about mother to child HIV transmission and prevention?	1. Mass media 2. Health professionals 3. From Health Extension worker 4. From friends	
305	Do you think medication provided to reduce mother to child HIV transmission actually reduce the transmission?	1. Yes 2. No 3. Don't know	

306	Did you know/heard about PMTCT services?	1.yes 2. No	If no → Q 309
307	If yes to Qno.306, what are the preventive mechanisms of mother to child transmission of HIV /AIDS?	1. Early initiation of ART 2. Adherence to ART drugs 3.Institutional safe delivery service as per protocol 4.Exclusive breast feeding while adhering to ART	
308	If yes to Qno.306, what are the four prong approaches to prevention of mother to child transmission?	1. Primary Prevention of HIV among Parents 2. Prevention of Unintended Pregnancies among HIV-Positive Women 3. Prevention of Transmission from HIV-Positive Women to the Infants 4. Follow-up for and Linkages to Long-term Prevention, Care, and Support Services for Mothers, their Children, and the Families(PMTCT-Plus)	
309	If Yes to Q no. 306, Could you say that your awareness on PMTCT service has changed your decision to have a desire for children?	1. Yes 2. No	

310	If you could go back to the time, when you were very sick and feel unhealthy what was your desire for children at that time?	1. No desire at all 2. Have a desire for children 3. Don't know 4. Don't remember 5. Others specify_____	
311	Does your exposure to HIV education changed your decision about fertility desire and level of knowledge about PMTCT?	1.Yes 2.No	

Part IV Information on HIV /AIDS and treatment conditions

No.	Question	Responses	Skip
400.	How did you know your HIV status?	1.PICT 2.VCT 3.HIVST	
401	How many years / months since HIV diagnosis?	1.____Months or ____ years 2.Don't remember	
402	Have you stared ART service	1.Yes2.No	If no → Q 405
403	How long is you have been started ART?	1. Less than one year 2. 1-4 years 3. 5-9 Years 4. > 10 years	
404	If your answer in Q 402 is yes when did you start receiving ARV treatment?	1. Before ___ month or ___years 2. Don't remember	
405	Does your husband /wife /partner tested for HIV?	1. Yes 2. No 3. Do not know	If no→ Q 407

406	If your answer in question 405 is 'yes' what was his /her test result?	1. Negative 2. Positive 3. I do not know	
407	Did you disclose your sero status to your partner?	1. Yes 2.No 3.No partner	
408	If no to Q 407, What is the reason?	Explain_____	
409	How is your overall health condition after you start receiving ART?	1. Improve 2. No change 3. Aggravated/Deteriorated	
410	Could you remember your current CD4 count?	1.yes _____2.No	If no refer register
411	Have you checked for viral load recently?	1. Yes 2. No	If yes refer register
412	If yes to Q 412, in which category it is?	1. TND 2. less than 20 copies 3. greater than 20 copies	
413	Did Your counsellor /ART provider discuss about sexuality, child bearing and family planning?	1.Yes 2. No	
414	If yes for question 407,did your counsellor/ART provider adequately cover issues like childbearing, sexuality and family planning	1. Yes 2. No 3. Don't know 4. No response	

V. Information on Socio- cultural issues

501	What is your attitude regarding child bearing issues in relation to your culture?	1.very Good 2.good 3.poor	
502	Does your sexual partner/peer encourage you to engage in child bearing practice?	1.yes 2.no 3.totaly avoid it 4.Idon.t know	
503	Does your family member encourage you to have more children?	1.yes 3.Idon't know 2.no	
504	How does your community perceive when peoples like you engage in child bearing practice?	1.encoarage 2.discoarage 3.Idon't know	
504	How does a health care provider perceive when peoples like you engage in child bearing practice?	1.encoarage/support 2.discoarage/advice to avoid it 3.nither support nor avoid it 4.I don't know	

ANNEX II

AMHARIC INFORMATION SHEET

የ ሚ ጃ ማከየ ቂያ ቅፅ

ጤናይስጥልኝስሜ.....ይባላለሁ፡፡ በጥናቱውስጥበመረጃሰብሳቢነኝ፡፡ ጥናቱ የይስሀቅ ሽዋዬ በጅማ ዩንቨርስቲ ህብረተሰብ ጤና እንስቲቱት የኢፒደሞሎጅ የትምህርትክፍል የድህረምረቃኝ ሮግራምማሟያሲሆን የጥናት ዋነኛ አላማ የፀረ- ኤች አይቪ ኤድስ መድሀኒት የሚከታተሉ ሰዎች የደፊት ልጅ የመዉለድ ፍላጎት እና ተያያዥ ምክኒያቶችን ለማወቅ የሚደረግ ጥናት ነዉ ፡፡

የጥናቱ ርዕስ፡- የፀረ ኤች አይቪ ኤድስ ህክምና መስጫ ክፍል ተከታታይ ህክምና የሚያደርጉ ከኤች አይቪ ቫይረስ ጋር የሚኖሩ ሰዎች የወደፊት ልጅ የመዉለድ ፍላጎት እና ተያያዥ ምክኒያቶችን ላይ ጥናት ማድረግ ቃለመጠይቅ እያደረግን ነው ፡፡ ይህ ጥናት ከኤች አይቪ ቫይረስ ጋር የሚኖሩናየፀረ ኤች አይቪ ኤድስ ህክምና ለሚከታተሉ ሰዎች የወልድ ፍላጎትና አገልግሎት አሰጣት ላይ ለውጥ ያመጣል ብለን እናምናለን ፡፡ ስምዎም ሆነ ሌሎች ግላዊ ነገሮች በዚህ መጠይቅ ዉስጥ የማይጠቀስ መሆኑንና በቃለ መጠይቁ የሚሰጡንመረጃ ሁሉ በሚስጥር ተይዞ ለጥናት አገልግሎት ብቻ የሚዉል መሆኑንላረጋግጠልዎ እወዳለሁ ፡፡ ይህ ጥናት ምንም አይነትአካላዊ ኢኮኖሚያዊና ማህበራዊ ችግሮችን አያስከትልም ፡፡ነገር ግን በጣም ባነሰ ሁኔታ የስነልቦና ተጽኖ ሊደርስ ይችላል፡፡ በዚህ ጥናት ላይ የመሳተፍ ያለመሳተፍ ወይም በማንኛዉም ሰአት አቋረጦ የመዉጣት ሙሉ መብትዎ የተረጋገጠነው ነገር ግን እርስዎ በጥናቱ ተሳትፈው የሚሰጡን መረጃ ጥናቱን ዉጠታማ ለማድረገና ጉዳዩን የሚመለከታቸው አካላት ከኤች አይቪ ቫረስ ጋር ለሚኖሩ ሰዎች የወልድ አገልግሎት አሰጣት ላይና የኤች አይቪ ኤድስ በሽታ መከላከያ መንገዶች ግንዛቤ ላይ ለውጥ ለማምጣት ጠቀሜታአለውቃሌመጠይቁ ከ15 እስከ 25 ደቂቃ ሊፈጅ ይችላል፡፡

አሁን በዘህ ጥናት ዉስጥ ለመሳተፍ ይስማማሉ?

አዎ እስማማለሁ..... 2. አይ አልስማማም

ከተስማሙ ቃለ መጠይቁን ይቀጥሉ፤ካልተስማሙ ወደ ቀጣይ ተጠያቅ ይለፉ ተሳታፊዉን አመስግነው ቃለ መጠይቁን ያጠቃልሉ፡፡

የ ጤያ ቂዉስ ም.....ፊር ማ.....ቀን

የ ተጠቆ ጣጣሪ ዉስ ም.....ፊር ማ.....ቀን

የአማርኛመጠይቆች

በጅማዞንአስተዳደርበተመረጡየጤናተቋማትላይየፀረኤችአይቪመድሀኒትየሚከታተሉሰዎችለወደፊትል ጅየመዉለድፍላጎትእናተያያዥምክኒያቶችንለማወቅለሚደረገውጥናትየተዘጋጀመጠይቅ.

የተቋሙዓይነት--------- የተቋሙስም ----------የተቋሙአድራሻ----------

የተጠያቂውመለያቁጥር ----------

አጠቃላይመመሪያ፡በዚህቃለመጠይቅየተጠያቂውንስምምሆነአድራሻመፃፍአያስፈልግም።በዚህጥናትዕ ድሚያቸውከ 15-49
ዓመትየሆናቸውእናፈቃደኛየሆኑሴቶችናወንዶችይሳተፋሉ።ለእያንዳንዱዝርዝርጥያቄዎችበቅደምተከተ ልመሰረትበመጠየቅትክክለኛውንመልስበማክበብመሙላት።

ክፍልአንድ፡ማህበራዊ፣ስነህዝባዊእናኢኮኖሚያዊሁኔታዎች

ጥ. ቁ	ጥያቄ	ምላሽ	ማጣቀሻ/ዝለል
100	የመኖሪያአድራሻ	1. ከተማ 2. ገጠር	
101	ዕድሜዎትስንትነው ?	_____በዓመት	
102	ጾታ	1.ሴት 2.ወንድ	
103	ሐይማኖትዎምንድንነው ?	1. ኦርቶዶክስ 2. ሙስሊም 3. ፕሮቲስታንት 4. ካቶሊክ 5. ሌላከሆነይገለፅ	
104	የትምህርትደረጃ	1. ያልተማረ	

		2. ማንበብናመፃፍየሚችል 3. አንደኛደረጃት/ቤት 4. ሁለተኛደረጃት/ቤት 5. ኮለጅ / ዩንቬርስቲ	
105	ብሔር	1.ኦሮሞ 2.አማራ3.የም 4.ከፋ 5. ጉራጌ 6.ዳዉሮ 7.ትግሬ 8.ሌላከሆነይገለፅ_____	
106	የጋብቻሁኔታ	1.ያገባ2. ያላገባ 3. በጓደኝነትአብሮየሚኖር 4. ተለያይተውየሚኖሩ 5. የተፋታ 6. ባልየሞተባት	
107	ስራዎምንድንነው ?	1. ገበርና 2. የቤትእመቤት 3. ነጋዴ/የግልስራ 4.የመንግስት/መንግስታዊያልሆነቅጥርሰራተኛ 5. የቀንሰራተኛ 6. ተማሪ 7. ሴተኛአዳሪ8.ሌላካለይገለፅ_____	
108	ጠቅላላየቤተሰብወርሀዊገቢበብርስን ትይሆናል?	1.ብር _____(በማጠጋጋት) 2. ገቢየለንም 3. አላወኩም	

ክፍል፡ ሁለትስለስነተዋለዶጤናሁኔታ

ጥ.ቁ	ጥያቄ	ምላሽ	ማጣቀሻ/ዝለል
201	በህይወትየተወለዱ/የወለዷቸውልጆችስን ትናቸው?	1. ----------በቁጥር 2. ምንምልጅአልወለደኩም 3. በህይወትየወለድኳቸዉልጆችየሉም 4. መልስየለም	
202	በአሁኑሰዓትበህይወትያሉስንትልጆችአለ ዎት?	1. ሴት..... 2. ወንድ.....	
203	ለወደፊትልጅ/ተጨማሪልጆችእንዲኖርዎ ትይፈልጋሉ?	1. አዎ 2. አልፈልግም	አልፈልግ ምከሆነ ጥያቄ 206
204	ለጥያቄቁጥር 203 መልስዎአዎከሆነወደፊትስንትልጆችእንዲ ኖርዎትይፈልጋሉ?	1. ----------በቁጥር 2. ወንድ------- 3. ሴት----	
205	ለጥያቄቁጥር 203 መልስዎአዎከሆነልጅእንዲኖርዎትየፈለጉ በትምክኒያትምንድንነው? (ከአንድበላይመልስይቻላል)	1. ምንምልጅስለለኝ 2. ልጆችየትዳርመልካምፍሬዎች ስለሆኑ 3. መሠረታዊየልጅፍላጎትበኤች አይቪስለማይለወጥ 4. የኤችአይቪኤድስመድሃኒትም ክንያትጠናየስለተሻሻሌ 5. ጸታንመሰረትያደረገየልጅፍላ ጎት 6. ከኤችአይቪነፃየሆነልጅመውለ ድስለሚቻል 7.የባለቤቴፍላጎት/ግፊት 8. በጓደኞችግፊት 9. የቤተሰብፍላጎት/የማሁበረሰቡግፊት 10. ሌላካለይገለፅ----------	
206	ለጥያቄቁጥር 203 መልስዎአልፈልግምከሆነለወደፊትልጅ/ተ ጨማሪልጆችእንዲኖርዎትያልፈለጉበትም ክንያትምንድነው	6. የምፈልገውንያክልልጅስላለኝ 7. ከእናትወደልጅበሽታውእንዳ ይተላሌፍበመስጋት 8. በቂገቢስለለኝ 9. የጤናባለሙያዎችልጅእንዳል ወልድስለመከሩኝ 10. ልጅመዉለድየራሴንናየትዳር አጋሬንጤናስለሚያባብስ	

207	የትዳርአጋሮሌላተጨማሪልጅእንድኖሯች ውይፈልጋሉ	1. አዎ 2. አይደለም	
208	ኤችይቪኤድስበደሞመኖሩንካወቁበኃላአ ርግዘው /ልጅወልደውያውቃሉ	1. አዎ 2. አይደለም	
209	በህይወትዎየእርግዝናመጨናገፍወይምህ ይወትየለለውልጅወልደውያዉቃሉ	1. አዎ 2. አይደለም	
210	ኤችአይቪበደማቸውመኖሩንካረጋገጡበ ኃላበአሁኑሰዓት / ከዚህበፊትእርሶ/ የትዳርአጋሮየወሊድመቆጣጠሪያዘዴተጠ ቅመውያዉቃሉ	1. አዎ 2. አልጠቀምም	መልስዎአ ልጠቀም ምከሆነ➔ ቁ. 214
211	መልስዎአዎከሆነከሚከተሉትውስጥየትኛ ውንዓይነትየወሊድመቆጣጠሪያዘዴይጠ ቀማሉ	1.ክኒን 2. መርፌ 3. በክንድላይየሚቀበር 4. ኮንደም 5. በማህፀንውስጥየሚቀመጥ 6. ሌላካሌይገለጽ.....	
212	ባለፉትስድስትወራትውስጥከተቃራኒፆታ ጋርወሲባዊግንኙነት	1. አዎ 2. አይደለም	
213	ለጥያቄተራቁጥር 212 መለስዎከሆነበሴአቱኮንድምተጠቅመዋ ል	1. አዎ 2. አይደለም	
214	የወሊድመቆጣጠሪያዘዴላለመጠቀምም ክኒያትዎምንድንነው(ከአንድበላይመልስይቻላል)	1. መድሀኒቱንጎንዮሽጉዳትበመፍራት 2. ባለቤቴስለተቃወመ 3. የቤተሰብተቃውሞ 4. የሀይማኖትተፅዕኖ 5. የዕውቀትማነስ 6. አገልግሎቱአለመኖር 7. ሌላካለይገለፅ----------	

<u>ክፍልሶስት፡የኤችአይቪኤድስበሽታከእናትወደልጅመተላለፊያናመከላከያመንገዶችግንዛቤንበ ተመለከተ</u>

ጥ.ቁ	ጥያቄ	መለስ	ዝለል
301	የኤችአይቪኤድስበሽታከእናትወደልጅይተላለፋል	1. አዎ 2. አይተላለፍም	
302	ለጥያቄተራቁጥር 301 መልስዎአዎከሆነ በሽታውከእናትወደልጅየሚተላለፈውመቼመቼነው	1. በእርግዝናጊዜ 2. በምጥ /በወልድጊዜ 3. ጡትበሚያጥቡበትጊዜ	
303	የኤችአይቪኤድስበሽታከእናትወደልጅእንዳይተላለፍየ ሚረዳመድሀኒትእንዳሌያውቃሉ	1. አዎ 2. አይደለም	
304	ለጥያቄተራቁጥር 301 መልስዎአዎከሆነ ስለዚህመረጃዉንያገኙትከየትነው	5. ከሬድዮ/ቴለቪዥን 6. ከጤናባለሙያዎች 7. ከጤናኤክስተንሽን 8. ከጓደኛ	
305	የኤችአይቪኤድስበሽታከእናትወደልጅእንዳይተላለፍየ ሚረዳመድሀኒትበእርግጥኝነትበሽታውንስርጭትይቀን ሳልብለውያስባሉ	1. አዎ 2. አይደለም	
306	የኤችአይቪኤድስበሽታከእናትወደልጅእንዳይተላለፍመ ከላከያመንገዶችንያውቃሉ	1. አዎ 2. አይደለም	መልስአ ይደለም ከሆነ▶ ጥ. 309
307	ለጥያቄተራቁ.306 መልስዎአዎከሆነየኤችአይቪኤድስበሽታከእናትወደልጅ እንዳይተላለፍመከላከያመንገዶችንምንምንድንናቸው	1. ልክበሽታውእነደታ ወቀመድኃኒትመጀ መር 2. መድኃኒቱንሳያቋር ጡመከታተል 3. በጤናተቋምመዉለ ድ 4. መድኃኒቱንሳያቋር ጡእየተከታተሉጡ ትብቻማጥባት	

308	ለጥያቄተራቁ.306 መልስዎአዎከሆነየኤችአይቪኤድስበሽታከእናትወደልጅ እንዳይተላለፍመከላከያመንገዶችንማወቆ ለሌላልጅየመዉለድፍላጎትእነድኖሯትአድርጎታል	1. አዎ 2. አይደለም	
309	ወደኋላያለውንጊዜበማስታወስእርስዎበህመምላይእያ ሉእናጤንነትዎሳይሻሻልበነበረበትጊዜልጅየመውለድፍላ ጎትነበረዎት?	1. ምንምፍላጎት 2. ፍላጎትነበረኝ 3. አላውቀውም 4. አላስታውስም 5. ሌላካለይገለፅ----------	

<u>ክፍልአራት፡ከኤችአይቪጋርየተያያዘየጤናሁኔታ</u>

401	የኤችአይቪፖዘቲቭመሆንዎንካረጋገጡስንትጊዜይሆናል?	1. ከ 1 ዓመትበታች 2. ከ 1-4 ዓመት 3. ከ 5-9 ዓመት 4. ከ 10 ዓመትበላይ	
402	የፀረ-ኤችአይቪመድሀኒትመውሰድጀምረዋል	1. አዎ 2. አይደለም	
403	የፀረ-ኤችአይቪመድሀኒትመውሰድከጀመሩስንትጊዜይሆናል?	1. ከ 1 ዓመትበታች 2. ከ 1-4 ዓመት 3. ከ 5-9 ዓመት 4. ከ 10 ዓመትበላይ	
404	ለጥያቄተራቁ.402 መልስዎአዎከሆነየፀረ-ኤችአይቪመድሀኒትመውሰድመቼጀመሩ	3. ከ___ ወርበፊት 4. ከ___ አመት በፊት	

		5. አላስተውስም	
405	የባለቤትዎንኤችአይቪሁኔታያውቃሉ?	1. አዎ 2. አላውቅም 3. ሌላካለይገለፅ----------	አላውቅምከሆነጥያቄ407
406	ለጥያቄቁጥር 405 መልስዎአዎከሆነየባለቤትዎኤችአይቪሁኔታ (ውጤት) ምንድንነው?	1. ኤችአይቪአለበት 2. ኤችአይቪየለበትም	
407	የእርስዎንኤችአይቪውጤትለባለቤትዎአሳውቀዋል?	1. አዎ 2. አላሳወቁም	
408	ለጥያቄቁጥር 407 መልስዎአላሳወቁምከሆነምክኒያትዎምንድንነው?	ይገለጽ.....	
409	የፀረ-ኤችአይቪመድሀኒትመውስድከመጀመርዎበፊትእናአሁንመውሰድከጀመሩበኋላያለዎትየጤናሁኔታእንዴትይገልፁታል?	1. ጥሩለውጥአለ 2. በመጠኑለውጥአለ 3. ምንምለውጥየለውም 4.የባሰእየታመመኩነው	
410	የ “CD4” መጠንዎንበቅርቡተለክተውያውቃሉ	1. አዎ 2. አላወኩም	አዎከሆነከመዝገብያረጋግጡ
411	የጤናባለሙያዎችእናአገልግሎትሰጭዎችኤችአይቪላለባቸውሰዎችበስነተዋልዶጤናዙሪያበቂመረጃምክርይሰጣሉ	1. አዎ 2. አይደለም	
412	ለጥያቄቁጥር 411 መልስዎአዎከሆነየጤናባለሙያዎችእናአገልግሎትሰጭዎችኤችአይቪላለባቸውሰዎችስለወልድናመሰልጉዳዮችየምሰጡትምክርበቂነውብለውያስባሉ	1. አዎ 2. አይደለም	
41	ባጠቃላይየጤናባለሙያዎችእናአገልግሎትሰጭዎችኤችአይቪያለባቸውሰዎችልጅመዉለድጋርያላቸውእይታምንይመስላል	1. ጥሩአመለካ	

3		2 ከትአላቸው. የተዛባ አመለካከትአላቸው	

<u>ክፍልአምስትማህበራዊናባህላዊጉዳዮች</u>

ኮድ	ጥያቄ	መልስ	ዝለል
501	ከራሰዎባህልአንጻርልጅመውለድናስለልጅያላቸውአመለካከትምንይመስላል	1. በጣምጥሩ 2. ጥሩ 3. አናሳ	
502	የትዳርአጋሮ / ቅርብጓደኛዎልጅእንድኖሮት ያበረታታሉ	1.አዎ 2.አይደለም	
503	የቅርብዘመዶ /በቴሰቦልጅእንድወልዱያበረታታሉ	1.አዎ 2.አይደለም	
504	እንዴእርሶየመሳሰሉሰዎችልጅየመዉለድ ሂደትዉስጥስገቡማህበረሰቡእነዴትይመለከተዋል	1. ያበረታታል 2. አየበረታቱም 3. አላዉቅም	
505	እንዴእርሶየመሳሰሉሰዎችልጅየመዉለድ ሂደትዉስጥስገቡየጤናባለሙያዎችያላቸውአመለካከትእነዴትነው	1. ያበረታታል 2. አያበረታቱም 3. አያበረታቱምም/አይከለክሉምም 4. አላዉቅም	

እጅግ በጣም እናመሰገናለን!!!

ANNEX III

Guca waliigaltee

Kaamjirtu?An maqaankoo _____jedhama. An raga qorannoofedhailmoogodhachuu funaanaanjira.Hospitaala/Buufatafayyaawaldhaansadhukkuba HIV kennu _____tti. Annamotadhibee HIV waliinjiraniifi qorichaisaa fudhachaajiranii fi fedhailmoogodhachuuf raga funaanaajira.

Odeeffannoonwaa'eekeeibsumaqaafikanbiroiyyaafannookana irrattikanhindabalamnee fiqaamaabiraafdabarfameekanhinkennamnedha. Qorannoonkun midhaaqaamaa, xiinsammuu, hawaasummaa fi dinagdeekamiyyusirraanhin gaeessifne dha miira xiqqoo xiinsammuu irraa kan hafe.odeeffannoo kan kennuu irraatti hirmaachuu dhiisuufi addaan kutuuf zero kamittuu mirga guutuu qabdu.Garuu odeeffannoon sin kennitan kaayyoo qorannoo kana galmaan ga'uufi qaama addaa addaa akkasumas qorattoota sagantaa jijjiirraa fedha ilmoo godhachuu fi kenninsa tajaajila namoota dhibee HIV fooyyeessuuf ga'ee guddaa qaba.iyyaafannoon kun daqiiqaa 15 hanga 25 fudhachuu danda'a.amma yoo sinitti tole iyyaafannoo kana irratti hirmaachuu barbaadduu?

1. **Tole nan hirmaadha ……**
2. **lakki hin hirmaadhu. ……..**

Galatoomaa!

MaqaaGaafataa----------Mallatoo---------Guyyaagaafii----------

Maqaato'ataa----------Mallatoo---------- Guyyaagaafii…….

KallattiiWoliigalaa

Afgaafannoo kana keessatti maqaa deebii kennaa barreessuuh inbarbaachisu. TokkoontokkooGaaffiiakkataabarreeffameensirriittigaafadhuudeebiisirriidhajedhametti Mari. Gaafanno kana KangaafattuyoogaafatamtuunUmuriiwolhormaataakeessattiargamtee Fi hirmaachuuffedhiiqabatteqofa.

YoofedhiihirmaachuufhinqabnegaraGaafatamaalammaffaattidarbi.

Lakk	Gaafilee	Deebi	Irradarbi
100	Iddoonjireenyakeetiieessa?.	1. Magaalaa 2. Baadiyyaa	
101	Umriinkeessanwaggaameeqa?	_____umriigutuudhanibsa	
102	SaalaGaafatamaa	1. Dhira 2. Dhalaa	
103	Amantaankeessanmaali?	1. Muslima 2. Ortodoksii 3. Protestantii 4. Kanbirraa.ibsa_____	
104	Sadarkaabarnootakessan?	1. Dubissu fi barressukandanda'u 2. Dubissu fi barressukanhindanda'u 3. Sadarkaatokkoffaa 4. Sadarkalammaffaa 5. coollegii/Yunuvesitti	
105	Saba (shanyiin) Keessanmaali?	1. Oromoo 2. Harari 3. Amhara 4. Gurage 5. Somale 6. Tigra 7.kan bira,ibsa_____	
106	Fuudha/Heerumakeessan?	1. Kanfudhe/fuute 2. Hifune /Kophaa 3. Maattinkanirraadu'ee/Dute 4. Walhikna/Addaan bane 5. Oddowalhinfudhinwalinjiranna 6. Debbinhinjiruu	
107	Yerooammahojinkessanmaali?	1. Qoteebulaa 2. Haadhamanaa 3. Daldalla/daldaltu 4. Qaxaramaamottumma/dhunfaa 5. Hojataaguyyaa 6. Barataa/tu 7. Kanbira, ibsa_____	
108	Galiinji'atiwaligalameqaa?	1. _____Qarshiitophiya 2. Galiihinqabu 3. Galiikiyyahinbeku 4. Kanbira,ibsa_____	

Kutaa II: Odeeffaannoofedhiihormaataa

Lakk.	Gaafillee	Debii	
201	Umrikettitijolleemeqaadhaltee?	1. _____jolleedhalaman 2. Gonkumayyuhindhalle 3. Jollelubbunhinqabu 4. Deininger	
202	Yerooammajolleemeqaqabdu?	1. _____dhira 2. _____dhalaa	
203	Fuuldurafjolledhalunibarbadani?	1. Eyyeen 2. Hinbarbadu 3. Hinbeku/hinmurtesine	Lakkii → G,206
204	Gaafindebii 203 eyyeenyota'ejollemaqadhalubarbadan?	1. _____ dhiraafidhalaa 2. _____dhira 3. _____dhalaa	
205	Gaffindabii 203 eyyeenyota'emaalifdhalubarbaadan?	1. Amman durajolleewaninhinqabnef. 2. Jollenfudhafiherumaf wan barbachisata'aanif 3. Dhukuba HIV tiiqababuunkiyaafadhidhalailaanifqabuhinjijiramne. 4. Sababifarra HIV tiinfayyaanko wan foya'ef 5. Saalabiraawaninbarbaduf 6. Ijolledhukuba HIV hinqababne wan barbaduf	
206	Gaffindabii 203 Hinbarbaaduyota'emaalifdhaluhinbarbaadane?	1. Ijolleega'aawaninqabuuf 2. Dadarbu HIV garaimmantiiwaninsodadhuf 3. Galliinkiyaaxiqaawaanta'eef 4. Hojatoonnifayyaakkailmaandhaluhinqabne wan nagorsanif 5. Ijolleedhalunfayyaakiyyaa wan hammessuf 6. Debiinhinjiru	

207	Abbaan /haatimanaakessanijolledhalunibarbadani?	1. Eyyeen 2. Hinbarbaadu/ddu 3. Hinbekkuu 4. Abbaa /haadhamanahinqabu 5. Debiihinjiru	
208	Ammaulfeyatanijirtu?	1. Eyyeen 2. Hinulfoyne	
209	Ammaanduraulfaatniissinnirra cite nibeka	1. Eyyeen 2. Cite hinbekku 3. Hinyadedhu 4. Debiihinjiru	
210	Erga HIV qabaachukeebeektebooda qusannomaatiifayyadamtertaa?	1. Eyyeen 2. Hinfayadamne 3. Hinyadedhu 4. Debiihinjiru	Lakkiiyootaye G,214
211	Gaffiindebii 210 eyyeenyota'equssannamaatigosaakkamifayadamterraa?dab'iitokkooldebisuunnidanda'ama	1. Walqunamittiqamasaaladhisuu 2. Koondomii 3. Kiniinaulfadhorku 4. Lilmeedhankankennamu 5. Gadammessattikanka'amu 6. Implaantii 7. Ujumoocuufu/vasectomy 8. Debiihinjiru 9.kan bira,ibsa_____	
212	Ji'a 6 darbeekessattiwalqunamtiiqamasaalagotaninibektu?	1. Eyyeen 2. Lakkii 3. Debiihinjiruu 4. Kanbira,ibsa_____	Lakkiiyootaye G214
213	Gaffiindebii 212 eyyeenyota'ekondoomifayadamanirru?	1. Eyyeen 2. Lakkii 3. Hinyadadhu 4. Debiihinjiruu 5.kan bira,ibsa_____	
214	YoodeebiiGaaffii 210 lakkiita'esababniKarooraMaatiifayyadamuudhabuumaalture? (Deebiitokkooolnidanda'ama)	1) Miidhaafaayidaabukkee 2) Abbanworraawaanyaadafaallesseef 3) maatiinwaanhindeeggarreef 4) amantiinwaanhineeyyamneef 5) hubnnoodhabuu 6) tajajilliwaanhinjirreef 7) sababKanbiroo	

Kutaa III: Oddeffannowa’eedadarbudhukuba HIV hadharragarailmaannitti

Lakk.	Gaaffille	Debii	
301	Dhikbni HIV hadharragamailmaanittihindabra?	1. Eyyeen 2. Lakkii 3. Hinbekku 4. Debiihinjiru	Lakkii yootaye→ G,306
302	Gaaffindebii 301 eyyeenyota’eeyerookamkessattidabra(HIV)?debiitokkoooldebisuunnidanda’amaa	1. Yeroodhalaarrati 2. Harmaalugsisudhaan 3. Yerooulfinnatti 4. Hinbekkuu 5. Debiihinjiru	
303	Dawaandhukuba HIV hadharraagarailmaanittiakkahindarbinegodhunijiraa?	1. Eyyeen 2. Lakkii 3. Hinbeku 4. Debiihinjiru	
304	Oddeffannowa’eedadarbidhukuba HIV hadharragarailaamaniittilaalateessarraargatan?	1. Walqunnamtii /TV/Radio/gazexxaa/ 2. Hojettotafayyaraa 3. Hojetottaekstenshinni 4. Hiirriyotakiyyarraa 5. Debiihinjiru	
305	Dawaandhukuba HIV hadharraagarailmaanittiakkahindarbinekangodhudhugumattihinhirdhisajattaniniamantanii?	1. Eyyeen 2. Lakkii 3. Hinbekkuu 4. Debiihinjiru	
306	Waayeeittisatatamsainadhibee HIV dhageessaabeektaa?	1. Eeyyee 2.Lakkii 3. Lakkiiyootayeirrada	Lakkii yootayeirradarbi

		rbi	G,309
307	DeebiinGaaffii 306 eeyyeeyootayeMalliittiin HIV/AIDS ittisan Mali?	1. Dafaniiyaala/ ART eegaluu 2.Qoricha walittifufiinsaanfud hachuu 3.dhaabbiee Fayyaatiprotocoliie eganiidahuu 4.dawaa farra HIV fudhachaaharmahaa dhaahoosisuu	
308	Yoodeebiingaaffii 306 eeyyeeta'ehubannoowaayeeQorannoodaddarbiinsa HIV haadhaairraagaradaa'immaniiAkkahindarbineirrattidaa' immanAkkaqabaachiirattuqabdumurteeKee SI jijjiirsiseejiraa?	1) Eeyyee 2)Lakkii	
309	Duubattideebiyeeyeroodhukkubbiinsittidhagahamaaturettidaa'immanqabaachuuffedhiinqabdumaalture?	1) Fedhiidaa'immaqabachuhinqabu 2) fedhiidaa'immahorachuuqaba 3) hinbeeku 4) hinyaadadhu 5) Kan biro	

Kutaa IV: Oddeyfannowa'ee HIV/AIDS fi walansaissailalataa

Lakk.	Gaaffilee	Debii	irradarbi
400	haala kamiin haala HIV kee beekte?	1.PICT 2.VCT	

		3.HIVST	
401	HIV qabaachuukeeergabeekte hangamture?	1.__waggaa_ji'aa 2.Hinyadadhu 3.Debiihinjiru	
402	Yaala ART jalqabadetaa?	1.Eyyen 2.Lakkii	Lakkiiyootaye → G 405
403	Ergayaala ART eegalteehagamtayeera?	1. Waggaa 1 gad 2.waggaa 1-4 3.waggaa 5-9 4.waggaa 10 ol	
404	Gaaffiindebii 402 eyyeenyota'eeergajalqabdanhangamture	1. _____ 2. waggaa__ji'aa 3. Hinyadadhu Debiihinjiru	
405	Abbaan /haatimaatikeeqorrannaHIVgodhanijiru?	1. Eyyeem 2. Lakkii 3. Abbaa 4. /haadhamaatihinqabu 5. Hinbekku 6. Debiihinjiru	Lakkiiyootaye G.407
406	Gaa ffindebii 405 eyyeenyota'eeqorranaan HIV issa/she maali?	1. Positivii 2. Negativii 3. Hinbekku 4. Debiihinjiruu	
407	Qorranna HIV kessannamabirratif/abbaa/haadhamanatifbeysistanijirtu?	1. Eyyeen 2. Lakkii 3. Abbaa /haadhamaatihinqabu 4. Debiihinjiru	
408	Akkayaadakessanittiergaafarra HIV jalqabdanfayyaankessanakkami?	1. Foyya'erra 2. Humajijiramahinqabu 3. Hammachajira 4. Debiihinjiru	
409	Haakimafayyaakessaniwajjiinwa'eedhalaa,walqunamtti fi	1. Eyyeen 2. Lakkii	

	qussannamaattiwaldubatibektu?	3. Debiihinjiru	
410	. Lakkoofsa CD4 keetiidhiyeenyattiyaadachuunidandeessaa?	1.Eeyee 2.Lakki 3.Lakki yootayeGalmeeilaali	Lakkiyootaye Galmeeilaali

Kuta V Oddeeffannoodhimmaaadaummaticha

501	Aadaanwalqabateeilaalchiatidaa'imman qabaachuufqabdumaalfakkaata?	1.Baayyee Gaariidha 2. Garidha 3. Gadaanaadha	
502	Hiryaansaalqunnamtiiyknhaatiworraan Keedaa'immanAkkaqabaattuufsijajjabeesiti?	1. Eeyee 2.Lakki 3 Gonkuma	
503	MiseensiMaatiikeetiidaa'immanbaayyee Akkahorattusideeggaruu?	1. Eeyee 2.Lakki 3.Gonkuma	
504	HawaasniNaannookeetiinamoonniAkkakeetiiyeroodaa'immanhoratanakkamittiilaala?	1.nijajjaabeessa 2. Hindeeggaru 3. Hinbeeku	

505	OgeessiFayyaanamoonniAkkakeetiiyero odaa'immanhoratanakkamittiilaala?	1.nijajjaabeessa 2. Hindeeggaru 3. Hinbeeku	

BAYEE GAALLATOOMAA!!!