

ST. PAUL'S HOSPITAL MILLENNIUM MEDICAL COLLEGE

DEPARTMENT OF PUBLIC HEALTH



HIV STATUS DISCLOSURE AND ASSOCIATED FACTORS
AMONG PEOPLE LIVING WITH HIV/AIDS FOLLOW-UP ART
CLINIC AT FITCHE HOSPITAL, OROMIA REGION, ETHIOPIA

BY: NIGUSU AYELE (BSc)

THESIS SUBMITTED TO SAINT PAUL'S HOSPITAL MILLENNIUM
MEDICAL COLLEGE DEPARTMENT OF PUBLIC HEALTH, IN PARTIAL
FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER'S OF PUBLIC HEALTH IN FIELD EPIDEMIOLOGY

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Acronyms

AIDS: Acquired Immune Deficiency Syndrome

AOR: Adjusted Odds Ratio

ART: Anti-Retroviral Therapy

CI: Confidence Interval

EDHS: Ethiopia Demographic Health Survey

HFIAS: Household Food Insecurity Scale

HIV: Human Immunodeficiency Virus

IRB: Institutional Review Board

OR: Odds Ratio

PLWHA: People Living With HIV/AIDS

SPHMMC: Saint Paul's Millennium Medical College

SPSS: Statically Package for Social Science

UNAIDS- United Nations Program on HIV/AIDS

VCT: Voluntary Counseling and Testing

Abstract

Background: The disclosure of positive HIV results plays an important role in the successful prevention and care of HIV-infected patients. It offers significant social and health benefits for individuals and the community. However, there was a lack of evidence to support disclosure of HIV / AIDS status to sexual partners, family and friends in the study area. The study aimed to determine the magnitude and associated factors of HIV status disclosure among people living with HIV/AIDS follow-up ART clinic at Fitcha Hospital.

Methods: A hospital-based cross-sectional study design was conducted and data was collected through face-to-face interviews from March 15 to May30, 2021. The study population consisted of people with HIV who were at least 18 years of age attending an ART clinic. The data was entered in Epi Info version 7 and then exported to the SPSS version 25 statistical software for data analysis. Multiple logistic regression analysis was used to identify independent determinants of disclosure of HIV status at $p < 0.05$.

Result: Of the 380 respondents, 95.5% had disclosed their HIV status to someone. Disclosure was made to their family 80%, to their sexual partner 67% and to friends 29%. In the multiple regression model, knowing their partner's HIV status (Adjusted Odds Ratio (AOR) = 11.08 (95% Confidence Interval(CI): 3.02,40.7), knowledge on the importance of HIV disclosure (AOR = 8.57(95% CI: 1.86,9.48) and longer duration of HIV follow-up (AOR=1.013(95% CI: 1.003,1.024) were independently associated with disclosure of HIV status to someone.

Conclusion: Most people with HIV shared their HIV status with someone, while the disclosure to sexual partners was relatively low. Government and stake holders are needed to promote HIV disclosure particularly among sexual partner.

Key Words: Disclosure, HIV status, PLWHA, Ethiopia

1. Introduction

1.1 Background

HIV/AIDS is one of the world's most serious health and development challenges, mainly in sub-Saharan Africa (1). An estimated 38 million people were living with HIV worldwide in 2019, more than two-thirds of them in sub-Saharan Africa (2). Around 690,000 people worldwide died of AIDS-related diseases and 1.7 million new HIV infections occurred in the same year (3).

According to UNAIDS estimates from 2019, 670 000 people are living with HIV/AIDS and 15 000 people are newly infected in Ethiopia. An estimated 12 000 people living with HIV died of AIDS (4). The national prevalence and incidence in adults aged 15–49 years in 2019 was 0.9% and 0.23 per 1000 population respectively (4).

Testing and counseling are essential parts of the intervention in HIV/AIDS prevention, care and support. Within HIV testing and counseling, the importance of HIV positive status disclosure is emphasized (5). HIV positive Status disclosure is the process of informing one's HIV status to others (6,7). Disclosure of one's HIV status is a key aspect of HIV prevention and treatment programs (8).

Factors that motivate people to disclose to partners, family, and friends include support (financial, psychological, and emotional), encouragement from counselors. the desire not to expose the partner to risk of contracting HIV, HIV testing together, and fear of God, following ART medication and becoming critically ill (7,9,10). Rewards/positive consequences resulting from disclosure included more social support, intimacy with partners, opportunities to share personal experiences, safer sexual practice, initiation of partners for HIV testing, and receiving kindness and acceptance (5,10,11).

1.2 Statement of the Problem

HIV status disclosure rates to sexual partners in developed countries ranged from 42% to 100%, with an average of 71%. In developing countries, however, disclosure of HIV status ranged from 16.7% to 86%, with an average of 52%(12). In Sub-Saharan Africa, the pattern and extent of disclosure of HIV sero-status to partners was 56.7%-71%, family (26.2%-54.0%) and friends (3.0-9.8%)(13).

The magnitude and patterns of HIV disclosure in Ethiopia vary depending on the study environment and the pattern / person to whom the information is shared. low rates of HIV status disclosure (37%) to any one were reported in Jimma among PLWHIV (14). In Ethiopia, the pooled prevalence of HIV positive status disclosure among sexual partner was 75.95% (15). There was high variation in rates of HIV status disclosure to sexual partners among different region in Ethiopia. HIV status disclosure to sexual partners was relatively lower percentage in Addis Ababa 51.7% (9) and in Bale 52.6% (16) as compared to study done in Kemissie 93.1% (17).

The disclosure of the HIV status can represent a phase of increased risk for the partner and should therefore be handled with caution (18). Low disclosure rates have been attributed to negative consequences such as stigma, discrimination, breakup, verbal abuse, blame, anger, rejection, psychological violence (10,11,17,19). These risks can prevent them from disclosing their HIV test results to friends, family, and sexual partners (11).

Disclosure can be tricky few people keep their HIV status completely secret. Researches in various settings have found that the PLWHA face a number of barriers to sharing their HIV test results with partners, family and friends. These barriers include fears of stigma, discrimination, and violence, fear of the partner's reaction, fear of upsetting family members and fear of losing an economic support partner, lack of trust on people, fear of divorce, not to worry others and fear of gossip (16,20–22).

A number of factors influence disclosure of HIV status. Previous research has identified a number of factors related to HIV status: knew their sexual partner's HIV status (23,24), negative self-image (25), discussions about HIV testing with the partner prior to testing (9), type of sexual partner (26) receiving counseling service ,discuss safe sex, viral load suppression, having good ART adherence, and perceived stigma (6).

The following gaps were identified: 1. Based on the above local studies, there is a discrepancy in the extent of disclosure of HIV status from place to place and the rate of HIV disclosure is low. Second, there is also some inconsistency in the same place about the level of disclosure by period. Previous research at Mekele Hospital showed the overall prevalence of sexual partner disclosure in 2012 versus 2013 (57.4% versus 63.8%) (23,26). Third, there has been a limitation in previous research on variable food insecurity related to disclosure of HIV status. Even when food insecurity affects the effectiveness of HIV treatment, reduces ART adherence, and induces HIV-related stigma (27), previous research on the relationship between disclosure and food security has not been clearly explored. Therefore, the current study will add food insecurity as an independent variable to assess the associated factor of HIV status disclosure and use it as a basis for the interventions.

1.3 Significance of the Study

Disclosure of HIV status to sexual partner, family and friends benefits PLWHA and communities. HIV status disclosure can help reduce HIV transmission by 41% (28). The findings of this study will directly benefit PLWHA by improving adherence to therapy, good clinical outcomes, and a reduction in the risk of HIV transmission between partners and reduction of HIV stigma.

Disclosure towards sexual partners, has been shown to promote safer sexual behavior in addition to emotional, social, or financial support from partners (29). In addition, disclosure helps create a sense of closeness in the family, reduces feelings of anxiety, and relieves isolation from the secret of being HIV positive and helps build social support networks (5). Disclosures to friends regarding HIV prevention were simply linked to protection from infection, often due to the friend's sexual behavior being viewed as risky, and included encouragement to get tested for HIV (21).

Ethiopia is one of the countries that has set ambitious goals and developed an investment plan towards achieving the fast-track targets and ending the HIV/AIDS epidemic by 2030. Research on HIV status disclosure among PLWHA is relevant and urgently needed to achieve the 90–90–90 UNAIDS targets and end the epidemic of HIV/AIDS by 2030.

The study can contribute to the scientific knowledge on HIV status disclosure. The study will also serve as a foundation on HIV positive status disclosure for local health authorities and as a reference for researchers carrying out similar studies in the future. However, there was lack of evidence to support disclosure of HIV / AIDS status to sexual partners, family and friends in the study area. Therefore, this study aims to determine the magnitude and associated factors of disclosure of HIV status among people living with HIV/AIDS follow-up ART clinic at Fitcha Hospital.

2. Literature Review

2.1 Concept of Disclosure

HIV disclosure is one of the most difficult psychosocial issue for people living with HIV/AIDS (30). HIV disclosure is an ongoing process that requires careful planning and preparation of decisions about who, why, when, where, and how to disclose (31). Disclosure is often regarded as means of "opening up" the HIV epidemic and thus an important step towards ending PLWHA stigma and discrimination (32). Disclosure is planned and selective behavior that responds to the balance between the potential risks and benefits of secrecy and disclosure of the person living with HIV (33). Disclosure may be voluntary or involuntary (34).

2.2 Magnitude of Disclosure

According to a systematic review and meta-analysis conducted in Ethiopia among HIV positive people receiving health care at health facilities 73% disclosure HIV status to sexual partner (95% CI: 64, 82%) (35). The HIV disclosure prevalence vary from settings and the person to whom disclosed. The level of disclosure to sexual partner in Ethiopia in different studies showed that in Mekele 57.4% (23), Bale 52.6% (16), Jimma 88.6% (14), Addis Ababa 51.7%(9) and in Hawassa 85.7% (9). Likewise, Sokodé Togo(36), Tanzania (8), South West Nigeria(37), southwestern Uganda (38) observed respectively in their studies that, 60.9%, 65.7 % , 75.6% and 57% % of participants had disclosed their HIV serostatus to sexual partner.

The findings study carried out in Jimma among people living with HIV /AIDS following ART clinic revealed that the 94.5% disclosure to at least one person(39). Other studies performed at Sekou-Toure hospital Mwanza, Tanzania among adults attending Care and Treatment Clinic (CTC) reports 93.3% disclosure serostatus to somebody(40). Also study done on pregnant women in Addis Ababa public health reported 80.6% disclose their HIV status (9). Study done among women attending ART clinic at Hawassa University Referral Hospital reported 92.2% of the women had disclosed their HIV positive status to anyone (24). Moreover, Study performed in Butajira showed 90% of adults living with HIV/AIDS have disclosed their HIV-positive status to another person(6).

A study carried out in Iringa, Tanzania, reported that 55% of married men showed their results to their wives, whereas 34% of the married women disclosed the information to their husbands (41). Similar study performed in Kenya and Togo revealed that participants who were married or in a common-law relationship were more likely to disclose their HIV-positive status to their sexual partner than the counterpart (29). Findings of study at Cape Metropolitan revealed that disclosure to casual sexual partners was the same for married and unmarried participants (42). whereas Study performed in Axum health facilities revealed that Unmarried respondents were more likely to disclose their HIV positive status compared to married one (7).

Studies have shown that men are more likely to disclose their status to partner than women (26,43). Similarly, the study done in Addis Ababa, reported disclosure was higher among males, which is 85.6% of males compared to 79.5% of females (10). According to a study conducted in Jimma showed that men were three times more likely to reveal their HIV serostatus than women (14). Other studies conducted among women revealed that women who had disclosed their HIV serostatus to their partners were 65.7% in Tanzania(8) and 34% in Kenya (27).

2.3 Factor Associated with HIV Status Disclosure

The results of the study showed that communication between partners improved disclosure of HIV serostatus(38). Studies have shown that sexual partners who discussed prior to the test disclosed their HIV status to their sexual partner than those who didn't talk about it (23,39), Other studies suggest that 60% of women had no discussion about HIV testing with their partners (26). Studies have also shown that respondents who knew the HIV status of their sexual partner were more likely to reveal their HIV-positive status than respondents who did not know their partner's HIV status (7,23).

The study, conducted in Jimma, Ethiopia, found that PLWHA aged ≤ 39 years were less likely to disclose than those aged ≥ 40 years(14). Another study conducted in Mwanza, Tanzania reported that participants over 30 years of age had a significantly higher prevalence of serostatus disclosure than those under 30 years of age (40).

A study undertaken in Axum, Ethiopia reported that 67% were disclosed within one month, 13.4% between 1 and 6 months, and 16.6% after 6 months of being notified of their HIV positive result (7). The finding of another study performed in Jimma, Ethiopia, showed that disclosure was made as early as (one day) and late as (two years) after learning the serostatus. Most (73%) of the participants disclosed on the day of receiving test result, 12% within two weeks(39). In addition, a study conducted in Addis Ababa found that 11.3% of the respondents immediately disclosed their result and initiated their partner for HIV testing (10). Furthermore, a study conducted at Woldia Hospital found that the sexual partner disclosure rate was 76.6%, with 29% of disclosure delayed (had sex before disclosure) (44). Moreover, study conducted among pregnant women in Uganda, it was reported that 80% revealed themselves within less than 2 months of testing positive for HIV (38).

A study conducted at Mekele Hospital showed that those who had HIV related care follow-up for more than two years were more likely to disclose to their sexual partner than those who had less than two years follow up (45). Other studies conducted in Tanzania showed that patients on ART treatment had 2 times higher odds of HIV-serostatus disclosure to partners than those who were not on treatment (8). Study performed at different period in Jimma, Ethiopia suggest that Individuals in an early clinical state (Stage I&II) of the WHO stage of disease were 78% less likely to disclose to a partner compared to those in an advanced stage (Stages III& IV) state of disease(14,39).

Receiving pre-test counseling about HIV serostatus disclosure has positive association with HIV serostatus disclosure to sexual partner. The study found that participants who received pre-test counseling were six times more likely than their counterparts to reveal their HIV serostatus to their sexual partner(16).Studies conducted in Butajira also showed that counseling on HIV / AIDS was more likely to do so results in them being disclosed HIV-positive status as no advice on disclosure of HIV-positive status (6).

A study conducted in Ethiopia found that people who live in the same house with their partner are more likely to reveal their partner than people who do not live in the same house (10,39). Studies in south Africa showed that respondents who were living together with their partner had high disclosure rate compared to not living together with their partner(66% vs 53%)(46).

High condom use was also found in couples who disclosed their HIV / status (20,39).to a study conducted in Tanzania, 71% said they had ever used condoms and 78.6% said they currently use condoms when having sex with their partners(8). However, some studies conducted in Nigeria and Ethiopia showed that there was no statistical significance between condom use and disclosure of status to the sexual partner (26,37).

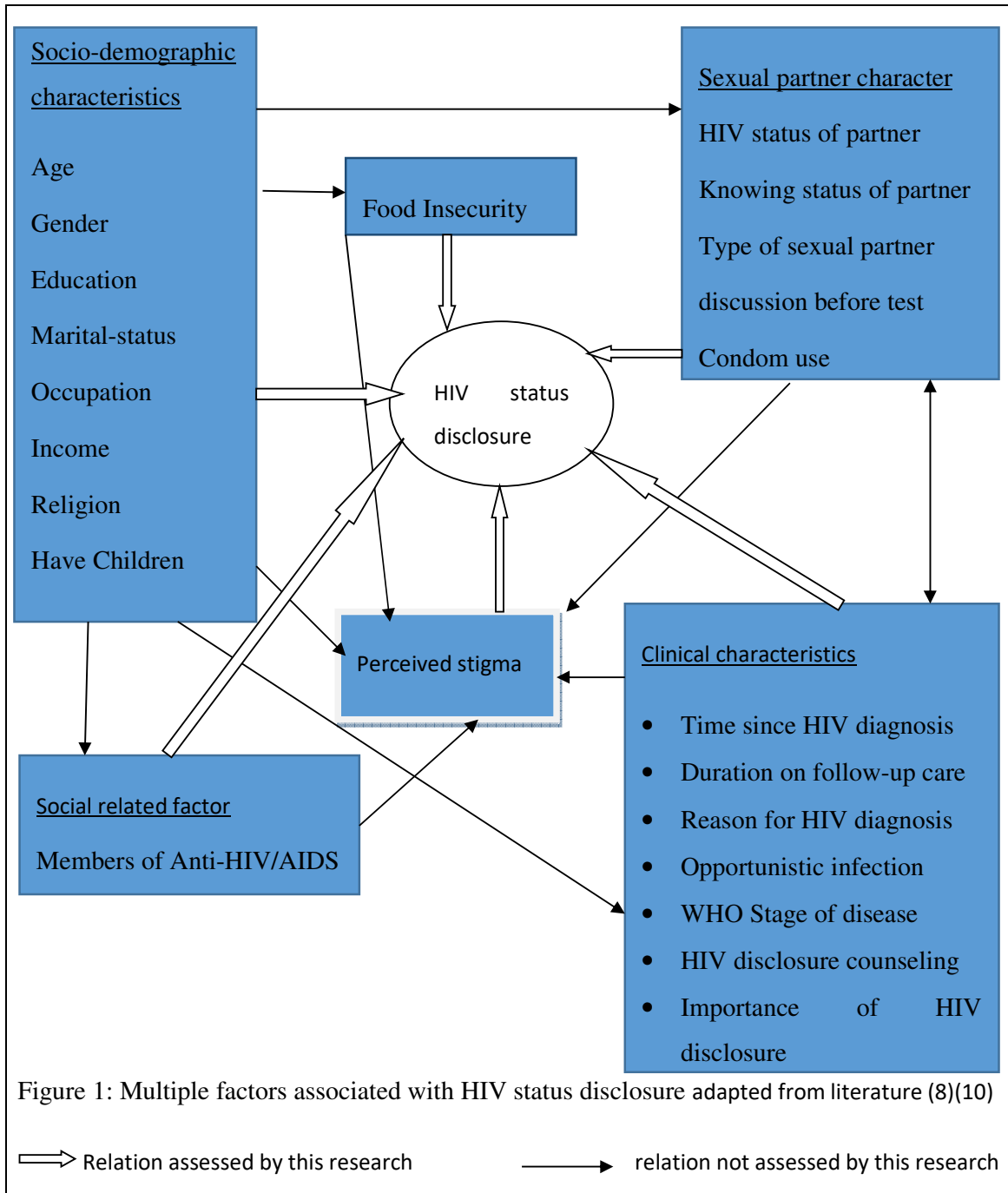
A study conducted in Jimma showed that 14.2% of those who disclosed had sex before telling their result with their partner (39). Other results from Addis Ababa showed that 14.7% of those who reported having disclosed their status to their last sexual partner had at least one unprotected sexual encounter with their partner after being diagnosed with HIV but before disclosure. In the same study, participants who shared their partner were more than 6 times more likely to use condoms with their partner than their counterparts (10).

Fear is cited as the most common factor hindering disclosure (47).A study conducted in Western Shoa, Ethiopia found that fear of stigma and discrimination (84.5%), fear of being accused of infidelity (79.6%) %) and fear of confidentiality were widespread among those who did not reveal their test results to anyone. Other study identified four main themes that reflected the barriers to disclosing HIV status to family members. The subjects are negative feelings from an HIV infected person, fear of rejection by family members, avoidance of stress on the family, and the desire to maintain good relationships with family members (48).

The study found that the commonest reasons reported for disclosure were: the need for financial psychological or emotional support (36.9%); not desire to put the partner at risk of catching HIV in 35.5%; and encouragement from counselors in 34.2% of cases(10). Another study reported that close relationship (usually to tell him every secret thing), spiritual responsibility and fear of legal allegations were the other motivates for disclosure(9).

2.4 Conceptual Framework

Figure 1 below illustrates conceptual framework that shows multiple factors of HIV positive status disclosure such as Socio-demographic characteristics, Clinical characteristics of the participants, Sexual partner characteristics of respondents, Preferred Disclosure of HIV status outcome, Social related factors, food insecurity and Perceived stigma and discrimination.



3. Objective

3.1 General Objective

To determine the magnitude and associated factor of HIV status disclosure among people living with HIV/AIDS follow-up ART clinic at Fitche Hospital, Oromia Region, Ethiopia in 2021.

3.2 Specific Objective

- 1) To assess the prevalence of HIV status disclosure among PLWHA follow-up ART clinic at Fitche Hospital
- 2) To determine factors associated with HIV status disclosure among PLWHA follow-up ART Clinic at Fitche Hospital

4. Methods

4.1 Study setting

The study was conducted in Fitch General Hospital in North Showa Zone, Oromia region state in the Northern part of Ethiopia which is located 114 km from capital city of Ethiopia, Addis Ababa. Fitch hospital has different departments and wards like, medical, gynecology, pediatrics, and surgical ward, ART clinic, Multi drug resistance Tuberculosis Treatment Follow-up Center, X-ray department, Laboratory department, pharmacy department. And the study focused in ART Clinic the hospital. People who test HIV- positive at the hospital and referred from other health institutions are attached to the ART clinic for clinical and laboratory investigations to monitor their immune status and viral load. Since the initiation of the program, a total of 3960 patients ever started ART, and of them currently 1668 were on ART, as of December 2020. From patients currently on ART 647 were males and 1606 were adults above 15 years old.

4.2 Study Design and Period

A facility-based cross-sectional study design was conducted at Fitch General Hospital among PLWHA who followed-up ART clinic from March to May 2021.

4.3 Population

Source population

All PLWHA clients who were on ART follow-up care at Fitch General Hospital ART clinics

Study population

Selected individuals who were on ART follow-up care and who fulfill the inclusion criteria and above available during study period at Fitch Hospital ART clinic.

Inclusion Criteria

- PLWHA who were on ART follow up for at least one month during the data collection period .
- Age 18years and above

Exclusion criteria

- Patients who were sick to be interviewed

4.4 Sample size

The sample size was determined by using a single population proportion formula which considers the magnitude of HIV disclosure to the sexual partner to be 52.6% from a previously conducted study in Bale, Ethiopia (16) with a marginal error of 5% with a confidence interval of 95%. Therefore, the minimum sample size required was 369, and after adding a 10% non-response rate, the final sample size was 406.

4.5 sampling Procedures

Study participants were selected through a systematic sampling technique taking into account the K values for the ART clinic and using their arrival at the ART clinic as the sampling frame during the period of data collection. About 30 adult patients visit the ART clinic every day. In order to complete the data collection within 28 working days, around 15 study participants are recruited daily. Therefore, within the interval of the 2nd patient attending the clinic is involved in an interview until the required sample is recruited.

4.6 Measurements

4.6.1 Study Variables

Dependent Variable

- HIV positive disclosure status to someone (sexual partner, family and friends)

Independent Variable

- Socio-demographic characteristics: (Age, sex, Ethnicity, level of education, marital status, occupation, monthly income and religion, children present, Number of children).
- Clinical characteristics of the participants: -Time since HIV diagnosis, Duration on ART, Reason for HIV diagnosis, WHO stage of disease, presence of opportunistic infection/parasite, Importance of HIV disclosure.

- Sexual partner characteristics of respondents:- (Number of life time sexual partner , Type of sexual partner, Prior discussion about HIV before test, Knowing partner's HIV status ,HIV status of partner)
- Social related factors: Being a member of the anti- HIV/AIDS club
- Perceived HIV stigma
- Food insecurity

4.6.2 Data collection instruments and Techniques

4.6.2.1 Data Collection Tool

Quantitative data was collected using pre-tested structured questionnaires adapted from previous, similar studies (10,39,49–51). The questionnaire was used to collect information on socio-demographic, clinical, and service-related factors, sexual partner characteristics, social factors, food insecurity, perceived stigma, and discrimination. The questionnaire was written in English and translated into two local languages (Afan Oromo and Amharic) for data collection and back into English language to check internal consistency.

4.6.2.2 Data Collectors

Two nurses who were working at Fitcha Hospital selected as data collectors. The data collectors collected data in Afan Oromo or Amharic language according to the interviewee's preferred language. One nurse was selected as supervisor from Fitcha Hospital to supervise and support the data collectors. Training was given for data collectors and supervisors on data collection tools and techniques before data collection.

4.6.2.3 Data Collection Technique

The data was collected face-to-face through interviewer-administered questioning techniques. After patients completed their scheduled services at the clinic, the researchers reached out to them and asked for their consent to an interview, with the assurance that a refusal or withdrawal would not affect the services they received at the clinic. Those who did not participate were allowed to be excluded from the interview, and those who accepted were interviewed in a safe place within the premises. The data was collected daily from morning to evening, except on weekends, for a period of one month until the calculated sample size was attained. Each interview lasted around 15 to 20 minutes. The researchers checked the

correctness and completeness of the completed questionnaires on a daily basis and provided the code number for the completed questionnaires.

4.7 Data quality Control

The questionnaires were pre-tested on 5% (21 customers) of the sample size in the Muka Turi Hospital in the PLWHA Follow-up ART Clinic to ensure the reliability and consistency of the tool before the actual data collection began and appropriate changes were made. The internal reliability test for the Likert scale items was performed using Cronbach's coefficient alpha analysis. In the current study, the overall scale showed excellent internal consistency (Cronbach's alpha = .904) for HIV stigma and Very good (Cronbach's alpha = .83) for House Hold food Insecurity (HHFIAS).

Data collectors and supervisors received two days of orientations from the principal investigator to familiarize themselves with the tool (specifically, how to ask questions and accurately record the information). A supervisor supported and monitored the data collectors on a daily basis. Both superiors and investigators were checked for clarity, completeness, and coded data on each day of a data collection period. The data was double entered and cleaned with the software Epi Info version 7.

4.8 Data Processing and Analysis

The data was entered in Epi Info version 7 and then exported to the SPSS version 25 statistical software for data analysis. Descriptive statistics were performed to measure the frequency, percentage, averages, median and Inter Quartile Range (IQR) of the variables. The data were then summarized and presented in tabular form. A bi-variable analysis was performed to determine association between independent variables and the outcome variable. Those with $p < 0.2$ in the bi-variable analysis were processed into a multiple logistic regression analysis. The overall goodness-of-fit of the model was assessed using Hosmer and Lemeshow Test and $p\text{-value} > 0.05$ was used to conclude the model fitness. AOR in 95% confidence intervals were calculated and a $P\text{-value}$ of < 0.05 was used to identify independent determinants of disclosure of HIV status.

4.9 Ethical Consideration

Ethical approval was obtained from the Institutional Review Board (IRB) of Saint Paul Hospital Millennium Medical College (SPHMMC). Then permission was obtained from Fitch Hospital and communicated to the hospital's ART clinic. For the interview, written consent was obtained from the study participants after they had been informed of the study objective. Each participant was assured that the information provided by them would be treated confidentially and only used for scientific purposes.

The participants were assured that the information they provided would not be traceable in the future and that their names were not mentioned in any documents from the study, but a code number was given to ensure the confidentiality of the participant information. Interviews were conducted with people who volunteered to take part in the study. The participants were informed that they have the right to refuse the study or to participate in the study and that they could withdraw from it at any time during the course of the study and that their involuntary behavior would not have any negative consequences for them or for the service they are providing to the health department. The researcher ensured that participants were comfortable and interviewed in a safe room with no noise.

4.10 Operational Definition

- HIV positive status disclosure: - The act of informing HIV positive status to others (sexual partner, families, and friends) (6).
- Partner:- someone you are in a relationship with or having love, emotional, romantic or sexual towards (52).
- Sexual partner: - Is a person with whom one engages in sex acts. They may be regular partner or not (52).
- Steady partner was a partner with whom a respondent had regular sexual relationship and perceived by them as spouse or regular boy/girl friend (53).
- Casual partners means individuals with whom they had sexual intercourse once or a few times other than regular steady partners (spouse/boy/girl friend) on payment or no payment (53).
- Household Food Insecurity Scale: The HFIAS consists of two types of related questions (occurrence and severity). There are 9 occurrence questions with two possible answers (0

= no, 1 = yes). For each question about the frequency of occurrence of HFIAS, the respondent was asked how often the condition reported in the question about previous occurrences has occurred in the last four weeks. There were three possible answers that represent a range of frequencies (1 = rarely, 2 = sometimes, 3 = often). Before summing, code the frequency of occurrence as 0 for all cases where the answer to the appropriate occurrence question was no. The maximum score for a household is 27 and the minimum score is 0. The higher the score, the more food insecurity (access) the household experienced. The lower the score, the less food insecurity (access) a household experienced (50).

- Perceived stigma: A 12-item short version of the psychometric rating scale of the HIV stigma scale was used to measure perceived stigma. A 4-point Likert scale was used to measure the perceived stigma of HIV (1=Strongly Disagree; 2=Disagree; 3=Agree; 4=Strongly Agree). A total stigma score was calculated by summing the scores for all 12 items, and the minimum score is 12 and the maximum is 48. High scores indicate higher levels of perceived HIV stigma (54).
- Opportunistic infections- are illnesses that occur more frequently and are more severe in people with HIV/AIDS: Tuberculosis, Herpes simplex virus, pneumonia, Candidiasis.

5. Result

5.1 Socio-demographic characteristics

A total 380 participants were interviewed with a response rate of 93.6%. The majority of them were 66.6% (253) female and 46.8% (178) married. The median age was 40 years with an inter quartile range IQR (35, 50) years. Of the respondents, 42.6% (162) had no formal education, 79.7% (303) were Oromo by ethnicity, and 92.4% (351) were Orthodox Christians by religion. Three hundred fifteen (82.9%) of the participants had children and 57.5% (181) had more than one child. The majority of the participants, 75.8% (n = 288), were employed and the median monthly household income was 2000 ETB (Table 1).

Table 1:- Socio-demographic characteristics of participants on follow-up of ART clinic at Fitch Hospital, Ethiopia, 2021

Characteristics		Frequency	Percentage (%)
Gender	Male	127	33.4
	Female	253	66.6
Age: Median(IQR)		40(35,50)	
Ethnicity	Oromo	303	79.7
	Amhara	74	19.5
	Others	3	0.8
Educational Level	No formal education	162	42.6
	Primary	122	32.1
	Secondary	61	16.1
	Tertiary	35	9.2
Religion	Orthodox	351	92.4
	Muslim	5	1.3
	Protestant	21	5.5
	Waqefata	3	0.8
Marital status	Married	178	46.8
	separated/Divorced	78	20.5
	Widowed	97	25.5
	Single	27	7.1
Having children	No	65	17.1
	Yes	315	82.9
Number of children living with (N=315)	<=1	134	42.5
	>1	181	57.5
occupation	Employed	288	75.8
	Not Employed	92	24.2
Monthly HH Income(ETB)	<=1000	102	26.8
	1001-3000	183	48.2
	>3000	95	25.0

5.2 Clinical, psychosocial and food in Security Characteristics

More than half of the study participants, 51.8% (197), had tested their HIV test results due to illness, and 34.7% (132) of them were affected by opportunistic infections. During the HIV tests, 66.6% (253) of them came alone and received advice. The median time since diagnosis of HIV status was 120 months IQR (72,156) and the median duration of ART started was 120 months IQR (63,156) at the time of the study. Only 13.7% of the study participants were members of associations of people with HIV. Three hundred seventy five (98.7%) of the participants received HIV status disclosure counseling. The majority, 364 (98.5%) of the study participants were in the first clinical stage of HIV infection. More than half of the study participants, 53.4% (203), had a high perceived stigma. Only one fourth of the PLWHIV had food in-security (Table 3).

Table 2: Clinical, psycho-Social factors and food insecurity characteristics of participant's follow-up ART clinic at Fitcha Hospital, Ethiopia, 2021

Characteristics		Frequency	Percentage (%)
Reason for HIV Test	partner positive	47	12.4
	partner sick/dead	22	5.8
	To know own status	56	14.7
	sick	197	51.8
	pregnant/plan to have child	25	6.6
	others	33	8.7
HIV tested with whom	Alone	253	66.6
	partner	93	24.5
	Others*	34	8.9
Time since HIV diagnosis in month(median)		120(72,156)	
Month on ART (median)		120(63,156)	
Opportunistic infections	No	248	65.3
	Yes	132	34.7
Member of ART association	No	328	86.3
	Yes	52	13.7
HIV status disclosure counseling	Yes	375	98.7
	No	5	1.3
WHO stage of disease	Stage I	364	95.8
	Stage II-IV	16	4.2
Perceived stigma	low perceived stigma	177	46.6
	High perceived stigma	203	53.4
Food security	food secured	287	75.5
	Food In secured	93	24.5

*Others: friends, family, neighbor

5.3 Time of Disclosure and importance of disclosure to others

Three hundred and twenty-four participants (89.3%) disclosed their HIV status within 24 hours of diagnosis, 11 (3%) within a week, 11 (3%) between a week and six months, and 17 (4.7%) after six months of diagnosis and knowing their HIV status. More than half of study participants, 201 (52.9%) reported it was important to tell others about their HIV status, while 179 (47.1%) reported it was not important to disclose it. Out of 201 respondents who said it was important to disclose their HIV status, 187 (93%) suggested preventing the transmission of HIV/AIDS, 108 (53.7%) for better care, and 7 (3.7%) reported to prevent blames (Table 4).

Table 3: Time of first disclosure and Reason why the disclosure is important among participant's follow-up ART clinic at Fitche Hospital, Ethiopia, 2021

Characteristics		Frequency	Percentage
Time first disclosure to someone	24 Hour	324	89.3
	1 week	11	3.0
	6 months	11	3.0
	>6 months	17	4.7
Important to disclose to others	Yes	201	52.9
	No	179	47.1
Importance of disclosure to others(N=201)	Better care	108	53.7
	Prevent transmission of HIV	187	93.0
	Prevent blames	7	3.5

5.4 Sexual behavior characteristics

Of a total of 380 respondents, 96.1% (365) had sexual partners in the past. Of those who have had sexual partners, 68.2% (249) know their sexual partner status and 61.8% (235) of them have had multiple sexual partners. Currently, 52.4% (199) have sexual partners of which 88.9% (177) had the sexual partner type of spouse (Table 4). Among 170 sexually active participants in the past 1 year, 29.4% (50) use condom always and 54.7% (93) not use condom at all (Table 5).

Table 4: Sexual behavior characteristics of participant's follow-up ART clinic at Fitcha Hospital, Ethiopia, 2021

Characteristics		Frequency	Percentage
Known HIV status of Sexual Partner (N=365)	No	116	31.8
	Yes	249	68.2
Sexual partner status (N=365)	Positive	182	49.9
	Negative	67	18.4
	Unknown	116	31.8
Number of life time sexual partner(N=380)	None	15	3.9
	single	130	34.2
	Multiple	235	61.8
Currently have sexual partner(N=380)	No	181	47.6
	Yes	199	52.4
Current Sexual partner Type(N=199)	Steady sexual Partner	184	92.5
	Casual sexual partner	15	7.5
Condom use among sexually active in the past 1 year(N=170)	Always	50	29.4
	Most of the time	3	1.8
	Sometimes	24	14.1
	Not use at all	93	54.7

5.5 Magnitude of HIV Disclosure

Among the 380 participants, 95.5 % (363) disclosed their HIV status to someone 4.5% did not disclose their HIV status to anyone. Disclosure to someone was almost the same in both gender men and women (94.6% vs. 96%) in magnitude. The disclosure of HIV status to family members and friends was 81.3% (309) and 29.2% (111), respectively. Disclosing to family occurred more frequently among women (84.2% vs. 75.6%). Among 365 participants who had a sexual partner, 67.4% (246) reported disclosing their sero-status to sexual partners. Disclosure to a sexual partner was more common in men 82.2% vs. 60.3% (Table 6).

Table 5: Prevalence of HIV status disclosure of participant's follow-up ART clinic at Fitcha Hospital, Ethiopia, 2021

Variables	Total disclosure N%	Male	Female
		N %	N %
Disclose to someone(N=380)	363(95.5)	120(94.5%)	243(96.0%)
Disclose to sexual partner (N=365)	246(67.4)	97(82.2%)	149(60.3%)
Disclose to Family/Relatives(N=380)	309(81.3)	96(75.6%)	213(84.2%)
Disclose to Neighbors(N=380)	103(27.1)	27(21.3%)	76(30.0%)
Disclose to Friends(N=380)	111(29.2)	40(31.5%)	71(28.1%)

5.6 Factors Associated with HIV disclosure

In the bi-variable analysis, knowing HIV status of partner (COR = 11.25, 95% CI: 3.16,40.0), duration since the HIV diagnosis (COR = 1.016, 95% CI: 1.006 ,1.026), duration on follow up (COR = 1.015, 95% CI: 1.005-1.025), HIV Disclosure importance (COR = 9.101, 95% CI: 2.05-40.37), Having current sexual partner (COR = 3.532, 95% CI: 1.13,11.03), positive partner status (COR = 12.35, 95% CI: 2.75,55.44) and negative partner status (COR = 9.059, 95% CI: 1.16,70.5) were significantly associated with HIV disclosure to someone (Table 7).

In the multivariable analysis, three variables (knowing the HIV serostatus of their sexual partners, duration on follow up, and importance of HIV disclosure) were found to be independently associated factors of disclosure to someone. Respondents who knew their sexual partners' HIV status were 11 times more likely to disclose than those who didn't know their partner's HIV status (AOR 11.08, 95% CI: 3.02,40.7). Individuals who support HIV disclosure importance of HIV status were 9 times more likely to disclose than counterparts (AOR=8.57, 95%CI: 1.86,39.48). Duration since HIV diagnosis was excluded in order to avoid collinearity with the duration of the follow-up examination. The odds (likelihood) of HIV status disclosure increases by 1.3% with an increase of 1-month follow up in the ART program (Table 7).

Table 6: Factors associated with HIV status disclosure among ART participant's follow-up ART clinic at Fitcha Hospital, Ethiopia, 2021

Characteristics		HIV status disclosing		COR(95% CI)	AOR (95% CI)
		Yes N (%)	No N (%)		
Marital status	Married	174(97.8)	4(2.2)	2.99(.957,9.350)	1.69(.253,11.39)
	Unmarried	189(93.6)	13(6.4)	1	1
House hold income by quartile	<=1000	96(94.1)	6(5.9)	1	1
	1001-3000	174(95.1)	9(4.9)	1.21(.41,3.49)	.61(.16,2.2)
	>3000	93(97.9)	2(2.1)	2.9(6.57,14.7)	1.05(.15,7.4)
Have children	No	60(90.9)	6(9.1)	1	1
	Yes	303(96.5)	11(3.5)	2.75(.98,7.73)	2.7(.79,9.4)
Month since HIV diagnosis				1.016(1.006,1.026)	
Month on ART				1.015(1.005,1.025)*	1.013(1.003,1.024)*
Know partner status	No	102(87.9)	14(12.1)	1	1
	Yes	246(98.8)	3(1.2)	11.25(3.16,40.0)*	11.08(3.02,40.7)*
currently have sexual partner	No	173(93.0)	13(7.0)	1	1
	Yes	188(97.9)	4(2.1)	3.53(1.13,11.03)	2.2(.36,13.9)
HIV disclosure importance	No	164(91.6)	15(8.4)	1	1
	Yes	199(99.0)	2(1.0)	9.10(2.05,40.37)*	8.57(1.86,39.48)*
Food security	secured	277(96.5)	10(3.5)	2.255(.83,6.10)	1.5(.43,5.4)
	In secured	86(92.5)	7(7.5)	1	1
Perceived stigma	low	173(97.7)	4(2.3)	2.95(.94,9.24)	2.31(.61,8.7)
	high	190(93.6)	13(6.4)	1	1

Note: * =Variables that are Statistical Significant at p value < 0.05

Hosmer and Lemeshow model fit is 0.585.

6. Discussions

Disclosure of HIV positive status is vital for ending the HIV/AIDS epidemic in Ethiopia. The level and factors of HIV disclosure vary depending on the study environment and the person to whom the information is shared. In this study, the overall disclosure rate of HIV status among people living with HIV/AIDS to someone was 95.5%. The data suggest that, the person to disclose HIV-positive status among respondents was 81.3 % to their family, 67.4% to sexual partner and 29.2% to friends. The finding indicated that factors associated with HIV status disclosure were Knowing partner's HIV status, duration of follow up care and knowledge on the importance of disclosure.

The prevalence of HIV status disclosure to someone in this study is comparable to other results carried out in Mwanza (Tanzania) of 93.3% (40). It is also comparable to studies conducted in Jimma and Hawassa in which 94.5% and 92.2% of the study subjects disclosed their HIV status to at least one person respectively(24,39). However, this finding is higher than the study conducted in Butajira 90% (6), Ambo 86.2%(11) in which HIV status was disclosed to at least one person. The discrepancy in this study may be due to the time, socio-demographic, and cultural, and aspects of the study participants.

This study showed that the overall prevalence of HIV serostatus disclosure to sexual partners in this study is slightly similar to the study by Sokod Togo 60.9% (36), Tanzania 65.7% (8) and Gore Matu 69%. This finding is lower than those reported in in Zimbabwe 93%(55), Jimma 88.6% (14), Hawassa 85.7% (9). However, this finding is higher than the studies undertaken in Mekele 57.4% (23), Bale 52.6% (16), Addis Ababa 51.7% (9). In addition, only 25% were tested with their sexual partner in this study, which could have an impact on a low disclosure rate to the sexual partner. Furthermore, the discrepancy could be due to the fact that the other study only included the current sexual partner / who had a sexual partner during the HIV diagnosis.

This study also revealed that people who knew their partner's HIV status, either positive or negative, were more likely to disclose their HIV status than those who did not know their partner's HIV status. The result is supported by studies done in Woldia(44), Debremerkos(56), Hawassa Referral Hospital(16). It is also supported by Togo(36), Nigeria Ogun state(57), and Kenya(29). Similar results as participants who knew their sexual partner's HIV status were more likely to disclose their own HIV-positive status. This might

be due to knowing the partner's HIV status opens up the opportunity to discuss HIV transmission and control. It is also critical to greater support, lowering the fear of disclosure, and improving HIV serostatus disclosure.

The duration of follow-up care was one of the factors positively associated with HIV disclosure. In this study, longer HIV follow-up care was associated with a higher rate of disclosure. This is in line with the findings of Mekele(23), Woldia(44), and Hawassa's(24). This might be due to the fact that people with HIV/AIDS receiving long-term care have knowledge about HIV/AIDS and disclosure as well as the opportunity to share their experiences with other HIV-positive people in order to build behavioral changes. Additionally, they have adequate time to consider HIV disclosure, start a new life, educate others and freely disclose their HIV status.

The study found that the commonest significance of disclosure were need to get financial, psychological or emotional support and not desiring to put partner at danger of catching HIV (10). In this study, PLWHIV who supports the concept of HIV importance disclosure were almost 9 times higher than PLWHIV who didn't support the concept of HIV importance disclosure. This result is supported by a descriptive cross-sectional study in Namibia(58) which showed that people's opinion of disclosure was positive. The majority (68%) responded that it was good, important, useful and necessary. However, there was no literature statistically significant when multivariate logistic regression was conducted on HIV disclosure importance.

7. Limitations of the study

The results presented in this study require careful interpretation in light of the following limitations. First, data was collected from a health facility and only from people living with HIV/AIDS who were in follow-up care, so it is not possible to generalize these results to the general public. As this, leads to an overestimation or underestimation of the community HIV status disclosure rate. Secondly, a cross-sectional study design was used: Causal relationships can't be determined, as this is a one-time exposure and outcome measurement. Thirdly, there was a possibility of recall bias concerning disclosure because some participants were diagnosed 5 years back.

8. Conclusion

This study found that the majority of respondents shared their HIV status with someone, while the disclosure to sexual partners was relatively low. Knowing sexual partner HIV status, long duration of follow-up care, and Importance of HIV disclosure were independently associated with HIV status disclosure to someone.

9. Recommendation

9.1 Clinicians who work at ART clinic should facilitate couple HIV diagnosis and counseling together. In addition, strengthened health education programs about HIV disclosure importance during follow up care.

9.2 Government and stake holders are needed to promote HIV positive status disclosure particularly among sexual partner.

9.3 Support groups who work on HIV are needed to reduce barriers affecting disclosure in order to increase the disclosure rate.

9.4 Fitch Hospital need to facilitate and prepares forums for the exchange of experience and knowledge about disclosure between customers follow-up the ART clinics.

9.5 Researchers need to conduct more studies on the barriers to disclosure and the motivations behind disclosure of HIV status. It is better to conduct further studies on similar topics to analytical studies to assess the factors associated with disclosure.

10. Plan for dissemination of findings

The final results of the study will be presented to SPHMMC. The results are also shared with the North Shoa Health Department and Fitch Hospital. The thesis will be submitted to the IRB of SPHMMC as it represents a partial fulfillment for the master's course in the Field Epidemiology. Effort will be made for publication of the research.

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Annexes

Annexe1 Consent Form in English version

CONSENT FORM

How are you? My name is _____ and I am working as data collector for MPH student Nigusu Ayele. He is student at Saint Paul's Hospital millennium Medical collage Department of Public Health. I would like to ask you few questions and your willingness in the study. This study is prepared to obtain relevant information about the prevalence of HIV status disclosure and associated factor in Fitcha Hospital among people living with HIV/AIDS. Your participation in the study is very important in reducing the HIV transmission rate. Your name & address will not be written in this form and will never be used in connection with any information you tell us. All the information given by you will be kept strictly confidential and only used for this study. Your participation is voluntary and you are not obligated to answer any question which you do not wish to answer. If you feel discomfort to respond to any of the question, please feel free to drop it any time you wish to do so. Thank you in advance for your participation in the study. I have read all the process and the objective of the study and I have understood the same as written. I understood that the research imposes no risk and no compensation would be provided to me. Could I have your permission to continue?

1. Yes

2. No Stop the interview and thank the respondent.

Witness's signature certifying that the informed consent has been given.

Witness: Signature _____ Date _____

Data collector: Name _____ Signature _____ Date _____

Result: 1. Questionnaire completed _____ 2. Questionnaire partially completed _____

Checked by Supervisor: Name _____ Supervisor's Signature _____ Date _____

Title: HIV status disclosure and its determinants among PLWHA following ART clinic in Fitcha Hospital, Oromia region, Ethiopia, 2021

Principal investigator's name and address Name: - NigusuAyele

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Section I Demographic and Socioeconomic Information		
SN	Questions and Filters	Response & Coding Categories /Skip
101	Study Number	_____
102	Sex	1 = Male 2 = Female
103	How old are you?	_____ Years
104	What is your education level?	1=Never attended to school 2=Primary education 3=Secondary education 4=Certificate 5=diploma 6=Degree and above
105	What is your religious denomination?	1=Orthodox 2=Muslim 3=Protestant 4=Catholic 5=Other, Specify _____
106	What is your ethnic group?	1=Oromo 2=Amhara 3=Other, Specify-----
107	What is your major paid occupation currently? (Whatever you do to earn money)?	1= Government employee 2= Private/NGO 3=Own business/farm 4=Daily laborer 5=Housewife 6=Student 7=Have no Job 8=Other specify _____
108	How much is your household income, including your own?	_____ (Birr/month)
109	Do you have children?	1=Yes 2=No-----If No skip to Q.113
110	How many children do you have?	_____
111	How many of your children are living with you now?	Number of children_____
112	What is your marital status now? (Circle)	1=Married----- go Q.201 2=Cohabiting----- go Q.201 3=Separated/divorced -----go Q.202 4=Divorced----- go Q.202 5=Widow-----go Q.202 6=Single-----go Q.202
Section II Partnership information. Now, I am going to ask you questions regarding your relationship with your most recent sexual partner. Your most recent partner is the person with whom you, most recently, are having/had mostly sex with. If you are abstaining, please answer about your spouse. Regular partner is a person with who you have sex regularly but isn't your spouse. Casual partner is a person with whom you had sex only once or only infrequently. If you are mostly having casual partners recently, please answer about your most recent casual partner.		
201	Are you currently living together or Visits?	1=Live together 2= 3-6 months apart 3= 7>more months apart Q203
202	Though you said you are widow, Divorced, separated, or single; do you have a regular sexual partner?	1=Yes 2=No ----- go Q301
203	How old is your partner?	_____
204	What is level of education of your partner?	1=Never attended to school 2=Primary education 3=Secondary education 4=Certificate 5=diploma 6=Degree and above
205	What is of your partner Occupation?	_____
206	Have you ever talked about HIV testing with	1=Yes

	your partner before going for a test?	2=No-----If No skip to Q.208
207	What was your partner's intention about the discussion on HIV testing?	1=Was happy 2=Was reluctant to discuss 3=Got angry 4= Other(specify)_____
208	Is your most recent partner tested for HIV, what was the result?	1=Has tested positive 2=Has tested negative 3=Has tested, but I don't know the result 4=Hasn't tested 5=I don't know if he/she is tested
Section III HIV testing and treatment		
301	What were the main reasons Why you went for HIV testing (more than one answer possible)	1=Your partner told you he/she is HIV positive 2=Your own past sexual behavior 3=Your partner's past sexual behavior 4=Your partner told you to come in and get tested 5=Your partner at the time was sick or died 6=You had sharp object injury or blood transfusion 7=You were taking care of people with HIV/AIDS 8=You just wanted to know your HIV status 9=You were sick 10=workplace / embassy requires testing 11=You were planning to get married 12=You were planning on having children 13=You were pregnant so you cared about the fetus 14=Other, specify----- -----
302	When did you find out that you have HIV?	_____ (month, year) 1= I don't know 2= Refused
303	Were you counseled before or after test?	1=Yes 2= No
304	With whom did you test for HIV	1=Alone 2=With my partner 3=Other specify_____
305	Did the counselor talk to you about disclosing your HIV positivity to your partner, family, or significant others?	1=Yes 2=No
306	Did the counselor tell you that he/she is required to notify your partner s/he is at risk, if you wouldn't?	1=Yes 2=No
307	Are you on antiretroviral medication?	1= Yes, 2=No -----Skip to Q 309
308	When did you start taking ARVs?	1=_____Month/Year 2=I don't Know 3=Refused
309	Are you a member of any association of people living with HIV/AIDS?	1=Yes 2=No
310	WHO Stage of the disease (look to patient card)	1=Stage I 2=Stage II 3=Stage III 4= Stage IV 5=-Not specified
311	Are you currently suffering from opportunistic infection?	1=Yes 2=No----- Skip to Q401 3=I don't Know----- skip to Q.401

312	If Yes which one?	1=Tuberculosis 2=Candidiasis 3=Urinary Tract infection (UTI) 4=Meningitis 5=Pneumonia 6=Others (specify) _____
Section IV. SEROSTATUS DISCLOSURE INFORMATION		
401	Did you receive any counseling in connection with HIV test result disclosure?	1=Yes 2=No
402	Does anyone close to you (other than the diagnosing / treating health professional) know your HIV status?	1=Yes 2=No -----If No Skip to Q.411
403	If yes, who knows that you are HIV positive?circle (Multiple response possible)	1=A partner 2=Mother 3=Father 4=Son/Daughter 5=Sibling 6=Other Family members 7=Relative 8=Friend 9=Religious Leader 10=Neighbor 11=Others
404	How long after learning your HIV status, did you first disclose your HIV status?	_____ day/weak/Month/year
405	How long after diagnosis or after you started relationship (if you had already been tested positive when you started the relationship) did you tell your result to your most recent	_____ (specify days, weeks, months, years as much as possible)
406	How long after diagnosis did you tell the first time your result to your family / friends?	1=Family _____ 2=Friends _____ (specify days, weeks, months, years as much as possible)
407	After you found out that you are HIV positive, did you have unprotected sex with your partner before telling him/her about your infection?	1=Yes 2=No
407	Why did you tell to your most recent partner that you are HIV positive? (Multiple response possible)	1=The counsellor encouraged me 2= I do not want to put them at risk 3=I want to get their support 4=It is usual to tell them every secret things 5=I do not want to be legally accused 6=I feared God to hide such things 7=Others(specify) _____
408	Why did you tell to your family (to hear it from you) that you are HIV positive? (Multiple response possible)	1=The counsellor encouraged me 2=I do not want to put them at risk 3=I want to get their support 4=It is usual to tell them every secret things 5=I do not want to be legally accused 6=I feared God to hide such things 7=others(specify) _____
409	Why did you tell to your Friends/relatives (to hear it from you that you are HIV positive? (Multiple response possible)	1=The counsellor encouraged me 2=I do not want to put them at risk 3=I want to get their support 4=It is usual to tell them every secret things 5=I do not want to be legally accused 6=I feared God to hide such things 7=others(specify) _____

This set of questions asks about some of your feelings and opinions as to how people with HIV feel and how they are treated. There is no right or wrong answer. Please feel free to tell us what you think. Could you tell me if you agree or disagree with the following statements

		Strongly disagree	Disagree	Agree	Strongly agree
601	I feel guilty because I have HIV	1= ☐	2= ☐	3= ☐	4= ☐
602	feel I'm not as good a person as others because I have HIV	1= ☐	2= ☐	3= ☐	4= ☐
603	People's attitudes about HIV make me feel worse about myself	1= ☐	2= ☐	3= ☐	4= ☐
604	Most people believe a person who has HIV is dirty	1= ☐	2= ☐	3= ☐	4= ☐
605	Most people are uncomfortable around someone with HIV	1= ☐	2= ☐	3= ☐	4= ☐
606	People with HIV are treated like outcasts	1= ☐	2= ☐	3= ☐	4= ☐
607	People I care about stopped calling after learning I have HIV	1= ☐	2= ☐	3= ☐	4= ☐
608	I have lost friends by telling them I have HIV	4= ☐	3= ☐	2= ☐	1= ☐
609	Some people avoid touching me if they know I have HIV	1= ☐	2= ☐	3= ☐	4= ☐
611	Telling someone I have HIV is risky	1= ☐	2= ☐	3= ☐	4= ☐
612	I work hard to keep my HIV a secret	1= ☐	2= ☐	3= ☐	4= ☐
613	I am very careful who I tell that I have HIV	1= ☐	2= ☐	3= ☐	4= ☐

VIV Household Food Insecurity Access Scale (HFIAS) Measurement Tool		
No	Question	Response Options
701	In the past four weeks, did you worry that your household would not have enough food?	0 = No ----- skip to Q703 1=Yes
702	How often did this happen in the past four weeks?	1 = Rarely (once or twice) 2 = Sometimes (three to ten times) 3 = Often (more than ten times)
703	In the past four weeks, were you or any household member not able to eat the kinds of foods you preferred because of a lack of resources?	0 = No ----- skip to Q705 1=Yes
704	How often did this happen in the past four weeks?	1 = Rarely (once or twice) 2 = Sometimes (three to ten times) 3 = Often (more than ten times)
705	In the past four weeks, did you or any household member have to eat a limited variety of foods due to a lack of resources?	0 = No -----skip to Q707 1 = Yes
706	How often did this happen in the past four weeks?	1 = Rarely (once or twice) 2 = Sometimes (three to ten times) 3 = Often (more than ten times)
707	In the past four weeks, did you or any household member have to eat some foods that you really did not want to eat because of a lack of resources to obtain other types of food?	0 = No -----skip to Q709 1 = Yes
708	How often did this happen in the past four weeks?	1 = Rarely (once or twice) 2 = Sometimes (three to ten times) 3 = Often (more than ten times)

709	In the past four weeks, did you or any household member have to eat a smaller meal than you felt you needed because there was not enough food?	0 = No -----skip to Q711 1 = Yes
710	How often did this happen in the past four weeks?	1 = Rarely (once or twice) 2 = Sometimes (three to ten times) 3 = Often (more than ten times)
711	In the past four weeks, did you or any other household member have to eat fewer meals in a day because there was not enough food?	0 = No -----skip to Q713) 1 = Yes
712	How often did this happen in the past four weeks?	1 = Rarely (once or twice) 2 = Sometimes (three to ten times) 3 = Often (more than ten times)
713	In the past four weeks, was there ever no food to eat of any kind in your household because of lack of resources to get food?	0 = No (skip to Q715) 1 = Yes
714	How often did this happen in the past four weeks?	1 = Rarely (once or twice) 2 = Sometimes (three to ten times) 3 = Often (more than ten times)
715	In the past four weeks, did you or any household member go to sleep at night hungry because there was not enough food?	0 = No -----skip to Q717) 1 = Yes
716	How often did this happen in the past four weeks?	1 = Rarely (once or twice) 2 = Sometimes (three to ten times) 3 = Often (more than ten times)
717	In the past four weeks, did you or any household member go a whole day and night without eating anything because there was not enough food?	0 = No 1 = Yes If 0 questionnaire is finished
718	How often did this happen in the past four weeks?	1 = Rarely (once or twice) 2 = Sometimes (three to ten times) 3 = Often (more than ten times)