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Acceptance of Index Case HIV Testing and Associated Factors among Partner and Families of ART Clients in Bekoji Town, Oromia Region, Ethiopia.

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ACRONYMS/ABBREVIATION

AIDS	Acquired Immunodeficiency Syndrome
AOR	Adjusted Odds Ratio
CI	Confidence Interval
COR	Crude Odds Ratio
EMDHS	Ethiopian Mini Demographic Health Survey
EPHI	Ethiopian Public Health Institute
FBICT	Family-Based Index Case Testing
HAART	Highly Active Antiretroviral Therapy
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome
HIV	Human Immune Virus
HTC	HIV Testing and Counseling
HTS	HIV Testing Services
ICHT	Index Case HIV/AIDS Testing
ICT	Index Case testing
NGOs	Non-Governmental Organizations
OR	Odds Ratio
PITC	Provider-Initiated HIV Testing & Counseling.
PLWHIV	People Living with HIV
SPSS	Statistical Package For Social Science
SSA	Sub Saharan Africa
STI	Sexually Transmitted Disease
UNAIDS	United Nations Programmes On HIV/AIDS
VCT	Voluntary Counseling and Testing

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Abstract

Background: Index case Human Immunodeficiency Virus (HIV) testing is a good approach for addressing and improving the efficiency and yield of testing among high-risk populations such as partners and families of people living with HIV. Despite national efforts to expand HIV testing, index case testing acceptance remains suboptimal in many areas of Ethiopia. Limited data exist regarding its determinants in Bekoji Town.

Objective: To assess the status of acceptance of partner and family-based index case HIV testing and its associated factors among clients receiving antiretroviral therapy (ART) at public health facilities in Bekoji Town, Ethiopia, in 2025.

Methods: A facility-based cross-sectional study was conducted among 282 ART clients in public health facilities in Bekoji Town from August 1, 2025, to October 30, 2025. A systematic random sampling method was utilized to recruit the study participants. Data was collected using interviewers administered a structured questionnaire. The collected data was entered into SPSS for analysis. Binary logistic regression was used to examine the association between independent variables and outcome variables. All variables with a p-value < 0.25 in bivariate logistic regression were entered into multivariable logistic regression to identify factors independently associated with the outcome variable. Odds ratio along with 95% CI at p-value < 0.05 were used to measure the strength of the association.

Result: The magnitude of HIV index case acceptance was 86.9 %(95%CI: 82.4%-90.6%). Urban (AOR = 3.92, 95%CI: 1.30–11.78), secondary education (AOR =4.36, 95%CI: 1.35–14.03), college and above education (AOR =4.50, 95%CI: 1.19–17.02), duration on ART (AOR = 3.78, 95%CI: 1.43–10.01), disclosed their HIV status (AOR = 6.06, 95%CI: 2.28–16.09), adherence to ART treatment (AOR = 2.60, 95%CI: 1.02–6.62) and good knowledge of HIV/AIDS (AOR =4.55, 95%CI: 1.86–11.16) were associated with ICHT acceptance.

Conclusion: In this study, 86.9% of HIV patients accepted ICHT for their family member/partner. Urban residence, secondary and above educational, ART medication adherence, duration on ART, HIV status disclosure, and good knowledge of HIV/AIDS were significantly associated with ICHT acceptance. Therefore, health providers should provide regular health education importance of HTS, adherence to ART medication, and HIV status disclosure.

1. INTRODUCTION

1.1 Background

The human immunodeficiency virus (HIV) can lead to the development of AIDS (acquired immunodeficiency syndrome), which is the last stage of HIV infection(1). HIV continues to be a major global public health concern. In 2024, an estimated 40.8 million people globally were living with HIV. There were still an estimated 650,000 AIDS-related deaths. Every day, 4000 people become infected with HIV. If current trends continue, 1.2 million people will be newly infected with HIV in 2025, which is three times more than the 2025 target of 370,000 new infections (2). Index case testing is defined as when a person with confirmed HIV infection (index case) is asked to contact family members (children, spouse, sexual partners, siblings, and parents) on their initiative or assisted by providers. This testing approach has increased the uptake of HIV test services and identified partners with an undiagnosed infection(3). It is a key intervention in diagnosing people living with HIV(PLWH) and enrolling and sustaining them in treatment and care(4).

Global targets indicate that HIV is no longer a public health threat and end AIDS by 2030. Three 95% targets are being implemented to do that (1). It is an important prevention strategy to increase the impact of treatment, improve adherence, and bring about behavior change(1). HIV testing and counseling are a central component of comprehensive HIV prevention programs and the gateway to HIV prevention, treatment, care, and other support services (5). Ensuring that people know their HIV status through HIV testing services (HTS) is crucial to the success of HIV responses. It reduces rates of morbidity and mortality, and transmission by suppression of viral load by starting people on ART (5,6). To achieve the first 95% target, HIV index family testing plays a major role (4). The Ethiopian government is implementing targeted strategies, including index testing, to improve the identification of people living with HIV. To reduce the risk of HIV infection, partners and family members of index patients should know their HIV serostatus (3,7,8). The partner and family-based testing strategy for HIV case finding is used to identify family members with unknown HIV status(9). The index case HIV testing strategy uses known HIV-infected persons on HIV treatment as an index reference for target partners for HIV testing, so that it enables the identification of people with undiagnosed HIV infection and links patients undergoing ART (10–12).

1.2 Statement of the problem

Globally, more than 40.8million people were living with HIV, with nearly 1.3million people acquiring HIV and more than 1.3million people newly acquired HIV in 2024(2, 3). From these, 39.4 million were adults. 19% people were unaware of their HIV status. There is Critical progress has been made in addressing the HIV epidemic to reach the global UNAIDS 95-95-95 targets, which seek to ensure 95% of PLWHIV know their status, 95% of PLWHIV receive ART, and 95% of those on ART are virally suppressed by 2030(3). More than two-thirds of People living with HIV (PLWHIV) are found in Sub-Saharan Africa (2, 3). In Africa, had an estimated 26.3 million people living with HIV(4). It is a high-yield, targeted testing approach for identifying and linking new HIV-infected individuals at an early stage to care and treatment services and linking HIV negative individuals at risk for HIV to prevention services, and it has made a significant contribution to increasing the number of people diagnosed with HIV (4).

This approach needs to be optimally utilized for case detection and to break the HIV transmission cycle by offering HIV testing to individuals who are exposed to HIV and linking them to care and treatment in the event of HIV-positive results(3). Partners and families of people living with HIV/AIDS are among the high-risk populations for contracting HIV/AIDS(13). In Sub-Saharan Africa, only 32–55% of adolescents are tested for HIV in their lives, and delayed diagnosis increases the risk of further HIV infection as well as increases the risk of mortality (14,15). Barriers to HIV index case testing in sub-Saharan African settings include stigma, discrimination, and non-confidential testing environments (16). If a partner of an HIV-positive index case and family member is not tested and knows their HIV status, complications like late diagnoses, which may lead to morbidity and mortality, no identification of cases, and the transmission of the disease between partners, family members, and other population categories may happen. According to a study conducted in China, early case identification and putting on ART were associated with a 45% lower risk of partner infection than late identification and treatment initiation(17). In the availability and accessibility of HIV testing, people continue to test late in the course of HIV infection (18). If patients receive an HIV diagnosis late in the course of infection, they are usually severely immunocompromised, more likely to present with opportunistic infections, and have a short chance of reducing or halting further transmission due to a change in risky behavior (19). Besides, because of a higher viral load in these patients, the probability of transmission from these clients is also very high

compared to individuals diagnosed early in the course of infection. Being too late for HIV testing is one of the reasons for delayed access to antiretroviral therapy for people in need. High mortality in the months after initiation of the treatment will be reported in some studies conducted in Sub-Saharan Africa(19,20). The targets of HIV testing for a partner and another family member of index cases are to save lives, to initiate treatment early, to stay HIV-free, undetectable is untransmissible, and to stop transmission to babies(21). Although most of the studies in Ethiopia have focused solely on PITC (Provider-Initiated HIV Testing & Counselling) and VCT (Voluntary Counselling and Testing), however, index testing has shown increased use of HIV testing services by partners and families of PLWH, resulting in high positivity yield, and increased linkage to treatment and care among partners of PLWH than another testing approach (22). Identifying the barriers and prerequisites for acceptance of HIV testing is important for improving HIV testing practices in populations engaged in risky behavior (23). HIV testing rates remain low in various population groups, and up to 30-50% of partners and family members of people living with HIV are also HIV positive, and many of these partners are currently untested (24). The consequence of low HIV index case testing due to undiagnosed and untreated index case family members is detrimental, as most end up having increased morbidity and mortality from opportunistic infections (25). Without targeted identification and offer of index case testing to priority population groups, including sexual partners of index PLWH, it will be difficult to end HIV/AIDS in 2030(3). Therefore, this study was conducted to assess missed partner and family index case HIV testing and there is limited data that addresses factors affecting acceptance and associated with index case testing, including the key population, counseling on index case HIV status disclosure and its benefits, and protecting privacy at initial HTC visits at Bekoji Town.

1.3 Significance of the study

Partner and family index case HIV testing is a key strategy to identify the most at risk of acquiring HIV, with a high yield of positive cases, information regarding prevalence, and factors affecting HIV testing. The findings of this study could help to inform decision-makers, service providers on the acceptance level of partner and family-based index case HIV testing and contributing factors. In that way, it could show the existing gap to end AIDS as a public health threat in 2030, and also it could help to minimize the morbidity and mortality of HIV infection, and for further improvements of the service. Moreover, the findings of this study would be used as a reference for future large-scale research.

2. LITERATURE REVIEW

2.1 Prevalence of Index Case HIV Testing.

In Lesotho, according to the study conducted on a total of 14,986 eligible family members of index cases, 10,0854 (72%) were accepted and tested for HIV. Of those, 92% were children, 73% were adolescents, and 72% were adults(4). In Africa, more than 75% of the total HIV-infected people were found, of whom 87% of people living with HIV tested for HIV and know their status(26,27). In Sub-Saharan Africa, the index-linked HIV tested children 60% were identified by using index family testing for biological children of PLWH, and the remaining 40% of HIV index case families were undiagnosed (28). Another research done in Kenya, the neighboring country of Ethiopia, shows that of 611 HIV index cases, only 12% performed HIV testing for their child(29). In a study conducted in Uganda, of 148 spouses of index clients tested, 69 were HIV negative, giving an HIV sero discordance rate of 46.6% (30). Another study conducted in Dar Salaam, Tanzania, revealed that of 438 HIV index clients, only 243 (55%) clients agreed to notify and accept partner and family-based HIV testing(31). Another study conducted in Tanzania showed that 3.9% of index clients refused to list their sexual partners. In Sub-Saharan Africa, the index-linked HIV tested children 60% were identified by using index family testing for biological children of PLWH, and the remaining 40% of HIV index case families were undiagnosed (28). A survey conducted in Ethiopia found that 73% of HIV index family members had previously been tested for HIV, and 20% had not tested for HIV (3,32). The study conducted at Zewuditu referral hospital shows that of the 452 index clients, 56% disclose their status to their partner and family members. From these, 64% of family members and 73% of partners accepted testing through an index-based HIV testing modality(32). Another study conducted in Sodo town shows that of the 623 families and partners of index clients included in the study, 566 (90.9%) were accepted and tested for HIV(33). Another multi-centered facility-based cross-sectional study revealed that of the total 384 index clients, 85.2% were accepted partner and family members index case basis for HIV testing(3). According to a study conducted in the city of Woliso, Oromia Region, Ethiopia, of 345 study participants, 333 (96.5%) with 95% CI (94.5-98.3) index case family members were tested (34).

2.2 Factors Influencing Acceptance of Index Case HIV Testing

Human Immunodeficiency Virus index case testing is affected by different factors like age, Sex(13), educational status, adherence status, initiation for testing, the status of disclosure to partner and family members, years on ART, ART adherence status, knowledge, and attitude to HIV counseling and testing(8,32).

2.2.1 Socio-Demographic Related Factors

According to the HIV Index case trial study conducted in Côte d'Ivoire, a woman was 46.9 times more likely than a man to refer her to a partner who was HIV positive, index cases with primary school or less were more likely to refer a positive partner, and index cases of another African nationality were more likely to refer an HIV-positive child(35). A study conducted in Dar Salaam, Tanzania, revealed that female index cases were 13% less likely to elicit partners and families for HIV testing compared to males. It also revealed that index cases who are not in marriage were more likely to elicit partners and accept HIV testing for them (31). According to the study in Burkina Faso, index clients whose ages were greater than 30 years were more accept HIV testing for their families(36). The study conducted in south-western Ethiopia found that clients attending primary education had their families tested 2.4 times more often than illiterate people, and those who attended secondary school were also 2.6 times more likely to have their family members tested for HIV than those who were illiterate. An index patient who received ART for more than 1 year was twice as likely to have her family tested for HIV as an index patient who received ART for less than 1 year (8).

2.2.2 Health System and Facility-Related Factors

The study conducted in Uganda revealed that index clients who were parents did not disclose their status and accepted HIV index case testing for their children due to fear of potential emotional trauma. The religion of the index client was influencing by the acceptability of testing their family members, and the mothers index were more willing to accept index case testing for their family members (36). Although partner notification is important for the identification of PLWH, linking them to care, and enhancing retention and adherence to care and treatment, it is also necessary to identify uninfected persons engaged in HIV-discordant partnerships to prevent HIV transmission (37). According to the study conducted in Southwest Ethiopia, most of the study participants (61.9%) were first tested by provider-initiated HIV testing and counseling, and

233 (68.7%) were counseled to bring their family for HIV testing at the ART clinic where they enrolled (8).

2.2.3 Family Related Factors

In Ethiopia, the study conducted in Woliso town, Oromia, HIV status disclosure and duration of ART were significantly associated with partner and family index case HIV testing. A similar study conducted in Zewditu Memorial Hospital showed that Partners of index cases who had disclosed their HIV status to family were 2.4 times more likely to accept HIV testing when compared to partners of the index case who hadn't disclosed their status. Those having non-regular relations with PLWH were 3.86 times more likely to accept HIV testing than those who were in regular relationships (32).

2.2.4 Knowledge and behavioral Factors

Lack of knowledge of the partner's HIV status poses an increased risk of HIV transmission to the uninfected partners and may lead to unprotected sex (38). In research done in northern Ethiopia, subjects who initiated HIV testing by friends, families, and other socials (25). The study conducted in Dare Salaam showed that index clients who did not fear rejection were more likely to accept HIV testing of their partners(31). Fear of being identified as having HIV may discourage a person from getting tested(39). The study conducted in Zeweditu Hospital showed that index clients who have good knowledge of HIV and its risks were two times more likely to accept HIV testing when compared to those who had poor knowledge(32). Similarly, the facility-based study conducted in West Ethiopia showed that index cases who had good knowledge regarding Index Case HIV Testing (ICHT) were nearly five times more likely to accept index case HIV testing compared to their counterpart(40).

CONCEPTUAL FRAMEWORK OF HIV INDEX CASE TESTING

The following conceptual framework is constructed and proposed to conduct this study after an intensive review of relevant literature on the partner and family-based HIV index case testing and factors associated (3,33)

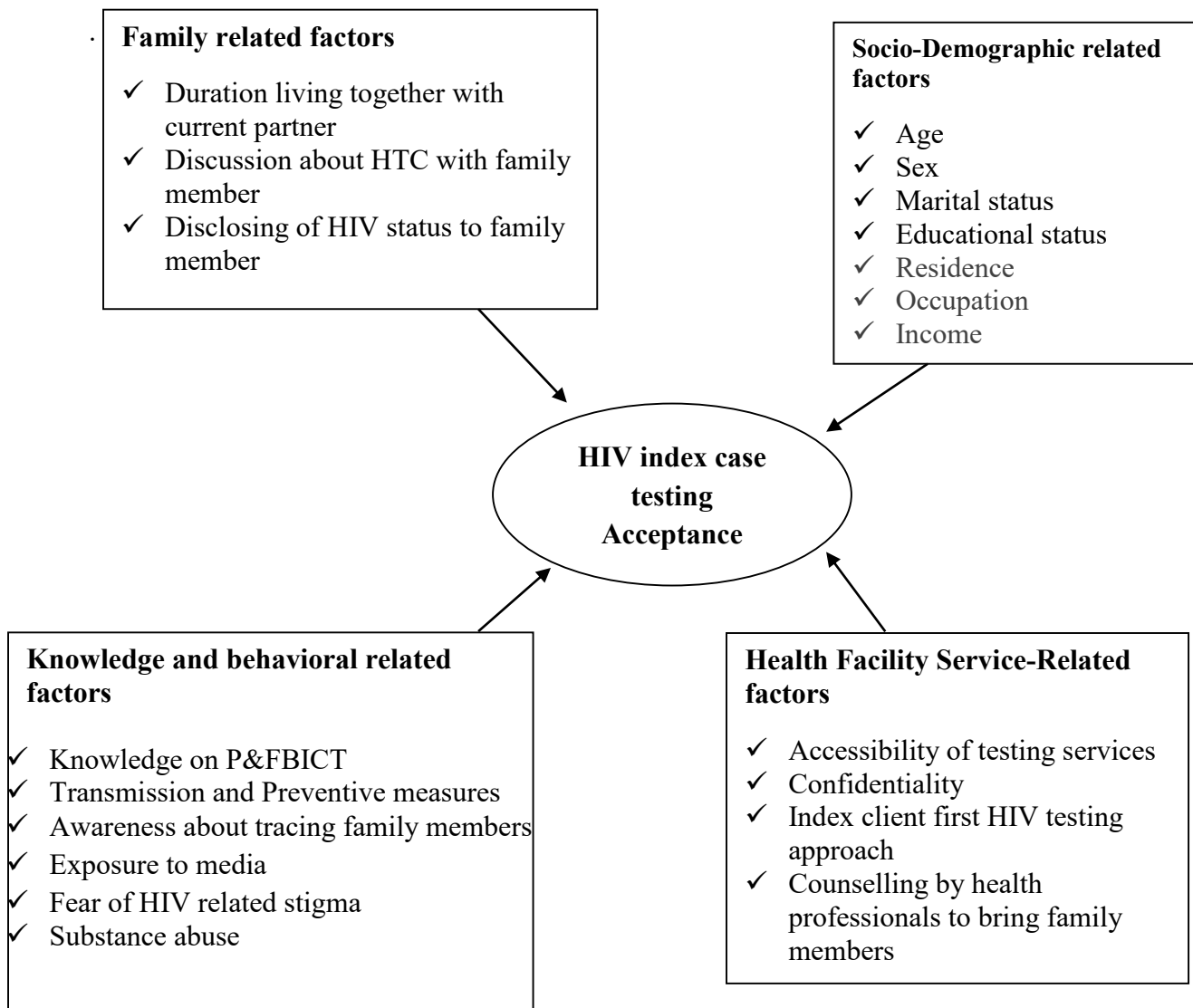


Figure 1: The conceptual framework for HIV index case testing acceptance among family/partners of ART clients in Bekoji town, Oromia Region, Ethiopia.

3. OBJECTIVES

3.1 General objectives

- To assess the status of acceptance of partner and family-based index case HIV testing and its associated factors among clients receiving antiretroviral therapy (ART) at public health facilities in Bekoji Town, Ethiopia, in 2025.

3.2 Specific objectives

- To determine the status of acceptance of partner and family index case HIV testing among clients receiving ART at public health facilities in Bekoji Town.
- To identify factors associated with the acceptance of partner and family index case HIV testing among clients receiving ART at public health facilities in Bekoji Town.

4. METHOD AND MATERIALS

4.1 Study area

The study was conducted in Bekoji Town, which is located in the Arsi Zone of the Oromia Regional State, approximately 219 kilometers southeast of Addis Ababa, the capital city of Ethiopia, along the main road to Bale Robe. Bekoji Town has a total population of 37,248, of whom 49.5% are female. The town has two public health facilities that provide antiretroviral therapy (ART) services: Bekoji Hospital and Bekoji Health Center. Currently, a total of 927 people living with HIV (PLWH) are receiving ART services in the town — 102 at Bekoji Hospital and 825 at Bekoji Health Center.

4.2 Study design and Period

A facility-based cross-sectional study was conducted in Bekoji town from August 1, 2025, to October 30, 2025.

4.3 Population

4.3.1. Source population

All people living with HIV (PLWH) who are currently receiving antiretroviral therapy (ART) at public health facilities in Bekoji Town, Oromia Region.

4.3.2 Study Population

All HIV-positive individuals aged 18 years and above who are receiving ART and attending public health facilities in Bekoji Town during the study period.

4.4. Inclusion and exclusion criteria

4.4.1. Inclusion criteria: - All People Living with HIV (PLWHIV) who are currently receiving antiretroviral therapy (ART) and whose ages were above 18 years of partner and family index case HIV testing (P&FBICT) service during the data collection period.

4.4.2, Exclusion criteria: - People Live with HIV (PLWH) who are seriously ill or physically unfit who do not respond, Mental illness, and PLWH enrolled in the appointment spacing model who do not visit the facility during the study period.

4.5. Sample size determination.

The sample size for people living with HIV who are currently on ART and eligible for partner and family index case HIV testing (P & FBICT) services was determined by using single population proportion formula; $[n = \frac{(Z\alpha/2)^2 \times p(1-p)}{d^2}]$ by considering the following assumptions: By considering the prevalence of acceptance of partner and family-based index case HIV testing 49% (=0.49) which is taken from a study done in southwest Ethiopia(25), 5% of marginal error between the sample ($d = 0.05$), 95% confidence level ($Z\alpha/2 = 1.96$)

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

$$n = \frac{(1.96)^2 \times 0.49 \times 0.51}{(0.05)^2} = 384$$

Since the source population was less than 10,000, the population correction formula was used.

$$NF = \frac{422}{1 + 422/660} = 257$$

10% is the non-response rate

$$10\% \times 257 + 257 = 282$$

Since the sample size for the first objective accommodates both, the final sample size became 282.

Table 1: Sample size calculations for the second objective by considering risk factors of HIV index case testing from different studies.

Variables	% of outcome in the exposed group	% of outcome in an unexposed group	CI	Power	Ratio	OR	Sample Size	Ref
HIV status disclosure	64	36.4	95	80	1	3.1	116	(8)
Duration on	97.9	77.7	95	80	1	13.2	100	(34)

ART								
Discussion about HIV testing	61.9	41.4	95	80	1	2.3	204	(41)

4.6. Sampling procedure

The study was conducted at two health facilities (Bekoji Hospital and Bekoji Health Centers) that provide Antiretroviral (ART) facilities. A sample was proportionally allocated to each facility based on the number of clients receiving ART. Following this, eligible participants for partner and family index case HIV testing (P&FBICT) service were selected using a systematic random sampling technique using an interval (K-value) done at the facility. Study participants eligible for partner and family index case testing service were selected to ensure a systematic selection of participants for the list of people living with HIV (PLWH) currently enrolled at these public health facilities.

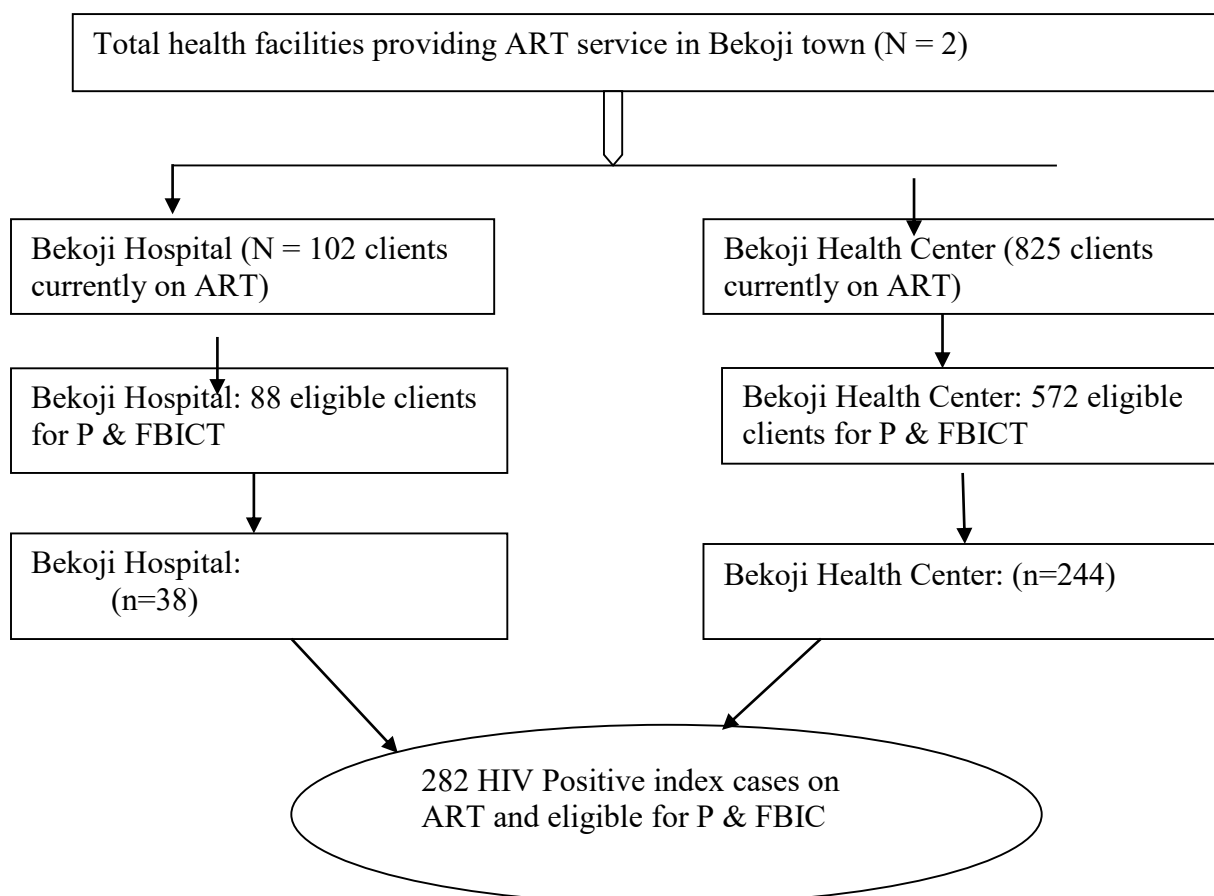


Figure 2: Proportional allocation of the Sampling procedure scheme of the study entitled ICHT Acceptance and Associated Factors among Partners and Families of ART Clients in Bekoji Town.

4.7 Variables

Dependent variables

Acceptance of partner and family-based index case HIV testing (Yes / No)

Independent variables

Sociology-demographic factors: - age, sex, educational status, occupation, marital status, Residence, and monthly income.

Health and family-related factors: Duration living together with current partner, discussion of HIV testing and Counselling (HTC) with family member, disclosure of HIV status to a family member, Partner's HIV testing status and result.

Health facility and service-related factors: Accessibility of testing services, Confidentiality of HIV testing, the index client's first HIV testing approach, and counseling by health professionals to encourage family testing.

Knowledge-related factors: knowledge on the partner and family index case HIV testing, knowledge on transmission and preventive measures, awareness about tracing family members, exposure to media, fear of HIV-related stigma, and substance abuse.

Operational definitions

Index case HIV testing: -is a voluntary process where a health care worker asks the index case to list all of their sexual partners/Family members and offers HCT(40).

Index case HIV testing Acceptance: - When an index case welcomes testing of their sexual partners and family members, and when consent of the index client is obtained(40).

Index case: - People diagnosed with HIV positive, aware of their status, and enrolled in HIV care and treatment(40).

Knowledge: - The knowledge status of study respondents on index case testing was computed using eight yes or no items. The correct answer (yes) was coded as “1” whereas the incorrect response (no) was coded as “0”. Then, the knowledge score was computed and the study

participants who scored mean and above was categorized as good, and those scored below mean was considered as poor knowledge (40)(46).

Attitude: The respondents' attitude towards index case testing was determined using nine Likert scale items ranging from strongly agree to strongly disagree. Then, the attitude score was computed and the respondent who scored mean and above was considered as having positive attitude while those who scored below mean was considered as having negative attitude(40)(46).

Family member tested: either partner or children >18 years of age tested for HIV.

Data collection procedure

Data will be collected through face-to-face interviews and chart reviews using structured and pretested questionnaires. The questionnaire was initially prepared in English and translated into the local language, Afan Oromo then it was translated back to English to check the comprehension and consistency. Information generated through the interview was entered into the Kobo toolbox and exported to SPSS version 27.3 Software. The principal investigator trained the data collectors and supervised the overall data collection process for one day. Data collected, uploaded, daily reviewed, and checked for completeness and consistency of the response.

Data quality assurance

To ensure the quality of the collected data, several key measures were implemented throughout the study. First, the principal investigator provided training to the data collectors, ensuring they are well-equipped to perform the data collection process efficiently and accurately. Throughout the data collection period, the principal investigator was provided with direct supervision to monitor the process, ensuring the completeness and concordance of the data collected. The questionnaire was initially developed in English, and then translated into the local languages, Afan Oromo. To maintain accuracy and consistency, the translated versions were subjected to back-translation into English. This step helps identify any discrepancies or inaccuracies that may arise during the translation process. Additionally, the questionnaire was pretested on a sample of 5% of the total sample size at a setting outside the study area, specifically at the Meraro Health Centre ART clinic. This pre-test will allow for adjustments to be made to the questionnaire, ensuring it is clear, culturally appropriate, and effective for the intended participants. Throughout the data collection process, regular monitoring was conducted to verify the consistency, accuracy, and completeness of the data.

Data analysis procedure

The collected data were entered into Kobo Toolbox for initial data entry and then exported to SPSS Version 27.3 software for further cleaning and analysis. Descriptive statistics were performed to summarize the data using frequencies, percentages, graphs, and text, providing a clear overview of the study variables. Binary logistic regression analysis was conducted to examine the association between the independent variables and the dependent variable. Variables with a p-value of less than 0.25 in the bivariate logistic regression analysis were included in the multivariable logistic regression model to identify factors that are independently associated with the acceptance of partner and family-based index case HIV testing. Multicollinearity was assessed using the Variance Inflation Factor (VIF). The odds ratio (OR), along with a 95% Confidence Interval (CI), was calculated to measure the strength of the association between independent variables and the outcome variable. The level of statistical significance was set at a p-value of less than 0.05. Lastly, the Hosmer and Lemeshow goodness-of-fit test was conducted to assess the model's fit, with a p-value greater than 0.05 indicating that the model fits the data well.

Ethical considerations

Ethical approval was obtained from the Research and Ethics Committee (REC) of Arsi University College of Science, Department of Public Health, for the appropriateness and scientific content of the study. An ethical clearance letter was submitted to the Oromia Regional Health Bureau, and a supportive letter was submitted to the Bekoji town Health Office and Bekoji Hospital. A permission letter was obtained from the Bekoji Town Health Office and the Bekoji Hospital. Participants were asked for informed consent before participating in the study. To maintain the confidentiality of the patient's data, staff data clerks working at the respective ART clinics were chosen to collect the data. Name and other personal identifiers were not written on the questionnaire. They were provided with information regarding the purpose, objective, potential risks, and benefits of the study. Participants were informed that their participation is purely voluntary and if they still have discomfort, they have the right to withdraw from the study at any time. Finally, if the client is positive during HIV testing, perform a confirmatory HIV testing, post-test counseling, link to HIV care and treatment, baseline clinical and laboratory assessment, and offer HIV testing to any other at-risk family members and sexual partners.

Dissemination plan

The study results will be presented and submitted to Arsi University College of Health Science, Department of Public Health, Oromia Health Bureau, Arsi Zonal Health office, Bekoji Hospital, and Bekoji Town Health Office. The findings will be presented at various professional meetings, and an attempt will be made for publication.

5. RESULTS

5.1. Socio-demographic characteristics of study participants

A total of 282 HIV-positive clients receiving ART participated in this study making% response rate. The majority of the participants, 162 (57.4%), were male, and 249 (90.8%) resided in urban areas. Out of the total respondents, 160 (56.7%) were married, followed by 50 (17.7%) who were cohabiting. More than half, 170 (54.7%), were in the 31–40 years age group, with a mean age of 33.39 years (SD $\pm$ 5.56). Regarding educational status, 132 (46.8%) had attended secondary education, while 89 (31.9%) had attained college and above education. In terms of occupation, 136 (48.2%) were merchants, followed by 53 (18.8%) daily laborers and 39 (13.8%) farmers. Nearly half of the respondents, 129 (45.7%), reported a monthly income between 2,000 and 5,000 Ethiopian birr. Concerning their relationship with the index case, 181 (64.2%) were husbands or wives (Table 2).

Table 2: Socio-demographic characteristics of HIV patients in Bekoji town, southern Eastern Ethiopia, 2025

Characteristics		Frequency (%)
Sex	Female	120(42.6%)
	Male	162(57.4%)
Age	18-30	77(27.3)
	31-40	170(60.3)
	>40 years	35(12.4)
Residence	Rural	33(11.7%)
	Urban	249(88.3%)
Educational status	No formal education	28(9.9%)
	Primary	32(11.3%)
	Secondary	132(46.8%)
	College and above	90(31.9%)
Marital status	Single	34(12.1%)
	Cohabiting	50(17.7%)
	Divorced	33(11.7%)
	Married	160(56.7%)

Occupational status	Widowed	5(1.8%)
	Farmer	39(13.8%)
	Daily laborer	53(18.8%)
	Government employee	33 (11.7%)
	Merchant	136(48.2%)
Religion	Student	21(7.4%)
	Muslim	66(23.4%)
	Orthodox	29(45.7%)
	Protestant	85(30.1%)
	Catholic	2(0.7%)
Monthly income	Less than 2000	29(10.3%)
	2000-5000	129(45.7%)
	5001-10000	114(40.4%)
	Above 10000	10(3.5%)
Relationship with Index case	Husband/housewife	181(64.2%)
	Parent	17(6.0%)
	Sexual partner	79(28.0%)
	Sibling	5(1.8%)

5.2. Health and health-related characteristics

Among the 282 HIV patients interviewed, most (256, 90.8%) lived within 5 km of a health facility, indicating good geographical accessibility. Nearly all respondents (267, 94.7%) reported that the health facilities had convenient opening hours for HIV testing. Furthermore, 208 (73.8%) rated the quality of services as good. The majority (266, 94.3%) believed that health workers maintained confidentiality during HIV testing, and almost all (274, 97.2%) reported being treated with respect and without discrimination (Table 3).

Table 3: Health and lifestyle-related characteristics of HIV patients in Bekoji town, southern Eastern Ethiopia, 2025

Characteristics	Frequency (%)
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Distance to Health Facility	<5km	256(90.8)
	5-10km	23(8.2%)
	>10km	3(1.1%)
Convenient opening hours for HIV testing	Yes	267(94.7%)
	No	15(5.3%)
Long waiting times when seeking services at this facility	Yes	37(13.2%)
	No	245(86.9%)
HIV testing approach, do you know?	VCT	195(69.1%)
	PICT	87(30.9%)
The counselor talked about disclosing your HIV positivity to your partner, family, or others	Yes	233(82.6%)
	No	49(17.4%)
The counselor maintained the confidentiality of the HIV testing services	Yes	266(94.3%)
	No	16(5.7%)
Health workers treat clients respectfully and without discrimination	Yes	274(97.2)
	No	8(2.8)
How do you rate the accessibility and quality of HIV testing services in the facility?	Good	208(73.8%)
	Fair	74(26.2%)

5.2. ART-related characteristics

In this study, the majority of respondents (169, 59.9%) had been on ART follow-up for more than 48 months. About three-fourths (211, 74.8%) of participants were adherent to ART medication, and 185 (65.6%) had a recent CD4 count greater than 200 cells/mm³. Regarding clinical status, 185 (65.6%) of respondents were in WHO stage I or II, while 97 (34.4%) were in stage III (Table 4). These findings suggest that most participants had stable clinical conditions and good adherence to ART, which may positively influence their engagement in HIV testing and care services.

Table 4: ART characteristics of HIV patients in Bekoji town, Oromia Region, Southern Eastern Ethiopia, 2025

Characteristics	Categories	Frequency (%)
ART follow-up duration	≤48months	113(40.1)
	>48 months	169(59.9)
Adherence to ART medication	Yes	211(74.8)
	No	71(25.2)
Recent CD4 count	<200	97(34.4)
	≥200	185(65.6)
WHO stage	I and II	185(65.6)
	III	97(34.4%)

Lifestyle and Behavioral Characteristics

More than two-fifths (42.6%) of respondents had a sexual partner, with 97(80.8%) of them using a condom during sexual intercourse. In addition, 94(33.3%) of study participants had reported use of substances, with 87(92.6%) and 37(39.4%) having a history of cigarette smoking and drinking alcohol, respectively (Table 5).

Table 5: lifestyle and behavioral characteristics of HIV patients in Bokoji town, southern Ethiopia, 2025

Characteristics	categories	Frequency (%)
Do you have a sexual partner?	Yes	120(42.6)
	No	162(57.4)
Use a condom during sexual intercourse(n=120)	Yes	97(80.8%)
	No	23(19.2%)
Do you have substance abuse?	Yes	94(33.3%)
	No	188(66.7%)
Smoke cigarettes (n=94)	Yes	87(92.6%)
	No	7(7.4%)
Drink alcohol (n=94)	Yes	37(39.4%)

No 57(60.6%)

5.3. Knowledge of the HIV and HIV testing service

In this study, all study participants heard about HIV/AIDS and its transmission from person to person. The majority, 231(81.9%) of the respondents think HIV/AIDS can be prevented through using a condom consistently and correctly. In addition, 261(92.6%) of study participants think early HIV testing and treatment improves the health outcomes, while 239(84.8%) of them reported offering HTS to their sexual partner/family is important (Table 6).. Overall, 219 (77.7%) have good knowledge of HIV/AIDS, and HIV index case testing, whereas 63(22.3%) had poor knowledge (Figure 3).

Table 6: Knowledge of HIV and HIV testing services among HIV patients in Bokoji town, Southern Eastern Ethiopia, 2025

Characteristics	Response	
	Yes(%)	No(%)
Heard about HIV/AIDS	282(100)	0(0)
HIV can be transmitted from person to person	282(100)	0(0)
The way of transmission of HIV		
Unprotected sexual intercourse	282(100)	0(0)
Sharing sharp material	276(97.9)	6(2.1)
Mother to child during pregnancy, delivery, or breastfeeding	218(77.3)	64(22.7)
Sharing food	24(8.5)	258(91.5)
Mosquito bite	53(18.8)	229(81.2)
Can HIV be prevented using a condom correctly and consistently?	231(81.9)	51(18.1)
Knowing HIV status through testing is important	245(86.9)	37(13.1)
Does early HIV testing and treatment improve the health outcomes?	261(92.6)	21(7.4)
Offering HTS to sexual partners/family is important	239(84.8)	43(15.2)
Family/sexual partner of HIV HIV-positive individual can be HIV negative through ICHT	68(24.1)	214(75.9)

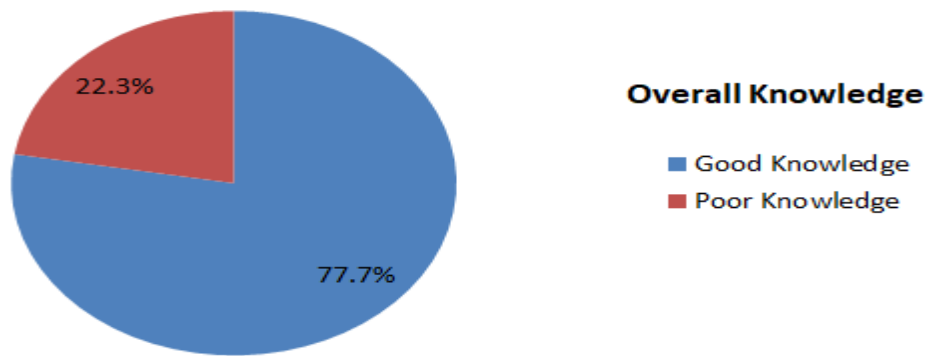


Figure 3: Overall respondent knowledge of ICTH among HIV patients in Bokoji town, South Eastern Ethiopia

5.3. Attitude towards HIV testing services

Out of 282 respondents, 83(29.4%) agree that people's attitudes about HIV make them feel worse about themselves. In addition, 77(27.3%) of the respondents agreed that disclosing their HIV status exposes them to people's discrimination. Moreover, 38(13.5%) of study participants agreed that most people think that a person with HIV is disgusting (Table 7). Overall, 196(69.5%) of respondents have a positive attitude towards HIV/AIDS, whereas 86(30.5%) had a negative attitude (Fig 4).

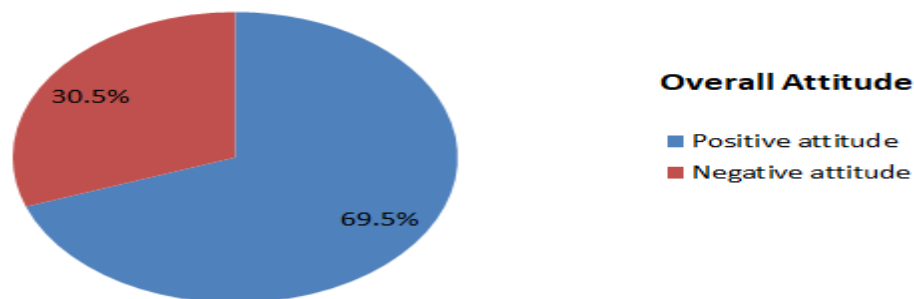


Figure 4: Overall respondent attitudes towards ICTH among HIV patients in Bokoji town, South Eastern Ethiopia

Table 7: Attitude towards /AIDS among HIV patients in Bokoji town, South Eastern Ethiopia, 2025

Items	Strongly disagree (%)	disagree	neutral (%)	agree (%)	Strongly agree
People's attitudes about HIV make me feel worse about myself	2(0.7)	149(52.8)	3(1.1)	83(29.4)	45(16)
Telling someone I have HIV is risky, and can lead to losing their jobs when their employers find out	24(8.5)	121(42.9)	7(2.5)	98(34.8)	32(11.3)
I feel I am not as good a person as others because I have HIV	38(13.5)	127(45.0)	8(2.8)	86(30.5)	23(8.2)
Since learning I have HIV, I feel set apart and isolated from the rest of the world	86(30.5)	166(58.9)	3(1.1)	12(4.3)	15(5.3)
Most people think that a person with HIV is disgusting	107(37.9)	107(37.9)	15(5.3)	38(13.5)	15(5.3)
Disclosing their HIV status exposes them to people's discrimination	8(2.8)	147(52.1)	7(2.5)	77(27.3)	43(15.2)
I worry that people may judge me when they learn I have HIV	5(1.8)	162(57.4)	6(2.1)	61(21.6)	48(17.0)
Accepting ICHT for family/partner might bring separation of marriage	2(0.7)	157(55.7)	11(3.9)	66(23.4)	46(16.3)
Disclosing their HIV status may shame people with HIV positive	3(1.1)	170(60.2)	8(2.8)	64(22.7)	37(13.1)

5.3. HIV service testing and disclosure status

In this study, the majority of respondents (260, 92.2%) had discussed HIV testing and counseling (HTC) with their partner or family members, and 245 (86.9%) reported having initiated HTC for their current family or partner. Regarding HIV testing frequency, 61 (24.9%) of families or partners were tested every three months, 104 (42.4%) every six months, and 80 (32.7%) once a year. Nearly all (241, 98.4%) of respondents preferred government health institutions for HIV testing services (Table 8). Concerning HIV status disclosure, 237 (84.0%) of index clients had disclosed their HIV-positive status. Among these, 136 (57.7%) disclosed to family members, 92 (38.8%) to their partners, and 8 (3.5%) to friends. However, 89 (37.6%) of those who disclosed experienced intimate partner violence following disclosure, and 112 (47.3%) reported stigma or discrimination.

Table 8: HIV testing service and disclosure status of patients in Bokoji town, Southern Eastern Ethiopia, 2025

Characteristics	categories	Frequency (%)
Have you discussed HTC with your family/partner	Yes	260(92.2%)
	No	22(7.8%)
Have you initiated HTC for the current family/partner	Yes	245(86.9%)
	No	37(13.1%)
How frequently does your partner/family member get tested for HIV?	Every three months	61(24.9)
	Every six months	104(42.4)
	Every year	80(32.7)
Preferred place for HTS(n=245)	Government health institution	241(98.4)
	Private health institution	4(1.6)
Have you disclosed your status to your partner/family	Yes	237(84)
	No	45(16)
To whom you disclosed your HIV status	Family	136(57.7)
	Partner	92(38.8)
	Friend	8(3.5)
Experienced intimate partner violence	Yes	89(37.6)

after HIV status disclosure	No	148(62.4)
Experienced discrimination and	Yes	112 (47.3)
stigma after HIV status disclosure	No	125(52.7)

5.3. Magnitude of HIV index case testing

The magnitude of HIV index case acceptance among HIV positive patients was 86.9 % (95%CI: 82.4%-90.6%) (Fig. 5).

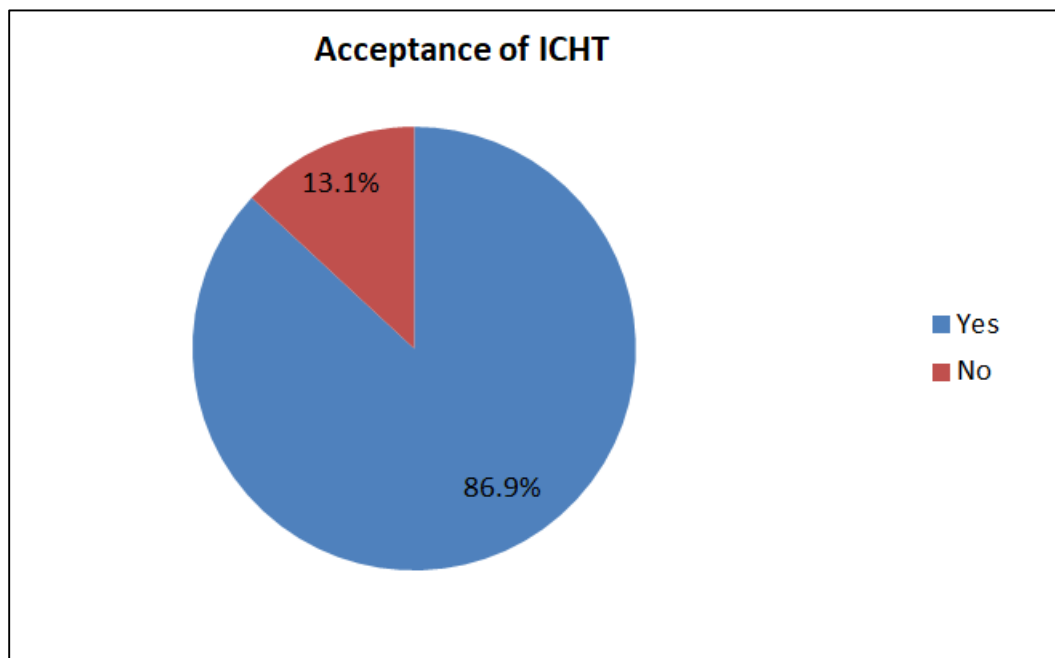


Figure 5: Magnitude of ICHT acceptance among HIV positive family/partner in Bekoji town, South Eastern Ethiopia, 2025.

5.3. Factors associated with ICHT acceptance

In the bivariate logistic regression analysis, sex, residence, educational level, ART adherence, ART duration, HIV disclosure status, and knowledge and attitude toward HIV/AIDS were identified as candidate variables for the multivariable model. After controlling for potential confounders in the multivariable logistic regression, residence,

educational level, ART adherence, ART duration, HIV disclosure status, and knowledge about HIV/AIDS remained significantly associated with ICHT acceptance (Table 9).

The results indicated that urban residents had nearly four times higher odds of accepting ICHT compared with rural residents (AOR = 3.92; 95% CI: 1.30–11.78). HIV patients who had completed secondary school and college or higher education were 4.36 (95% CI: 1.35–14.03) and 4.50 (95% CI: 1.19–17.02) times more likely, respectively, to accept ICHT compared to those with no formal education. Respondents who had been on ART for more than 48 months had 3.78 times higher odds of accepting ICHT compared with those on treatment for less than 48 months (AOR = 3.78; 95% CI: 1.43–10.01).

Moreover, participants who disclosed their HIV status were almost six times more likely to accept ICHT compared with those who did not disclose (AOR = 6.06; 95% CI: 2.28–16.09). Similarly, ART adherence was positively associated with ICHT acceptance; adherent patients had 2.60 times higher odds of acceptance compared to non-adherent individuals (AOR = 2.60; 95% CI: 1.02–6.62). Finally, participants with good knowledge about HIV/AIDS were approximately five times more likely to accept ICHT compared with those who had poor knowledge (AOR = 4.55; 95% CI: 1.86–11.16).

Table 9: Multivariate logistic regression analysis results on the relationships between ICHT acceptance and factors associated among HIV patients in Bekoji town, South Eastern Ethiopia, 2025

Variables	HIV index case test acceptance		COR (95%CI)	AOR (95%CI)
	Yes	No		
Sex				
Female	99	21	1	1
Male	146	16	2.13(1.05,4.30)	2.23(0.96, 5.19)
Residence				
Rural	23	10	1	1
Urban	222	27	3.58(1.54,8.31)	3.92(1.30, 11.78)*
Educational status				

No formal education	20	8	1	
Primary education	26	6	1.47(0.43,4.97)	2.39(0.56, 10.39)
Secondary education	117	15	3.39(1.27,9.02)	4.36(1.35, 14.03)*
College and above	82	8	3.80(1.27,11.38)	4.50(1.19, 17.02)*
Duration on ART				
≤ 48 months	91	22	2.48(1.23,5.03)	3.78(1.43–10.01)*
>48 months	154	15	1	1
Disclosure status				
Disclosed	213	24	3.61(1.67,7.79)	6.06(2.28, 16.09)*
Not disclosed	32	13	1	1
Attitude towards HIV/AIDS				
Positive	177	19	2.47(1.22,4.98)	2.23(0.87, 5.64)
Negative	68	18	1	1
Adherence to ART medication				
Yes	191	20	3.01(1.47,6.14)	2.60(1.02, 6.62)*
No	54	15	1	1
Knowledge				
Poor	46	17	1	1
Good	199	20	3.68(1.79,7.57)	4.55(1.86, 11.16)*

6. Discussion

Index case HIV testing (ICHT) is a highly effective strategy for improving the efficiency and yield of HIV testing among high-risk populations. Partners and family members of people living with HIV (PLHIV) are among the most vulnerable groups for acquiring the infection(36). In the present study, the proportion of ICHT acceptance among HIV-positive clients was 86.9% (95% CI: 82.4%–90.6%). This finding is comparable with a study conducted in West Ethiopia, which reported an acceptance rate of 85.2%(40). However, the current finding is higher than the results reported in Dire Dawa City Administration (48.5%)(42), Gedeo Zone (60.6%)(43), Southwest Ethiopia (49%) (25), Shashemene (63.7%)(44), and Oromia Region (80.2%) (45). The observed differences might be attributed

to variations in study population characteristics, sample size, accessibility of HIV testing services, or differences in the period of data collection.

In this study, residence was significantly associated with ICHT acceptance. Urban respondents had nearly four times higher odds of accepting ICHT compared to rural residents. This result is consistent with a study conducted in the Gedeo Zone(46). A possible explanation is that urban residents generally have better access to health facilities, mass media, and health information, which may enhance their awareness and motivation to initiate HIV testing for their partners or family members

Similarly, educational status was found to be a significant predictor of ICHT acceptance. Participants who had attained secondary education or above were almost four times more likely to accept ICHT than those who had informal education. This finding aligns with studies conducted in Dire Dawa(42) and Southwest Ethiopia(25). Education likely increases awareness of HIV prevention, improves understanding of the benefits of early diagnosis, and enhances communication within families regarding HIV testing and care. ART adherence and duration on ART were also significantly associated with ICHT acceptance. Respondents who adhered to ART medication and had been on treatment for more than 48 months had higher odds of accepting ICHT than their counterparts. Similar findings were reported in studies from Gedeo Zone(43), Shashemene(44), and Southwest Ethiopia(25). Patients who have long-term contact with healthcare providers and consistent adherence to ART are more likely to receive counseling and health education, which can increase their awareness and motivation to promote HIV testing within their families.

In addition, HIV disclosure status was found to strongly influence ICHT acceptance. Participants who disclosed their HIV status were almost six times more likely to accept ICHT than those who did not disclose. This is consistent with studies conducted in Dire Dawa(42) (42), Gedeo Zone (43)(46), and Southwest Ethiopia(25), which indicated that disclosure promotes trust and reduces fear, thereby increasing the likelihood of partner and family testing. Individuals who disclose their status are less likely to fear stigma and discrimination, allowing them to freely encourage HIV testing among their close contacts. Lastly, knowledge about HIV/AIDS was significantly associated with ICHT acceptance. Participants with good knowledge were nearly five times more likely to accept ICHT compared with those who had

poor knowledge. This result is in line with findings from West Ethiopia(40) and Gedeo Zone (46). Well-informed individuals are more aware of the benefits of early diagnosis and treatment, and they understand the importance of encouraging their partners and families to test for HIV.

Overall, the findings of this study indicate that socio-demographic factors (residence and education), treatment-related factors (ART adherence and duration), behavioral factors (disclosure), and knowledge level all play a significant role in influencing ICHT acceptance. Strengthening health education, promoting ART adherence, and encouraging safe disclosure could enhance the uptake of index case testing among families of people living with HIV.

Strengths of the study

This study had the following strengths.

- The study used a standardized questionnaire.

Limitations of the Study

This study has some limitations.

- The study was conducted in a small town, which affects the generalizability of the results in some way.
- The study's cross-sectional design also didn't support the cause-and-effect relationship.

7. Conclusion and Recommendation

7.1. Conclusions

In this study, 86.9% of HIV patients accepted index case HIV testing (ICHT) for their family members or partners. Urban residence, higher educational level, ART adherence, longer duration on ART, HIV status disclosure, and good knowledge about HIV/AIDS were significantly associated with ICHT acceptance. These findings indicate that improving awareness, strengthening ART counseling, and promoting open HIV disclosure are essential to enhance ICHT uptake.

7.2. Recommendations

For Health institutions

- Provide continuous health education and awareness sessions on HIV/AIDS through health literacy and counseling units.
- Integrate partner and family testing promotion into ART clinic routines.

For Health Providers:

- Deliver regular, confidential, and stigma-free counseling on the importance of HIV testing and ART adherence.
- Strengthen patient education on the benefits of HIV status disclosure for family health and prevention.

For Researchers:

- Future studies should employ mixed-method approaches to explore social, psychological, and cultural factors influencing ICHT acceptance.

For Policy Makers:

- Strengthen community-based HIV testing initiatives and allocate resources for awareness campaigns targeting rural populations.

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Participant Information Sheet and Consent Form

My name is _____. I am working as a data collector for the study being conducted in this Health Center by _____ who is studying for his master's degree at Arsi University college of health sciences, Department of Public Health. I kindly request you to lend me your attention to explain you about the study and being selected as study participant.

The study title: - Index Case HIV Testing Acceptance and Associated Factors Among Partners and Families of ART Clients in Bekoji Town, Oromia Region, Ethiopia

Purpose of the study: The finding of this study is of paramount importance for the Bekoji Town woreda Health Office as well as Zonal Health Office and Oromia Regional Health Bureau to improve Family of partner and family based index case human immune deficiency virus testing. Moreover, the aim of this study is to write a thesis as a partial requirement for the fulfillment of Master program in Public Health for the principal investigator

Procedure and duration: I will be interviewing you using a questionnaire to provide me with pertinent data that is helpful for the study. There are ____ questions to answer where I will fill the questionnaire by interviewing you. The interviews will take 20 minutes. So, I kindly request you to spare me this time

Risk and Benefit: There is no known risk of being participant in this study except taking few minutes from your time. There would not be any direct payment for participating in this study. But the finding from this research may reveal important information for the local health planners at regional health office, woreda health office, Hospital and Health Centers.

Confidentiality: Any information you will provide us will be confidential. There will be no information that will identify you. The findings of the study will be general for the study population and will not reflect anything particular of individual persons or housing. The questionnaire will be coded to exclude showing names. No reference will be made in oral or written reports that could link participant to the research.

Rights: Participation for this study is fully voluntary. You have the right to declare to participate or refuse this study. If you decide to participate, you have the right to withdraw from the study at any time and this will not label you for any loss of benefits which you otherwise are entitled. You do not have to answer any question that you do not want to answer.

In Case if you have any question you can ask; -

Jemal Hussein Phone No.0922143942

9. Declaration of Informed Voluntary Consent

I have read/was read to me 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 participating and the contact address for any queries. I was informed that I have the right to withdraw from the study at any time or not to answer any question that I do not want. Therefore, I declare my voluntary consent to participate in this study with my signatures as indicated below.

Signature of the participant _____

Signature of the data collector _____

10. ANNEXES

Questionnaire by English.

Title: Index Case HIV Testing (ICHT) Acceptance and Associated Factors among Partners and Families of ART Clients in Bekoji Town, Oromia Region, Ethiopia.

Health Facility ID _____

Name of Health Facilities _____

Interviewer ID for Family _____

Interview ID for Partner _____

Date of Starting (DD, MM, YY) _____

Consent has been read and obtained a, Yes b, No If No END

Time of Interview start (Hour) Hrs. _____ Mints _____

Section 1: Socio-Demographic Factors

1. Age of respondent (in completed years): _____ years
2. Sex of respondent: A. Male B. Female
3. Relationship to the index case (ART client): A. Husband/Wife (spouse) B. Sexual partner (non-marital) C. Parent D. Child E. Sibling F. Other relative (specify) _____
4. Marital status: A. Single B. Married C. Cohabiting D. Divorced/Separated E. Widowed
5. Educational level: A. No education B. Primary education (1-8) C. Secondary education (9-12)
D. College/University and above
6. Occupation: A. Farmer B. Daily laborer C. Merchant/trader D. Government employee E. Student F. Other (specify) _____
7. Monthly household income (in Ethiopian Birr)?
A. < 2000 B. 2000–4999 C. 5000–9999 D. ≥ 10,000
8. Religion: - A. Orthodox Christian B. Muslim C. Protestant D. Catholic E. Other (specify) _____
9. Place of residence: - A. Urban B. Rural

10. Living arrangement with index case (ART client): A. Living together in same household
B. Living separately but visit often C. Rarely meet

Section 2: Health and Health related characteristics Factors

11. Distance to the nearest health facility offering HIV testing?
A. < 5 km B. 5–10 km C. > 10 km
12. Do you think the health facility has convenient opening hours for HIV testing services?
A. Yes B. No
13. Does the health facility provide HIV testing services free of charge?
A. Yes B. No C. Don't know
14. Have you ever experienced long waiting times when seeking services at this facility?
A. Yes B. No
15. Have you counseled before or after test? A. yes B. No
16. Which HIV testing approach do you know? (Multiple answer possible)
A. VCT B. Provider-initiated counseling and testing (PICT) C. Through IHTC
17. With whom did you test for HIV? A. Alone B. with my partner C. other _____
18. Did the counselor talk to you about disclosing your HIV positivity to your partner, family, or significant others? A. yes B. No
19. Did the counselor keep the confidentiality of HIV testing services? A. yes B. No
20. Do you feel that health workers treat clients respectfully and without discrimination?
A. Yes B. No
21. Overall, how would you rate the accessibility and quality of HIV testing services at your nearest facility? A. Good B. Fair C. Poor
22. When were you diagnosed with HIV? _____
23. For how long you have been on antiretroviral medication? _____
24. How many times have you missed taking your drugs in the past one month? (Do pill count)

25. What is your recent CD4 count?
26. What is your WHO HIV stage?
27. After you tested HIV positive, have you discussed about HTC with family members/partner? A. yes B. No
28. Would you be willing to take your partner/family for HTC to the nearby facility?
- A. yes B. No
29. If yes, have you ever initiated your current partner or family for HTC? A. yes B. no
30. If yes, where do you prefer your partners or family get HIV tested and counseled?
- A. Government health institution
- B. Non –governmental institution
- C. Private health institution
- D. PLWHA association
31. How frequently your family members get testing for HIV?
- A. Every month 1 B. Every three month 2 C. Every 6 month 3 D. Every years
32. What are reasons for initiation of HTC to current partner or other family?
- A. Prevent HIV transmission
- B. To know family/partner serostatus
- C. Requested by partner/family members for HIV testing
- D. Other
33. If you knew that your partner is HIV negative would you disclose your status to your partner? A. yes B. no
34. If Yes to Q15, to whom you disclosed your HIV status? (Multiple choice possible)
- A. Family B. Partner C. Friends D. other
35. Have you experienced intimate partner violence after disclosing your HIV status?
- A. yes B. no
36. Have you experienced discrimination and stigma after disclosing your HIV status?

- a. yes b. no

37. What is the benefit of disclosing HIV status? (Multiple choice possible)

- a. Prevent transmission
- b. To know serostatus
- c. Avoid stress
- d. Other(specify)

38. If no to Q15, what are the reasons for not disclosing your HIV status?

- a. Stigma/discrimination
- b. Fear of divorce/separation
- c. Others(specify)

Section 3: - Lifestyle and Behavioral Characteristic

39. Do you have sexual partner? A. yes B. No if ***no Q39 skip Q40***

40. How many sexual partners have you had in the last one year? _____

41. Do you have any Substance Abuse? A. yes B. No If no Q41 skip Q42-43

42. Do you smoke cigarettes? A. yes B. No

43. Do you drink alcohol? A. Yes B. No

44. Do you use condom during sexual intercourses? A. Yes B. No

Section 4: - Knowledge on HIV and Index Case Testing

45. Have you ever heard about HIV/AIDS? A. Yes B. No If ***no skip Q45-51***

46. Do you know that HIV can be transmitted from one person to another? A. Yes B. No

47. Which of the following are common ways HIV is transmitted? (Multiple answer possible)

- A. Unprotected sexual intercourse
- B. Sharing sharp instruments (razor/blades, needles)
- C. Mother-to-child during pregnancy, delivery, or breastfeeding

- D. Sharing food / casual contact (wrong belief)
 - E. Mosquito bites (wrong belief)
48. HIV can be prevented by using condoms consistently and correctly?
- A Yes B. No C. Don't know
49. Do you think knowing your HIV status through testing is important? A. yes B. No
50. Where did you get information about HTC service provision? (***Multiple answer possible***) A. Healthcare workers B. Mass Media C. Friend D.
51. Do you know that early HIV testing and treatment improves health outcomes?
- A. Yes B. No
52. Have you heard of Index Case HIV Testing (ICHT)?
- A. Yes B. No ***If no to Q52 skip 53-54***
53. Offering HIV testing to sexual partners and/or family members of a person already living with HIV is important? A. Yes B. No C. Don't know
54. Partner/family member of HIV positive individual can be HIV negative through ICHT?
- A. Yes B. No C. Don't know

Section 5:- Attitude towards discrimination, stigma, and disclosure of their HIV status

This set of questions asks about some of your attitude towards people with HIV feel and how they are treated. Could you tell me if you agree or disagree with the following statements?

A. Strongly agree B. agree C. Neutral D, disagree E. Strongly disagree

- 55. People's attitudes about HIV make me feel worse about myself
- 56. Telling someone I have HIV is risky and assists losing their jobs when their employers find out
- 57. I feel I am not as good a person as others because I have HIV
- 58. Since learning I have HIV, I feel set apart and isolated from the rest of the world
- 59. Most people think that a person with HIV is disgusting
- 60. Disclosing their HIV status exposes to people's discrimination

61. I worry that people may judge me when they learn I have HIV
62. Accepting ICHT for family/partner might bring separation of marriage
63. Disclosing their HIV status may ashamed people with HIV positive.

Gaafii fi Deebii.Afaan Oromoo qophaayyee.

Mata-duree: - Qabiyyee fi Haala Itti Fayyadama Tajaajila Qorannoo HIV Namoota Qabamanii (Index Case HIV Testing – ICHT) fi Haala Waliin Hidhaman, Firoottan fi Maatiiwwan Namoota ART fudhatan keessatti Magaalaa Bekoji, Naannoo Oromiyaa, Itoophiyaa.

ID Mana Fayyaa _____

Maqaa Mana Fayyaa _____

ID Gaafataa Maatii/Hirriyaa _____

Guyyaa Eegalu (Guyyaa/ Ji'a / Bara) _____

Hayyama hirmaannaa dubbifamee fi fudhatameera?

A. Eeyyee B. Lakki → Yoo hin ta'in asirratti dhaabi

Sa'aatii jalqaba gaafii: Sa'aatii _____ Daqiiqaa _____

Kutaa 1: Haala qabatamaa nannoo fi Maatii

1. Umuriin gaafatamaa meeqa dha (waggaa guutuu)? _____ waggaa

2. Saala: A. Dhiira B. Dubartii

3. Walitti dhufeenya inni qabu waliin index case (namni ART fudhatu):

A. Abbaa warraa / Haadha warraa (spouse) B. Hirmaata wal-quunnamtii saalaa (kan hin heerumne)

C. Haadha/Abbaa D. Ilma/Intala E. Obboleessa/Obboleettii

F. Firoota biroo (akkaataa ibsi) _____

4. Haala fuudhaa heerummaa:

A. Dantaa hin qabne (Single) B. Fuudhee/Heerumte C. Waliin jiraachuun (Cohabiting)

D. Gargar ba'ee / Addaan ba'e E. Haadha manaa dhabe / Abbaa manaa dhabe

5. Sadarkaa barnootaa:

A. Barnoota hin B. Sadarkaa duraa (Kutaa 1–8) C. Sadarkaa lammaffaa (Kutaa 9–12)

D. Yuunivarsiitii fi olii

6. Hojii:

A. Qonnaan bultootaa B. Hojjetaa guyyaa (daily laborer) C. Daldalaa / Gabaa gurgurtaa
D. Hojjetaa mootummaa E. Barataa F. Kan biraa (akkaataa ibsi) _____

7. Qabeenya maatii ji'aan argattu (Birrii Itoophiyaa):

A. < 2000 B. 2000–4999 C. 5000–9999 D. $\geq 10,000$

8. Amantii:

A. Ortodoksii B. Musliima C. Pirootesitaantii D. Kaatooilikii E. Kan biraa (ibsi) _____

9. Bakka jireenyaa A. Magaalaa B. Baadiyyaa

10. Haala jireenya waliin index case:

A. Waliin jiraachuun iddoo tokko keessa B. Addaan jiraachuun garuu yeroo baayyee wal arguun

C. Yeroo gabaabaa wal argu

Kutaa 2: Haala dhaabaata Fayyaa fi tajaajila isaan Walqabate

11. Fageenya bakka tajaajila qorannoo HIV itti kennamu irraa jiraattu?

A. < 5 km B. 5–10 km C. > 10 km

12. Sa'aatii hojii tajaajila qorannoo HIV irratti yeroo gaarii fi mijataa qabaa?

A. Eeyyee B. Lakki

13. Tajaajilli qorannoo HIV mana fayyaa kana keessatti bilisaan kennameeraa?

A. Eeyyee B. Lakki C. Hin beeku

14. Yeroo tajaajila argachuuf deemtan turtii yeroo dheeraa mudattee?

A. Eeyyee B. Lakki

55. Qorannoo dura yookaan booddee gorsa (counseling) argittee?

A. Eeyyee B. Lakki

16. Akkaataa qorannoo HIV beektaa? (Deebii heddu kennamuu danda'a)

A. VCT (Voluntary Counseling and Testing) B. PICT (Provider-Initiated Counseling and Testing)
C. IHTC (Index HIV Testing and Counseling)

17. Yoom HIV qoramtan?

A. Kophaa koo B. Hiriyyaa koo waliin C. Maatii koo waaliin D. Kan biraa _____

18. Gorsaan qorannoo HIV irratti akka ilaalcha keessan gara jaalallee, maatii yookaan nama biraatti himtu isin waliin dubbate?

A. Eeyyee B. Lakki

19. Gorsaan iccitii qorannoo HIV keessan eeggate?

A. Eeyyee B. Lakki

20. Hojjettoonni fayyaa hawaasa kabajaan fi safuu eeguun tajaajila kennu?

A. Eeyyee B. Lakki

21. Tajaajila qorannoo HIV naannoo keessan keessa jiru sadarkaa akkamii qabaa?

A. Gaarii B. Giddugaleessa C. Hammaataa

22. Yoom HIV irratti argamtan? _____

23. Yeroo meeqa irraa jalqabee dawaa ARV fudhataa jirta? _____

24. Ji'a darbe keessa yeroo meeqa dawaa fudhachuu dhiistee? _____

25. Lakkoofsa CD4 yeroo dhihoo kanaa meeqa? _____

26. Sadarkaa WHO HIV keessan maal? _____

27. Qorannoo HIV erga argamtan booda jaalallee/maatii keessan waliin qorannoo fi gorsa irratti mari'attan? A. Eeyyee B. Lakki

28. Jaalallee/maatii keessan gara qorannoo HIV geessuuf fedhii qabdaa?

A. Eeyyee B. Lakki

29. Yoo eeyyee jette, jaalallee/maatii keessan duraan qorannoo irratti kakaastan?

A. Eeyyee B. Lakki

30. Yoo eeyyee jette, bakka maali keessatti jaalallee/maatii keessan qorannoo fi gorsa HIV itti fudhachuu filatta?

A. Mana fayyaa mootummaa B. Dhaabbata miti-mootummaa C. Mana fayyaa dhuunfaa

D. Waldaan namoota HIV'n qabaman (PLWHA)

31. Hirmaattotni maatii keessan yeroo meeqa HIV irratti of qoratani jiru?

A. Ji'a ji'a hunda 1 B. Ji'a 3 keessatti 1 C. Ji'a 6 keessatti 1

32. Sababni jaalallee yookaan maatii qorannoo HIV irratti kakaastu maali?

A. Daddarbaa HIV ittisuuf B. Sadarkaa HIV maatii/jaalallee beekuuf C. Maatii/jaalalleen ofii qorannoo gaafate D. Kan biraa (ibsi) _____

33. Yoo jaalallee kee HIV-n hin qabne ta'e beekte, himta?

A. Eeyyee B. Lakki

44. Yoo eeyyee jette, eenyutti himte? (Deebii heddu ni ta'a)

A. Maatii B. Jaalallee C. Hiriyoote D. Kan biraa

35. Erga sadarkaa HIV kee himte booda miidhaa jaalallee irraa (Intimate Partner Violence) sitti raawwatee? A. Eeyyee B. Lakki

36. Erga sadarkaa HIV kee himte booda tuffii fi hacuuccaa (stigma/discrimination) sitti raawwate?

A. Eeyyee B. Lakki

37. Faayidaan sadarkaa HIV kee himuu maali? (Deebii heddu ta'a)

A. Daddarbaa ittisuuf B. Sadarkaa HIV beeku C. Dhiphina irraa ba'uuf D. Kan biraa (ibsi) _____

38. Yoo hin himin, sababni maali?

A. Tuffii fi hacuuccaa sodaachuun B. Fuudhaa heerumaa diigamuu sodaachuun

C. Kan biraa (ibsi) _____

Kuta 3. Haala Jireenya fi Amaloota Hawaasummaa

39. Ati nama walqunnamtii saalaa qabdaa?

A. Eeyyee B. Lakki (Lakki yoo jette G39 irra darbi G40)

40. Bara darbe keessa namoota meeqa waliin walqunnamtii saalaa gootee jirta?

41. Dhukkuba ykn meeshaalee seeraan alaa fayyadamta?

A. Eeyyee B. Lakki (Lakki yoo jette G41 irra darbi Q42-43)

42. Ati sigareeta xuuxxa?

A. Eeyyee B. Lakki

43. Ati dhugaatii alkoolii dhugtaa?

A. Eeyyee B. Lakki

44. Walqunnamtii saalaa gochuu yeroo condom fayyadamaa?

A. Eeyyee B. Lakki

Kutaa 4:- Beekumsa HIV fi To'annoo Index Case (ICHT)

45. Ati HIV/AIDS dhagahuu keeti?

A. Eeyyee B. Lakki (G45 Lakki yoo jette Q4551- irra darbi)

46. HIV namni tokko irraa nama biraatti darbaa akka jiru beektaa?

A. Eeyyee B. Lakki

47. Haala itti HIVin darbu keessaa kanneen armaan gadii keessaa maal beektaa? (Filannoo hedduu ni danda'ama)

A. Walqunnamtii saalaa malee eeggannoo godhamuu

B. Meeshaalee eelee (raazorii, cirracha, cirracha cirracha, injection) qooduu

C. Haadha irraa gara daa'imaatti yeroo ulfaa, dhaloota ykn daa'ima akka lammataa nyaachuu

D. Nyaata qooduu / walqunnamtii hafuuraa (dogoggora amantaa)

E. Ciniinnata keessa ciccitaa (dogoggora amantaa)

48. HIV irraa of eeguuf kondom sirriitti fi yeroo hunda fayyadamuun ni danda'amaa?

A. Eeyyee B. Lakki C. Hin beeku

49. Beekumsa sadarkaa HIV keetiin barbaachisaa ta'uu ni yaaddaa?

A. Eeyyee B. Lakki

50. Odeeffannoo tajaajila HTC eessa irraa argatte? (Filannoo hedduu ni danda'ama)

A. Hojjettoota fayyaa B. Miidiyaa gurguddaa C. Hiriyoota

51. To'annoo fi tajaajila jalqaba HIV beeku fi fayyadamuu fayyaa foyya'uuf ni gargaara jettee yaadda?

A. Eeyyee B. Lakki

52. Ati hirriyyaa ykn matii akka qorachisaan (Index Case HIV Testing (ICHT) dhagahuu keeti?

A. Eeyyee B. Lakki(G52 Lakki yoo jette G53-54 irra darbi)

53. HIV nama tokko jiraatuuf, namoota maatii fi hiriyyoota irratti qorannoo dhiyeessuun barbaachisaa dha?

A. Eeyyee B. Lakki C. Hin beeku

54. Namni HIV qabu ta'us, maatii fi hiriyoonni isaa qorannoo irratti hirmaachuun HIV hin qabne ta'uu danda'u?

A. Eeyyee B. Lakki C. Hin beeku

Kuta 5:- Yaada ilaalchaa fi rakkoo saalaa, gargar bahuu fi ifa baasuu HIV irratti

Gaafileen armaan gadii yaada keetiif dhiyaatan: dhugaa ta'uu ykn hin ta'iin adda baasi.

Filannoo:

A. Waan jabduu waliif gallee B. Waan waliif gallee C. Waliigala hin taanee

D. Waan waliif hin galle E. Waan jabduu waliif hin galle

55. Yaada namootaa HIV irratti qabuun ofii koo gara hamaa na geessa.

56. Nama tokko HIV qabu yoo namatti himame, hojii irraa dhabuuf carraan jiru ni jira.

57. Ani nama biroo caalaa hin fooyya'u sababni HIV qabaachuu kooti.

58. HIVin koo beeksisuun ani addatti fi dhiphina keessa na buusa.

59. Namoonni hedduun namni HIV qabu ni suukanneessa jedhanii yaadu.

60. HIV beeksisuu namoota biratti addatti ilaalamuu naaf fidee, saaxilamuu naaf fiduu danda'a.

61. Namoonni ani HIV qabu beekan na ilaalchisee yaadu danda'u jedhee na yaadda.

62. ICHT maatii/hiriyyaa kootif fudhachuun cidha ykn walitti dhufeenya maatii adda baasu danda'a.

63. HIV isaanii beeksisuun namootaaf balaa isaanitti fiduu danda'a.

Declaration of Investigator

I, the undersigned student of General Master of Public Health, declare that this thesis work is my original work in partial fulfillment of the requirement for the degree of General Master of public health to my best knowledge.

Name of investigator: Jemal Hussein Betul



Signature:

Date 03/12/2025

Declaration of Advisors

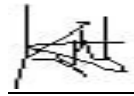
We, the undersigned Advisors, declare that this thesis is our original work in partial fulfillment of the requirement for the degree of General Master of public health for the stated student above to our best knowledge. We confirmed that this thesis is ready for examination with our approval as the university advisor(s).

Name of primary Advisors:

Signatures

Date

1. Kabtamu Tolosie



05/12/2025

Name of secondary Advisors:

Signatures

Date

2. Firaol Lamessa



05/12/2025

Examining Board Approval

We, the undersigned Examining board, approved that this thesis is original work with the basic scientific merits for partial fulfillment of the requirement for the degree of General Master of public health for the stated student above to our best knowledge. We confirmed that this thesis is sufficient for the student's promotion to the higher level.

Name of External Examiner:

Signatures

Date

1. _____

Name of Internal Examiner:

Signatures

Date

2. _____

Name of Department Head:

Signatures

Date

3. _____
