Sexual and reproductive health needs and preferences of people living with HIV/AIDS in Southern Nations Nationalities and Peoples Region

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Abbreviations:

AAU: Addis Ababa University
AIDS: Acquired Immune deficiently syndrome
ART: Anti retro viral therapy
ART Unit: Anti retro viral therapy unit
ARV: Anti retro viral
CI : confidence Interval
DCH: Department of community Health
ETB: Ethiopia Birr
HAART : Highly active antiretroviral therapy
HBC: Home based HIV care
HIV: Human Immune deficiency virus
IUD: Intra uterine Derive
MOH: Ministry of health
MTCT: Mother to child transmission of HIV
OCP: Oral contraceptive pills
OR: Odds ratio
PLWHA: People living with HIV,/or manifestations of AIDS
PMTCT: Prevention of mother to child transmission of HIV
RHB: Regional Health Bureau
SD: Standard deviation
SNNPR: southern Nations and nationalities peoples Region
SPSS: statistical package for social sciences
STI: Sexually transmitted infections
WHO: world health organization

Abstract:

Background: Sexual and Reproductive needs and preferences of HIV positive individuals are changing due to the development of antiretroviral therapy (ART) as effective for HIV infection. Due to improvements of symptoms and the change in quality of life PLWHA regain their normal activities and new challenges and new opportunities are arising.

Objective: The aim of this study is to assess sexual & reproductive needs and preferences of PLWHA receiving antiretroviral therapy in five Hospitals of Southern Nations Nationalities & peoples Region (SNNPR).

Methods: A cross sectional survey on 461 Patients receiving ART in five hospitals of SNNPR, was carried out from February to March 2007. The data on sexual and reproductive needs and preferences, and other variables were collected using structured and pre-tested questionnaire. A Quantitative method is supplemented by Qualitative (in-depth interview).

Result: Two hundred twenty three (49.1%) of HIV positive individuals were found to have sexual practice with regular partner, 191(42.1%) were abstained, 24(5.3 %) had sexual practice with no or inconsistent condom use and 16(3.5%) with multiple sexual partners. One hundred fifty four (33.9%) of the respondents expressed their desire for children. One hundred sixty nine (70.4%) of the study population had ever used at least one method of contraception during the study time, while 33(53.4%) wanted to use at least one method in the future. Condom and injectable are the most commonly used method of contraception in the past and preferred method to be used in the future. Generally, HIV positive individuals who had sexual risk were those non married & had sexual partner (adjusted OR: 6.99, 95% CI: 2.34-20.9) and reported alcohol use (Adjusted OR: 6.07, 95% CI: 1.87-19.7). Respondents in the age group 15-34 were more likely to desire children (adjusted OR: 1.91, 95% CI:1.13-3.24) than other age group. Followers of orthodox Christianity were less likely to desire children than other Christians (adjusted OR: 0.54, 95% CI = 0.33-0.91). Being married (adjusted OR: 1.78, 95% CI: 1.05-3.14), those who had risky sexual behavior (OR=1.73, 95% CI=1.02-2.95) and those who reported no currently alive children adjusted (OR: 4.41, 95% CI: 1.46-13.36) were more likely to desire children.

Conclusion: Sexual & reproductive health needs and preferences of PLWHA are not affected by their HIV status**.** Risky sexual practice was not uncommon, high number of them expressed a wish for children and wants to use family planning. To address such issues proper promotion & counseling of subjects is important. Moreover, National and the International stakeholders should be coordinated for intervention.

1. Introduction

HIV/AIDS created enormous worldwide challenges on survival of mankind. Since its recognition, the virus has infected close to 65 million individuals and over 25 million have already died due to AIDS, over 40 million people living with HIV/AIDS and more than 65% are in sub-Saharan Africa. Ethiopia is one of the countries heavily affected, with 1.7 million of people living with HIV/AIDS, 245,000 AIDS patients were in need of antiretroviral treatment (ART). The majority of cases are in reproductive age group (15-49) which has a great implication on sexual and reproduction like sexual desire, sexual behavior, fertility need and family planning practices (1, 2).

Since the development of antiretroviral therapy (ART), AIDS has substantially reduced the death rate from this disease, whereas clinical disease progression increased to 20 years, and the prevalence of HIV/AIDS dramatically increased.(2,3)

As life expectancy of people living with HIV/AIDS (PLWHA) is changing, the reproductive health needs of clients are constantly changing and becoming increasingly important. New challenges and new opportunities are arising as the HIV/AIDS epidemic evolves, as technologies change, and as individuals and societies respond to these changes. Due to improvements of symptoms and the change in quality of life, being a human, PLWHA regain their normal sexual desire/activities. Due to lack of awareness of risky sexual condition of HIV re-infection, they may be re-infected with new, possibly more dangerous strains of HIV, or infected with HIV that is drug resistant and increased to get other sexually transmitted diseases (STD). The worst behavior may be exposing someone else to a serious illness (4). The availability of antiretroviral agents for prevention of mother to child transmission increased decision making ability to plan for future fertility desire. In order to meet this need some of HIV-infected people may be engaged in unprotected sex while attempting to have children (5).

Reaching the reproductive health goals set by the international community in the ICPD program of Action, as reflected in the MDGs and other international agreement, will require scaling up of cost-effective approaches. Countries can no longer afford to pass up missed opportunities to address the range of unmet reproductive health needs of clients, like

FP/MCH, HIV/STI,PMTCT,VCT,ART services can be an efficient way to promote wanted, healthy pregnancies, improve child health and prevent disease(2).

In SNNPR, provision of ART was started in two hospitals (Yirgalem& Arbaminch) in 2003 with aid from Norwegian Lutheran Mission. Now the Region has scaled it up to 10 new additional sites with 15 million populations. So this study assessed sexual and reproductive health needs and preferences of people living with HIV/AIDS in the region.

2. LITERATURE REVIEW

2.1 Sexual desire/activities

ART has been shown to improve survival of PLWHA and one of the consequences of the treatment is an increase in the prevalence of HIV-infected people in the population. ART treatment not only reduces the rate of progression to overt AIDS but also increases the number of CD4 and induces the disappearance of viral antigens from peripheral blood(4).

Sexuality is at core of human identity and personhood. Seriously, sex matters & understanding sexuality is a key to understanding of many beliefs & much of behavior which affect health and reproduction (21).Taking about sex is seen to be threatening. Educating people about sex is seen to be threatening. Sexuality starts from early life human being. Our opportunities to seek or even think about sexual pleasure, as well as how we experience pleasure, and what turns us on, are influenced by a wide range of factors including gender power relations, class, race, economic status, the global media and the market (6).

The physiological improvement due to ART drugs follows with the improvement of sexual activities of PLWHA and majorities of them continue their normal sexual activities. The study, conducted on sexual activity of patients on ART clients at Mexico shows, from 115 patients included, 100 patients continued to have sexual activity after the diagnosis, while only 15 patients stopped their sexual activity. Only 13 of 100 patients who continue to have sex activity claimed that they do not tell about the HIV status to their sexual partners, 65% of the partner aware that they could transmit the HIV if they had intercourse; the remaining 34.8% consider that there were no risk, especially with the use of condom (7).

Another study from South Africa shows 65% of the baseline and 88% of the follow-up ART patients were sexually active. Similar study in Addis Ababa shows, 50.2% of ART patients were also sexually active(11, 12).

2.2 Risk sexual practice

In the context with PLWHA, risk is defined as the probability of HIV-positive person may acquire re- infection by HIV of resistant strains to ARV drugs or acquiring other STD's which fasters AIDS progression. Risk arises from HIV-positive individuals engaging in risk-taking behavior for a variety of reasons. They may, for instance: perceives already infected and lack

of awareness about possibility of re-infection, lack of awareness on risks of other STDS, being an able to negotiate safe sex, or may not have access to condom (13).

In someone immune system is weakened, STDs can have serious repercussions and once established, can be difficult to treat. Therefore, condom protection remains essential; it prevents further sexual transmission of HIV & other STDs to and from any sexual partners (23).

Perhaps, the most difficult area of HIV/AIDS prevention lies in the area of behavioral change. Behavioral change is certainly difficult to inspire and extremely hard to measure (8). The infection pool of HIV is enormous and the potential for further transmission of HIV arising from the sexual behavior of those who already know their status can not be overlooked (9). In Ethiopia, the major (88%) route of HIV transmission and the major determinants for rapid spread of HIVAIDS includes behavioral factors such as un protected sexual intercourse and multiple sexual partners (18, 20). The study from US shows that, 13% HIV positive clients reported in sexual risk with sero-negative or unknown partner, involving 1411 sexual risk acts, 35% of acts where with primary partner, 65% were with causal or one-partner. Sexual risk was associated with lower coping self-efficacy, with the use of alcohol & stimulants (10).

The study from Brazil show a high proportion (25%) HIV-positive people intentionally practiced high risk sex, and this behavior is also of concern for other STDs (25). Similar study from Uganda, out of 723 attending ART, 49% of the respondents had sex in the proceeding 6months, & 35% had other sexual partners whom the majority (86%) had at least 3 or more partners (9).

The study conducted in South Africa show that HIV/AIDS patients are still susceptible to unprotected sex, despite wide spread health education. At baseline 48% of sexually active patients did not use condom while 84% of the patients at follow-up did not use condom at their most recent vaginal intercourse (11).

In Addis Ababa, 74.9% of PLWHA used condom while one fourth did not use and practicing risk sexual behavior. Out of those reported condom use 79.8% used it regularly, while 20.2% reported irregular use. The most common reason for non use was partners dislike for condom

(25.8%). The most common reason for condom use was advice from health professionals (63%) (12).

Another study of Italy reveals condom use reduced the risk of sero-conversion, the incidence rate in couples using them during all intercourse being about six times lower than in other couples (24).

2.3 fertility desire (desire to have children)

The primary concern of PLWHA is their responsibility for their children and others in their families who may be ill, or they do not consider themselves at risk (27). The fact that many HIV-infected adults desire and expect to have children has important implications for the prevention of vertical and heterosexual transmission of HIV.

The optimization of ART was led great improvements in both the quality of life and life expectancy of PLWHA. This "Normalization" has encouraged many positive people to include perspectives in planning of their life that had previously seen as being impossible to fulfill, planning a family is often among those perspectives (14).

Overall, 28-29% of HIV-infected men and women receive ART in the United States desire children in the future. Among those desiring children, 69% of women and 59% of men actually expect to have one or more children in the future. Generally, HIV-positive individuals who desire children are younger have fewer children and report higher ratings of their physical functioning or overall health than their counterparts who do not desire children, yet desire for future childbearing is not related to measures of HIV progression. HIV-positive individuals who expect children are generally younger and less likely to be married than those who do not. Multivariate analyses indicate that black HIV-positive individuals are more likely to expect children in the future than others (15). Another study from Brazil shows half of PLWHA have been sexually active and more than half had reported the desire to children (27.)

The study in Addis Ababa conducted on ART client's shows 40.2% of the respondents expressed the desire for children. Out of those desiring children 42.2% desire to have one child while 57.8% desire to have two or more children. 43.8% of the respondents planned to have a child with in two years, while 56.2% after two years (12).

2.4 Family planning practice

In the era of AIDS, contraceptives are important in both developing and developed counties. The threat of contracting HIV had led to some of these respondents decide to produce fewer children than desired, because of worries of leaving orphans behind for others to look after, the costs to be incurred in caring for them and the hope that their orphans would be better cared for Preventing unintended pregnancy among PLWHR is an effective approach to reducing MTCT and vital to meeting sexual and reproductive needs of PLWHA (26).

One of the family planning methods that have been resisted in Africa for cultural and other reasons is the condom. Though the distribution of condoms has greatly increased, & the resistance is slowly giving way, yet the community still harbors a lot of doubts about them. Rumors that condoms leak, or are even infected with HIV, women blame condom for promoting promiscuity, and churches added to the confusion. Recent Demographic and Health Surveys in various African countries have noted increases in condom use for protection against HIV/STD and preventing pregnancy. Current condom use was higher among women who had received their results and been counseled than others (15, 23). All available methods of family planning such as oral contraceptives, injectables, implants, Intrauterine devils (IUD) barrier methods and spermicidal can be appropriate choice for all HIV positive women including those who do not have advanced disease and on effective ARV treatment (12).

The study in Zimbabwe shows that after their HIV diagnosis, most of the women became much more aware of methods to prevent STI and HIV re-infection, and generally also very anxious to prevent conception. Sixty percent of women used barrier methods or dual protection and 87% of them used contraceptive & 75% used condom (28). In Brazil, in order to limit the number of children they had, two-third HIV-positive women used hormonal contraceptive methods and high proportion of the women are using condom for dual protection (27).

The study of Addis Ababa on ART clients reveals 48.9% and 43.3% of the respondents ever used at least one method of contraceptive before and after HIV diagnosis, respectively. Oral contraceptive pills and injectable were most commonly used before 45.8% and after 29.3% HIV diagnosis, respectively (12).

2.5 Knowledge and attitude on MTCT

HIV- positive pregnant women who do not have indication for HAART should receive ARV for Preventing Mother to child transmission (PMTCT) purposes as per the national PMTCT guidelines (3)

The main objective of PMTCT is to reduce the transmission of HIV infection from HIV infected mother to offspring. A sentinel surveillance report of sero-status of pregnant mother from 5 towns of southern Ethiopia revealed a prevalence of 7.8%. An increase incidence of HIV in pregnant mothers would ultimately lead to increased incidence of HIV in children. The reason for increasing MTCT of HIV might include lack of knowledge of mothers on the risk of MTCT, lack of access to VCT and the benefit of preventive interventions, like ART, infant feeding options. ARV prophylaxis and avoidably breast feeding are cornerstones of the strategy of PMTCT (17, 19).

The study from Addis Abab Showed, 98.9% of participants know about transmission of HIV from mother to child. Out of these people 93.6% of them knew the availability of MTCT prevention medication. 20% have negative attitudes toward the effectiveness of preventive medications. Public media 69% and with health professionals 46.6% were identified as major sources of information about PMTCT (12).

3. Objective

3.1. General Objective:

To assess sexual practice, fertility desire and family planning needs of People living with HIV/AIDS who are currently on Ant retroviral therapy in five hospitals of SNNPR.

3.2. Specific Objective:

1. To assess sexual practice and fertility desires of People living with HIV/AIDS who are currently on Anti retro therapy in five hospitals of SNNPR.
2. To assess Family Planning practices & need of people living with HIV/AIDS who are currently on Ant retroviral therapy in five hospitals of SNNPR.
3. To explore knowledge on mother to child transmission of HIV-positive people who are currently on Anti retro viral in five hospitals of SNNPR.

4. Methods and materials

4.1 Study design:

A cross sectional study design that employed quantitative methods supplemented by qualitative in depth interview.

4.2. The study area and period:

The study was undertaken from February to March 2007 in five ART service providing hospital in Southern Nations, Nationalities and Peoples Region. The capital town of the region (Awassa) is located at 275 km from Addis Ababa. Five Hospitals, where the study was conducted are Yirgalem hospital(50km) and Dilla hospital(100km) to south wards, while Soddo hospital(160km) and Arbaminch hospital(275km) to west ward from Awassa. Butajira hospital is also located 165km to north of Awassa. In the region, a total of 2073 HIV positive individuals were receiving ART during were reported in 2005/2006, and 1654(80%) of them were reported from these haspitals.

4.3 Source population:

The source population was all PLWHA who visited the selected hospitals ART unit during the study period.

4.4 Study population:

The study population was all PLWHA who were visited the selected Hospitals ART service and who had at least two or more follow up during data collection period.

4.5 Variables of the Study:

Sexual behavior, Fertility desire, Family planning needs are the main response or dependent variables. Explanatory/independent Variables are socio-demographic characteristics such as age, sex, literacy status, income, marital status, religion, occupation, ethnicity, duration in marriage, family size and number of alive children, duration since HIV diagnosis, family planning use before and after HIV diagnosis, and other variables like substance use, knowledge about MTCT, etc are the important variables in this study.

4.6 Inclusion criteria:

PLWHA those in reproductive age group for women 15-49 and men 15 and above who had at least two or more visits to the selected hospitals for ART were included in the study.

4.7 Exclusion criteria:

All PLWHA who are unable to communicate, mentally handicapped, seriously ill, those who discontinued ART, those who refused to participate in the study and all younger or older than the age specified in the inclusion criteria were excluded from the study.

4.8 Sample size:

4.8.1 Quantitative method:

The sample size was determined by the assumption that 50% of HIV+ individuals may desire to have children with 5% marginal error and 95%CI(α =0.05) and a none response rate of 20%. Based on this assumption, the actual sample size for the study was determined using the formula for single population proportion

$$n = \frac{(Z\ \alpha/_2)^2\ p\ (1-p)}{d^2} \qquad n = \frac{(1.96)^2 x 0.5(1-0.05)}{(0.5)^2}$$

Where:

n=the required sample size

z= standard score corresponding to 95% CI

p= Assumed proportion of RH needs

d= the margin of error 5%

None response rate = 20%

n= 384 + 20%

None respondent rate 20%= 77

Required sample size 384 +77= **461.**

4.8.2 Qualitative method:

For the in- depth interview, purposive sampling was used to select 10 interviewee from the same areas of quantitative data collection. Equal number of males and females were included in the interview.

4.9 Sampling procedure:

4.9.1 Quantitative method:

For quantitative study random sampling method was used. Out of 10 ART sites in SNNPR, 5 sites were purposely selected due to areas of major tribes of (sidama, Gurege, wolaita, Gamu, and Gedeo) representing 75% of catchments population of SNNPR, with 80% of PLWHA are confined to these areas, and other ART sites were not included in the study due to budget constraints, case load, geographic inaccessibility and so on.

The calculated sample size was used to recruit study subjects from the selected ART units proportional to the unit's client size. Study subjects in the selected ART units stratified by sex and sample size for each stratum proportionally allocated. To select study subjects from each stratum, systematic sampling was used. By referring clients registration book for a month prior to data collection, average number of clients visited to all the study hospitals ART unit per month was 90 clients and every 3rd clients interviewed through out the data collection period.

4.9.2 Qualitative method:

For the in- depth interview, purposive sampling was used to select 10 interviewee. Those HIV-positive individuals who participated in in-depth interview were excluded from sample.

4.10 Data Collection instrument:

4.10.1 Format:

A structured questionnaire which was Prepared in English is translated in to Amharic and then translated back to English to check for consistency. The study variables include socio demographic characteristics, sexual desire, family planning practice, fertility desire, sexual practice, knowledge information. For qualitative study open ended questions on sexual desire, sexual behavior, fertility desire, family planning practice and needs were used.

4.10.2 Data Collectors:

For quantitative data 5 Nurses (Counselors) working in the ART unit of each hospital administered structured questioner after they had two days training on the objective, relevance of the study, and technique of interview with demonstration. Five supervisors (one at each Hospital) with first degree were trained and supervised the data Collection process closely and followed up with principal investigator. Qualitative data was administered by principal investigator.

4.11 Quality control:

To ensure the quality of data, training of counselors and supervisors was undertaken and administration of pre-test among 10% of the total sample size. The questionnaire was assessed for its clarity, length, completeness and consistency where some of skip patterns were corrected; questions difficult to ask were then rephrased. In addition, both principal investigator and supervisor had undertaken daily monitoring for completeness, correcting mistakes, checking errors, etc.

4.12 Data processing and analysis:

Quantitative data were entered into EPINFO version 3.3.2 and imported for analysis to SPSS version 13.0 computer. For errors related consistency, 10% of data was entered, cross checked and corrected during data cleaning process. The descriptive analysis such as proportions, percentages, frequency distribution and measures of central tendency were used. Then the logistic regression model was also employed to control confounding effect and measure strength of association.

4.13 Ethical consideration

Ethical approval was obtained from the Research and Publications committee of Medical faculty, Addis Ababa University. A formal letter for permission and support was written to the regional Health Bureau (RHB) and then the region wrote a letter to respective hospitals. The purpose of the study was clearly explained to concerned bodies. In order to keep confidentiality of Patients information, only those personnel who are currently working in

ART unit were involved in the data collection and supervision process. Separate room was prepared for interviewing each patient, in order to keep the privacy of patients as some of the questions may be related to sensitive issues. The respondents were told that they have the right to be involved or not to be involved in the study, and that non involvement otherwise will not affect the clinical care they receive. .

4.14 Operational definitions

Contraceptive use: - HIV positive individuals those who were in marriage/union had and used contraceptives prior to HIV diagnosis.

Changed sexual desire: PLWHA who reported that they had increased or decreased sexual desire after receiving ART drugs compared to sexual desire prior to diagnosis.

Desire for a child /children– refers to a wish or expression of PLWHA to have a child/children in the future.

Fertility needs: A want of PLWHA to have desired family size, number of children, intended or unintended pregnancy, wanted or unwanted pregnancy.

Mother to child transmission**:- refers to the transmission of HIV from the mother to the child through various mechanisms like delivery ,breast feeding ,and pregnancy.**

Prevention of mother to child transmission:- **refers to the methods that help to decrease the chance of transmission of the virus to the born by a certain percent.**

Need for contraceptives: – PLWHA on follow-up care those who were in marriage/union and were not using but wan to use Family planning methods in the future to limit or space child bearing.

Other risks: Other risks include risks other than sexual practice but may put an individual on risk of HIV infections or re-infections. For example sharing common needles with other people, sharp materials, blood transfusion, etc.

Opportunistic Infection: **refers to a disease in some one with a weakened immune system such as an individual with HIV/AIDS but not mostly occurred in people with an intact immune system**

Reproductive Decision: refers to the intention of the individual to give birth to a child or use of contraceptives or thinking of possibility of giving birth.

PLWHA on follow up care – In these study all PLWHA who had at least one visit to the selected ARV treatment units for care who are receiving ARV.

Reproductive health needs : refers to a want of PLWHA for process of healthy generation or self propagation of the ranges of reproductive health needs to have desired family size, number of children, intended or unintended pregnancy, planned or unplanned pregnancy, etc.

Reproductive health preferences: refers to estimation or choice for process of healthy generation or self propagation to determine desired family size, number of children, intended or unintended pregnancy, planned or unplanned pregnancy, etc.

Risky sexual behaviors: IT is sexual activities of PLWHA having a sex with multiple sexual partner, sex with no or inconsistent use of condom.

Safe sex: **refers to the practice of sex that do not make the person vulnerable to HIV**

Sexual desire: refers to a wish or expressions of PLWHA drawing one sex to ward another.
STI: It is self report signs and symptoms of the respondents, such as genital ulcer, abnormal genital discharges, and/or pain during urination or genital swelling since diagnosed for HIV

Substance use: The use of substances (drugs or chemicals) for any reason other than medical or therapeutic reasons which may depress or elicit normal emotion of an individual like cigarette smoking, khat chewing, shisha/gaya smok

5. Results:

A total of 461 eligible clients of reproductive age group (women 15-49 years & men 15 years and above) were identified for the study from five hospitals found in SNNPR, out of which 454 were interviewed with response rate of 98.5 %. The majority 206 (45.4%) of the respondents were from Yirgalem Hospital. Table 1 shows the number and percentage distribution of the participants by Hospital.

Table-1: Distribution of Study Population (PLWHAs) by Hospitals, SNNPR, Ethiopia, 2007.

sr. no.	Name of Hospital	No. of PLWHAs interviewed	%
1	Yirgalem Hospital	206	45.4
2	Arbaminch Hospital	112	24.7
3	Dilla Hospital	71	15.6
4	Wolaita Soddo Hospital	38	8.4
5	Butajira Hospital	27	5.9
	Total	454	100

6.1 Socio- demographic characteristics of the study population (see table 2)

Of the total respondents 238 (52.4%) were females and 216 (47.6%) were males. The age range of the study subjects were 15-54 years and 187 (41.2%) were in the age group of 25-34 years. Above half (50.2%) of the respondents were married, while 92(20.3%) were widowed, 66(14.5%) were divorced and 68(15.0%) were single. Out of those married, majority 169(74.1%) of the respondents were in union for five years and above. More than half (59.5%) were followers of Orthodox Christianity followed by Protestants (29.3%). Of all the respondents who participated in the study, 68(15%) had no schooling, 188(41.1%) had primary education, 152(33.5%) had secondary school education and 46(10.1%) were diploma or degree graduate.

Regarding ethnic composition, the respondents belong to seven ethnic groups. Amhara constituted 131(28.9%), Gurage 75(16.5%), wolaita 72(15.9), Oromo 57(12.6%), Gamo 48(10.6%), Sidama 30(6.6%) and others were 41(9%).

The majority 209(46%) of the study subject were unemployed, while 79(17.4%) and 78(17.2%) were daily laborer and government employee, respectively. Two hundred fifty (55.1%) of the subjects had monthely house hold income less than ETB150 and the median monthly income of the participants was ETB 235. Abut 410 (90.3%) of study participants were urban dwellers and 322(70.9%) of them were living with family size less than or equal to five person.

Table2. Socio-demographic characteristics of PLWHA attending ART service at five hospitals in SNNPR, 2007

Characteristics/variables	**n**	**%**
Sex		
Female	238	52.4
Male	216	47.6
Age (years)		
15-24	43	9.5
25-34	187	41.1
35-44	173	38.1
45 & above	51	11.2
Religion		
Orthodox	270	59.5
Protestant	133	29.3
Islam	44	9.7
Others	7	1.5
Educational status		
No schooling	68	15
Elementary school	188	41.1
High school	152	33.5
Diploma /degree graduate	46	10.1
Ethnicity		
Amhara	131	28.9
Gurage	75	16.5
Wolaita	72	15.9
Oromo	57	12.6

Gamu	48	10.6
Sidama	30	6.6
Others	41	9.0
Marital status		
married/Non-married partner	228	50.2
Widowed	92	20.3
Divorce	66	14.5
Single or Never-married	68	15.0
Duration since marriage (Only current in union, n=233)		
Less than 1year	11	2.4
1-5 year	48	20.6
5 and above years	169	74.2
Estimated monthly household income (In Eth. Birr)		
≤ 150	250	55.1
151-300	109	24.0
301 and above	95	20.9
Occupation /Employment		
Un employed	209	46.0
Daily Laborer	79	17.4
Government employ	78	17.2
Merchant	67	14.8
Others	21	4.8
Current residence		
Urban	410	90.3
Rural	44	9.7
Family Size (Person)		
Less than or equal five	322	70.9
Greater than Five	132	29.1

6.2 Risky Sexual behavior (see table 3)

With respect to history of sexual behavior prior to HIV diagnosis of the respondents, 185(40.7%) had sex with regular /one partner, 126(27.8%) had risky sexual behavior practice with no or inconsistent condom use, 107 (23.6%) had multiple sexual partners and 36(7.9%) had other non sexual risks such as sharing needles, sharp materials, blood transfusions, etc. About twenty five (11.1%) of non-married participants had sexual partner. Out of those non-married respondents 18(72%) of them had one /regular partner, while 7(28%) had non-regular sexual partner.

Majority 323 (71.1%) of the study subjects had felt change in current sexual desire compared to the sexual desire prior to HIV diagnosis. Nearly half (49.1%) of the total respondents were found to have current sexual practice with regular/one partner, while 191(42.1%), 24(5.3%) and 16(3.5%) were abstained from sex, had sexual practice with no or inconsistent condom use and had sex with multiple sexual partners, respectively.

Eleven (24.2%) of the study subjects reported that they had no discussion with ART service providers about risks of unsafe sexual practices. Though 431(94.9%) of the respondents knew about safe sex, 8.8% do not have safe sex. One hundred eighty (41.8%) of the respondents knew that acquiring new strains of HIV infection is one of the consequences of risky sexual behavior for PLWHA.

Table3. Sexual behavior of PLWHA attending ART service at five hospitals in SNNPR, Ethiopia, 2007

Characteristics	n	%
Have sexual partner (Not-married n=226		
Yes	25	11.1
No	210	88.9
Sexual partner (n=25)		
One /regular	18	72.0
None regular	7	28.0
Current Sex desire (Compared to prior to diagnosis)		
No Change	118	26.0
Decreased	296	65.2
Increased	27	5.9
No response	13	2.9
Sexual behavior prior to diagnosis		
One /regular partner	185	40.7
In consistent/ no condom use	126	27.8
Multiple sexual partner	107	23.6
Other non-sexual risk behavior	36	7.9
Current sexual behavior		

One /regular partner	223	49.1
Abstained	191	42.1
Risky sexual practice	24	5.3
Multiple sexual partners	16	3.5
ART Service provider ever discussed about self risk of un safe sex for PLWHA (n=454)		
Yes	343	75.6
No	11	24.4
Knew about self sex (n=454)		
Yes	431	94.9
No	23	5.1
Knew risks of unsafe sex (n=431)		
Acquiring new strain	180	41.8
Contracting other STIs	123	28.5
Worsening of HIVAIDS	120	27.8
The risk is only to HIV negatives	8	1.9

6.3 Fertility desire (see table 4)

While 190(41.9%) of the study subjects had three and more live births, 165(36.3%) of the study population had three and more children who are currently alive. During their follow up only 159(35%) of the study subjects had discussion about fertility issues with ART service providers and out of those who had discussion, 128 (80.5%) had perceived adequate counseling. About one hundred fifty four (33.9%) of the respondents expressed their desire for children. Out of those who desire children, 130(84.4%) desire to have two or less than two children, while 24(15.6%) desire to have more than two children. Sixty two (40.3%) of the study subjects who desire to have children planned to have a child with in two years, while 92(53.7) desire to have after two years. Sixty six (42.9%) of the respondents who desire to have children preferred to have a son, while 24(15.6%) preferred to have a daughter.

Table4. Distribution of PLWHA attending ART service by fertility desire at five hospitals in SNNPR, Ethiopia, 2007

Characteristics / variable	n	%
Number of live births (n =454)		
0 or none	93	20.5
1-2	171	37.7
3 & above	190	41.9
Number of children currently alive(n=454)		
0 or None	108	23.8
1-2	181	39.9
3 & above	165	36.3
Had discussion on fertility issues with ART service provider (n=454)		
Yes	159	35
No	295	65
Had adequate counseling (n=159)		
Yes	128	80.5
No	31	19.5
Future child desire (n= 454)		
Yes	154	33.9
No	300	66.1
Time planned to have children (n=154)		
Within 1-2 years	62	40.3
Within 3-4 years	40	20
After 5 years	52	33.7
Number of children desired (n = 154)		
≤ 2	130	84.4
>2	24	15.6

6.4 Contraceptive use and need

The study participants were requested if they were using contraceptives. They were also requested about the type of contraceptives they used before and during the study time, and the type of contraceptives they plan to use in the future. While nearly half (47.6%) and 169(37.2%) of the study population ever used at least one method of contraception before HIV diagnosis and during the study time, respectively. Out of those who are not currently using contraceptives 38 (8.4%) 0f them reported that they want to use at least one method of contraception in the future.

Condom is the most commonly mentioned contraceptive method used by the study participants in the past (46.7 %) and currently being used (68.6). And it is followed by injectable used in the past (41.2%) and being used during the study time (30.8%). The common reason for current method of contraceptive choice was clients' perceived safety (17.2%) and health workers advice (13.2%).

The most common contraceptive method of future need which are identified by current non-users were injectable(65.8%) and condom(44.7%). The most common reason for no contraceptive need in the future was fear of side-effects/reactions/ with ART drugs (3.7%). The preferred place for contraceptive service delivery was public health facilities (4.2%) and ART unit (3.3%). Out of the study subjects who were using contraceptive during the study time, (17.6%) did not disclose their HIV status to family planning providers. The most common reason for non disclosure was fear of stigma and discriminations (11.7%).

Table 5. Family planning use & need of PLWHA attending ART service at five hospitals in SNNPR, Ethiopia, 2007

Characteristics/variable	n	%
Contraceptive every used prior diagnosis (n=454)		
Yes	216	47.6
No	182	40.1
Not applicable	56	12.3
Contraceptive every used after diagnosis (n=454)		
Yes	165	36.3
No	114	25.1
Not applicable	175	38.5
Current Contraceptive use (n=454)		
Yes	169	37.2
No	71	15.6
Not applicable	214	47.1
Reason for current contraceptive method choice (454)		
Perceived safety	78	17.2
Advise from health worker	60	13.2
Advice from peer/partner recommendation	31	6.8
Not applicable	285	62.8
Future Contraceptive need (n=454)		
Yes	38	8.4
No	33	7.2
Not applicable	383	84.4
Reason for no contraceptive need (n=454)		
	17	
Fear of side effects with ART drugs	10.	3.7
Wants more child	6	2.2
Partner disagree	421	1.3
Not applicable		92.7
Preferred place for contraceptive service (n=454)		
Gov't health facility	19	4.2
ART unit	15	3.3
Private health facility	4	0.8
Not applicable	416	91.6
Disclosure HIV status to contraceptive service provider (n=454)		
Yes	80	17.6
No	89	19.6
Not applicable	285	62.8
Reason for non disclosure (n=454)		
Fear of stigma/ discrimination	53	11.7
No trust on Health Worker Not applicable	36 365	7.9 80.4

Table6. Distribution of PLWHA attending ART service by method of contraceptive ever use prior to diagnosis, after diagnosis, current use and future need at 5 hospitals in SNNPR, Ethiopia, 2007.

	Contraceptive use /need			
	Used prior to diagnosis	**Used of after diagnosis**	**Current use**	**Future need**
Method choice	n=216 n(%)	n=165 n(%)	n =169 n(%)	N=38 n(%)
Abstinence	12 (5.5)	17(10.3)	30(17.8)	4(10.5)
Condom	101 (46.7)	110(66.6)	166(68.6)	17(44.7)
OCPs	48(22.2)	20(12.1)	11(6.5)	4(10.5)
Injectables	89(41.2)	51(30.9)	52(30.8)	25(65.8)
IUD	3(1.4)	2(1.2)	3(1.8)	2(5.3)
Implants	4(1.9)	4(2.4)	4(2.4)	2(5.3)
Surgical	0(0.0)	1(0.6)	1(0.5)	2(5.3)

6.5 Knowledge on mother to child transmission of HIV

Four hundred twenty four (93.4%) of the respondents had ever heard about mother to child transmission of HIV. Those who answered correctly about the time of MTCT of HIVas during pregnancy, labor and through breast feeding were 290 (68.4%), 350 (82.5%) and 357 (84.2%), respectively. The most common source of information about MTCT was from health workers (48.1%) and mass media(45.5%). .

Three hundred eighty three (90,3%) of the study subjects knew about PMTCT, while 72(17%) had negative attitude toward PMTCT of HIV.

Table7. Knowledge about MTCT of PLWHA attending ART service at five hospitals in SNNPR, Ethiopia, 2007

Characteristics/variables	n	%
Heard about Mother to child transmission (MTCT) of HIV (n 454)		
Yes	424	93.4
No	30	6.6
Knowledge about the time of MTCT (N=424)		
During pregnancy	290	68.4
During labor	350	82.5
Through Breast feeding	357	84.2
Source of information about MTCT (n=424)		
Health workers	204	48.1
Mass media	193	45.5
Peer/HBC/others	27	6.4
Awareness about medications of mother to child transitions (PMTCT) of HIV		
Yes	383	90.3
No	41	9.7
Attitude toward medications of MTCT (n=424) of HIV		
Positive	352	83
Negative	72	17

6.6 Condom

Two hundred sixty three (57.9%) of the respondents were sexually active with in the past six months. Two hundred twenty three (49.1%) of those individuals had sexual practice with regular partner and 40(8.8%) of them with none regular partner. Though almost all (8.6%) of those who had sexual practice with none regular partner use condom and only 16(3.8%) of them used condom consistently, while 23(5.1%) of them used some times. The most common reason for condom use was fear of re-infections with other STIs 23(59%). The most common

reason for none condom use was partner's dislike 22(4.9%), while 30 (6%) of study subjects suggested condom use during sexual intercourse.

Table 8. Condom use of PLWHA attending ART service at five hospitals in SNNPR, Ethiopia, 2007

	n	%
Characteristics/Variable		
Sexually active in the past 6 months		
Yes	263	57.9
No	191	42.
Sexual partner (n=454)		1
Regular partner /union	223	49.1
Non regular partner	40	8.8
Non applicable	191	42.1
Condom use with non regular partner (n=454)		
Yes	39	8.6
No	1191	0.3
Not applicable		42
Frequency of Condom use		
Consistently	16	3.5
Some times	23	5.1
Reason for condom use (n :454)		
Fear of re-infection /STI/infecting others	23	5.1
Advised by Health workers	16	3.5
Reason for non use of condom (n=454)		
Partner dislike	22	4.9
Reduce sexual pleasure	2	0.4
Condom use suggested by (n=454)		
Self	30	6
Partner	9	2

6.7 Substance use

Fifty three (11.7%) of the respondents were reported that they consume alcohol during the course of ARV treatment. Out of those who consume alcohol 25(84.4%) of the subjects had used on daily basis, while 28(52.8%) of the subjects had used once in two weeks.

Thirty two (7%) of the study subjects also reported that they use other substances during the course of ARV treatment. Among those users the commonly used substances were cigarette (84.45), Khat (43.8%) and shisha/gaya(6.3%).

Table 9. Substance use by PLWHA attending ART service at five hospitals in SNNPR, Ethiopia, 2007.

Characteristics / variable	n	%
Alcohol in take (n=454)		
Yes	54	11.9
No	400	88.1
Frequency of alcohol in take (n=53)		
Every day	26	47.2
Once in 2 weeks	28	52.8
Other substance use (n=454)		
Yes	32	7
No	422	93
Types of narcosis used (n=32)		
Khat	27	84.4
Cigarette	14	43.8
Shisha/gaya	2	6.3

6.8 HIV/AIDS diagnosis, treatment, care and support

Three hundred twenty one (70.7%) of the respondent had duration of less than or equal to two years since HIV diagnosis was done, while 401(88%) of the subjects had duration of less than or equal to two years since ART started. The median duration since HIV diagnosis and receiving ART were 2 and 1.5years, respectively. Four hundred fourty six (98.2%) of the

study subjects reported improvement in health status after ARV treatment, while 3 (1.8%) had no improvement. Four hundred fifty one (99.3%) of them received the drug free from government /ART unit..

One hundred ninety four (42.7%) of the respondents have had socio- economic support, while 260(57.3%) claimed to have no support. The source of support were mainly from NGOs(57.3%) & GOs(21.6%). The most commonly received kinds of support were food (44.3%) and money(37.6%).

One third (32.6%) of the respondents had history of STI (sexually transmitted infections) after HIV diagnosis. Out of those who had STI 116(78.4%) had treatment at public health facilities /ART unit and 16(10.8) were treated at private health institution, while 16 (10.8%) had no sought for treatment

Table10. Provision of *HIV/AIDS diagnosis, treatment, care and support* for PLWHA attending ART service at 5 hospitals in SNNPR, Ethiopia, 2007

Characteristics /variable	n	%
Duration since diagnosis (in years, n=454)		
Less than or equal to two	321	70.7
Greater than two	133	29.3
ART duration (in years, n=454)		
Less than or equal to two	401	88.3
Greater than two	53	11.7
ART drugs Covered/sponsor (n=454)		
Gov't (free)	451	99.3
NGO	3	0.7
Self reported changes in health (n=454)		
Improved	446	98.2
Not improved	8	1.8
Secured social support group (n=454)		
Yes	194	42.7
No	260	57.3
Source of support (n=194)		
NGO (non Gov't organization)	110	56.7
GO (Government organization)	42	21.6
Friends /Relatives / neighbors /	30	15.5
Types of support /n=194)		
Food	86	44.3
Money	73	37.6
Counseling	20	10.3
HBC /Home Based Care/	15	7.8
History of STI after HIV diagnosis		
Yes	148	32.6
No	306	67.4
If yes place of treatment (n=148)		
Public Health facilities /ART unit	116	78.4
Private " "	16	10.8
No treatment	16	10.8

6.9 Factors associated with sexual behavior and fertility desire of PLWHA

In this survey respondents were asked different questions to assess factors that determine their sexual behavior and fertility desire after ART. Logistic regression is employed to measure the effect of each predictor when the effect of all other factors was controlled.

In univariate analysis (shown in table11), taking alcohol, and using substance like cigarette and/or khat were positively and significantly associated with current risky sexual behavior ($P< 0.05$).
On the other hand, having unchanged sexual desire was less likely to have current risk of sexual behavior compared to changed (increased and decreased) sexual desire.

Multivariate analysis revealed (shown in table11), those who reported alcohol use were found to have a six fold increased odds of practicing current risky sexual behavior compared to non-users (adjusted OR: 95% CI: 6.9-19.7). The use of substances was not associated with current risky sexual behavior. On the other hand, respondents who had unchanged /normal sexual desire were less likely to have sexual risk compared to respondents with changed sexual desire (adjusted OR: 0.39, 95% CI: 0.15-0.99).

Table11. Association of current sexual behavior by selected characteristics among PLWHA in 5 hospitals in SNNPR, Ethiopia, 2007

Characteristics	Current sexual behavior			
	Risky Freq (%)	**Non-risky** Freq (%)	**Crude OR (CI)**	**Adjusted OR (CI)**
Alcohol intake				
Yes	11(27.5)	42(10.1)	**3.36(1.56-7.21)**	**6.07(1.87-19.7)**
No	29(72.5)	372(89.9)	1	1
Substance use				
Yes	8(20)	24(5.8)	**4.06(1.69-9.77**)	1.05(0.21-5.30)
No	32(80)	390(94.2)	1	1
Current sexual desire				
Unchanged	16 (48)	102(24.6)	**0.49(0.25-0.96)**	**0.39(0.15-0.99)**
Changed	24(60))	312(75.4)	1	1

With regard to fertility desire, logistic regression analysis had also showed the number of predicting factors associated with fertility desire. In univariate analysis (shown in table12), the characteristics age group 15-34 was positively and significantly associated with desire to have children (P< 0.05). On other hand, male sex and being the followers of Orthodox Christianity were less likely to desire for children than their counterparts (P<0.05). The characteristic being married, having family size of less than or equal to five person, practicing risky sexual behavior before HIV diagnosis, having no live births having no current alive children, and using contraceptives prior to HIV diagnosis were significantly associated with desire for children (P< 0.05).

In a multivariate analysis (shown in table12) , respondents in the age group 15-34 were 2 fold more likely to desire children (adjusted OR:1.91, 95% CI:1.13-3.24) compared to other age group. The followers of Orthodox Christianity were less likely to desire children than other Christians (adjusted OR: 0.54, 95% CI = 0.33-o.91). The study subjects who

were married were 2 times more likely to desire children (adjusted OR: 1.78, 95% CI: 1.05-3.14) than the non-married. The respondents those who had risky sexual behavior were 2 times more likely to desire children (adjusted OR=1.73, 95% CI=1.02-2.95) than their counter parts. Those who reported no currently alive children were found to desire children four times higher than those with one child or more (adjusted OR: 4.41, 95% CI: 1.46-13.36).

Table 12. Association of desire to have children by selected characteristics among PLWHA at five hospitals in SNNPR, Ethiopia, 2007

Characteristics	Desire Children		Odds Ratio	
	Yes	No	Crude OR (CI)	Adjusted OR (CI)
	Freq (%)	Freq (%)		
Age (in years)				
15-34	96(52.6)	134(44.7)	**2.05(1.383.05)**	**1.91(1.13-3.24**)
35-54	58(37.7)	166(55.3)	1	1
Sex				
Male	87(56.5)	129(43)	**0.58(0.39-0.86)**	0.74(0.42-1.30)
Female	67(43.5)	171(57)	1	1
Religion				
Orthodox	81(52.6)	189(63)	**0.59(0.38-0.90)**	**0.54(0.33-0.91)**
Moslems	14(9.1)	30(10)	0.64(0.31-1.31)	0.44(0.18-1.09)
Other Christians	59(38.3)	81(27)	1	1
Marital status				
Married	78(50.6)	155(51.7)	**2.94(1.60-5.39)**	**1.78(1.05-3.14)**
Single	33(21.4)	34(10)	1.35(0.86-2.10)	0.25(0.06-1.05)
Widowed /Divorce	43(27.9)	155(38.3)	1	1
Family size (Person)				
≤ 5	128(83.1)	194(64.7)	**2.70(1.16-4.36)**	2.30(1.28-4.14)
> 5	26(16.9)	106(35.5)	1	1
Sexual behavior prior diagnosis.				
. Risk	104(67.5)	165(55)	**1.70(1.13-2.6)**	**1.73(1.02-2.95)**
Non risk	50(32.5)	135(45)	1	1
Number of live births				
0 or none	56(36.4)	37(12.3)	**4.06(2.52-6.54)**	1.72(0.48-6.22)
≥ 1	98(63.6)	263(87.7)	1	1

Number of current alive				
0 or None	66(42.9)	42(14)	**4.61(2.92-7.27**	**4.41(1.46-13.36)**
≥ 1	88(57.1)	258(86)	1	1
Contraceptive use before diagnosis				
Yes	57(46.3)	159(57.8)	**1.59(1.04-2.43**)	1.44(0.85-2.44)
No	66(53.7)	116(42.2)	1	1

Qualitative study result

The in-depth interview was conducted at the same areas of the study representing proportional distribution with Quantitative sample size.

Ten HIV positive individuals 5 males and 5 females participated in the in-depth interview. Their age ranges from 26-41 years. Seven respondents were married, while 5 of them were jobless. Six of the respondents were grade 0-12 , while four of them had education above twelve. Out of four respondents who had children, one study subject had HIV positive child.

Sexual behavior Prior to HIV diagnosis

Six out of 10 respondents reported that they had risky sexual behavior prior to HIV diagnosis. Five males had also sexual intercourse with multiple sexual partners using no or inconsistent condom. One of the positive HIV positive man from Arbaminch explained, *"Before I became ill, I had a bad character by having sexual intercourse with multiple sexual Partners. I use a condom for a first contact and continue with out it."*.

A female who engaged in commercial sex work had reported history of multiple sexual practices because she could not negotiate for condom use with her clients.

Out of 10 respondents, many had a normal sexual desire after ART treatment. Some of the subjects reported that they had no regular sexual practice with their spouses. The reduction for normal practice was not due to loss of desire but because of miss conception from counselors & mass media about sex. One of the respondents expressed *"Since the start of ARV treatment, my sex desire was improving time to time and I have*

strong desire to exercise sex. I like sex. Before my illness, I often used to enjoy sex, but not now. The reduction was due to fear of loosing protein & death. This was what I was counseled from my doctor."

Another HIV Positive man reported obstacles to sex desire, *"Before I contracted HIV, I often used to enjoy sex. Though I regained my normal health, my desire for sex is depressed, other wise, the virus multiplies and progression to AIDS then death."*

The study subjects condemned sex due to miss-information or misinterpretations. One of the respondents from Yirgalem expressed, *"Though I had desire for sex I hate it due to conditions related to sex which could lead to death., I was counseled by health workers and have information through media."*

Three totally abstained HIV positive women who were not in union blame HIV positive men for sex. A 29 years old HIV positive woman who desired sex cited, *"Since I started ART, I feel healthy and regained desire for sex. Since I am a young, I had strong desire for sex. As a counselor, I know that many men and women had strong desire for sex. But men are not disclosing their HIV status, having the right and power to buy and negotiating with women who do not know their sero-status for sex, as others are doing. Since our culture disfavors, they can not approach men for sex. Although, women had strong desire, due to being a poor, they expose their HIV status to the media for economic reason and no one approach with us both for marriage and sexual partner, except poor HIV Positive men like daily laborers, soldiers, drivers and jobless who already exposed themselves for economic problems".*

Other HIV Positive man who was in union had abstained from sex for fear of death. This HIV positive man complained, *"Though now I have strong desire I have discontinued sex with my wife, because we have to survive in order to take care for our children. Doing any sexual intercourse may kill people with HIV/AIDS. Incase if we die who will take care of them? There fore, we decided to stop sex".*

Most of the study subjects reported their fear about sexual practice as if it was a source for threats. Another HIV positive women expressed desire for sex, *"A desire for sex I have is actually now depressed, because I am in threat. When I was counseled for the first time I was given the information of exercising sex will kill HIV positive people. For this reason I decided to isolate myself from this practice for survival."* Other study subjects expressed that their sexual desire was depressed due to their negative attitudes to ward a sex.

Child desire

Out of 10 respondents, 4 individuals had children. Three out of those with children and 4 out of those with out children expressed their desire to have children. Most described the availability of PMTCT & improvements of health service delivery which encouraged them to have children. The reason for child desire was being psychological satisfaction due to replacement, social heritage, stabilize bonding wife- husband relationship and at the end to get care & support from their children. A woman who had no child and who desired to have children from Dilla expressed, *"when I was sick, I felt loneliness. If I had had a child, I would have been given care and support at home."*

One HIV positive individual who was interviewed expressed his desire to have a child to replace the already infected one. He said, *"I had HIV positive child. The availability of PMTCT has changed my mind to have HIV negative child."*

Others HIV Positive people desire child because it was a base for family and marriage stability. A woman who had no child and desired to have children explained, *"I did not have any child, so I want one, since medications against transmission of HIV from mother to child are available. Other wise problem arises in the marriage. A child is a base for the family stability."*

Some of the respondents expressed to have desired number of children though they had some. A 29 years old HIV positive women reported "*When the doctor told me that I had*

positive test for HIV, I Was shocked and asked him whether I can have children or not. Though I already had two children, our plan was four, now realized that availability of PMTC so that I can have two more children. As our parents replaced us & passed away we should do, too."

The reason for those who did not want to have children includes economic problem and fear of MTCT. A man said, "Doctors often discourage us not to have children and insist use contraceptive, for those who desire children they recommend breast feeding replacements. I support this because breast feeding replacement needs money and I can not afford to buy so that I do not want to have any child."

Other man with no child reported not to have a child due to negative attitude on PMTCT.

A 31 years *old* man who had no child but did not want to have any child expressed, "*We have no child. Though no one dislike children, my wife and I decided not to have child due to fear that the kids may acquire virus I don't believe with PMTCT."*

Family planning use and need

Out of seven respondents who were in union, 5 individuals used condom, one used both condom & injectable, where as one abstained.

Of the five individuals who reported condom use, 3 individuals desire for injectable method, while 2 respondents had negative attitude to ward contraceptive use. The reasons to use being, its convenience to take, no side effects on GI & low chance to forget. One of the interviewee who needs to use contraceptive from Butajira expressed *"For me injectable was best method of choice. It is not taken daily & have no gastro intestinal side effects and it is convenient to take every 3 month."*

Two study subjects developed negative attitude towards contraceptive use due to fear of ART drug reactions. A 28 years old man criticized contraceptive use with ARV drugs & said, "*I witnessed that HIV positive mothers who used injectable with ART drugs developed severe rash on their body. Therefore, it is better to use condom than injectables."*

Other HIV women expressed strong opposition for contraceptive use. This who had negative attitude towards other contraceptives reported as follows, " *It is better to take care of contraceptive use. Because I witnessed for 4 clients facing problems and 2 deaths associated with contraceptive use among members of my association. Therefore, I strongly suggest condom for those who use ART service."*

Knowledge about MTCT & risk of unsafe sex

All the interviewed respondents had awareness on mother to child transmission and availability of medication, while two respondents expressed negative attitude to PMTCT.

All of the respondents had awareness on risks of unsafe sex for PLWHA. They emphasized that it worsen a disease, leads to a new resistant strain of HIV and contracting other STIs.

6. Discussion

This study was intended to assess sexual & reproductive health needs and preferences of PLWHA attending ART hospitals in SNNPR. Among 454 PLWHA in the reproductive age group interviewed, 40(8.8%) individuals were currently practicing risky sexual

behavior & 154 (33.9%) had desire to have children. While 169 (37.2%) are currently using contraceptives and 38(8,4%) want to use family planning methods in the future.

The proportion of those with current risky sexual behavior (8.8%) was lower compared to those with history of risky sexual practice prior to HIV diagnosis (59.2%). The marked reduction in risky sexual behavior could be due to high awareness (93.4 %) about risk of unsafe sex and 65.2% of respondents reported decreased in sexual desire. The finding of this study about risky sexual practice was lower compared to those reported from other countries. In one study conducted in the United States, 13% of HIV positive clients engaged in sexual risk with sero-negative or unknown partner (15). In another study conducted in Brazil 25% and in Uganda 35% of HIV positive people attending ART intentionally practiced high risk sex (25, 9).

In this study those who reported alcohol consumption had six times increased sexual risks than non-users. The use of substances like khat chewing and cigarette smoking were not associated with sexual risk behavior. The study done on commercial sex workers at Addis Ababa showed similar findings and risk taking behavior was common among alcohol consumers (31). Similar study from United States shows that 13% HIV positive clients reported in sexual risk and associated with the use of alcohol & stimulants (10).

The proportion (57.9%) of respondents who were sexually active was lower than other counties. Mexico study revealed 87% and South Africa 65 % PLWHA attending ART were sexually active (7,11). During the in-depth interview respondents suggested why high proportion of the respondents was sexually inactive 191 (42.1%). The majority of them cited that reduction of sexual desire does not mean actual reduction but they had fear since they were told by counselors and mass media that frequent sexual activities may accelerate the progression to AIDS and death. Some other totally abstained HIV positive women who were not in marital/ union reported stigma and discrimination was the main reason for their abstinence as stated in the in-depth interview. Similar study conducted in Addis Ababa has also showed that one of the reasons for not being sexually active was due to fear of ruining their health status (29)

One third of the respondents had STI after HIV diagnosis which is higher than the proportion of reported risky sexual behavior. The reason for this could be explained by additional risks posed by their partners.

The proportion of respondents who had desire to have children was higher compared to other countries but lower compared to the study finding in Addis Ababa (12). Majority (42.9%) of the respondents had preferred son compared to daughter. In this study, an important factor significantly associated with child desire was the age of the respondents and the age group 15-34 desired more children than the older age group (P<0.05). Similar studies conducted in United States (15) and Addis Ababa (12) has also showed that the age of respondents was an important predictor of fertility. Other significantly associated factor with child desire among the respondents was religion. The followers of Orthodox Christianity were less likely to have desire for children than other Christians (P<0.05). This might need another ethnographic study to explain the finding. Another factor significantly associated with child desire of ART attendants of this study was

family size (P<0.05).The more family they had the less desire for more children. This study has also showed that people who had risky sexual behavior prior to HIV diagnosis had more child desire than their counterparts. Probably for those desired children, practices of fertility trials might expose them to sexual risks before their diagnosis of HIV. Those who had no child were more likely to desire children than who had one or more children (P<.05). This finding is inline with the findings of other studies in the United States (15) and Addis Ababa (12).

Concerning desired number of children, majority (84.4%) of the respondents preferred to have two or less than two children. The study in the United States was in agreement with this finding (15). Probably they fear about health to have more or may not afford to bring them up, etc, could be the reasons for desiring less number of children. The participants of in-depth interview support the suggestion. The reasons for those who did not want to have children include economic problem and fear of MTCT.

Family planning use is important for HIV positive individuals like any HIV negative people to space & limit birth and to prevent unintended pregnancy irrespective of their fertility desire (30). Furthermore, avoiding unintended pregnancy among HIV positive is one way of vertical transmission reduction (12). Most contraceptives are safe and effective for use by people with asymptomatic HIV infection as well as people who developed HIV/AIDS disease (30). In this study family planning use and need for future use was also assessed together with sexual risk and fertility desire. This study showed that 54.3% of eligible respondents for family planning had ever used at least one method of contraception prior to HIV diagnosis. The rate of utilization was increased during the study period to 70.4%, which might be attributed to the participation of men in family planning by using condom as evidenced by increased utilization of condom among spouses from 46.7% prior diagnosis to 68.6% after diagnosis.

The most common preferred and currently used family planning methods were condom and injectables. Studies conducted at Addis Ababa have also shown similar results (12, 29). In a similar study in Zimbabwe, 75% of the participants used condom as preferred method of family planning (28). In Brazil, high proportion of HIV positive women used condom for dual

protection (27). These studies have also shown that method of family planning choice shifted toward condom since condoms are important for dual protection (30).

Among non-users of contraceptives more than half (53.5%) of them showed desire to use contraceptive in the future. At Addis Ababa a similar study has revealed that 40% of the respondents wanted to use contraceptives in the future (12). The reason might be due to counseling on use of contraceptives by ART provider.

The common reason for lack of demand for contraceptive was fear of side effects with ART drugs. This finding is also supported by qualitative data results. For example, some of the respondents in in-depth interview reported that they witnessed of reactions and deaths of other users. Half of respondents did not disclose their HIV status to their family planning service provider and the most common reason for this was fear of stigma and discrimination. In a similar study conducted at Addis Ababa, majority of the respondents reported fear of stigma & discrimination (29). According to the qualitative study findings, some women reported that HIV-positive men do not negotiate for sexual partnership with HIV-positive women for fear of stigma & discrimination since they have already exposed themselves to the media for economic reasons.

Majority of patients who have access to free ART reported improved change in their heath status (98.2%). This finding is in line with the results of various studies about effectiveness of ART in developing countries (27, 28). In our study, 8.8% of the clients commit risky sexual practices. The odds of having risky sexual practice in alcohol users are six times higher than non users. Other studies also showed that regular alcohol use is the strongest predictor of not using condom with non-regular sexual partners (31). Many other literatures suggest that substance use by PLWHA increased risky sexual behavior and HIV transmission. Since they also receive ART potential drug reactions and treatment failure should be considered (30).

7. Strength and limitation of the study

7.1 Strength

This study used qualitative method to supplement the result and also to explore ideas that are not addressed by quantitative survey.

The study tried to explore sexual and reproduction needs and preferences among ART clients in SNNPR. It will be helpful to give insight on the issue for further studies.

7.2 Limitation

1. Sample bias –Study participants recruited at visit to ART, more adherent are more likely to be enrolled. Thus the result may not be generalized to all HIV positive individuals.
2. Social desirability bias-Counselors in the selected ARVT were trained and recruited as a data collector to ensure confidentiality of the study subjects. Even though the counselors were trained appropriately on confidentiality and respondent's right and also the data collectors explained well to the respondents the study has no link with the service provided, to minimize social desirability bias, the respondents may still provide desired answers by their counselors especially on high risk behaviors. Therefore social desirability bias may be totally unavoidable in this study.

8. **Conclusion**

The results of this study revealed important points with regard to sexual & reproductive health needs & preferences of people living HIV/AIDS:

- The uses of ART drugs help HIV positive individuals to regain their sexual and reproductive needs.
- The findings of this study showed that a significant proportion of PLWHA who are on ART desire to have children.
- The most prevalent and future need of method of family planning among HIV positive individuals were Condom and injectables.
- A significant proportion of HIV positive people who are on ART still consume alcohol and other stimulants.

9. Recommendations

- The counseling service and mass media should modify the ways of the communication strategy of IEC/BCC emphasize to promote the right discussion and responsible reproductive decision .
- The family planning service should access wide range methods family planning to provide varied options for PLWHA.

- Further studies should be conducted in the hospital and out side the hospital setup and in different parts of the country to come up with more representative findings. In addition, the issue should also need to be assessed from different community group's perspectives i.e. care providers, policy makers, community leaders to understand the situation in a better way and design interventional activities accordingly.

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11. ANNEXES

Addis Ababa university faculty of medicine department of community health structured questionnaire on sexual desire/practice, fertility desire, demand for family planning and knowledge of MTCT of PLWHA in SNNPR, ARV treatment units.

PART I -Socio-Demographic characteristics

No	Questions	Categories

101	**How old are you?**	**.....Years (age in completed years)**
102	**What is your sex?**	**Male..... Female.....**
103	**What is your religion?**	**Orthodox..... 1** **Catholic .....2** **Muslim..... 3** **Protestant..... 4** **Others (specify).....89**
104	**What is the highest Educational level you attained?**	**.....Grade completed** **Able to read and Write .....1** **Un able to read & Write.....2** **Other specify 89**
105	**What Ethnic group do you belongs to?.**	**Sidama .....1** **Wolaita ..... 2** **Gurage ..... 3** **Gedeo ..... 4** **Gamo…….5** **Amhara …..6** **Oromo……7** **Other(specify).....89**
106	**What is your current Marital/relation ship status?**	**Married .....1** **Single ..... 2** **Widowed .....3** **Divorced ..... 5** **Non married partner .....6** **No response 99**
107	**If you are currently in marital / relationship, how long years since you married?**	**…… years**
108	**What is your house hold average Monthly income?**	**..... ……..Eth. Birr** **No income ..... 1** **Don't know ..... 2** **No response .....99** **Other (specify) 89**
109	**What is your current Occupation?**	**Unemployed .....1** **Student .....2** **House wife .....3** **House servant .....4** **Daily laborer .....5** **Merchant .....6** **Commercial Sex worker .....7** **Government employ....8** **Private employee….9** **Peasant……11** **Private self employed……10** **Other(Specify)…...89**
110	**What your current residence?**	**Urban…….Rural…….**
111	**How much is your family size?**	**…….. person**

PART II-INFORMATION ON SEXUAL BEHAVIOR AND CONDOM USE

201	**If you are currently not in a marital status do you have sexual partner?**	**Yes……1** **No……2** **No response …99**
202	**If the answer for Q 201 is yes, how many sexual partner do you have?**	**Only one regular partner ……1** **Greater than one/non-regularpartners..2** **No response ……..99**
203	**Compare (thinking back) to prior your diagnose 0f HIV, what is your sexual desire now?**	**It is as normal as when I was healthy ……..1** **My desire is decreased ……2** **My desire is increased …….3** **No response …..99**
204	**Retrograde (think back) to your practice, which one of the following sexual risk did you practice before you became ill by HIV?**	**Multiple sexual practice……1** **Only one sexual partner…….2** **Inconsistent/no condom use…3** **I used to sale sex(kind,cash,gift)..4** **I used to buy sex(kind,cash,gift)…5** **I had signs/symptoms of STD……6** **Other (specify)……**
205	**Have you ever had history of sexual victimization?**	**Yes…….1** **No…….2** **No response …….99**
206	**If the answer for Q 205 is yes, by who did you victimized?**	**By my friend…….1** **By my boss …….2** **By unknown person ……3** **Other(specify)…….88**
207	**Which of the following risk do you practice now?**	**Multiple sexual practice……1** **Only one sexual partner…….2** **Inconsistent/no condom use…3** **I am saling sex(kind,cash,gift)..4** **some times I buy sex(kind,cash,gift)…5** **I had signs/symptoms of STD……6** **Other (specify)……89**
208	**Have you ever had symptom of STD, such as genital ulcer, abnormal genital discharges, and/or pain during urination or genital swelling since diagnosed for HIV?**	**Yes ……..1** **No ……..2** **No response ……..99**
209	**If the answer for Q 208 is yes, where did you go for treatment?**	**Traditional healer……1** **Public health institution……2** **ART unit……..3** **Private clinic Pharmacy……4** **Subsidized with out treatment …….5** **Other (specify)……**

210	**Have you had sexual Intercourse in the past six month?**	**Yes.....1** **No.....2** **I donot remember…..3** **No response.....99** **Other (specify) 89**
211	**If the answer is yes for Q210, with whom did you have sexual intercourse?**	**Regularpartner(husband/wife/friend).1** **None regular partner(casual)….2** **Other(specify)……89** **. No response …….99**
212	**The time you had sex with non-regular partner did you use the condom?**	**Yes.....1** **No.....2** **I don't remember.....3** **No response.....99** **Other (specify).....89**
213	**If yes for Q 212, how often did you used condom?**	**Always.....1** **Almost always ……...2** **Some times .....3** **I never used ……..4** **No response .....99** **Other (specify).....89**
214	**If the answer for Q 212 yes, why did you use condom? Because…**	**To prevent pregnancy.....1** **my partner HIV status is negative / to protect my partner……..2** **Advised by health worker .....3** **Fear of re-infection with new stain.…..4** **Fear of other STDs ……..5** **No response.....99** **Other (specify) 89**

215	**If you didn't use, why didn't you use a condom,**		**Yes**	**No**
		1. Not available	**1**	**2**
		2.Too expensive	**1**	**2**
		3. Not comfortable	**1**	**2**
		4. Partner objected	**1**	**2**
		5.In a hurry	**1**	**2**
		6. Embarrassed to buy or ask	**1**	**2**
		7.Used other contraceptives	**1**	**2**
		8.Didn't think it was necessary	**1**	**2**
		9. Allergy /itching	**1**	**2**
		10. I do not like it	**1**	**2**
		11.I trust my Partner	**1**	**2**
		12. Don't trust condom they may transmit HIV	**1**	**2**
		13. Due to lack of applying condom	**1**	**2**
		14. Due to frequent breaks of condom	**1**	**2**
		15.It reduces sexual pleasure/desire	**1**	**2**
		16. Desire to conceive	**1**	**2**
		17. my religion prohibits	**1**	**2**
		89. Others (specify)	**1**	**2**
		88. DK	**1**	**2**
		99. NR	**1**	**2**
216	**Who suggest condom use?**	**My self.....1** **My partner.....2** **Joint decision...3** **Peer.....….4** **DK.....88** **NR.....99** **Other(specify)…….89**		
217	**Did you disclose your HIV- status to your partner?**	**Yes ……1** **No ……2** **No response ……..3**		

		Other (specify) …….
218	**If the answer for 218 is No, why you did not you disclose your sera-status to your partner?**	**Fear of discrimination …1** **Fear of divorce ……2** **Fear of stigma ……4** **No response ……..99** **Other(specify) ……89**
219	**Did your partner had HIV test?**	**Yes …….1** **No ……2** **No partner …….3** **No response ……99** **Do not know …….88** **Other (Specify) …….89**
220	**If the answer for Q220 is yes, what was his/her test result?**	**Positive.....1** **Negative.....2** **I don't now.....3** **No response.....99** **Other(specify).....89**

PART III - Information on Child Desire

301	**How many live births have you had in your life?**	**..... Live births** **I did not give birth at all ..... 97** **I do not have any live birth ....98** **No response ..... 99** **Other (specify).....89**
302	**How many alive children do you have now?**	**No of alive children.....** **I do not have children at all .....97** **I do not have alive children .....98** **No response .....99** **Other (specify).....89**
303	**Would you like to have children in the future?**	**Yes ..... 1** **No ..... 2** **Don't know .....3** **No response .....99** **Other (specify).....89**
304	**If the answer for Q 303 yes, when do you prefer to have a child?**	**.....Months/.....Years** **Don't know ..... 89** **No response ..... 99** **Other (specify) 89**
305	**If the answer for Q 303 yes, How many (more) children would you like to have in the future**	**No desired……..**
306	**If the answer for Q 303 yes, which sex would you prefer**	**Son ……..1** **Daughter…….2** **No preference(God knows) ……4**
307	**If the answer for Q 303 is yes, why do you want to have children?**	**I don not have one before ……1** **I did not have desired number…...…2** **My partner desired to have children3** **Pressure from families ……..4** **Social/ pear stigma …….5** **For substitution ……..6** **For inheritance …….7** **My partners is in good health …….8** **Iam onART/ hence I canhave achild 9** **No response ……99** **Other (specify) ……89**

PART IV - Information on contraceptive use &demand

401	**Have you (your partner) ever used family Planning method before HIV diagnosis?**	**Yes .....1** **No .....2** **Don't remember .....3** **Don't know .....4** **No response .....99** **Other specify 89**
402	**If yes for Q401 specify the method you /Your partner used?** **(More than one answer can be possible)**	**Abstainence from sex.....1** **Condom .....2** **Pill (OCP) .....3** **Injectables .....4** **IUD .....5** **Implants .....6** **Tuba legation/Vasectomy .....7** **No response ..... 99** **Other (specify) 89**
403	**Have you (your partner) ever used family Planning method after HIV diagnosis?**	**Yes .....1** **No .....2** **Don't remember .....3** **Don't know .....4** **No response .....99** **Other (specify) 89**
404	**If the answer for Q403 is yes, specify the method you/ your partner used?** **(More than one answer can be possible)**	**Abstained from sex .....1** **Condom .....2** **Pill (OCP) .....3** **Injectable .....4** **IUD .....5** **Implants .....6** **Tuba legation/Vasectomy .....7** **No response .....99** **Other (specify).....89**
405	**Are you/your partner/using Family planning method currently (during the study period)?**	**Yes .....1** **No.....2** **I don't know .....3** **No response 99**
406	**If yes for question 405 specify the method you are using?** **More than one answer can be possible)**	**Abstained from sex .....1** **Condom .....2** **Pill (OCP) .....3** **Injectable ..... 4** **IUD ..... …5** **Implants ..... …6** **Tuba legation /Vasectomy..... ..7**

		No response .....99 **Other (specify) 89**
407	**Why do you choose the current family planning method?**	**Health professionals advise .....1** **Because it suites with my health ....2** **From my friends experience /advise...3** **My partners choice …….4** **Has dual protection (HIV/Conceiption)...5** **Other (specify) 89**
408	**(If the answer for Q 405 No) would you like to use family planning method in the future?**	**Yes .....1** **No .....2** **Don't know .....3** **No response .....99** **Other (specify).....89**
409	**If for question 408 yes, specify the method you Intended to use? (More than one answer can be possible**	**Abstainence from sex ..... 1** **Condom .....2** **Pill (OCP) .....3** **Injectable .....4** **IUD .....5** **Implants .....6** **Tuba legation/ vasectomy .....7** **Other (specify) 89**
410	**Where do you want to get family planning service?**	**At ARV treatment units .....1In government health facility (FP unit)2** **In private clinics .....3** **In counseling units .....4** **Other (specify) 89**
411	**If the answers for question 408 is no, why don't you wan to use family planning?**	**Want to have a child .....1** **Fear of reaction ART drugs ……..2** **I abstained from sex .....3** **My partner objected ……4** **No response ..... 99** **Other (specify) 89**
412	**If you are using family planning methods did you disclose your sera-status to your family planning provider?**	**Yes.....1** **No .....2** **No response.....99** **Other (specify).....89**
413	**If the answer for question 412 is no, why don't you disclose your sera-status to your family planning providers**	**I don't trust the providers.....1** **I feared stigma and discrimination-2** **Disclosure does not help/no use ….....3** **No response.....99** **Other (specify).....89**

PART V - Information of knowledge on MTCT and HIV Re-infection

501	**Does HIV transmits from mother to child ?**	**Yes .....1** **No .....2** **Don't know .....3** **No response.....99** **Other (specify).....89**
502	**If yes when does HIV transmissions occur from mother to child?** **(multiple answers are possible)**	**During pregnancy.....1** **During labor.....2** **Through breastfeeding ...3** **1,2,3 possible ……4** **I don't know .....5** **No response.....99** **Other (specify).....89**
503	**If the answer for 501 is yes, how much do you think the risk of HIV Transmission from mother to child during pregnancy, if the mothers do not use any preventive medication?**	**All children born to infected mother acquire the infection.....1** **About 50% children acquire the infection ..... 2** **About one-fourth …….3** **About three-fourth ……4** **I don't know the exact figure.....5** **No response.....99** **Other specify.....89**
504	**If the answer for 501 is yes, how much do you think the risk of HIV Transmission from mother to child through breast feeding, if the mothers do not use any preventive medication?**	**All children born to infected mother acquire the infection.....1** **About 50% children acquire the infection ..... 2** **About one-fourth …….3** **About three-fourth ……4** **I don't know the exact figure.....5** **No response.....99** **Other specify.....89**
505	**Is there any medication, which may help to prevent mother to child HIV transmission?**	**Yes .....1** **No.....2** **Don't know.....3** **No response.....99** **Other (specify).....89**
506	**From where did you get the information about mother to child HIV transmission & prevention?**	**Mass media.....1** **Health care provider .... 2** **From friends/peer 3**

		Home based care givers....4 No response.....99 Other (specify).....
507	Do you think medication provided to reduce mother to child HIV transmission actually reduce the transmission?	Yes.....1 No.....2 Don't know.....3 No response.....99 Other (specify)….....
508	Is there any risk to HIV-positive patient him self if he commits un safe sex?	Yes ……1 No ……2 I do not know …...3 No response ……4 Other (specify) ……89
509	If the answer for Q507 is yes, what are the risks of un protected sex to HIV- positive person?	Acquiring new strain ….1 Infected by other STDs ..2 Worsening disease……3 The risk is only to HIV-people.....4 I do not know ……5 No response ……99 Other (specify) ……...89

PART VI - Information on HIV/AIDS and treatment conditions

601	How many years/months since HIV diagnosis?	....Months or ….....Years Don't remember.....1 No response.....99 Other (specify).....89
602	When did you start receiving ARV treatment?	…… months …….years No response.....99 Other (specify).....89
603	Who cover the cost of the Drugs?	My self.....1 FreefromtheGovernment…2 Covered (support) NGO's...3 My parents/Relatives.....4 No Response.....99 Other (specify).....89
604	How is your over all health condition after you started receiving ART?	Improved.....1 No change.....2 Deteriorated.....3 No Response.....99 Other (specify).....
605	Did you get support from different community groups?	Yes.....1 No .....2 No Response.....99 Other (specify).....
606	If the answer for Q608 is yes, from where did you get the support?	Relatives/neighbors and friends.....1 NGO's .....2 Gov'ts 3

		FB'OS.....4 Other (specify).....
607	If the answer for Q 608 is yes, what kind of supp you get?	Money.....1 HBC (Home Based Care) ....2 Counseling .....3 Food ….....4 No Response.....99 Other (specify).....
608	Did your counselor /ART Provider discuss about child bearing and family planning?	Yes.....1 No.....2 No response.....99
609	If yes for Q611, did your counselor/ART provider adequately cover issues like child bearing, and family planning?	Yes.....1 No.....2 Don't know.....3 No response.....4 Other specify.....89
610	Did your counselor /ART Provider discuss about self risk of unsafe sex for PLWHA?	Yes.....1 No.....2 Don't know.....3 No response.....4 Other specify.....89

PART VII - information on Substance abuse

701	During the last 6 months have you ever had drunk alcohol?	Yes.....1 No .....2 I don't know…..88 No response……99
702	If the answer for Q701 is yes, how often have you had drinks containing alcohol? (alcohol includes like Tella, Tej, Areke, Beer).	Everyday……..1 At least once a week..2 Once in two weeks….3 Once in a month …….4
703	Which of the following substances, if any, have you tried?	

	Yes	No	DK	NR
KHAT	1	2	88	99
SHISHA/GAYA	1	2	88	99
BENZENE	1	2	88	99
HASHISH	1	2	88	99
COCAINE	1	2	88	99
SMOKING	1	2	88	99

704 If the answer for Q703 is Yes, during the last weeks how often you use these substance?

	Everyday	twice/week	oncet a week	Never	DK	NR
	1	2	3	4	88	99
KHAT	1	2	3	4	88	99
Shisha/gaya	1	2	3	4	88	99
Benzene	1	2	3	4	88	99
Hashish	1	2	3	4	88	99
Cocaine	1	2	3	4	88	99
Smoking	1	2	3	4	88	99

Addis Ababa university faculty of medicine department of community health structured questionnaire on sexual desire/practice, fertility desire, knowledge of MTCT and demand for family planning of PLWHA in SNNPR, ARV treatment units.

Part I- Socio demographic information

- **How old are you (age in completed years)? ----------**
- **What is your sex? ---------- ----------**
- **What is you marital status? - ----------**
- **What is your current occupation? ----------**
- **What is your Ethnicity? ----------**
- **What is your Religion? ----------**
- **What is your total Monthly in come? ---------- Eth. Birr.**
- **What is the highest educational level you completed? ----------**

Part II - Information on sexual behavior

1. What was your sexual practice before you became ill by HIV/AIDS?

2. What was the impact of HIV/AIDS presence in your body on your/ your porter's sexual desire?

3. What is your sexual practice now?

4. During sexual practice why do you or do you not use a condom?

5. What do you think about possible risks for PLWHA is they commit risky sexual practice?

Part III - Information on child desire and in reproductive characteristics

6. How many current alive children did you have?

- **Their age ----------**
- **Their sex ----------**
- **Their HI/status ------**

7. How important is it for you to have /not to have (more) children?

8. What are some of the reasons for the way you feel about this?

9. How important is it for your partner to have or not to have (more) children?

10. What effect. if any, does HIV have on your desire to have or not to have (more) children

11. How many more children would you like to have? Why?

12. How important are children in your community?

13. Do you think HIV changed the way people in your community think about The number of children you want to have? EXPLAIN

Part IV- Information on family planning choice

14. How important is it for you to use or not to use family planning?

15. How important is it for your partner to use or not to use family planning?

16. What are some of the reasons for the way you feel about this?

17. What effect, if any, does HIV have on your demand to use or not to use family planning?

18. What method of family planning do you want to use/are using? way

19. How and why do you choose the method you want to use/you are using?

20. Have you ever discussed about your serostatus to your family planning provider? Why?

21. Have you ever discuses about your serostatus to your partner /your family? why?

22. Do you want to discuss about fertility, sexuality and family planning with your counselor and ART Provider? Why?

23. What do you now about MTCT? Explain.

24. What do you now about PMTCT services? Explain.

25. Do you think /believe medications used to prevent MTCT of HIV reduce the chance of transmission? WHY?

NOTE:- For all questions probe as needed for more inform

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¡õM 1- S[Í eK Tlu^© G<'@□

}.l	ØÁo-‹	SMe K=J'< ¾T>‹K< ´`´a‹
101	°ÉT@- e"ƒ ¨'<	------ □ÅT@ □ÉT@ uS<K< ¯Sƒ ÃÑKê)

102	ï	¨”É ---------- c?ƒ ---------
103	GÃT•ƒ- U”É ’¨<	*`„Ê¡e -------1 "„K=¡ -------2 S<eK=U -------3 ýa,e”ƒ -------4 K?L "K ÃÑKî ------89
104	}U[¨< ÁÖ“klƒ Ÿõ}— ¾ƒUl`ƒ Å[Ë e”ƒ ’¨<	--------- ¡õM ÁÖ“kl T”uw“ Síõ ¾T>‹M -----1 T”uw“ Síõ ¾TÃ‹K ----2
105	wH@`- /²`- U”É ’¨<;	c=ÇT -------1 ¨LÃ -------2 Ñ<^Ñ@ -------3 Ñ@Ç=* -------4 ÒV -------5 ›T^ -------6 *aV -------7 K?KA‹ "K< ÃÑKî -------8
106	u›G<’< ¨pƒ ¾Òw‰ G<’@ ”Èƒ ’¨<;	ÁÑu< -------1 ÁLÑu< -------2 vM /T>eƒ ¾V}v†¨< -------3 ¾}ó~ -------4 ÁM}Òu< Ø”Ê‹ /¾ï ÕÅ— ÁL†¨</ ------89
107	u›G<’< ¨pƒ uƒÇ` LÃ ŸJ’< ƒÇ` ŸSW[~ e”ƒ ¯Sƒ ÃJ•M;	-------- ¨` -------- ¯Sƒ
108	ÖpLL ›T"Ã ¾¨` Ñu=- e”ƒ ’¨<;	----- ¾›=ƒ.w` Ñu= ¾K˜U -------1 ›L¨<pU -------2 SMe ¾KU -------3 K?L "K ÃÑKê ------89
109	u›G<’< ¨pƒ ÁK<uƒ ¾Y^ ›Ã’ƒ U”É ’¨<;	Y^ ¾K?K¨< ------- 1 }T] -------2 ¾u?ƒ Su?ƒ -------3 ¾u?ƒ W^}— -------4 ¾k” W^}— -------5 ’ÒÈ -------6 ¾u<“ u?ƒ W^}— -------7 ¾S”ÓYƒ W^}— -------8 ¾ÓM W^}— -------9 ¾ÓM Y^ /¾^e/ -----1® ›`f ›Å` -----11 K?L "K ÃÑKê -----89
110	u›G<’< ¨pƒ S•]Á- ¾ƒ ’¨<;	Ÿ}T ------ 1 ÑÖ` ----- 2
111	Ÿe”ƒ u?}cw Ò` ›”É LÃ Ã•^K<;	---------- c¨<

¡õM 2 S[Í eK Ów[eÒ Ó”–<’ƒ

201	u›G<’< ¨pƒ ¾ƒÇ` ÕÅ— ŸK?K-ƒ Ów[YÒ Ó”–<’ƒ ¾T>ðìS<ƒ ¾}n^’> ï ÕÅ— ›K-ƒ;	›-” -----1 ¾K˜U -----2

		SMe ¾KU -----99
202	KØÁo 2®1 SMc< ›-" ŸJ' e"ƒ ¾ï Ó"–<'ƒ ÕÅ— ›K-ƒ;	sT> ¾J' ›"É ÕÅ— w‰ -----1 Ÿ›"É uL¾ /sT> ÁMJ' ÕÅ— -----2 SMe ¾KU -----99
203	`e- Ö?"T Ÿ'u\uƒ /ŸSSS- uòƒ Ÿ'u[-ƒ G<'@ Ò` c='íì` u›G<'< ¨pƒ ÁK-ƒ ¾Ów[YÒ /¨c=w/ õLÔƒ- U" ÃSeLM;	Ö?"T Ÿ'u`Ÿ<uƒ UU K¨<Ø ¾KU -----1 õLÔ~ k"dDM -----2 õLÔ~ ÚUbK -----3 SMe ¾KU -----99
204	K›?‹ ›Ã y= hÃ[e ŸSÒKØ- uòƒ ¾'u[-ƒ" vl]Ã c=ÁÖ'< ŸT>Ÿ}K<ƒ ¨<eØ u¾ƒ—¨< S"ÑÉ K›‹ ›Ãy= ›?Ïe ¾}ÒKÖ< ÃSeM- M;	Ÿw²< c-‹ Ò` Ów[ YÒ Ó"–<'ƒ TÉ[Ó ----1 ›"É w‰ ¾Ów[ YÒ Ó"–<'ƒ ÕÅ— 'u[˜ -----2 ¢"ÊU ›KT²¨<}` />KSÖkU -----3 ¨c=w" KS}ÇÁ] SÖkU /KÑ"²w KeÙ K›Ã'ƒ ------4 ¨c=w" eðêU Ñ´Š '¨</uÑ"²w eÙ u›Ã'ƒ/ ------5 ¾K?KA‹ ›vL² UM¡„‹ 'u\w˜ ------6 K?L "K ÃÑKê -----89
205	Ÿ²=I uòƒ ›eÑÉÊ SÉð` /¾¨c=w Ønƒ }ðêVxƒ Á¨<nM;	›-" -----1 ›Á¨<pU -----2 SMe ¾KU ----99
206	KØÁo 205 SMc< ›-" ŸJ' ¾›eÑÉÊ SÉð` Ønƒ uT" '¨< ¾Å[cw-ƒ;	uÕÅ—Â -----1 u›KnÂ -----2 uTÃ¨p c¨< -----3 K?L "K ÃÑKê ----89
207	ŸT>Ÿ}K<ƒ K›?‹ ›Ã y= ›?Ée ›ÒLß vl]Áƒ S"ŸM u›G<'< ¨pƒ `e- ¾ƒ—¨<" ÃðêTK<	Ÿw²< c-‹ Ò` Ów[ YÒ Ó"–<'ƒ TÉ[Ó ----1 ›"É w‰ ¾Ów[ eÒ Ó"–<'ƒ ÕÅ— 'u[˜ -----2 ¢"ÊU ›KT²¨<}` />KSÖkU -----3 ¨c=w" KS}ÇÁ] SÖkU/KÑ"²w KeÙ K›Ã'ƒ/ -----4 ¨c=w eðêU Ñ´Š '¨</uÑ"²w ueÙ u¯Ã'ƒ/ -----5 ¾K?KA‹ ›vL² UM¡„‹ 'u\w˜ -----6 K?L "K ÃÑKê -----89
208	›?‹ ›Ã y= uÅU- S•\ Ÿ}[ÒÑÖuƒ Ñ>²? ËSa ¾K?KA‹ ›vL² ui UM¡„‹ TKƒS ¾wMƒ SlcM ÁM}KSÅ ŸwMƒ ¾T>¨× ðdi ¾wiiƒ Ø wÖƒ ¾wMƒ SlcM" ¾i"ƒ TnÖM ¾SdcK<ƒ eT@„‹" UM¡„‹ }cU„ƒ Á¨<nM ¨Ã;	›-" -----1 ›Á¨<pU -----2 SMe ¾KU ----99
209	KØÁo 208 SMc< ›-" ŸJ' KI¡U" H@Å¨< ¾ŸS<ƒ ¾ƒ '¨<;	ŸvIL© /¾MUÉ NŸ=U -----1 ŸS"ÓYƒ Ö?" }sU -----2 ¾°ÉT@ T^²T>Á I¡U" ¡õM -----3 uÓM ¡K='>¡ /ó[Tc= -----4 ÁKI¡U"/u^c< É"EM -----5 K?L "K ÃÑKê ----89
210	"Kñƒ 6 ¨^ƒ ¨Ç=I ¾Ów[YÒ Ó"–<'ƒ ›É`Ñ¨< Á¨<nK<;	›- -----1 ›L¨<pU -----2 ›Le¨<eU -----3 SMe ¾KU ----99 K?L "K ÃÑKê ----89
211	KØÁo 21® SMc< ›-" ŸJ' ¾Ów[YÒ Ó"–<'ƒ ¾ðìS<ƒ ŸT" Ò^ 'u`;	sT> /vM T>eƒ/ ÕÅ— -----1 sT> "MJ' ÕÅ— -----2 SMe ¾KU ----99

		K?L "K ÃÑKê ----89		
212	KØÁo 211 SMc< sT> "MJ’ ¾}n^’> ï Ÿ J’ uÓw[YÒ Ó”–<’ƒ ¨pƒ ¢”ÊU }ÖpS¨< ’u`	›-” -----1 ›M}ÖkUŸ<U -----2 ›Le¨<eU -----3 SMe ¾KU -----89 K?L "K ÃÑKê -----99		
213	KØÁo 212 SMc< ›-” ŸJ’ ¢”ÊU ¾~” ÁIM ÃÖkS< ’u`;	G<MÑ>²? -----1 ›w³—¨<” Ñ>²? -----2 ›Mö ›Mö -----3 uõèU ›M}ÖkUŸ<S -----4 SMe ¾KU ----99 K?L "K ÃÑKê ----89		
214	KØÖo 212 SMc< ›-” ŸJ’ ¢”ÊU KU” }ÖkS<;	`Ó´“” KSŸLŸK -----1 ÕÅ—Â ŸzÃ[c< ’í eKJ’ Ÿy¾[c< KSŸLŸM ----2 uÖ?“ vKS<Á eK}SŸ`Ÿ< -----3 KK?L ´`Á zÃ[c< LKSÒKÖ eKð^G< -----4 K?KA‹ ›vL²` ui-‹” eKð^G< -----5 SMe ¾KU ----99 K?L "K ÃÑKê ----89		
215	KØÁo 212 SMc< ›M}ÖkUŸ<U ŸJ’ ¢”ÊU ÁM}ÖkS<ƒ KU”É ¨¨<;	eKTÃ•` /eKTÃÑ˜ u×S eK}¨ÅÅ eKTÃS‹ ÕÅ—Â eLMðKÑ eKU”†Ÿ<K /uØÉòÁ KSÓ³ƒ/KSÖ¾p eKTõ` K?L ¾¨K=É SŸLŸÁ eKU”ÖkU ›eðLÑ> SeKA eLM¾˜ ›L`Ï¡ /eKT>Ád¡¡ eKTM¨Å¨< ÕÅ—Â” eKTU¨¨< ¢”ÊU eKT“U” ›ÖnkS<” eKTL¨<p w²< Ñ>²? eKT>kÅÉw˜ Åe Â” eKT>k”ew˜ KT`Ñ´ eKUðMÓ NÃT•, eKTÃðpÉ 88. ›L¨<pU 89. SMc< ¾KU 89. K?L "K ÃÑKê	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
216	¢”ÊU ”Ç=ÖkS< ¾U¡` ›ÑMÓKAƒ ¾cÖ-ƒ T” ’u[;	’@¨< ^c? -----1 ¾ƒÇ` /ï ÕÅ— -----2 ¾Ò^ ¨<d’@ -----3 Ÿ¨<K< ÕÅ™Š -----4 SMe ¾KU-----99 K?L "K ÃÑKê-----89		
217	¾›?‹ ›Ã y= ›?Ée ¾ÅU U`S^ ¨<Ö?ƒ-” KƒÇ` /Kï/ ÕÅ—- ›d¨<kªM;	›-” -----1 ›Ld¨<pG<U -----2 SMe ¾KU-----99		

		K?L "K ÃÑKê-----89
218	KØÁo 217 SMc< ›Ld¨pG<U ŸJ' ¨<Ö?~" K*f*Ç` /Kï/ ÕÅ—- KU" ›Ld¨Lu;	SÑKM eKð^G< -----1 "ÇÃð˜ eKð^G< -----2 ¾c¨<" SÖsqS uSõ^*f* -----3 SMe ¾KU-----99 K?L "K ÃÖke-----89
219	¾*f*Ç` /¾ï ÕÅ—- ¾›?‹ ›Ãy= ›?Ée ¾ÅU U`S^ ›É`Ñ ªM;	›- -----1 ›LÅ[ÑU -----2 vM /¾}n^'> ï ÕÅ— ¾K˜U -----3 SMe ¾KU-----99 ›L¨<pU-----88 K?L "K ÃÑKê-----89
220	KØÁo 219 SMc< ›-" ŸJ' ¾›?‹ ›Ãy= ›?Ée ¾ÅU U`S^ ¨<Ö?*f* U" 'u`;	zÃ[c< ›Kv†¨< /þ²+{ -----1 ŸzÃ[c< 'í "†¨< /'Ò+{ -----2 ›L¨<pU -----3 SMe ¾KU-----88 K?L "K ÃÑKê-----89

¡õM 3- S[Í eKS¨<KÉ õLÔ*f*

301	uÉT@- U" ÁIM (uIÃ¨*f* ¾}¨KÆ/ MÐ‹ ¨MÅªM;	uIÃ¨*f* ¾}¨KÆ MÐ‹ lØ` U"U MÏ ›M¨KÉŸ<U ------97 U"U uIÃ¨*f* ÁK MÏ ›M¨KÉŸ<U ------98 SMe ¾KU ------99 K?L "K ÃÑKê ------89
302	u›G<'< ¨p*f* U" ÁIM MÐ‹ uIÃ¨*f* ›K<-*f*;	uIÃ¨*f* ÁK< MÐ‹ lØ` ------1 U"U MÏ ›M¨KÉŸ<U ------97 U"U uIÃ¨*f* ¾K MÏ ›M¨KÉŸ<U ------98 SMe ¾KU ------99 K?L "K ÃÑKê ------89
303	K¨Åò*f* MÏ "Ç=•`- /S¨<KÉ/ ÃðMÒK<;	›-" ------1 ›MðMÓU ------2 ›L¨<pU ------3 SMe ¾KU------99 K?L "K ÃÑKê------89
304	KØÁo 303 SMc< ›-" ŸJ' SŠ '¨< MÏ S¨<KÉ ¾T>ðMÑ<*f*;	Ÿ¨^*f* ----- Ÿ¯S*f* u%EL ›L¨<pU ------89 SMe ¾KU ------99
305	KØÁo 303 SMc< ›-" ŸJ' K¨Åò*f* U" ÁIM }ÚT] MÏ "Ç=•[- ÃðMÒK<;	K?L "K ÃÑKê ------89 ---------- MÏ
306	KØÁo 303 SMc< ›¨" ŸJ' ¾*f*—¨< ï "Ç=•[- ÃS`×K<;	¨"É ------1 c?*f* ------2 Ó²=` ¾cÖ˜" /G<K~"U ï/ ------3
307	KØÁo 303 SMc< ›-" ŸJ' KU"É'¨< MÏ "Ç=•[-*f* ¾ðKÑ<*f*; /Ÿ›"É uLÃ SMe SSKe Ã‰LM/	U"U eLM'u[˜------1 ¾UðMÑ¨<" ÁIM MÏ eLM'u[˜------2 vKu?, /ÕÅ—Â MÏ eKT>ðMÓ ------3 ¾u?}cw Ý" /Òò*f* eLK ------4 ¾Tlu[cw /ÕÅ— }î°• eLK ------5 ²` KS}"*f* ------6

		¨^i eKUðMÓ ------7 ¾vKu?, /ÕÅ—Â Ö?"ƒ Ø\ G<'@ LÃ eKJ' ------8 °ÉT@ T^²TÁ ¾}ÖkUŸ< eKJ' /S¨<KÉ eKU‹M ------9 SMe ¾KU ------99 K?L "K ÃÑKê ------89
308	KØÁo 303 SMc< ›MðMÓU ŸJ' K¨Åòƒ KU"É¨< MÏ "Ç=•` ÁMðKÑ<ƒ; /Ÿ›"É uLÃ SMe SSKe Ã‰LM/	¾UðMÑ¨< ÁIM MÏ eLK˜ ------1 zÃ[c< Ÿ›"ƒ ¨Å MÏ "ÇÃ}LKõ eKð^G< ------2 }ÚT] MÏ ¾TdÉÓuƒ um Ñu= eKK?K˜ ------3 ¾Ö?“ ›ÑMÓKAƒ cÜ MÏ "ÇM¨MÉ eKSŸ[˜---4 uK?L ´`Á zÃ[c< "ÇMÁ´ eKð^G< ------5 vKu?, /ÕÅ—Â uzÃ[c< "ÇÃÁ´ eKð^G< ------6 vKu?, /ÕÅ—Â MÏ "Ç=•[" eKTÃeTT ------7 ¾c¨< SÖsqT>Á "Ç"J" ------8 K?L "K ÃÑKê -----89

¡õM 4- eKu?}cw U×'@ ›ÖnkU“ õLÔƒ

401	¾›?‹ ›Ãy= ¾ÅU U`S^ ¨<Ö?ƒ-" ŸT¨p-uòƒ "`e- ¨Ã"U ¾ƒÇ` /¾ï"/ ÕÅ—- ¾u?}cw U×'@ }ÖpS¨< Á¨<nK<;	›-" -------1 }ÖpS" ›“¨<pU -------2 ›Le"¨<eU -------3 ›L¨<pU -------4 SMe ¾KU-------99 K?L "K ÃÑKê-------89
402	KØÁo 401 SMc< ›-" ŸJ' ¾ƒ—¨< ¾¨K=É SŸLŸÁ ›Ã'ƒ ²È 'u` ¾}ÖkS<ƒ /Ÿ›"É uLÃ SMe SSKe Ã‰LM;	S"kw /Ów[YÒ Ó"–<'ƒ ›KTÉ[Ó -------1 ¢"ÊU SÖkU -------2 ¾¨K=É Sq×Ö]Á "¡wM -------3 uS`ô ¾T>cØ ¾¨K=É Sq×Ö]Á -------4 uTlì" ¾T>Ñv ¾¨K=É Sq×Ö]Á -------5 u¡"É ¾T>ku` ¾¨K=É Sq×Ö]Á -------6 ¾²`" õ_ /Tlì" TesÖ` -------7 SMe ¾KU-------99 K?L "K ÃÑKê-------89
403	¾›?‹ ›Ãy= ›?Ée ¾ÅU U`S^ "¨l u%EL "`e- ¨Ã"U ¾ƒÇ` /¾ï" ÕÅ—- ¾u?}cw U×'@ }ÖpS¨< Á¨<nK<;	›-" -------1 }ÖpS" ›“¨<pU -------2 ›Le"¨<eU -------3 ›L¨<pU -------4 SMe ¾KU-------99 K?L "K ÃÑKê-------89
404	KØÁo 403 SMc< ›-" ŸJ' ¾ƒ—¨<" ¯Ã'ƒ /²È 'u` ¾}ÖkS<ƒ/ Ÿ›"É uLÃ SMe SSKe Ã‰LM/	S"kw /Ów[YÒ Ó"–<'ƒ ›KTÉ[Ó/ -------1 ¢"ÊU SÖkU -------2 ¾¨K=É Sq×Ö]Á "¡wM -------3 uS`ô ¾T>cØ ¾¨K=É Sq×Ö]Á -------4 uTlì" ¾T>Ñv ¾¨K=É Sq×Ö]Á -------5 u¡"É ¾T>ku` ¾¨K=É Sq×Ö]Á -------6 ¾²`" õ_ /Tlì" TesÖ` -------7 SMe ¾KU-------99 K?L "K ÃÑKê-------89
405	U›G<'< ¨pƒ /Ø"ƒ uT>"H@Éuƒ ¨pƒ/	›-" -------1

	¾ `e- ¨Ã”U ¾ƒÇ` /¾ï ÕÅ—- ¾¨K=É SŸLŸÁ ƒÖkTL‹G<;	›ÃÅKU -------2 ›L¨<pU-------3 SMe ¾KU------99
406	KØÁo 405 SMc< ›-” ŸJ’ ¾ƒ—¨<” ¾¨K=É SŸLŸÁ ¯Ã’ƒ /²È ’¨< ¾}ÖkT‹G< ÁL‹G<ƒ; /Ÿ›”É uLÃ SMe SSKe Ã‰LM/	S kw /Ów[YÒ Ó”–<’ƒ ›KTÉ[Ó/ -------1 ¢”ÊU SÖkU -------2 ¾¨K=É Sq×Ö]Á ”¡wM -------3 uS`ô ¾T>cØ ¾¨K=É Sq×Ö]Á -------4 uTlì” ¾T>Ñv ¾¨K=É Sq×Ö]Á -------5 u¡”É ¾T>ku` ¾¨K=É Sq×Ö]Á -------6 ¾²` õ_ /Tlì” TesÖ` -------7 K?L "K ÃÑKê ------89
407	›G<” ¾}ÖkS< ÁK<ƒ” ¾¨K=É SŸLŸÁ ¯Ã’ƒ /²È KU” S[Ö<;	uÖ?“ vKS<Á U¡` -------1 KÖ?”’ƒ eK}eTT˜ -------2 ŸÕÅ™Š MUÉ /U¡` -------3 ¾vKu?, /¾ï ÕÅ—Â U`Ý eKJ’ -------4 G<Kƒ ‹Ó` / `Ó´“ ›?‹ ›Ã y= eKT>ŸLŸM ------5 K?L ›T^ß SŸLŸÁ eKTLÑ˜ -------6 K?L "K ÃÑKê -------89
408	KØÁo 405 SMc< ›MÖkUU ŸJ’ K¨Åòƒ ¾¨K=É SŸLŸÁ SÖkU ÃðMÒK<;	›-” -------1 ›MðMÓU -------2 ›L¨<pU -------3 SMe ¾KU-------99 K?L "K ÃÑKê-------89
409	KØÁo 408 SMc< ›-” ŸJ’ ¨Åòƒ SÖkU ¾T>ðMÑ<ƒ ¾¨K=É SŸLŸÁ ›Ã’ƒ /²È ÃÓKè;	S kw /Ów[YÒ Ó”–<’ƒ ›KTÉ[Ó/ -------1 ¢”ÊU SÖkU -------2 ¾¨K=É Sq×Ö]Á ”¡wM -------3 uS`ô ¾T>cØ ¾¨K=É Sq×Ö]Á -------4 uTlì” ¾T>Ñv ¾¨K=É Sq×Ö]Á -------6 ¾²`” õ_ /Tlì” TesÖ` -------7 SMe ¾KU -------99 K?L "K ÃÑKê -------89
410	¾u?}cw U×’@ ›ÑMÓKAƒ Ÿ¾ƒ TÓ–ƒ ÃðMÒK<;	°ÉT@ T^²T>Á l¡U“ ¡õM -------1 uS”ÓYƒ Ö?“ }sTƒ -------2 uÓM Ö?“ }sTƒ -------3 uU¡` ›ÑMÓKAƒ SeÝ ×u=Á -------4 K?L "K ÃÖke -------89
411	KØÁo 408 SMc< ›MðMÓU ŸJ’ ¾¨K=É SŸLŸÁ SÖkU ÁMðKÑ<ƒ KU”É ’¨<;	MÏ ”Ç=•[” eKU”ðMÓ -------1 ŸÉT@ T^²T>Á SÉ >ƒ Ò` ›ÃeTS<U wÂ eKð^G< -------2 ŸÓw[YÒ Ó”–<’ƒ eK kwŸ< -------3 vKu?, /ÕÅ—Â eLM}eTT -------4 SMe ¾KU -------99 K?L "K ÃÑKê -------89
412	¾u?}cw U×’@ ¾T>ÖkS< ŸJ’ ¾›?‹ ›Ãy= ›?Ée ¾ÅU U`S^ ¨<Ö?ƒ-” Ku?}cw U×’@ ›ÑMÓKAƒ cÜ NŸ=U- ›d¨kªM;	›-” -------1 ›Ld¨pG<U -------2 SMe ¾KU -------99 K?L "K ÃÑKê -------89
413	KØÁo 412 SMc< ›Ld¨pG<U ŸJ’ ¾›?‹	eKT“U“†¨< -------1

	›Ãy= ›?Ée” ¾ÅU U`S^ ¨<Ö?ƒ-” KU” ›Ld¨Lu;	ÁÑK<—M wÂ cÓŠ -------2 Td¨p ›ÃÖpSU wÂ -------3 SMe ¾KU -------99 K?L "K ÃÑKê -------89

¡õM 5- Ÿ“ƒ ¨Å MÏ ¾›?‹ ›Ãy= ›?Ée e`ßƒ SŸLŸM LÃ ÁL†¨< ¨<kƒ

501	›?‹ ›Ãy= ›?Ée Ÿ“ƒ ¨Å MÏ K=}LKõ Ã‹LM;	›-” -------1 ›Ã}LKõU -------2 ›L¨<pU -------3 SMe ¾KU -------99 K?L "K ÃÑKê -------89
502	KØÁo 501 SMc< ›-” ŸJ’ SŠ /uU” Ñ>²?/ ’¨< ›?‹ ›Ãy= ›?Ée Ÿ“ƒ ¨Å MÏ ¾T>}LKð¨<; /Ÿ›”É uLÃ SMe SSKe Ã‰LM/	u¨Ó´“ ¨pƒ -------1 u¨K=É ¨pƒ -------2 Ö<ƒ uTØvƒ Ñ>²? -------3 u3~U S”ÑÉ Ã}LKóM -------4 ›L¨<pU -------5 SMe ¾KU -------99 K?L "K ÃÖke -------89
503	KØÁo 501 SMc< ›-” ŸJ’ u›?‹ ›Ãy= ¾}Á²‹ “ƒ u¨Ó´“ ¨pƒ U”U SŸLŸÁ vƒÖkU zÃ[c<” KMÏª ¾Te}LKõ ÉM U” ÁIM ’¨< wK¨< ÁevK<;	u›?‹ ›Ãy= ¾}Á²‹ “ƒ ¾Uƒ¨MÇ†¨< MÐ‹ uS<K< ÃÁ³K< -------1 ŸT>¨KÆƒ MÐ‹ ÓTg< ÁIM -------2 ›”É ›^}— ÃÁ³K< -------3 Zeƒ ›^}— ÃÁ³K< -------4 U” ÁIK ”ÅJ’ ›L¨<pU Ó” ÃÁ³K< -------5 SMe ¾KU -------99 K?L "K ÃÑKê -------89
504	KØÁo 501 SMc< ›-” ŸJ’ u›?‹ ›Ãy= ¾}Á²‹ “ƒ U”U SŸLŸÁ dƒÖkU Ö<ƒ uTØvƒ zÃ[c<” KMÏª ¾Te}LKõ ÉM U” ÁIM ’¨< wK¨< ÁevK<;	u›?‹ ›Ãy= ¾}Á²‹ “ƒ ¾Uƒ¨MÇ†¨< MÐ‹ uS<K< ÃÁ³K< -------1 ŸT>¨KÆƒ MÐ‹ ÓTg< ÁIM -------2 ›”É ›^}— ÃÁ³K< -------3 Zeƒ ›^}— ÃÁ³K< -------4 U” ÁIM ”ÅJ’ ›L¨<pU Ó” ÃÁ³K< -------5 SMe ¾KU -------99 K?L "K ÃÑKê -------89
505	›?‹ ›Ãy= Ÿ“ƒ ¨Å MÏ ”ÇÃ}LKõ KTÉ[Ó ¾T>[Ç SÉ’>ƒ /l¡U“/ ›K;	›- -------1 ¾KU -------2 ›L¨<pU -------3 SMe ¾KU -------99 K?L "K ÃÑKê -------89
506	›?‹ ›Ã y= Ÿ“ƒ ¨Å MÏ S}LKõ” u}SKŸ} S[Í Ÿ¾ƒ ’¨< ÁÑ–<ƒ;	Ÿw²<G” SÑ“—-------1 ŸÖ?“ ›ÑMÓKAƒ cÜ -------2 Ÿ¨<KA ÕÅ™‹ -------3 Ÿu?ƒ Ku?ƒ ›ÑMÓKAƒ cÜ -------4 SMe ¾KU -------99 K?L "K ÃÑKê -------89
507	›?‹ ›Ãy= Ÿ“ƒ ¨Å MÏ ”ÇÃ}LKõ KTÉ[Ó ¾T>Å[Ñ¨< l¡U“ zÃ[c<” Ÿ“ƒ ¨Å MÏ S}LKñ” u¨ÓÖ¨ƒ Ãk”dM wK¨< ÁU“K<;	›- -------1 ›Ãk”eU -------2 ›L¨<pU -------3 SMe ¾KU-------99 K?L "K ÃÑKê-------89

508	¾›?‹ ›Ãy= ›?Ée zÃ[e uÅT‹" ¨<eØ ¾T>Ñ–< c-‹ Mp ¾J' ¾Ów[YÒ Ó"–<'ƒ u=ðêS< u^d†¨< Ö?"'ƒ LÃ Ñ<Çƒ ÁeŸƒLM wK¨< ÁevK<;	›- -------1 ›ÁeŸƒMU -------2 ›L¨<pU -------3 SMe ¾KU-------99 K?L "K ÃÑKê-------89
509	KØÁo 507 SMc< ›-" ŸJ' ¾›?‹ ›Ãy= uÅT‹" ¨<eØ ¾T>Ñ˜ c-‹ Mp ¾J' ¾Ów[YÒ Ó"–<'ƒ u=ðêS< u^d†¨< L¾ U" ¯Ã'ƒ Ñ<Çƒ ÁeŸƒLM wK¨< ÁevK<;	u›Ç=e ´`Á zÃ[e SÁ´ -------1 uK?K‹ ¾›vL²` ui-‹ SÁ´ -------2 ¾›?‹ ›Ãy= ›?Ée Svve -------3 ›ÅÑ—'~ Ÿ›?‹ ›Ãy= ›?Ée 'í KJ' w‰ -------4 ›L¨<pU -------5 SMe ¾KU-------99 K?L "K ÃÑKê-------89

¡õM 6- S[Í eK ›?‹ ›Ã y= ›?Ée" ¾l¡U" G<'@

601	¾›?‹ ›Ãy= ›?Ée zÃ[e uÅU- "ÇKw- }S`U[¨< "¨l U" ÁIM Ñ>²? J•M;	--------- ¨` ------- ¯Sƒ ›Le¨<eU -------1 SMe ¾KU -------99 K?L "K ÃÑKê -------89
602	¾ì[-›?‹ ›Ãy= ›?Ée SÉ'>ƒ SÖkU ¾ËS\ƒ SŠ '¨<;	------ ¨` ----- ¯Sƒ ›Le¨eU -------1 SMe ¾KU -------99 K?L "K ÃÑKê -------89
603	¾SÉ'>~" ¨Ü T" '¨< ¾T>gõ'¨<	'@ ^c? -------1 ŸS"ÓYƒ u'í -------2 ŸSÁÉ ÉÒõ ¾}gð'M˜ -------4 Ÿ¨LÐ‹ /Ÿ²SÊ‹ -------5 SMe ¾KU -------99 K?L "K ÃÑKê -------89
604	u`e- ›SK"Ÿƒ /U²" ¾ì[-›?‹ ›Ãy= ›?Ée SÉ'>ƒ SÖkU ŸËS\uƒ Ñ>²? ËUa u›ÖnLÃ ¾Ö?"- G<'@ "Èƒ '¨<;	}gKA—M -------1 U"U K¨<Ø ¾K˜U -------2 wfw—M -------3 SMe ¾KU -------99 K?L "K ÃÑKê -------89
605	Ÿ}KÁ¾ ¾lw[}cw ¡õKA‹ ÉÒõ ÃÅ[ÓM-M;	›-" -------1 ›M}Å[ÑM˜U -------2 SMe ¾KU -------99 K?L "K ÃÑKê -------89
606	KØÁo 605 SMc< ›-" ŸJ' ÉÒõ" Ÿ¾ƒ '¨< ÁÑ–<ƒ;	Ÿ²SÉ /ŸÔ[u?ƒ/ ŸÕÅ— -------1 ŸSÁÉ /S"ÓY© ÁMJ' É`Ïƒ -------2 ŸS"ÓYƒ -------3 Ÿlw[}cw É`Ïƒ -------4 K?L "K ÃÑKê -------89
607	KØÁo 605 SMc< ›-" ŸJ' U" ›Ã'ƒ ÉÒõ '¨< ÁÑ–<ƒ;	Ñ"²w -------1 u?ƒ Ku?ƒ "¡w"u? -------2 ¾U¡` ›ÑMÓKAƒ -------3 UÓw -------4 SMe ¾KU -------99 K?L "K ÃÑKê -------89

608	Ÿ›T"]ª /Ÿì[-›?‹ ›Ãy= ›?Ée l¡U“ cÜ GŸ=U- Ò` eKMÏ S¨<KÉ “ eKu?}cw U×'@ ›ÑMÓKA*ƒ* }¨ÁÃ}¨< Á¨<nK<;	›-” -------1 ›L¨<pU -------2 SMe ¾KU -------99
609	›T"]- /Ÿì[-›?‹ ›Ãy= ›?Ée l¡U“ cÜ GŸ=U- eK MÏ S¨<KÉ“ u?}cw U×'@ ›ÑMÓKA*ƒ* uT>Ñv /uT>Á[" G<'@/ *ƒ*UI`*ƒ* cØ}ªM ÃLK<	›-” -------1 ›McÖU -------2 SMe ¾KU -------99 K?L "K ÃÑKê -------89
610	Ÿ›T"]ª /¾ì[-›?‹ ›Ãy= ›?Ée l¡U“ cÜ GŸ=U- Ò` eKMp Ów[-YÒ Ó”–<'*ƒ* ›ÅÑ—'*ƒ*“ ŸzÃ[c< Ò` uT>•\ c-‹ L¾ ¾T>ÁS×¨<” ‹Ó` }¨ÁÃ}¨< Á¨<nK<;	›-” -------1 ›McÖU -------2 SMe ¾KU -------99 K?L "K ÃÑKê -------89

¡õM 7 S[Í eK c<e ›eÁ» °î‹

701	vKñ*ƒ* 6 ¨^*ƒ* ¨p*ƒ* ¾›M¢M SÖØ ÖØ}¨< Á¨<nK<;	›-” -------1 ›MÖ×G<U -------2 ›L¨<pU -------3 SMe ¾KU -------4				
702	KØÁo 701 SMc< ›-” ŸJ' u¾e”*ƒ* Ñ>²? ¾›M¢M SÖØ ÃÖ×K<; /ÖL' ÖÏ' ›[o' u=^' ¾SdcK<*ƒ*/	u¾k'< -------1 u=Á”e uXU”*ƒ* ›”É -------2 uG<K*ƒ* XU”*ƒ* ›”É -------3 u¨` ›”É -------4				
703	ŸT>Ÿ}K<*ƒ* c<e ›eÁ» °ï‹ 'Ña‹ ¨<eØ ¾*ƒ*—¨<” }ÖpS¨< Á¨<nK<;/ ¾}ÖkS<u*ƒ* ›Ò×T> "K ÃØkc<;		›-”	›M}Ö.	›L¨<pU	SMe ¾KU
		Ý*ƒ* SnU	1	2	88	99
		g=h/ÒÁ SXw	1	2	88	99
		u?”²=” SXw	1	2	88	99
		Nii S¨<cÉ	1	2	88	99
		¢Ÿ?Ã” S¨<cÉ	1	2	88	99
		c=Ò^ TÚe	1	2	88	99
704	KØÁo 703 SMc< ›-” ŸJ' vKñ*ƒ* 4 dU”*ƒ* ¨<e u¾e”*ƒ* Ñ>²? }ÖpSªM;	u¾k'<	uXU”*ƒ* G<K*ƒ*	uXU”*ƒ* ›”É	U”U	›L¨<pU
	Ý*ƒ* SnU	1	2	3	4	88
	g=h/ÒÁ SXw	1	2	3	4	88
	u?”²=” SXw	1	2	3	4	88
	Nii S¨<cÉ	1	2	3	4	88
	¢Ÿ?Ã” S¨<cÉ	1	2	3	4	88
	c=Ò^ TÚe	1	2	3	4	88

›Ç=e ›uv ¿'>y`e+ ¾l¡U“ ƒUl`ƒ ¡õM ¾lw[}cw Ö?“ ƒUl`ƒ ²`õ Ÿ›?‹ ›Ã y= ›?Ée Ò` ¾T>•\“ uÅu<w ¾l[ ›?‹ ›Ã y= ›?Ée ¾l¡U“ SeÝ ×u=Á-‹ }Ÿ Ã l¡U“ uT>ÁÅ`Ñ< c-‹ ¾Ów[YÒ Ó”–<'ƒ ¾S¨<KÉ“ ¾u?}cw UÖ'@ ›ÑMÓKAƒ õLÔ†¨<” KTØ“ƒ ¾}²ÒË ¾¨<ÃÃƒ SU]Á::

¡õM 1- S[Í eK Tlu^© G<'@
ÉT@- e”ƒ '¨<; (uS<K< ›Sƒ ÃÑKê)
ï- U”É '¨<;
u›G<'< ¨pƒ ÁK<uƒ ¾Òw‰ G<'@ U”É '¨<;
u›G<'< ¨pƒ ÁK<uƒ ¾Òw‰ G<'@ U”É '¨<;
u›G<'< Ñ>²? Y^- U”É '¨<;
²`- U”É '¨<;
NÃT•ƒ- U”É '¨<;
ÖpLL ¾¨` Ñu=- e”ƒ '¨<;
}U[¨< ÁÖ“klƒ Ÿõ}—¨< ¾ƒUl`ƒ Å[Í e”ƒ '¨<;

¡õM 2- S[Í eK }n^'> ï Ó”–<'ƒ vl]Áƒ

`e- ŸS SU- uòƒ ¾'u[- ¾¨c=w /¾Ów[ YÒ Ó”–<'ƒ vl] U” ÃSeM 'u`;
K`e- /Kï ÕÅ—- Ÿ›?‹ ›Ã y= ›?Ée Ò` S•` u¨c=w /uÓw[YÒ Ó”–<'ƒ õLÔƒ- L¾ ÁdÅ[w-ƒ K¨<Ø U”É '¨<;
`e- u›G<'< ¨pƒ ÁKw-ƒ ¾¨c=w /¾Ów[YÒ Ó”–<'ƒ vl]- U” ÃSeLM;
`e- uÓw[eÒ Ó”–<'ƒ ¨pƒ ¢”ÊU }ÖpS¨< ¾M}ÖkS< ŸJ' KU” /”Èƒ }ÖkS< ¨Ã”U ›M}ÖkSU;
Mp ¾J' ¾Ów[YÒ Ó”–<'ƒ SðìU ŸzÃ[c< Ò` KT>•\ ¨Ñ•‹ u^d†¨< LÃ U” Ñ<Çƒ ÁS×M wK¨< ÁU“K<::

¡õM 3- S[Í eK S¨<KÉ õLÔƒ

U” ÁIM uIÃ-ƒ ÁK< MÐ‹ ›K-ƒ;
ÉT@Á†¨< ----------
ï†¨< ----------
¾›?‹ ›Ã y= ›?Ée ¾ÅU U`S^ ¨<Ö?†¨< ----------
`e- /}ÚT]/ MÐ‹ S¨<KÉ /ÁKS¨<KÉ U” ÁIM ›eðLÑ> '¨<;
”Ç=I ”Ç=cT-ƒ ÁÅ[Ñ- U¡”Áƒ U”É '¨<;
›?‹ ›Ã y= u`e- MÏ ¾S¨<KÉ /ÁKS¨<KÉ õLÔƒ- L¾ }ê• "Å[Ñ U” ¯Ã'ƒ }ê• ›Kw-;
U” ÁIM }ÚT] MÏ ÃðMÒK<; KU";
›?‹ ›Ã y= ›?Ée `e- ¾T>•\uƒ Tlu[cw `e- K=•`- eKT>Ñv¨< ¾MÏ lØ`“ ¾S¨<KÍ Ñ>²? ÁK¨<” ›SK"Ÿƒ kØa M wK¨< ÁevK<;

¡õM 4- S[Í eKu?}cw U×'@ ›ÑMÓKAƒ õLÔƒ“ U`Ý

K`e- ¾ƒÇ`/ ¾ï ÕÅ—- ¾u?}cw U×'@ SÖkU /ÁKSÖkU U” ÁIM ›eðLÑ> '¨<;
”Ç=I ”Ç=cT-ƒ ÁÅ[Ñ- U¡”Áƒ U”É '¨<;
›?‹ ›Ã y= ¾u?}cw U×'@ SÖkU /ÁKSÖkU õLÔƒ- L¾ }ê• "Å[Ñ U” ¯Ã'ƒ }ê• ›Kw-;
U” ¯Ã'ƒ ¾¨K=É SŸLŸÁ ¯Ã'ƒ SÖkU /ÃðMÒK</ ¾}ÖkS< '¨<;
¾S[Ö<ƒ” ¾¨K=É SŸLŸÁ ¯Ã'ƒ ”Èƒ“ KU” S[Ö<ƒ;
eK ›?‹ ›Ã y= ›?Ée ¾ÅU U`S^ ¨<Ö?ƒ“ Ÿu?}cw- /ŸƒÇ`/ Ÿï ÕÅ—- Ò` }¨ÁÃ}ªM; KU";
eK ›?‹ ›Ã y= ›?Ée Ÿ“ƒ ¨Å MÏ e`ßƒ U” Á¨<nK<;
eK ›?‹ ›Ã y= ›?Ée Ÿ“ƒ ¨Å MÏ e`ßƒ SŸLŸM U” Á¨<nK<;

eK ›?‹ ›Ã y= ›?Ée” e`ßƒ KSŸLŸM ¾T>Å[Ó l¡U“ ¾›?‹ ›Ã y= ›?Ée” e`ßƒ Ãk”dM wK¨< ÁU“K<; KU”;

Te¨h:- KG<K<U ØÁo-‹ ”Å ›eðLÑ>’~ Tw^]Á ÃcØ::