# HIV Positive Women's Intention to have Pregnancy; Using The Theory of Planned Behavior The Case of Assela Referral Hospital, 2010.

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May, 2010.

Jimma, Ethiopia

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## Abstract

***Background**: All women have the same rights concerning their reproduction and sexuality, but women living with HIV/AIDS require additional care and counseling during their reproductive life. In sub-Saharan Africa, women account for almost 6 out of every 10 persons living with HIV/AIDS and the failure to implement intervention measures, known to reduce perinatal transmission of HIV, accounts for the higher number of new pediatric cases.*

***Objective**: The objective of this study was to describe HIV positive women's behavioral intention and its determinant factors to have pregnancy in the future.*

***Methods**: A cross-sectional facility based study design, supplemented with in-depth interview was employed in Assela referral hospital, from March 10- Aril 8, 2010. The theory of planned behavior was used to develop the conceptual framework. Study participants were selected randomly from clients who came to visit Assela hospital ART unit. Frequencies, percentages, means and standard deviations were used for descriptive summary; and correlations to examine the relationships among variables. Stepwise regression was used to identify important predictors of pregnancy intention.*

***Results**: There were 344 study participants with response rate of 95.3%. Majority of the respondents (75.3%) were found highly knowledgeable about Prevention of Mother to Child Transmission (PMTCT). Large number of women (29.1%) had intended pregnancy in the near future. Respondents' age, history of PMTCT service exposure, and PMTCT knowledge had significant correlation and account 21.4% of the variability in pregnancy intention. Belief based attitude, subjective norm and perceived behavioral controls had significant correlation with pregnancy intention, and explain 36% of the variability in pregnancy intention, where belief based attitude alone accounts 25.5%. In this study the theory of planned behavior and external variables together explained 57.4% of the variability in pregnancy intention.*

***Conclusion and recommendation:** Large number of HIV positive women were intended to have pregnancy in the near future, where attitude towards pregnancy was found the major predictor. Therefore, higher attention needs to be given on attitude towards pregnancy and strengthening PMTCT services.*

## Acknowledgment

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## Acronyms

| | |
|---|---|
| AIDS | Acquired Immunodeficiency Syndrome |
| ANC | Antenatal Care |
| ART | Antiretroviral Therapy |
| BMI | Body Mass Index |
| CU | Colombia University |
| DIC | Disseminated Intravascular Coagulation |
| ECA | Economic Commission of Africa |
| EDHS | Ethiopian Demographic and Health Survey |
| FP | Family Planning |
| HAART | Highly Active Antiretroviral Therapy |
| HIV | Human Immunodeficiency Virus |
| ICPD | International Conference for Population Development |
| ICAP | International Center for AIDS care and treatment Program |
| MOH | Ministry of Health |
| MTCT | Mother To Child Transmission |
| NVP | Neverapin |
| PIHCT | Provider Initiated HIV Counseling and Testing |
| PMTCT | Prevention of Mother To Child Transmission |
| SPSS | Statistical Package for Social science Studies |
| SRS | Simple Random Sampling |
| STI | Sexually Transmitted Infections |
| TPB | Theory of Planned Behavior |
| TRA | Theory of Reasoned Action |
| UN | United Nation |
| UNAIDS | Joint United Nations program on HIV/AIDS |
| UNDP | United Nations Development Program |
| UNICEF | United Nations Children's Fund |
| US | United States |
| VCT | Voluntary Counseling and Testing |
| WHO | World Health Organization |
| WLH | Women Living with HIV |

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# CHAPTER I: Introduction

The sexual and reproductive health of women living with HIV/AIDS is fundamental to their well-being and that of their partners and children. Improving women's sexual and reproductive health, treating HIV infections and preventing new ones are important factors in reducing poverty and promoting the social and economic development of communities and countries. All women have the same rights concerning their reproduction and sexuality, but women living with HIV/AIDS require additional care and counseling during their reproductive life (WHO, 2006).

There are several distinct facets to the association between HIV/AIDS and fertility. HIV/AIDS can affect fertility desires and outcomes, and fertility can affect the risk of HIV/AIDS and for this reason an empirical association between the two seems almost unavoidable. The factors that account for this quite substantial depressing effect of HIV/AIDS on reproductive performance are thought to be largely biological, although behavioral mechanisms cannot be ruled out (UN, 2002).In Africa, most sero-positive individuals are unaware of their status until the infection expresses itself in overt physical symptoms (Setel, 1995), and women often learn of their sero-positive status through an antenatal check-up, i.e. after they have already had a pregnancy (UN, 2002).

The question to be raised and investigated is whether pre-informed HIV sero-status alters the pregnancy intention of women living with HIV (WLH) or not. This study is expected to answer the above question and to clearly pick out the behavioral construct and other external variables which have a significant role in determining HIV positive women pregnancy intention. Thus, the conceptual framework of the study is adapted from the theory of planned behavior (Ajzen, 1991).

## Statement of the Problem:

In country's most heavily affected, HIV has reduced life expectancy by more than 20 years, slowed economic growth, and deepened household poverty. In sub-Saharan Africa alone, the epidemic has orphaned nearly 12 million children aged under 18 years. The natural age distribution in many national populations in Sub-Saharan Africa has been dramatically skewed by HIV (UNAIDS, 2008). HIV has inflicted the "single greatest reversal in human development" in modern history (UNDP, 2005). In 2007 alone, 33 million people were living with HIV, among these 67% were living in sub-Saharan Africa, and 38% of deaths were occurred in this region (UNAIDS, 2008).

Women comprise an increasing proportion of people living with HIV/AIDS worldwide. Global prevalence among women has accelerated from 41 % of infected adults in 1997 to 50 % in 2002. In sub-Saharan Africa, women account for almost 6 out of every 10 persons living with HIV/AIDS (UNAIDS, 2004) or almost 60% (UNAIDS, 2008). Sub-Saharan Africa is the only region, globally, where more women than men are infected with the virus (ECA, 2004).

The prevalence of HIV among pregnant women in African countries is higher, when compared to other countries. And the failure to implement intervention measures, known to reduce perinatal transmission of HIV, accounts for the higher number of new pediatric cases (Anon., 1999). According to the World Health Organization, a moderate reduction in the number of pregnancies among HIV-infected women would yield a reduction equivalent to the number of infections averted among infants of HIV-positive pregnant women, given that so few of these women receive the full package of PMTCT interventions (from HIV counseling and testing to support for safer infant feeding practices) (WHO, 2002).

It is estimated that there were 43.4 million orphans in Africa at the end of 2003, a number projected to increase to 50 million by 2010. The increase is largely due to AIDS, with an estimated 12.3 million AIDS orphans at the end of 2003, rising to 18.4 million in 2010 (UNICEF, 2004). Of the 2 million people who died of AIDS during 2007, more than one in seven were children. Every hour, around 31 children die as a result of AIDS (UNAIDS, 2008).

More than 90% of children living with HIV acquired the virus during pregnancy, birth or breastfeeding—forms of HIV transmission that can be prevented (Kengeya-Kayondo et al., 1995; Mulder et al., 1996; Hauri, Armstrong & Hutin, 2004; Kiwanuka et al., 2004; Schmid et al., 2004). Levels of orphanhood have always been high in sub-Saharan Africa, as a result of high mortality in general and high maternal mortality in particular (UNICEF, 2004). AIDS orphans suffer the psychosocial problems that other orphans do, but have an additional burden of stigma associated with HIV/AIDS (ECA, 2004). Where one-fourth of all births in sub-Saharan Africa are unintended, assuming that 25% of HIV-positive births are also unintended, meeting the family planning needs of all women with HIV in sub-Saharan Africa has the potential to avert 120,000 HIV-positive births each year (REYNOLDS, 2005).

Scholars reported that the average age of death of HIV infected children born to HIV positive women was less than six months, 72% of them dying within their first year of life. Orphans were three times likely to die and infants with a low birth weight had eight times higher risk of dying (Taha et al., 1996).

According to the serial reports of ministry of health in its health and health related indicators, Ethiopian national prevalence of HIV/AIDS has declined from 4.4 in 2003 (MOH, 2003) to 2.1, while the prevalence in women were 2.6 (MOH, 2007).

The annual incidence of HIV/AIDS in adults was 0.28 and the total number of orphans in the year 2007 was 898,350. From 127,544 pregnant women tested for HIV, 6,655 were reported to be positive and 58.3% of the women and 2,736 new born babies had taken NVP (MOH, 2007). In 2007 the contraceptive coverage of the country was 33.3%. Besides, the proportion of hospitals, health centers, clinics providing VCT service were 63.6% and only 38.2% of the health institutions were providing PMTCT service. The 2005 EDHS has reported that the prevalence of HIV in pregnant women who were following ANC was 1.4, whereas the 2005 ANC round estimate was 3.5 (EDHS, 2005). This reflects as there is a desire to have further child among HIV positive women despite the aforementioned service coverage of the country.

From the joint report of UNAIDS/WHO/UNICEF, as an Epidemiological factsheets on HIV/AIDS in Ethiopia, the antenatal coverage was 28%. Over all in the nation 74,000 pregnant women were estimated to live with HIV and looking for PMTCT service, however only 8% of the women had the service in 2007 (UNAIDS/WHO/UNICEF, 2008).

Although policies and programs for support provision are increasingly being put in place, African governments are struggling to meet the needs of orphans. It is estimated that only 3% of orphans and vulnerable children in low and middle income countries receive any form of public support (UNAIDS, 2004). An important intervention is to prevent children from becoming orphans in the first place. This can be achieved through either preventing HIV infection in the parents, or through prolonging infected parents' lives through providing treatment and other forms of health-sustaining support (ECA, 2004). In addition to the already started programs in Ethiopia, PMTCT and PIHCT, this study provides an insight on the behavioral factors that needs to be considered.

# CHAPTER II: Literature Review

Women with HIV have much the same desires to have children as do other women (GUTTMACHER, 2006). Surveys in developed and developing countries have found that 18% to 43% of women with HIV wanted children in the future (CHEN et al., 2001). In general, people with HIV want children for reasons common to many other people who desire parenthood. A study conducted in Uganda to assess the desire for children and pregnancy risk behavior of HIV positives, 40% (455) of participants were sexually active, and of these, 18% (83) desired children(S. Nakayiwa et al., 2006). In Lesotho, a sizable proportion of HIV-positive women (38.7%) intend to have a child. In the same study HIV-positive women age 35 and over are significantly less likely to want a child in future compared with those age 15-19 (T. Adair, 2007).

In United States, overall, 28-29% of HIV-infected men and women receiving medical care 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 (James et al. 2003). A study conducted among 100 HIV-Positive women in New York by Nancy and her colleagues (2004) have found that one third of subjects were considering future children.

Another study conducted on people living with HIV in Cape Town has revealed that 45% of women and 57% of men being open to the possibility of having a child (D. Cooper et al. 2009). In countries where antiretroviral treatment (ART) has proved effective, research indicates that HIV-positive individuals are likely to choose to have children (CHEN et al. 2001). A study in Nigeria conducted among HIV positive men and women to determine their fertility desire and intention 63.3% of the participants desire children even though 50.4% already had >2 children. Respectively, 71.5% and 93.8% of men and women who desire children intend to have >2 in the near future (Oladapo et al. 2005a).

A longitudinal study conducted in Malawi to determine fertility intentions of HIV-1 infected and uninfected women, those with more children were less likely to have a desire for more children; women's age was also found to have statistically significant association with fertility intention (Frank et al. 2009). In sub-Saharan African countries, a substantial proportion of women and

men who are on HAART wish to have children, CD4 cell counts also affect pregnancy incidence, although the difference was not statistically significant. Similarly the presence of PMTCT enables HIV infected women to continue to have children while reducing the chance of transmitting HIV to her child (Hoffman et al., 2008).

Human immune-deficiency virus (HIV) has had variable effects on fertility in different cultures, both for expectations and actual childbearing following diagnosis. In Nigeria, desire for children was significantly associated with non-disclosure, younger age and recent diagnosis (Oladapo et al., 2005b). A study conducted in South Africa (Peltzer et al., 2008) indicate that among HIV positive women a lower number of children, higher PMTCT knowledge and younger age were associated with pregnancy desire.

In South Africa, among HIV positive women and men receiving antiretroviral therapy, a decreased number of children were associated with fertility desire (Myer et al., 2007), moreover young women are likely to have an expectation of childbearing, and are more likely to voice desire for pregnancy after diagnosis (CHEN et al., 2001; Peltzer et al., 2008; Heard et al., 2007; Taulo et al., 2009; Oladapo et al., 2005b).

Longer HAART usage and HAART-associated health restoration were associated with increased childbearing desire amongst women living in sub-Saharan Africa. General health status, which may vary relative to other factors over time, tends to be stronger for women than for men to have an influence on childbearing desire (Kaida et al., 2006; Hoffman et al., 2008).

In Lesotho and South Africa, knowledge of MTCT was significantly associated with increased likelihood of wanting to give birth in the future for HIV positive women (T. Adair, 2007; Peltzer et al., 2008). A study conducted in Uganda, knowledge was high regarding the possibility of HIV transmission from mother-to-baby (71%), its prevention (81%) and about the PMTCT program (78%). However, 78% did not know that an HIV-infected woman who took PMTCT drugs could still deliver an HIV-infected baby. In a similar study, exposure to PMTCT programs was found to be associated with lower rates of pregnancy risk behavior (S. Nakayiwa et al. 2006).

On the other side male partners appear to contribute greatly to pregnancy decision-making; a study in sub-Saharan Africa has noted that men are more likely than women to desire children after diagnosis (Myer et al., 2007). In Lesotho, marital status has also found to affect fertility desire. Controlling for other factors, a currently married HIV-positive woman is almost 14 times more likely than a never-married woman to want to have a child (T. Adair, 2007).

In many societies, women's identity is defined by child bearing. The ability to reproduce affects social standing, individual recognition, partnership stability, and through these conventions, financial security (Serour, 2008). In India, women who indicated as they did not have family support and stigmatized by the family were reluctant to opt for a pregnancy as they were not sure of the future, including child care in event of parental death. In contrast, those women who decided to have a child did so based on family support, especially when family members offered to take care of the child in the future in the event of parental death (Kanniappan S. et al., 2008).

As it has reviewed, HIV positive women desire and intention to have a child was found to have relation with marital status and partner influence, respondents age, CD4 cell counts, number of children the woman had, duration since HIV diagnosis, PMTCT knowledge and history of PMTCT services in the previous pregnancy, being on HAART and its duration, perceived general health status of the woman and strong family support.

## Rationale for the Theory of Planned Behavior (TPB):

The Theory of Planned Behavior (TPB; Ajzen, 1985) and its precursor, the Theory of Reasoned Action (TRA; Fishbein & Ajzen, 1975) are prominent models in health psychology research. From 1985 to April 2004, the TPB has featured in 622 papers included in the PsycINFO data base and 230 papers included in the Medline database, and the frequency has increased during each five year period since the publication of the theory (J.J. Francis et al. 2004a). This mostly featured behavioral model that has been used to predict human behavior, the TPB, is adapted to develop the conceptual framework of this study. To strengthen the model prediction some factors external to the TPB are included in the conceptual framework.

The TPB (Ajzen, 1991) is established to answer the limitation in the TRA (Fishbein and Ajzen, 1975; Ajzen and Fishbein, 1980). TPB deals with behavior where individual have incomplete faculty of using one's will or situation where they have incomplete control of their behavior (Ajzen, 1985, 1991, 2002). The TPB is composed of attitude towards the behavior, social factor called subjective norm and an added variable which is the degree of perceived behavioral control (PBC) (Ajzen, 1985, 1991, 2002).

The construct of PBC was added into TRA in an effort to deal with situations where individuals may lack complete volitional control over the behavior (Ajzen, 1991, 2002). PBC is defined as, given the presence or absence of requisite resources and opportunities, the individual's perception of the ease or difficulty in performing the behavior of interest (Ajzen, 1991).

Subjective norm deals with the influence of social environment or social pressure on individuals (Fieshbein and Ajzen, 1975), or is individual's perception of the likelihood that the potential referent group or individuals approve or disapprove of performing the given behavior (Fieshbein and Ajzen, 1975; Ajzen, 1991). It is shown as a direct determinant of behavioral intention in TRA (Fishbein and Ajzen, 1975) and TPB (Ajzen, 1991).

Attitude has long been identified as a construct that guides future behavior or the cause of intention that ultimately leads to a particular behavior. In TRA, attitude is referred as the evaluative effect of positive or negative feeling of individuals in performing a particular behavior

(Fishbein and Ajzen, 1975), or it is the degree of favorableness or unfavorableness of an individual's feeling towards a psychological object (Ajzen and Fishbein, 2000).

Behavioral Intention is the perception of an individual towards performance of a particular behavior (Fishbein and Ajzen, 1975). In TRA, Fishbein and Ajzen (1975) intention is stated as, "a person's location on a subjective probability dimension involving a relation between oneself and some action". In the TPB (Ajzen, 1985, 1991, 2002) the antecedents of intention are attitude towards the behavior, subjective norm and the degree of PBC.

## TPB to predict behavioral Intention:

So far so many studies have been conducted using the TPB and the model has featured in different data bases frequently. The TRA/TPB has been used to understand a variety of behaviors, some of the applications of the model to predict health related behaviors had reviewed to examine as to how the theory can predict behavioral intention. In a meta- analysis of 185 studies conducted to assess the intention regarding low fat diet consumption, breast screening, smoking cessation, and intention to exercise for coronary heart disease patients, attitude, subjective norm and PBC explained 39% of the variation in intention. The attitude-intention (r= 0.49) perceived behavioral control (PBC) - intention (r= 0.43) associations were stronger than the subjective norm-intention (r=0.34) correlation. The analysis revealed that the correlation between behavior and intention (0.38, $p<0.01$), and PBC and behavior (r= 0.14, $p<0.01$) were found significant (Armitage & Conner, 2001).

In another meta-analysis, 56 studies specific to health-related behaviors; smoking, drunk driving, breast self examination, avoiding caffeine, exercising, condom use and flossing teeth, the average explained variance in intention was 40.9%. The intention-attitude (r=0.46), intention-subjective norm (r=0.34) and intention-PBC (r=0.46) correlations were all significant (Godin and Kok, 1996).

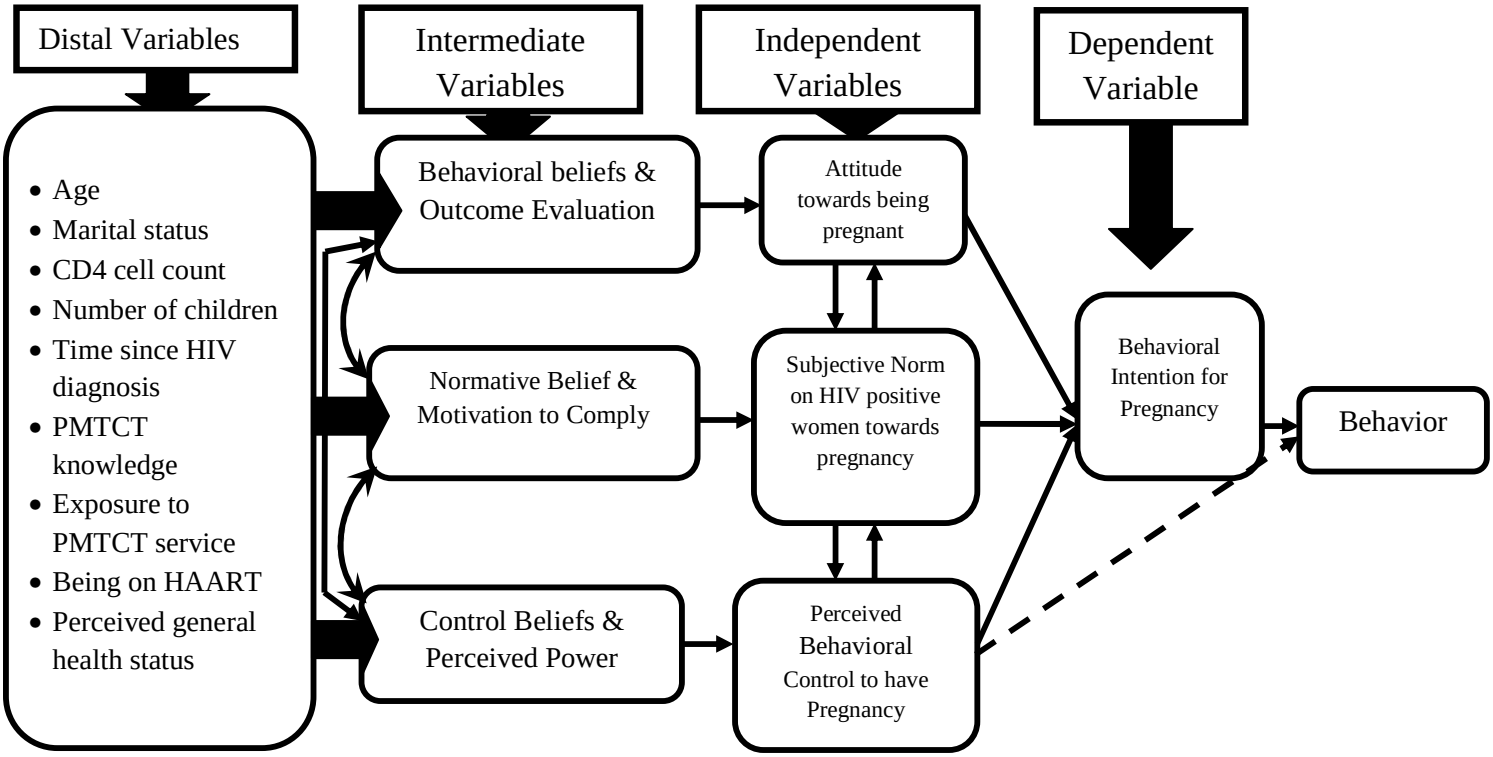


Figure 1. The conceptual framework of the study, adapted from Theory of Planned Behavior, Ajzen 1991.

## Significance of the Study:

Health and quality of life benefits ensue from the availability of Highly Active Antiretroviral Therapy (HAART) are worthy, but the social scene continues to pose challenges for women's decision making around having children (M. Nduna et al. 2009). This is resulting in an increase in the number of HIV positive children where the cause is largely associated with MTCT (UNICEF, 2004; Kengeya-Kayondo et al., 1995; Mulder et al., 1996; Hauri, Armstrong & Hutin 2004; Kiwanuka et al., 2004; Schmid et al., 2004). In Ethiopia, it was estimated that there were 744,100 orphans age 0-17 years, of these 30,300 were new HIV positive births. It was also estimated that 43,100 children were in need of ART as of 2005 (MOH, 2007).

So many studies have been done to understand the effect of HIV/AIDS on fertility and the reverse. Most of the studies revealed that HIV positive women have an intention to have their own child despite the risk of HIV transmission to the newborn and the related health consequences on themselves. Studies have identified so many factors that lead women to such an intention (M.Nduna et al., 2009; Homesy J. et al., 2009; D.Cooper et al., 2009); however there are few studies that have been exclusively done to investigate the behavioral determinants of intention to pregnancy and future fertility. Thus, it is vitally important to understand how women make decisions concerning pregnancy so that interventions to reduce perinatal transmission can be developed (Marjorie R.S., 2007).

This study has identified the behavioral determinant variables, based on the theory of planned behavior, and the effect of other external variables that lead HIV positive women to pregnancy intention. It adds baseline informations and insights for extra investigations. The results can be used to assist Ministry of Health, HAPCO, Oromia Regional Health Bureau, Arsi Zone Health Bureau, Assela referral hospital and concerned non-governmental organizations to design the appropriate interventions regarding this particular issue and let behavioral factors into consideration.

# CHAPTER III: Objectives

## General Objective

- To describe HIV positive women's behavioral intention and its determinant factors to have pregnancy at Assela Referral Hospital, 2010.

## Specific Objectives

- To describe HIV positive women's behavioral intention to (have) pregnancy, at Assela Referral Hospital.
- To identify the behavioral determinant factors of TPB influencing HIV positive women to have pregnancy.
- To identify external factors to the TPB which influence HIV positive women behavioral intention to have pregnancy.

# CHAPTER IV: Methods and Materials

## Study area

The study was conducted in Assela referral hospital, one of the referral hospitals in Oromia regional state, located in Asella town, Arsi zone. Assela town is located 175 km south east from the capital of Ethiopia, Addis Ababa. Asella referral hospital ART unit has been serving 2263 women of reproductive age group according to March 2010 report of the department. It is the only highly organized ART unit in Arsi zone, where it provides a referral service to the nearby health centers and district hospitals.

The ART unit of Assela hospital was established in 19/09/2005. Currently the unit has twelve employed staff and 10 volunteer peer educators; and equipped with modern computerized data-base which is supported by CU/ICAP-Ethiopia since its establishment. It has been providing ART, VCT, Prophylaxis and PMTCT service. Moreover, it has provided family planning service, usually dual method, for those who are married and sexually active clients.

## Study Period

The study was held from March 10 - April 8, 2010.

## Study Design

A facility based cross-sectional study design was employed.

## Source Population

All non-pregnant women enrolled in Assela Hospital ART Unit confirmed as HIV positive and taking ART or on Non-ART care.

## Study Subjects

The study subjects were selected randomly from those women who are enrolled in Assela Referral Hospital ART Unit based on the following inclusion and exclusion criteria.

**Inclusion criteria**

- Women who were confirmed HIV-positive and in reproductive age range (15-49)
- Women who had at least one visit to the ART unit for ART or non-ART care.
- Women who had appointment in the study period, March 10- April 8/2010.

**Exclusion criteria**

- Women who were pregnant at the time of data collection.
- Women who were seriously ill and mentally disabled during the study period.

## Sample Size and Sampling Technique

### For quantitative study

The sample size was determined by using a formula to calculate a single population proportion (Glenn D., 2009). While calculating the sample size the following assumptions were considered; the proportion of HIV-positive women who intend to be pregnant was assumed as 50%, margin of error of 5%, and Confidence level of 95%.

$$n = Z_{\frac{\alpha}{2}}^{2} \frac{P(1-P)}{d^2} \quad \Rightarrow OR \quad n_0 = \frac{Z^2 pq}{e^2} \quad (Glenn\ D., 2009)$$

Where

- n Is the required number of sample size
- $\mathbf{Z}_{\frac{\alpha}{2}}^{2}$ Is the standard score corresponding to 95% confidence level i.e. 1.96
- P Is an assumed proportion of pregnancy intention
- $d^2$ Is the margin of error

$$n = 1.96^2 \ x \frac{0.5(1-0.5)}{0.05^2} = 384$$

Because the source population is 2263, correction is made on the sample size.

$$n_0 = \frac{n}{1 + \frac{(n-1)}{N}}$$

(Glenn D., 2009)

Where

- $n_o$ is the corrected sample size
- n is the original sample size
- N is the total population from which the study subjects are drawn

The calculated sample size was 328.

10% non response rate was considered.

Thus the desired sample size for the study was found **361.**

**For qualitative study**

In-depth interviews were made with 14 HIV positive women who came to Asella referral hospital ART unit. Information saturation and redundancy as well as the number of informants were used to limit the number of interviews.

**Sampling Technique and Procedure**

For the in-depth interview purposive sampling method was used to select informants. The informants were equally taken from married and unmarried (single, divorced and widowed).

For the quantitative study, subjects were selected randomly from an already prepared sampling frame. The sampling frame was prepared from the registration record depending on clients' appointment and by including those who fulfill the inclusion criteria. Then SPSS V.16. was used to select the study subjects randomly.

## Data Collection Methods and Instrument

**Data Collectors Recruitment**

Six data collectors, who are diploma nurses and one B.sc. nurse for supervisory purpose, were recruited. All of them were the staff members of the ART unit and can speak Amharic and Oromifa perfectly. The data collectors had three days long training on the objective of the study, its relevance, confidentiality of participants' response, participants' right, informed consent and techniques of interview which was supplemented with practical demonstrations.

**Data collection Methods**

After identifying the study participants for the quantitative study, signed informed consent were assured, then relevant records of the respondent were reviewed from the client card using check list. Data were collected through a face to face interview using an Amharic version structured questionnaire.

In addition in-depth interviews were made to supplement the quantitative data. Informed consent was assured form each informant and the interview were held in a quiet and private room to maintain confidentiality. The principal investigator and the recruited supervisor had carried out the interview.

**Data Collection Instrument**

Two separate data collection instruments were developed to collect quantitative and qualitative data. The quantitative data collection instrument had three sections; sociodemographic informations, measures of behavioral intention (direct and salient belief) and measures of PMTCT knowledge as well a record review check-list. The sociodemographic section includes respondents age, marital status, occupation, educational status, the number of children a woman has, perceived general state of health, PMTCT service exposure in previous pregnancy and other informations.

The direct measures of behavioral intention were adapted to the local context from the manual developed for constructing questionnaires using the TPB (J.J. Francis et al. 2004b) and other related studies. Whereas the salient belief measures of behavioral intention were developed in two phases according to the guideline for the construction of a standard TPB questionnaire (J.J. Francis et al. 2004b, Conner & Sparks, 1995).

1. Belief elicitation study was conducted to identify the salient belief measures of attitude, subjective norm and perceived behavioral control. Twenty five clients were selected purposively from the source population. Such important beliefs for the study population regarding the behavioral consequences of being pregnant and the significant referent and control factors were identified through in-depth interviews. Then frequently occurring responses, mentioned by 75% of the respondents, were used to form the basis for the development of measures of behavioral, normative and control beliefs (Ajzen & Fishbein, 1980).

2. From the identified salient beliefs, similar items were combined and used to develop the final questionnaire. Pre-test was done on other 20 clients (J.J. Francis et al. 2004b), before including the measurements in to the final version instrument.

**Elicitation study data analysis:** Recorded responses gathered from the in-depth interview of 25 interviewees were, transcribed, sorted and thematized manually to obtain specific informations which could be used as a base to construct the questionnaire for the quantitative survey. Accordingly 9 behavioral beliefs, 12 normative beliefs and 8 control beliefs were obtained. Then, the variables were sorted according to their frequency of occurrence and 4 variables for behavioral belief, 3 variables for normative belief and 4 variables for control belief were shared by 75% of the interviewees. However, two of the variables in behavioral belief "I feel like I will lose too much blood" and "The child will get HIV" would not give valid response while converted to an outcome evaluation item; therefore the items were omitted from the final version as not to affect the response rate/ response validity of the instrument (J.J. Francis et al. 2004b), while all the rest variables were tested and used to construct the survey instrument.

The questions designed to measure behavioral intention directly or indirectly were presented in a multiple item, where each constructs of TPB had four questions, and unipolar likert scale ranging from "Strongly disagree" with a value of "1" to "Strongly agree" with a value of "5". While items designed to measure attitude are developed to assess the instrumental and experiential aspects.

Knowledge to PMTCT were assessed through five questions which ask whether "a child can get HIV", "the chance of HIV transmission during pregnancy, delivery and breast feeding" and "MTCT is preventable or not" the responses were presented in a "Correct", "Incorrect" and " Not Sure" format. For the sake of comparison, the results were multiplied by two providing zero for not sure response and ranked in to four groups as "Not Knowledgeable" (no correct answer), "Low knowledgeable" (2-4 correct points), and "Medium knowledgeable" (6-8 correct points), and "High knowledgeable" (10 correct points) (Oguta TJ et al., 2006).

The record review checklist incorporates informations regarding date of HIV/AIDS diagnosis, and latest WHO HIV/AIDS stage of the respondent, when ART was started, latest CD4 count and viral load.

An interview guide was used to collect qualitative data. The instrument contained four open ended questions designed to assess the subjects intention, outcome beliefs, normative beliefs of referents, and beliefs referring to control factors related to the target behavior (Wei- Sen Lin et al. 1998).

## Variables and Operational Definitions

### Study Variables:

***Dependent Variable:***

- Intention to have Pregnancy.

***Independent Variables:***

- Attitude towards being pregnant
- The Subjective norm towards pregnancy
- The perceived behavioral controls to be pregnant

***Intermediate Variables:***

- Belief towards Pregnancy
- Outcome evaluations
- Normative Beliefs
- Motivation to comply
- Control beliefs
- Perceived control power

***Distal Variables:***

- Age
- Marital status
- CD4 Cell Count
- Number of children
- Time since HIV diagnosis
- Exposure to PMTCT services
- Higher PMTCT knowledge
- Being on HAART
- Perceived general health status
- Other Sociodemographic variables

**Operational Definitions and Measurements:**

***Perceived current general health status***: it is the respondents own feeling about once general health status at the time of study period. Respondents had rate their perceived state of general health status from "very good" (=1), "good" (=2), "No change" (=3), to "worsen or bad" (=4).

***Behavioral intention to Pregnancy (I)***: it is the woman motivation in the sense of her conscious plan to exert effort to carry out such behavior, intend to be pregnant or to have biological child. Three items were presented to describe respondents' level of agreement in a five scale response format ranging from "strongly disagree" to "strongly agree". The items assess the level of expectation for a woman to be pregnant, intent and want. Based on the mean score respondents intention to have pregnancy is categorized as "Low Intention" where the mean is $\leq 3$, "Moderate Intention" with a mean (M) of $3 < M \leq 4$, and "High Intention" with mean of $4 < M \leq 5$. A fourth question is presented as "how many children they planned to have in the future" to examine the strength of their pregnancy intention, intention performance (J.J. Francis et al. 2004b).

***Attitude towards being pregnant (AT)***: It is the degree of favor or disfavor of being pregnant or intending to have biological child. Attitude was measured in two ways, by asking the respondents' direct degree of favor or disfavor through four items presented in a five point semantic differential scales as being pregnant for an HIV positive woman is "Harmful to Beneficial" and "Worthless to Useful" to assess the instrumental aspect of attitude and "Bad to Good", and "Unpleasant to Pleasant" to assess the experiential aspect of attitude. Mean score of the items was used to explain the degree of favor/disfavor towards being pregnant. Secondly, items of behavioral belief and outcome evaluation were used to compose the attitude scale, where each behavioral belief item scores were multiplied to its corresponding outcome evaluation item scores and then sum-up to compose the belief based attitude scale, i.e. $A=\Sigma b_i e_i$ (J.J. Francis et al. 2004b) .

***The subjective norm towards pregnancy (SN)***: It is the perceived social pressure to be pregnant or intending to have biological child. Similar to that of attitude, subjective norm was measured in two ways. Three items were used to measure the subjective norm directly; the respondents rate their level of agreement or disagreement with a five category Likert scale measures ranging from "strongly disagree" to "strongly agree". Then the mean score of the items was used to explain the degree of referents' influence for being pregnant. In addition, items of normative belief and motivation to comply were used to compose the subjective norm scale, where the scores of each normative belief items were multiplied to its corresponding motivation to comply item score and then sum-up to compose the belief based subjective norm scale, i.e. $SN=\Sigma n_i m_i$ (J.J. Francis et al. 2004b).

***The perceived behavioral controls to be pregnant (PBC)***: It is the perception on the easiness or difficulty of being pregnant. Like other independent variables, the perceived behavioral control was measured in two ways. It was measured directly with four items that asses the respondents' behavioral control to be pregnant. Respondents' disclose their level of agreement or disagreement in a five scale Likert response category ranging from "strongly disagree" to "strongly agree" to the presented items. Then mean score of the items was used to explain the degree of perceived behavioral control factors influence on pregnancy intention. Further, items of control belief and power of control were used to compose the belief based perceived behavioral control scale, where the scores of each control belief were multiplied to its corresponding power of control item score and then sum-up to compose the belief based perceived behavioral control scale, i.e. $PBC=\Sigma c_i p_i$ (J.J. Francis et al. 2004b).

***Behavioral beliefs (BB***): It is an individual's belief about the perceived consequences, an advantage or disadvantage, of being pregnant or having biological child. Respondents were asked two questions, to indicate their beliefs of being pregnant on a five-point Likert scale responses category ranged from "strongly agree" (=5), to "strongly disagree" (=1).

***Outcome evaluations (OE)***: It is the evaluation of the perceived consequences of being pregnant. It corresponds with the positive or negative judgments related to the behavioral beliefs. Two items were presented to respondents meant to evaluate the consequences of being pregnant on a five point Likert scale response category, ranged from "extremely undesirable" (=1) to "extremely desirable" (=5).

***Normative beliefs (NB)***: It is the perceptions of significant others' preferences whether an HIV positive woman should be pregnant or not. Participants were asked 3 questions to indicate the extent to which they thought the identified referent groups appreciate their state of pregnancy, responses categories were ranged from "strongly disagree" (=1) to "strongly agree" (=5).

***Motivation to comply (MC):*** It is the extent to which a woman feels inclined to match her behavior, of being pregnant, to various sources of social pressure. This variable was measured by 3 questions to rate the extent to which respondents' think it is important for them to comply with the wishes of their salient referents. Responses were ranged from "not at all important" (=1) to "very much important" (=5).

***Control beliefs (CB):*** Are beliefs about the likely hood of possessing the resources and opportunities that are thought necessary to execute the behavior, i.e. being pregnant. The respondents were asked 4 questions to indicate the extent to which they thought the opportunities and the resources they have are in favor of their intention to be pregnant. Responses were ranged from "strongly disagree" (=1) to "strongly agree" (=5).

***Power of control (PC):*** It is the woman's perceived ease or difficulty of being pregnant. Respondents were asked 4 questions to indicate how likely it would be for them to be pregnant given the existing resources and opportunities. Responses were ranged from "very less likely" (=1) to "very much likely" (=5).

## Data Processing and Analysis

### Quantitative data Analysis

Data were entered, cleaned, recoded and analyzed by using SPSS V. 16.0, Statistical Package for Social science Studies. Summary tables and graphs were used to present the findings. Frequencies, percentages, means and standard deviations were used to summarize the descriptive results.

Bivariate and multivariate correlations were made to determine the relationship among the constructs of TPB. The composed weights of items of salient beliefs were used to predict their respective direct belief variables and further identify the items with strong prediction. Multivariate correlation was run to examine the relationship between pregnancy intention and distal variables. As well multiple regressions were run to identify the predictors among distal variables. At last distal variables with significant correlation to pregnancy intention and belief based variables of the TPB was run in a stepwise regression to identify the important variables that explain pregnancy intention variability.

Variables with higher regression coefficients, *P-value* of less than 0.05, at 95% confidence interval were taken as statistically significant and predictors of their corresponding outcome variable. Furthermore $R^2$ was used to explain the variance accounted by each variable.

### Qualitative data analysis

Recorded responses collected from respondents were transcribed, content analyzed and thematized in to the main thematic areas in accordance with the constructs of TPB and the identified distal variables. Important specific views, opinions, and beliefs of the respondents with their own sayings were selected and presented to support the quantitative findings.

## Data Quality Assurance

To ensure the quality of the data, both the direct and salient measures of behavioral intention were developed according to recommended standard guideline (J.J. Francis et al. 2004b) and relevant literatures (Conner & Sparks, 1995; Ajzen & Fishbein, 1980; Wei- Sen Lin et al. 1998) and finally adapted to the local context.

The original English version instrument was translated to Amharic and back translated to English in order to keep its consistency. Then pre-test was conducted on 20 (5% of the sample size) HIV positive women looking for instrument comprehensibility and misunderstanding as well phrases which were ambiguous to the respondents were identified and amendments made in accordance.

Three days long training was provided to the data collectors and the supervisor to familiarize the instrument and the objective of the study.

Privacy of participants and confidentiality of their response were maintained during interview. Statement of anonymity was read at the beginning of each interview.

All completed questionnaires were examined and checked for completeness, inconsistency and any other sort of errors at all levels of data management. To assure the reliability of the instrument items with chronbach's alpha 0.7 or more were included in the analysis.

## Ethical Considerations

Ethical approval was obtained from the Ethical Review Board of Jimma University. And letter of support was obtained to conduct the study. Arsi Zone Health Bureau and Asella Referral hospital were informed and permission was obtained. During data collection, all the study participants were communicated about the objectives of the study prior to data collection to obtain their signed consent and voluntary participation. Participants had full right to discontinue the interview at any time. As well response anonymity and confidentiality were maintained.

## Result Dissemination

The findings of the study will be presented and submitted to Jimma University College of Public Health and Medical Sciences. Copy of the results will be submitted to MOH, Oromia regional health bureau, Arsi zone health bureau, Assela referral hospital and other interested officials. As well publication in scientific journals will be considered in advance.

# Chapter V: Results

## Sociodemographic and other characteristics of respondents

A total of 344 HIV positive women of reproductive age groups (15-49 years), with mean (SD) age of 30.41(± 6.07) years, who took ART and on Pre-ART care at Assela Referral Hospital had participated in the study, which gives 95.3% response rate. Nearly half, 45.1% (155) of the study subjects have been permanently living in Assela, while 27(7.8%) live in Sagure and 20(5.8%) live in Eteya . From the respondents 146(42.4%) were married, and 99(28.8%) were widowed. Majority of the respondents, 243(70.6%) were Orthodox and followed by Muslims 58(16.9%), and Protestant 41(11.9%). Concerning ethnic distribution, 192(55.8%) were Oromo, 131(38.1%) were Amhara and 15(4.4%) were Gurage. Almost half, 169(49.1%) of the respondents had attended primary school (grade 1-8$^{th}$), whereas 79(23%) were illiterate. Most of the respondents, 140(40.7%) were housewives.

The respondents' average (SD) length of duration since HIV diagnosis till April 2010 was 28.86 (±14.85) months. Of the total respondents, 270(78.5%) were on ART while 74(21.5%) were on Pre-ART care. For those on ART, the mean (SD) duration of being on HAART till April 2010 was found to be 24.11 (±14.01) months. A little higher than half the respondents, 186(54.1%) were categorized as WHO HIV/AIDS stage III, while 90(26.2%), 44(12.8%), and 24(7%) were categorized as WHO HIV/AIDS stage II, I and IV respectively according to respondents latest staging. The latest average (SD) CD4 count of respondents was 362.53(±193.27) cells per micro liter.

Of the total, 269(78.2%) had one or more children, of these 90(33.5%) had served PMTCT at least once and had an average (SD) number of 2.5 (±1.31) children. More than half, 195(56.7%), of the respondents had perceived their current health status as very good, other 135(39.2%) respondents perceived good (minimal change), and 11(3.2%) perceived as they had no change from their previous condition. Of the total, 139(40.4%) of the respondents were live with their husband while 96(27.9%) live alone [Table 1].

***Table 1: Sociodemographic and other characteristics of HIV Positive women at Assela Referral Hospital, 2010 (N=344).***

| Characteristics | No. | Percent | Characteristics | No. | Percent |
|---|---|---|---|---|---|
| WHO HIV/AIDS Stage | | | ART Status | | |
| Stage I | 44 | 12.8 | On ART | 270 | 78.5 |
| Stage II | 90 | 26.2 | On Pre-ART Care | 74 | 21.5 |
| Stage III | 186 | 54.1 | Educational Status | | |
| Stage IV | 24 | 7 | Primary (1-8$^{th}$ ) | 169 | 49.1 |
| Marital Status | | | Secondary (9-10$^{th}$) | 59 | 17.2 |
| Single | 31 | 9 | Preparatory or 11-12$^{th}$ | 23 | 6.7 |
| Married | 146 | 42.4 | TVET | 4 | 1.2 |
| Divorced | 68 | 19.8 | Higher Education | 10 | 2.9 |
| Widowed | 99 | 28.8 | Illiterate | 79 | 23 |
| Religion | | | Perceived Health Status | | |
| Orthodox | 243 | 70.6 | Very Good | 195 | 56.7 |
| Muslim | 58 | 16.9 | Good (minimal change) | 135 | 39.2 |
| Protestant | 41 | 11.9 | No change | 11 | 3.2 |
| Catholic | 1 | 0.3 | Worsen | 3 | 0.9 |
| Other | 1 | 0.3 | Respondents live with | | |
| Ethnicity | | | Alone | 96 | 27.9 |
| Oromo | 192 | 55.8 | My Husband | 139 | 40.4 |
| Amhara | 131 | 38.1 | My Parents | 35 | 10.2 |
| Gurage | 15 | 4.4 | My children | 74 | 21.5 |
| Tigre | 3 | 0.9 | | | |
| Others | 3 | 0.9 | | | |

## PMTCT Knowledge

Majority of the respondents, 322(93.6%) knew that a child can get HIV; similarly 315(91.6%) of the women knew the chance of HIV transmission during the time of pregnancy, while 28(8.1%) of the respondents were not sure whether a child can get HIV during pregnancy. Ninety two percent (316) of the study subjects were knew a child can get HIV at the time of delivery, while 24(7%) were not sure of this and 2(0.6%) of them did not know at all. Most of the respondents, 307(89.2%) knew the chance of HIV transmission to the new born through breast feeding, but 37(10.8%) were not sure. To the same end, 279(81.1%) of the women knew as there is a preventive measure for mother to child transmission but 2(0.6%) women did not know, while 63(18.3%) of the respondents were not sure about the presence of any preventive measures [Table 2, Annex].

Knowledge to PMTCT was measured by the composite of correct responses to five knowledge items. Correct responses were multiplied by 2 for the purpose of comparison with other literatures. Hence, the composite correct responses were varied from 0 to 10 points. Accordingly, 8(2.3%) respondents were "Not Knowledgeable" scored 0, 14(4.1%) were "Low Knowledgeable" result 2 to 4 points, 63(18.3%) of them were "Moderately Knowledgeable" got 6 to 8 points, and 259(75.3%) were "Highly knowledgeable" answered all of the questions [Figure 2].

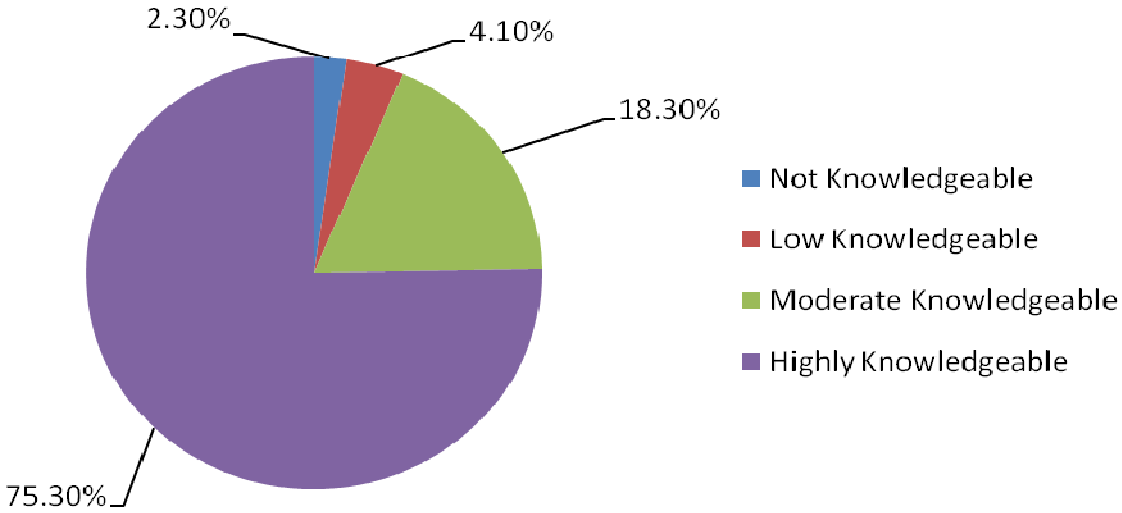


Figure 2. Level of PMTCT Knowledge among HIV Positive women, Assela Referral Hospital, 2010.

## Variables of the TPB to explain Pregnancy Intention

Items of the behavioral predictors extracted from the theory of planned behavior are designed in a five point semantic differential scale to measure attitude and Likert scale format was used to measure subjective norm and perceived behavioral control. The response categories "strongly agree" and "agree" are grouped as "Agree" as well as "strongly disagree" and "disagree" are grouped as "Disagree" for the sake of analysis.

**Attitude towards pregnancy**

**Direct Measure:**

The study participants' attitude was assessed through four items. Accordingly, 292(84.9%) of the women believe that being pregnant for an HIV positive woman is harmful, while 19(5.5%) others believe that it is beneficial. Similarly, 293(85.2%) of the respondents consider being pregnant for HIV positive woman as bad, while 14(4.1%) of the respondents consider it as good [Table 3]. A consistent result was also found from an in-depth interview,

Unmarried woman said "……..*I did not think it is advisable to an HIV positive woman to get pregnant, it hearts her, she will get seriously sick, she lose too much blood, and she become weak. I feel remorseful when I think of this upon me.……..*"

***Table 3. HIV Positive women response to statements assessing attitude towards being pregnant, Assela referral Hospital, 2010.***

| Item | No. | % | No. | % | No. | % |
|---|---|---|---|---|---|---|
| | Harmful | | Beneficial | | Neutral | |
| | 292 | 84.9 | 19 | 5.5 | 33 | 9.6 |
| | Bad | | Good | | Neutral | |
| Being pregnant for an HIV positive woman is | 293 | 85.2 | 14 | 4.1 | 37 | 10.8 |
| | Unpleasant | | Pleasant | | Neutral | |
| | 293 | 85.2 | 11 | 3.2 | 40 | 11.6 |
| | Worthless | | Useful | | Neutral | |
| | 292 | 84.8 | 15 | 4.4 | 37 | 10.8 |
| **Cronbach's alpha= 0.917** | | | | | | |

**Indirect Measurements:**

**a. Behavioral Belief:**

Of the total, 191(55.5%) of the respondents were agreed on getting pregnant and giving birth will substitute their generation, while 116(33.7%) were not in favor of this statement and 37(10.8%) were not sure of this. About half of the women, 165(48%) believe that getting pregnant and giving birth will fulfill their desire to have a child, whereas 152(44.2%) of the women did not believe that getting pregnant and give birth will fulfill their desire of having a child, while 27(7.8%) of the respondents were not sure about it [Table 4].

***Table 4. HIV Positive women response to statements assessing behavioral beliefs of being pregnant, Assela referral Hospital, 2010.***

| Sr. no. | Items | Agree | | Disagree | | Not Sure | |
|---|---|---|---|---|---|---|---|
| | | No. | % | No. | % | No. | % |
| 1 | If I got pregnant and give birth, I feel that I am substituting my generation. | 191 | 55.5 | 116 | 33.7 | 37 | 10.8 |
| 2 | If I got pregnant and give birth, I believe like I am fulfilling my desire to have a child. | 165 | 48 | 152 | 44.2 | 27 | 7.8 |
| **Chronbach's alpha= 0.894** | | | | | | | |

**b. Outcome Evaluation:**

About half, 178(51.8%) of the women believe that substituting their generation is desirable, while 139(40.4%) were not in desire to substitute their generation, and 27(7.8%) of the women were responded as not sure of whether substituting their generation is desirable or not [Table 5].

***Table 5. HIV Positive women response to statements assessing outcome evaluation of being pregnant, Assela referral Hospital, 2010.***

| Sr. no. | Items | Desirable | | Undesirable | | Not Sure | |
|---|---|---|---|---|---|---|---|
| | | No. | % | No. | % | No. | % |
| 1 | For me substituting my generation is | 178 | 51.8 | 139 | 40.4 | 27 | 7.8 |
| 2 | For me getting pregnant and giving birth to satisfy my desire to have a child is | 160 | 46.5 | 156 | 45.3 | 28 | 8.1 |
| **Chronbach's alpha= 0.894** | | | | | | | |

**Overall Attitude (Composed Attitude)**

The salient measures of attitude were weighted, where items of behavioral belief were multiplied with the corresponding outcome evaluation to come up with the weighted scores of belief based attitude measures. Then each weight scores were added to result the belief based attitude score, i.e. $A=\Sigma b_i e_i$. Bivariate correlation was then run to examine the relationship between beliefs based attitude score and the direct measures of attitude and revealed no significant relationship. This insignificant relationship might result from the use of 2 items to measure behavioral belief and outcome evaluation, where 2 items were omitted during instrument development [Table 6].

***Table 6. Correlation matrix: Direct and belief based constructs of TPB to explain HIV positive women Pregnancy intention, Assela referral Hospital, 2010.***

| Variables | INT | ATT | SN | PBC | BATT | BSN | BPBC |
|---|---|---|---|---|---|---|---|
| **INT** | 1.000 | | | | | | |
| **ATT** | 0.335 | 1.000 | | | | | |
| **SN** | 0.361 | 0.978 | 1.000 | | | | |
| **PBC** | 0.575 | 0.731 | 0.672 | 1.000 | | | |
| **BATT** | 0.623 | 0.079* | 0.064* | 0.340 | 1.000 | | |
| **BSN** | 0.593 | 0.419 | 0.392 | 0.640 | 0.478 | 1.000 | |
| **BPBC** | 0.606 | 0.375 | 0.334 | 0.827 | 0.520 | 0.594 | 1.000 |

(* not significant at α=0.05 level)

(*INT-pregnany intention; ATT-Attitude; SN-Subjective norm; PBC-Perceived behavioral control; BATT-Belief based attitude; BSN-belief based subjective norm;BPBC-belief based perceived behavioral control)*

Then the weight scores were entered into a regression model to look at their relative strength of prediction, and shows a significant relationship between the outcome and independent variables ($F_{2, 341}$=6.68, *p< 0.01, $AR^2$= 0.03)*. Thus the variables "If I got pregnant and give birth, I believe like I am fulfilling my desire to have a child; and for me getting pregnant and giving birth to satisfy my desire to have a child is desirable" were found to have better predictors of attitude (*St. Beta= 0.36, P< 0.001).* However, the model has shown that a higher variance of attitude is due to other factors rather than the salient measures [Table 7a, 7b and 7c].

***Table 7a. Model Summary: Behavioral belief and outcome evaluation to predict attitude towards pregnancy intention, Assela referral Hospital, 2010.***

| Model | R | R square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | 0.194 | 0.038 | 0.032 | 0.66471 |

***Table 7b. ANOVA: Behavioral beliefs and outcome evaluations to predict attitude towards pregnancy, Assela referral Hospital, 2010.***

| Model | Sum of squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 5.906 | 2 | 2.953 | 6.683 | .001 |
| Residual | 150.667 | 341 | 0.442 | | |
| Total | 156.572 | 343 | | | |

***Table 7c. Behavioral beliefs and outcome evaluation to predict attitude towards pregnancy, Assela referral Hospital, 2010.***

| Model | Unstandardized coefficients | | standardized coefficients | t | Sig. | 95%confidence interval for B | |
|---|---|---|---|---|---|---|---|
| | B | Std. Error | Beta | | | Lower bound | Upper bound |
| Constant | 1.815 | 0.066 | | 27.638 | .000 | 1.686 | 1.944 |
| BBOE_1 | -0.023 | 0.008 | -0.269 | -2.733 | .007 | -0.039 | 0.006 |
| BBOE_2 | 0.034 | 0.009 | 0.355 | 3.612 | .000 | 0.016 | 0.053 |

*(BB-Behavioral belief; OE-Outcome Evaluation)*

**Subjective Norm towards Pregnancy**

**Direct Measure:**

Majority, 268(77.9%) of the women believe that most important people to them would not approve of their being pregnant and have a child, while 36(10.5%) were feel in contrary. On the same side, 293(85.2%) of the respondents feel they are not expected of being pregnant and have a child, moreover 280(81.4%) of the women believe they are not under social pressure to get pregnant and have a child. Similarly, 274(79.7%) of the women believe most people important to them do not want them to be pregnant and have a child [Table 8].

***Table 8. HIV Positive women response to statements assessing the subjective norm for being pregnant, Assela referral Hospital, 2010.***

| Sr. no. | Items | Agree | | Disagree | | Not Sure | |
|---|---|---|---|---|---|---|---|
| | | No. | % | No. | % | No. | % |
| 1 | Most people who are important to me think that I should conceive and have a child. | 36 | 10.5 | 268 | 77.9 | 40 | 11.6 |
| 2 | It is expected of me to conceive and have a child. | 14 | 4.1 | 293 | 85.2 | 37 | 10.8 |
| 3 | I feel like I am under social pressure to be pregnant and have a child. | 20 | 5.8 | 280 | 81.4 | 44 | 12.8 |
| 4 | People who are important to me want me to be pregnant and have a child. | 21 | 6.1 | 274 | 79.7 | 49 | 14.2 |
| **Cronbach's alpha= 0.932** | | | | | | | |

**Indirect Measurements:**

**a. Motivation to Comply:**

It was seen that majority of the study subjects, 244(70.9%) were not comply for what their families think they should do. Whereas 41(11.9%) and 59(17.2%) of the respondents were comply and not sure to comply for what their families think they should do respectively. Similarly, 276(80.2%) of the women were not likely to comply for their close friends' approval of their being pregnant and have a child, while 26(7.6%) were likely to comply for close friends' approval and 42(12.2%) were not sure of it [Table 9]. As it described above most respondents were less likely to comply for their referent groups, and this finding was also supported by in-depth response,

Married woman said *"…….Oh! I don't know why others concerned about your number of children. There are some that didn't even think of your health, they usually said "lej belejenet new"…..…."*

***Table 9. HIV Positive women response to statements assessing motivation to comply for being pregnant, Assela referral Hospital, 2010.***

| Sr. no. | Items | Agree | | Disagree | | Not Sure | | Cronbach's alpha if item deleted |
|---|---|---|---|---|---|---|---|---|
| | | No. | % | No. | % | No. | % | |
| 1 | What my families think I should do matters to me. | 41 | 11.9 | 244 | 70.9 | 59 | 17.2 | 0.346 |
| 2 | My close friends' approval of my pregnancy and having a child is important to me. | 26 | 7.6 | 276 | 80.2 | 42 | 12.2 | 0.369 |
| 3 | Satisfying my partner's desire to have a child is important to me. | 65 | 36.7 | 77 | 43.5 | 35 | 19.8 | 0.728 |

**Cronbach's alpha= 0.603** ($3^{rd}$ item is not considered in the analysis)

**b. Normative Belief:**

About half, 165(48%) of the women believe that their families would not approve if they get pregnant and give birth to a child, whereas 74(21.5%) of the women believe that their families would be in favor of their being pregnant and have a child. A little higher than half, 183(53.2%) of the respondents believe that their close friends would not admit their being pregnant and give birth to have a child, but 59(17.1%) of the women would believe that they would be accepted by their close friends [Table 10].

***Table10. HIV Positive women response to statements assessing normative beliefs for being pregnant, Assela referral Hospital, 2010.***

| Sr. no. | Items | Agree | | Disagree | | Not Sure | |
|---|---|---|---|---|---|---|---|
| | | No. | % | No. | % | No. | % |
| 1 | My families think that I should get pregnant and give birth. | 74 | 21.5 | 165 | 48 | 105 | 30.5 |
| 2 | My close friends would approve of my being pregnant and give birth to have a child. | 59 | 17.1 | 183 | 53.2 | 102 | 29.7 |
| 3 | My partner needs to have our own child. | 61 | 34.4 | 64 | 36.2 | 52 | 29.4 |

**Cronbach's alpha= 0.745**

**Overall Subjective Norm (Composed Subjective norm)**

The salient measures of subjective norm were weighted in a similar way to that of attitude. Then the weight scores were summed-up to result belief based subjective norm score. Bivariate correlation run to examine the relationship between the direct and belief based subjective norm score had revealed a significant relationship (*r=0.39, p<0.001*). Then each weight scores were entered into a regression model to look at their relative strength of prediction and significant relationship was found between subjective norm and the weight scores of the salient beliefs of subjective norm ($F_{3, 173}$*=18.51, P<0.001,* $AR^2$*= 0.23),* where the weight score of variables "My families think that I should get pregnant and have a child, and what my families think I should do matters to me" as a predictor for subjective norm (*St. Beta= 0.49, P < 0.001)* [Table 11a, 11b, 11c, Annex].

**Perceived behavioral controls for being pregnant**

**Direct Measures:**

Majority of the women, 292(84.9%) were not confident that they could get pregnant even if they want to. Similarly, 293(85.2%) of the respondents perceived being pregnant for them is difficult. Besides 102(29.7%) of the women believe that the decision to be pregnant and to have a child is beyond their control, while 126(36.6%) of participants perceived that being pregnant and have a child is entirely up to them [Table 12].

***Table 12. HIV Positive women response to statements assessing perceived behavioral controls for being pregnant, Assela referral Hospital, 2010.***

| Sr. no. | Items | Agree | | Disagree | | Not Sure | |
|---|---|---|---|---|---|---|---|
| | | No. | % | No. | % | No. | % |
| 1 | I am confident that I could be pregnant and have a child if I wanted to. | 19 | 5.5 | 292 | 84.9 | 33 | 9.6 |
| 2 | For me to be pregnant and have a child is easy. | 14 | 4.1 | 293 | 85.2 | 37 | 10.8 |
| 3 | The decision to be pregnant and to have a child is beyond my control. | 102 | 29.7 | 185 | 53.8 | 57 | 16.6 |
| 4 | Whether being pregnant and have a child or not is entirely up to me. | 126 | 36.6 | 153 | 44.5 | 65 | 18.9 |
| **Cronbach's alpha= 0.775** | | | | | | | |

**Indirect Measurements:**

**a. Control Beliefs:**

More than half, 195(56.7%) of the respondents believe that an HIV positive women feeling healthy can get pregnant, in contrast 103(29.9%) of the women did not believe that a healthy HIV positive women could get pregnant. About half, 165(48%) of the women believe that an HIV positive women with good income could get pregnant, while 124(36%) of others did not agree with this. Presence of family support were also considered important by 151(43.8%) of the respondents for an HIV positive women to get pregnant, however 132(38.4%) of others did not believe on the value of family support [Table 13]. Further the result was consistent with an in-depth interview finding,

Married woman said "…....*People say simply what they feel about, but you know your conditions, like your health status, your economic status, even your housing condition. So, you are the one who decide for yourself. It is you, the one to take the advantage or the risk……..*"

***Table 13. HIV Positive women response to statements assessing the control beliefs for being pregnant, Assela referral Hospital, 2010.***

| Sr. no. | Items | Agree | | Disagree | | Not Sure | |
|---|---|---|---|---|---|---|---|
| | | No. | % | No. | % | No. | % |
| 1 | An HIV positive woman feeling healthy gets pregnant to have her own child. | 195 | 56.7 | 103 | 29.9 | 46 | 13.4 |
| 2 | An HIV positive woman with a good income gets pregnant to have her own child. | 165 | 48 | 124 | 36 | 55 | 16 |
| 3 | An HIV positive woman with higher CD4 count gets pregnant to have her own child. | 261 | 75.9 | 28 | 8.2 | 55 | 16 |
| 4 | An HIV positive woman with family support gets pregnant to have her own child. | 151 | 43.8 | 132 | 38.4 | 61 | 17.7 |

**Cronbach's alpha= 0.802**

**b. Power of Control:**

Majority of the respondents, 225(65.4%) had disclosed that they would not get pregnant even if they are in a better health, while 70(20.4%) others would believe they would get pregnant if they are in a better health. Even if they have good income, 185(53.8%) of the respondents would not get pregnant, while 102(29.7%) of the women believe they would get pregnant. Higher CD4 count was considered determinant to get pregnant by 126(36.6%) of the women, however 153(44.5%) of others would not get pregnant yet their CD4 count is higher [Table 14].

***Table 14. HIV Positive women response to statements assessing power of control for being pregnant, Assela referral Hospital, 2010.***

| Sr. no. | Items | Agree | | Disagree | | Not Sure | |
|---|---|---|---|---|---|---|---|
| | | No. | % | No. | % | No. | % |
| 1 | If I am in a better health, I am likely to get pregnant to have a child. | 70 | 20.4 | 225 | 65.4 | 49 | 14.2 |
| 2 | If I have good income, I am likely to get pregnant to have a child. | 102 | 29.7 | 185 | 53.8 | 57 | 16.6 |
| 3 | If I have higher CD4 count, I am likely to get pregnant to have a child. | 126 | 36.6 | 153 | 44.5 | 65 | 18.9 |
| 4 | If I have good family support, I am likely to get pregnant to have a child. | 96 | 27.9 | 193 | 56.1 | 55 | 16 |
| **Cronbach's alpha= 0.732** | | | | | | | |

**Overall Perceived Behavioral Control (Composed Perceived Behavioral Control)**

The salient measures of perceived behavioral control were also weighted in similar fashion with that of attitude and subjective norm, and the weight scores were added to result the belief based PBC score. Then bivariate correlation was run to examine the relationship between belief based PBC and direct measures of PBC, and found a significant relationship (*r=0.83, p<0.001*) [Table 6]. Then the weight scores were entered into a regression model to come up with the greater predictor variables. The variables were entered simultaneously and a significant relationship was found ($F_{4, 339} = 191.23$, *P< 0.001,* $AR^2 = 0.69$) , where the weight score of variables "An HIV positive woman with a good income gets pregnant to have her own child, and if I have good income, I am likely to get pregnant and have a child" was found the predictors of HIV positive women perceived behavioral control towards pregnancy (*St. Beta= 0.35, P< 0.001*) [Table 15a, 15b, 15c , Annex].

**HIV positive women intention towards pregnancy**

More than half, 185(53.7%) of the respondents expect an HIV positive woman to get pregnant, and considerable numbers of the study subjects, 100(29.1%) want to get pregnant and have their own child in the near future, similarly out of 70 respondents who disclosed the number of children they want to have in the near future, about 37(10.8%) want to have 1 child and 33(9.6%) want to have 2 children; however 216(62.8%) of the respondents did not want to conceive at all [Table 16 and Table 17].

***Table16. HIV Positive women response to statements assessing intention for being pregnant, Assela referral Hospital, 2010.***

| Sr. no. | Items | Agree | | Disagree | | Not Sure | |
|---|---|---|---|---|---|---|---|
| | | No. | % | No. | % | No. | % |
| 1 | I expect an HIV positive woman to be pregnant | 185 | 53.7 | 114 | 33.1 | 45 | 13.1 |
| 2 | I want to conceive and have my own child | 100 | 29.1 | 216 | 62.8 | 28 | 8.1 |
| 3 | I intend to conceive and have my own child | 75 | 21.8 | 241 | 70.1 | 28 | 8.1 |

**Cronbach's alpha= 0.707**

***Table17. Number of children HIV positive women plan to have in the future, Assela referral Hospital, 2010.***

| Sr. no. | Planned number of children | No. | Percentage |
|---|---|---|---|
| 1 | 0 | 274 | 79.7 |
| 2 | 1 | 37 | 10.8 |
| 3 | 2 | 33 | 9.6 |
| | **Total** | **344** | **100** |

**Pregnancy intention explained by TPB**

Mean scores of the direct measures of TPB were computed to explain pregnancy intention. Thus study participants had a mean pregnancy intention of 2.64, which shows a relatively low leaning towards pregnancy intention, similarly the mean attitude was found to be 1.88, explaining unsupportive attitude towards pregnancy. Moreover a mean of 1.90 was obtained for subjective norm referring to a relatively low influence from the referent groups towards pregnancy and a mean of 2.26 was found for PBC, referring being pregnant with the existing resources and opportunities is difficult [Table 18].

Item mean scores of intention were used to categorize the level of pregnancy intention into three groups. Thus 238(69.2%) of the women had a mean score of ≤3, low intention groups; 80(23.3%) of the women had a mean score of ≤4, Moderate intention groups; and the rest 26(7.6%) women had a mean of >4, high intention groups [Figure 4].

Variables of the TPB were also examined for their relationship and found a significant relationship among all the variables. Thus behavioral intention to have pregnancy had a higher correlation with that of belief based attitude (*r=0.62*), belief based perceived behavioral control (*r=0.61*) and belief based subjective norm (*r=0.59*) respectively [Table 6].

***Table18. Direct measures of TPB constructs to explain HIV positive women pregnancy intention, Assela referral Hospital, 2010.***

| Variables | No. (%) ≤Mean | No. (%) >Mean | Mean | Standard Deviation |
|---|---|---|---|---|
| Behavioral Intention (INT) | | | 2.6405 | 0.97039 |
| Attitude (ATT) | 328 (95.3) | 16 (4.7) | 1.8874 | 0.67563 |
| Subjective Norm (SN) | 328 (95.3) | 16 (4.7) | 1.9019 | 0.66570 |
| Perceived Behavioral Control (PBC) | 292 (84.9) | 52 (15.1) | 2.2696 | 0.77672 |

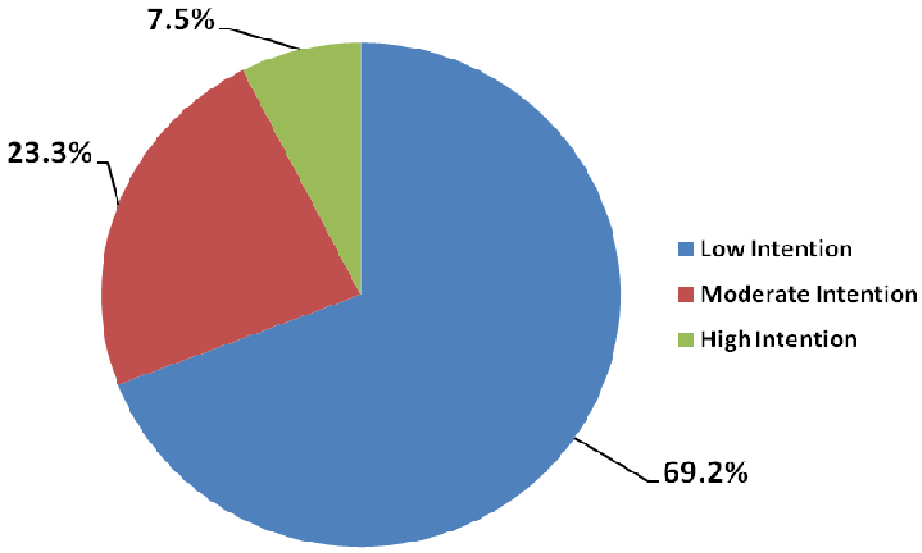


Figure 3: HIV positive women level of pregnancy intention, Assela referral Hospital, 2010.

## Relationship between distal variables and Pregnancy Intention

The relationship of distal variables, variables external to the theory of planned behavior, and HIV positive women pregnancy intention was assessed to look for their relative importance on pregnancy intention. Having own child (*r=0.35*), History of PMTCT service (*r= 0.32*), respondents age (*r= -0.24*), and PMTCT knowledge (*r= 0.19*) were found to have higher relationship with pregnancy intention. Moreover, PMTCT knowledge, respondents age, latest CD4 count, respondents marital status, whether respondents had child or not, history of PMTCT service in the previous pregnancy and respondents perceived current health status were found to have statistically significant relationship with that of pregnancy intention [Table 19].

***Table 19. Distal variables and Pregnancy intention correlation to explain HIV positive women Pregnancy intention, Assela referral hospital, 2010.***

| Variables | r | p |
|---|---|---|
| Respondents Age | -0.24 | 0.001 |
| Marital status | -0.14 | 0.01 |
| Status of having a child or not | 0.35 | 0.001 |
| ART status (Pre ART care or on ART) | -0.07 | 0.204 |
| Duration since ART started | 0.10 | 0.121 |
| Duration since HIV diagnosis | 0.07 | 0.184 |
| Perceived current general health status | -0.19 | 0.001 |
| Latest CD4 count | 0.12 | 0.03 |
| PMTCT knowledge | 0.19 | 0.001 |
| PMTCT service history | 0.32 | 0.001 |

## Predictors of Pregnancy Intention

### Age, Marital Status and Status of having a child or not:

Age, marital status and whether the respondent have child or not were entered simultaneously and found a significant relationship with pregnancy intention ($F_{3, 340}$=19.87, *P<0.001, $AR^2$=0.14).* Thus the variable, "whether respondents' have a child or not" and "Age" were found to be significant, while the variable "whether respondents have a child or not" have a larger coefficient to predict HIV positive women pregnancy intention (*St.Beta =0.31, p<0.001).* However marital status was found to have no significance to predict HIV positive women pregnancy intention (*St. Beta=-0.05, P=0.93).* [Table 20a, 20b, and 20c, Annex]. This finding was also supplemented with in-depth interview,

> Unmarried woman said "…….*I am only 23, young, I need to have a child before I get old. It is difficult for an older HIV positive woman to get pregnant; I think it deteriorates her health status. I need to marry in the few years and have a child.…..…"*

### Duration since HIV diagnosis and ART start, Latest CD4 count and Perceived current general health status:

Variables explaining duration since HIV diagnosis, duration since ART start, latest CD4 count and respondents perceived general health status were entered in a regression model and found significant relationship with pregnancy intention (*$F_{4, 265}$= 2.46, P<0.05, $AR^2$= 0.02).* However only current respondents perceived general health status was found to be statistically significant (*St. Beta=-0.13, P< 0.05)* to predict pregnancy intention [21a, 21b and 21c, Annex].

### PMTCT knowledge and History of PMTCT service:

PMTCT knowledge and history of PMTCT service in their previous pregnancy were entered simultaneously in the model to predict HIV positive women pregnancy intention. Thus a significant relationship was evidenced with pregnancy intention (*$F_{2, 341}$=28.76, P<0.001, $AR^2$= 0.14).* Even if both of the variables are found statistically significant predictors "History of previous PMTCT service" was found to have a higher regression coefficient (*St.Beta=0.34, P<0.001)* [Table 22a, 22b and 22c, Annex]. Consistent findings were also obtained from in-depth interview, regarding the effect of PMTCT knowledge and PMTCT service history on pregnancy intention.

Unmarried woman said that "……*I know everything about HIV; I know how it transmits from person to person and from mother to child. I do know also the way it cannot be transmitted for instance, you can prevent it by using condom, or a pregnant woman can consult to health professionals in order to get what's called 'PMTCT'. It is possible to have a negative child, I am thinking of it……..*"

As a married woman said "…….*I did not know I was HIV positive, the nurses has told me that I need to check HIV if in case while I came for pre-delivery services, and I was agreed and told me that I am positive and sure I had served PMTCT, and my child is 3years old he is free of HIV, I wish him to have a sister……..*"

**Distal variables to Predict Pregnancy Intention:**

All distal variables were entered in a regression model to look their predictive power of HIV positive women pregnancy intention and found significant relationship with pregnancy intention ($F_{9, 260}$*= 9.30, P<0.001,* $AR^2$*=0.22*), however only 3 variables, respondents' age *(St. Beta=-0.17, P<0.001*), PMTCT knowledge (*St.Beta=0.16, P<0.005)* and history of PMTCT service (*St.Beta= 0.22, P< 0.05*) were found to be statistically significant to predict HIV positive women pregnancy intention. Among the three variables history of PMTCT service was found to have a higher regression coefficient followed by PMTCT knowledge and respondents age to predict HIV positive women pregnancy intention [Table 23a, 23b and 23c, Annex].

**TPB to explain HIV positive women pregnancy intention**

The theory of planned behavior was used to prediction HIV positive women pregnancy intention as it is recommended by Ajzen (1991) through a stepwise forward regression analysis to pick out the important variable to explain the variability in pregnancy intention.

Respondents' history of PMTCT service, respondents' age and PMTCT knowledge were first regressed upon intention and found an $R^2$ of 0.214 (*P< 0.001*), indicates 21.4 % of pregnancy intention was explained by history of PMTCT service, age and PMTCT knowledge [Table 24].

Then belief based attitude was regressed upon intention resulted in an $R^2$ of 0.469(*P< 0.001*), a 0.255 $R^2$ change, referring that attitude had an additional 25.5% explanation in HIV positive women pregnancy intention. Next, belief based subjective norm was added to the regression model resulted in an $R^2$ of 0.550(*P<0.001*), with a 0.081 difference explained by attitude, where 8.1% of pregnancy intention was explained by subjective norm. At last perceived behavioral control was regressed and the $R^2$ was found 0.574 (*P< 0.001*), with a 0.024 $R^2$ change explained by subjective norm, signifying that perceived behavioral control explains 2.4% of HIV positive women pregnancy intention [Table 24].

This indicates that external variables explain 21.4% and belief based attitude, subjective norm and perceived behavioral control; together explain 36% of HIV positive women pregnancy intention, of which the highest share was due to attitude, 25.5%. In general, the constructs of TPB together with distal variables explained 57.4% of the variability in pregnancy intention [Table 24].

***Table 24. TPB and distal variables to predict HIV positive women pregnancy intention, Assela referral Hospital, 2010.***

| Model | R | R square | Adjusted R Square | Std. Error of the Estimate | Change statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | R Square change | F Change | df1 | df2 | Sig. F Change |
| 1 | 0.176[a] | 0.031 | 0.026 | 0.97377 | 0.031 | 5.623 | 1 | 175 | 0.019 |
| 2 | 0.347[b] | 0.120 | 0.110 | 0.93054 | 0.089 | 17.639 | 1 | 174 | 0.000 |
| 3 | 0.463[c] | 0.214 | 0.200 | 0.88211 | 0.094 | 20.630 | 1 | 173 | 0.000 |
| 4 | 0.685[d] | 0.469 | 0.457 | 0.72711 | 0.255 | 82.616 | 1 | 172 | 0.000 |
| 5 | 0.742[e] | 0.550 | 0.537 | 0.67120 | 0.081 | 30.851 | 1 | 171 | 0.000 |
| 6 | 0.758[f] | 0.574 | 0.559 | 0.65490 | 0.024 | 9.617 | 1 | 170 | 0.002 |

a. Predictors: (Constant), Age
b. Predictors: (Constant), Age, PMTCT Knowledge
c. Predictors: (Constant), Age, PMTCT Knowledge ,History of PMTCT service,
d. Predictors: (Constant), Age, PMTCT Knowledge ,History of PMTCT service, B.Attitude
e. Predictors: (Constant), Age, PMTCT Knowledge ,History of PMTCT service, B.Attitude, B.Subjective Norm
f. Predictors: (Constant), Age, PMTCT Knowledge ,History of PMTCT service, B.Attitude, B.Subjective Norm, B.Perceived Behavioral Control

# Chapter VI: Discussion

In this study PMTCT knowledge was found high and past history of PMTCT service, PMTCT knowledge and respondent's age among distal variables and attitude from TPB variables were found as a predictor for pregnancy intention..

The finding of this study confirms that, 29.1% (100) of the women want to get pregnant and have a child in the near future. The result also goes in line with the study conducted in United States, where 28% to 29% of HIV-infected men and women receiving medical care desire to have a child in the future (James et al., 2003). Similarly a study conducted in New York had discovered a comparable result with the current study that one third of the study subjects were considering future children (Nancy et al. 2004). Comparisons were made among HIV-positive women regarding their desire of parenthood, pregnancy intention and desire for children. Surveys in developed and developing countries had found that 18% to 43% women with HIV wanted to have children in the future (CHEN et al, 2001).

The effect of age in the current study was found as a potential factor to explain pregnancy intention and had a significant inverse relationship with pregnancy intention, where older age groups are less likely to consider pregnancy. This finding was also consistent with the finding in an in-depth interview. Likewise a study conducted in Lesotho, Malawi, Nigeria and South Africa had disclosed that age has a significant effect over parenthood desire, where older age groups are less likely to want to a child when compared to younger women (T. Adair, 2007; Frank et al. 2009; Oldapo et al. 2005a; Peltzer et al. 2008; CHEN et al. 2001; ).

In the current study marital status has found no significant relation with that of pregnancy intention. However, a study conducted in Lesotho had found marital status to affect fertility desire significantly, where married HIV positive women had 14 times more likely than a never married woman to want to have a child (T. Adair, 2007). This discrepancy might result from weak family support to HIV positive women and care for her newborn. Moreover, qualitative findings has revealed that resources, like better income and living house, strong family support were found more prominent than any other variables to opt for pregnancy.

It is found that the number of children had a significant indirect correlation with that of pregnancy intention, where women with lower number of children had a higher intention to have a child. Studies in Malawi and South Africa had discussed a significant relationship between the number of children and HIV positive woman desire for further children, where those women with more children were less likely to have a desire for more children (Frank et al. 2009; Peltzer et al. 2008).

The current study has found longer duration on ART and perceived current general health status had no significant relationship with level of pregnancy intention. A study conducted in sub-Saharan African countries revealed that a substantial proportion of women and men who are on HAART wish to have children, though the differences were not statistically significant (Hoffman et al. 2008). In the current study "ART Status" being on ART or on Pre-ART care has found to have no significant relationship with pregnancy intention, which supports the previous study. However, longer HAART usage and HAART associated health restorations were significantly associated with childbearing desire (Kaida et al. 2006, Hoffman et al. 2008). This inconsistence might result from the low perceived current general health status in the current study, where only 195(56.7%) had very good perception regarding their current general health status.

The present study revealed that duration since respondents knew their HIV status and their level of pregnancy intention was found to have no significant relationship. While a study conducted in Nigeria (Oladapo et al. 2005a), released its findings that recent diagnosis and desire for children are significantly associated. The value given to having a child, cultural and psychological differences in self adjustment of being HIV positive might explain the variation.

In this study, PMTCT knowledge was found very high among study participants, knowledge regarding the possibility of HIV transmission from mother -to-child; during pregnancy 91.6% (315), at the time of delivery 92% (316), and during delivery was 89.2% (307); and 81.1% (279) of the women knew the presence of preventive measures. In cumulative, those with higher PMTCT knowledge account 75.3% (259). This finding is relatively higher than the findings in Uganda (S. Nakayiwa et al. 2006), where 71% of the women knew the possibility of HIV transmission from mother-to-child, and 81% of the women knew its prevention about PMTCT program. This higher knowledge difference in the two localities might result from the service provision modality. In the current study set-up every HIV positive women and men had a regular

health education program provided by volunteer peer educators who were trained for the purpose of adherence counseling, and this resulted in higher introduction of mother-to-child transmission and the existing preventive service, i.e. PMTCT.

In this study PMTCT knowledge was found high and there exist a significant relationship with pregnancy intention and PMTCT knowledge, where those with higher PMTCT knowledge intend to have a child compared to those with lower PMTCT knowledge. This finding is supported by a study conducted in Lesotho and South Africa, where Knowledge of MTCT was significantly associated with increased likelihood of wanting to give birth in the near future (T. Adair, 2007; Peltzer et al. 2008). Moreover this finding has a strong support from an in-depth interview.

The study also show that, exposure to PMTCT services had a significant relationship with pregnancy intention, where those who had previous PMTCT service exposure had a higher pregnancy intention when compared to those who had no PMTCT service exposure. In addition it was supported by qualitative finding; however, a study in Lesotho (S. Nakayiwa et al. 2006) had found an association between exposure to PMTCT programs and lower rates of pregnancy risk behaviors. This might be explained by the higher level of PMTCT knowledge and personal experience of the respondents in the current study area.

Variables external to the constructs of TPB, respondents' age, PMTCT knowledge and PMTCT service exposure had significant relationship and found to be predictors of HIV positive women pregnancy intention and explained 21.4% of the variability in pregnancy intention. A bivariate correlation computed to examine the relationship of intention with variables of the TPB found higher correlation with belief based attitude ($r=0.63$), than belief based perceived behavioral control ($r=0.61$) and belief based subjective norm ($r=0.59$). Similarly belief based attitude had explained the variability of pregnancy intention more than other variables of TPB, which accounted 25.5% alone.

In general the constructs of TPB together account 36% of the variability in pregnancy intention. Likewise, attitude was taken as a stronger predictor of different health related behaviors. In a Meta analysis conducted by Armitage and Conner (2001) to assess the intention regarding low fat diet consumption, breast screening, smoking cessation, and intention to exercise for coronary heart disease patients, the TPB constructs together explain 36% of the variation in intention. Furthermore, the relationship among intention was, attitude-intention (*r=0.49)*, PBC-intention (*r=0.43)* and subjective norm-intention (*r=0.34),* comparable with the current study.

In another Meta-analysis (Godin and Kok, 1996) of 56 studies specific to health related behaviors; smoking, drink driving, breast self examination, avoiding caffeine, exercising, condom use and flossing teeth; the average explained variance in intention was 40.9%, which is comparable with the current study, i.e. 36%. Moreover the correlation between intention-attitude (*r=0.46*), intention-subjective norm (*r=0.34*) and intention-PBC (*r=0.46*) were all consistent with the current study, where attitude had higher correlation with intention than subjective norm and perceived behavioral control.

## Strengths and limitations of the study

***Strengths*:**

- The TPB was adapted to develop the conceptual framework of the study.
- Other moderator variables external to TPB are included as a distal variable.
- The instrument is developed according to standard guideline and relevant literatures.
- An elicitation study was conducted to identify the salient beliefs of pregnancy intention.

***Limitations*:**

- Social desirability bias may be introduced as the interviewers were clients' own care givers.
- The study is facility based, thus findings may not be generalized to HIV positive women who are not taking ART and non-ART care.
- No local studies were compared to the findings of this study.

# Chapter VII: Conclusion and Recommendation

## Conclusion:

Majority of the study participants (75.3%), were found under the category of "highly knowledgeable" about PMTCT issues while the remaining 24.7% of the respondents were found below the range of this category. In this study PMTCT knowledge was found relatively higher when compared to other settings.

While assessing pregnancy intention, 53.7% of the participants expect an HIV positive woman to get pregnant and considerable numbers of respondents (29.1%) want to get pregnant and have their own child in the near future. More over 30.9% of the women were grouped under moderate to high pregnancy intention categories. This finding showed the reproductive need of HIV positive women is sizable and due attention is required.

Pregnancy intention was found to have significant correlation with attitude, subjective norm and perceived behavioral controls as well as with their belief based measures. The belief based measures of intention revealed that, belief upon getting pregnant and give birth to satisfy the desire to have a child was found to predict attitude towards pregnancy intention. Furthermore, family influence and having good income were important factors to determine pregnancy intention.

The variables; respondents' age, PMTCT knowledge, history of exposure to PMTCT service were found to have higher significant relationship and association with pregnancy intention. Among these variables history of PMTCT service was found to have a higher strength to predict pregnancy intention. Besides, respondents' age, History of PMTCT service and PMTCT knowledge explained 21.4% of the variability in pregnancy intention. The three major variables of TPB; belief based attitude, subjective norm and perceived behavioral control together explained 36% of the variability of pregnancy intention, where belief based attitude shares the greatest portion 25.5%, followed by belief based subjective norm 8.1%, and belief based PBC 2.4%. Generally, the TPB variables jointly with external variables explained 57.4% of the variability of pregnancy intention among HIV positive women. This shows the direction for interventions and the possible application of the TPB to assess HIV positive women pregnancy intention under similar contexts.

## Recommendations:

Considering the higher level of pregnancy intention, observed PMTCT knowledge gap, pregnancy intention variability explanations of the TPB variables, the significant effect of respondents age, history of PMTCT service and PMTCT knowledge on pregnancy intention, the following recommendations are forwarded,

**Ministry of Health/ HAPCO /Oromia Regional Health Bureau**

- Widely implement and access PMTCT service to the target clients.
- Fulfill health institutions with the required infrastructure and necessary facilities to carry out PMTCT services.
- Scale-up the available PMTCT trained work force.
- Design sound health education strategies focused on attitude and important referent groups towards pregnancy.

**Concerned Non-governmental organizations**

- Collaborate with Ministry of health and concerned governmental organizations.
- Provide adequate technical and material support to deliver PMTCT services based on base line findings.

**Assela Referral Hospital**

- Strengthen its health education strategies so as to close the gap in the identified PMTCT knowledge deficit.

**Health Professionals**

- Should carefully consider HIV positive women pregnancy intention and provide holistic support.
- Reinforce pregnancy intended HIV positive women to consider PMTCT service.

**Researchers**

- Consider large scale studies to have adequate information on national basis.
- Conduct large scale studies to determine the contraceptive needs of low intention groups.
- Consider to incorporate additional variables into the TPB to improve its predictive power.

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# Annexes

## Annex I: English Version Questionnaire

**Jimma University**
**College of Public Health and Medical Sciences**
**Graduate Studies**

An interviewer guided questionnaire developed to assess pregnancy intention of HIV positive women:

**Introduction and Consent**

Good morning/Good after noon. My name is_____ and I am a nurse in Assela Hospital ART unit and now we are conducting a study in the hospital in collaboration with Jimma University and selected PLWHA who follow their treatment in the hospital. This study is part of the Master's Thesis for the partial fulfillment of the degree of masters in public health in Jimma University.

We would like to ask you about your intention towards pregnancy and related personal informations. Whatever information you provide will be kept strictly confidential and will not be disclosed to third party. Participation in this survey is voluntary; there is no harm or effect on you whether you participate or not in the study. There is no right or wrong answer. You can choose not to answer any individual question or all of the questions. However, we hope that you will actively participate in this survey since your views are important to design appropriate reproductive health care interventions for PLWHA. The study will be conducted through interviews and we are asking you for a little of your time, about 30 to 40 minutes.

Are you willing to participate in this study? *Check box (✓)*

☐ Yes, I am willing to participate. Please sign here:_____

☐ No, I am not willing to participate.

**Thank You!**

Questionnaire ID. No._____

## Section I: ART Record Review

**Direction**:

This is the first section of the questionnaire. It is filled by the ART unit data clerk, after identifying and asking the consent of the selected study participant. The study participant needs to have at least one visit to the ART unit, in reproductive age range (15-49 years old), with no pregnancy and mental disability and able to communicate.

For study participants who fulfill the inclusion criteria fill the informations listed below, next to this the respondent will have an interview with the data collector in a private room.

**Section I: ART Record Review**

| Q. no. | Records to be filled | Coding Category | Skip |
|---|---|---|---|
| Q101 | ART Unique ID. No. | _____ | |
| Q102 | Patient Card No. | _____ | |
| Q103 | Date of HIV Diagnosis | ___/____/____E.C. | |
| Q104 | Date ART started | ___/____/____E.C. | |
| Q105 | WHO HIV/AIDS stage (Latest) | _____ | |
| Q106 | Latest HIV Viral Load | _____ | |
| Q107 | Latest CD4 count | _____ | |

Note: Please use *dd/mm/yy* E.C. format to fill the date.

Date of record: _____/_____/_____

Data clerks' name: _____

Date of submit to supervisor: ____/_____/_____

Supervisors' name: _____

Supervisors' signature:_____

Questionnaire ID. No.

**Section II: Sociodemographic and Reproductive Informations**

| Q. no. | Questions | Response Category | Skip |
|---|---|---|---|
| Q201 | How old are you? | _____ Years | |
| Q202 | Where is your permanent residence? | _____ | |
| Q203 | What is your current marital status? | ☐ 1=Single<br>☐ 2=Married<br>☐ 3=Divorced<br>☐ 4=Widowed | |
| Q204 | What is your ethnic group? | ☐ 1=Oromo<br>☐ 2=Amhara<br>☐ 3=Gurage<br>☐ 4=Tigre<br>☐ 5=Others, specify_____ | |
| Q205 | What is your religion? | ☐ 1= Orthodox<br>☐ 2= Muslim<br>☐ 3=Protestant<br>☐ 4=Catholic<br>☐ 5=Others, specify_____ | |
| Q206 | Whom do you live with? | ☐ 1=Alone<br>☐ 2=My husband<br>☐ 3=My Parents<br>☐ 4=Others, specify_____ | |
| Q207 | What is the highest level of grade you have completed? | ☐ 1=Primary School (grade 1-6)<br>☐ 2=Junior School (grades 7-8)<br>☐ 3=Senior School (grades 9-12)<br>☐ 4=Other higher education(12+)<br>☐ 5= Not Educated | |

| | | | |
|---|---|---|---|
| Q208 | What is your Occupation?<br>(What do you do for living?) | ☐ 1=Government employee<br>☐ 2=Private organization employee<br>☐ 3=NGO employee<br>☐ 4=Businesswomen<br>☐ 5=Farmer<br>☐ 6=Housewife<br>☐ 7=Daily laborer<br>☐ 8=Student<br>☐ 9=Have no job<br>☐ 10=Others, specify _____ | |
| Q209 | Do you have your own child/children? | ☐ 1=Yes<br>☐ 2=No | |
| Q210 | If the response for the above question is “Yes”, how many children do you have? | ☐ 1= One<br>☐ 2= Two<br>☐ 3= Three<br>☐ 4= Four<br>☐ 5= Five and above | |
| Q211 | How do you perceive your general state of health? | ☐ 1=Very Good<br>☐ 2= Good (minimal change)<br>☐ 3= No change at all<br>☐ 4=Worsen/Bad | |
| Q212 | Have you ever served PMTCT in your previous pregnancy/pregnancies? | ☐ 1=No, I have not<br>☐ 2= Yes, I have<br>☐ 3=I have not been pregnant | |

## Section III: Measures of Behavioral Intention

Each questions in this section refers to
YOUR PREGNANCY INTENTION OR PLAN IN THE FUTURE

Direction: for the following questions the response format is prepared in a form of scale, ranges from 1 to 5, the definitions for each of the scales is given below.

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Strongly disagree | Somewhat Disagree | Neutral or Not sure | Somewhat Agree | Strongly Agree |

| Q. no. | Questions | Response Format | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Q301 I | I expect an HIV positive woman to be pregnant | Strongly Disagree | 1 | 2 | 3 | 4 | 5 | Strongly Agree |
| Q302 I | I want to conceive and have my own child | Strongly Disagree | 1 | 2 | 3 | 4 | 5 | Strongly Agree |
| Q303 I | I intend to conceive and have my own child | Strongly Disagree | 1 | 2 | 3 | 4 | 5 | Strongly Agree |
| Q304 I | How many child/children do you want to have in the future? | No child | 1 | 2 | 3 | 4 | 5 | More than 5 |
| Q305 AT | Being pregnant for an HIV positive woman is | Harmful | 1 | 2 | 3 | 4 | 5 | Beneficial |
| | | Bad | 1 | 2 | 3 | 4 | 5 | Good |
| | | Unpleasant | 1 | 2 | 3 | 4 | 5 | Pleasant |
| | | Worthless | 1 | 2 | 3 | 4 | 5 | Useful |
| Q306 SN | Most people who are important to me think that | I should | 1 | 2 | 3 | 4 | 5 | I should not |
| | | Conceive and have a child. | | | | | | |
| Q307 SN | It is expected of me to conceive and have a child | Strongly Disagree | 1 | 2 | 3 | 4 | 5 | Strongly Agree |
| Q308 SN | I feel like I am under social pressure to be pregnant and have a child. | Strongly Disagree | 1 | 2 | 3 | 4 | 5 | Strongly Agree |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Q309 SN | People who are important to me want me to be pregnant and have a child. | Strongly Disagree | 1 | 2 | 3 | 4 | 5 | Strongly Agree |
| Q310 PBC | I am confident that I could be pregnant and have a child if I wanted to | Strongly Disagree | 1 | 2 | 3 | 4 | 5 | Strongly Agree |
| Q311 PBC | For me to be pregnant and have a child is | Very Difficult | 1 | 2 | 3 | 4 | 5 | Very Easy |
| Q312 PBC | The decision to be pregnant and to have a child is beyond my control. | Strongly Disagree | 1 | 2 | 3 | 4 | 5 | Strongly Agree |
| Q313 PBC | Whether being pregnant and have a child or not is entirely up to me. | Strongly Disagree | 1 | 2 | 3 | 4 | 5 | Strongly Agree |

**Direction IV: Salient Measures of Behavioral Intention**

| Q. no. | Questions | Response Format | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Q401 BB | If I got pregnant and give birth, I feel that I am substituting my generation | Strongly disagree | 1 | 2 | 3 | 4 | 5 | Strongly agree |
| Q402 BB | If I got pregnant and give birth, I believe like I am fulfilling my desire to have a child | Strongly disagree | 1 | 2 | 3 | 4 | 5 | Strongly agree |
| Q403 OE | For me substituting my generation is | Extremely undesirable | 1 | 2 | 3 | 4 | 5 | Extremely desirable |
| Q404 OE | For me getting pregnant and giving birth to satisfy my desire to have a child is | Extremely undesirable | 1 | 2 | 3 | 4 | 5 | Extremely desirable |
| Q405 NB | My families think that I | should not | 1 | 2 | 3 | 4 | 5 | should |
| | | | get pregnant and give birth. | | | | | |
| Q406 NB | My close friends would | disapprove | 1 | 2 | 3 | 4 | 5 | approve |
| | | | of my being pregnant and give birth to have a child. | | | | | |
| Q407 NB | My partner (husband/spouse) | does not | 1 | 2 | 3 | 4 | 5 | does |
| | | | need to have our own child. | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Q408 MC | What my families think I should do matters to me. | Not at all | 1 | 2 | 3 | 4 | 5 | Very much |
| Q409 MC | My close friends' approval of my pregnancy and having a child is important to me. | Not at all | 1 | 2 | 3 | 4 | 5 | Very much |
| Q410 MC | Satisfying my partner's desire to have a child is important to me. | Not at all | 1 | 2 | 3 | 4 | 5 | Very much |
| Q411 CB | An HIV positive woman feeling healthy gets pregnant to have her own child. | Strongly disagree | 1 | 2 | 3 | 4 | 5 | Strongly agree |
| Q412 CB | An HIV positive woman with a good income gets pregnant to have her own child. | Strongly disagree | 1 | 2 | 3 | 4 | 5 | Strongly agree |
| Q413 CB | An HIV positive woman with higher CD4 count gets pregnant to have her own child. | Strongly disagree | 1 | 2 | 3 | 4 | 5 | Strongly agree |
| Q414 CB | An HIV positive woman with family support gets pregnant to have her own child. | Strongly disagree | 1 | 2 | 3 | 4 | 5 | Strongly agree |
| Q415 PC | If I am in a better health, It is…… to get pregnant to have a child. | Very difficult | 1 | 2 | 3 | 4 | 5 | Very easy |
| Q416 PC | If I have good income, I am…….. .get pregnant to have a child. | Very less likely | 1 | 2 | 3 | 4 | 5 | More likely |
| Q417 PC | If I have higher CD4 count, I am ……get pregnant to have a child. | Very less likely | 1 | 2 | 3 | 4 | 5 | More likely |
| Q418 PC | If I have good family support, It is……to get pregnant to have a child. | Very difficult | 1 | 2 | 3 | 4 | 5 | Very easy |

## Section V: PMTCT Knowledge Assessment

Each of the questions in this section will assess
YOUR KNOWLEDGE ABOUT PMTCT

| Q. no. | Questions | Response Category | Skip |
|---|---|---|---|
| Q 501 | There is a chance that a child can get HIV. | ☐ 1=Correct<br>☐ 2=Incorrect<br>☐ 3=Not sure | |
| Q502 | There is a chance of HIV transmission to a fetus during pregnancy. | ☐ 1=Correct<br>☐ 2=Incorrect<br>☐ 3=Not sure | |
| Q503 | There is a chance of HIV transmission to the newborn at the time of delivery. | ☐ 1=Correct<br>☐ 2=Incorrect<br>☐ 3=Not sure | |
| Q504 | There is a chance of HIV transmission to the new born while breast feeding. | ☐ 1=Correct<br>☐ 2=Incorrect<br>☐ 3=Not sure | |
| Q505 | MTCT to the new born is preventable. | ☐ 1=Correct<br>☐ 2=Incorrect<br>☐ 3=Not sure | |

**We would like to thank you for your cooperation!!**

## Elicitation Study In-depth Interview Guide:

**Direction**:

Please read the questions slowly and give time for the respondent to list her thoughts. Repeat the questions and try to clarify, if the respondent does not understand the question at all. Please use probes as necessary.

Date of Interview: ____/____/____E.C.

Time Interview started: _____:____

Time Interview Ended: _____:____ Interviewer Name:_____

| | |
|---|---|
| **Q1** | What do you believe are the advantages of being pregnant and have one's own child for an HIV positive woman? |
| **Q2** | What do you believe are the disadvantages of being pregnant and have one's own child for an HIV positive woman? |
| **Q3** | Is there anything else you associate with your own views about being pregnant and having a child for an HIV positive woman? |
| **Q4** | Are there any individual or groups who would approve of your being pregnant and having a child? |
| **Q5** | Are there any individual or groups who would disapprove of your being pregnant and having a child? |
| **Q6** | Is there anything else you associate with other people's view about being pregnant and having a child for an HIV positive woman? |
| **Q7** | What factors or circumstances would enable you to be pregnant and have your own child? |
| **Q8** | What factors or circumstances would make it difficult or impossible for you to be pregnant and have your own child? |
| **Q9** | Are there any other issues that come to mind when you think about being pregnant and having your own child? |

**We would like to thank you for your cooperation!!**

## Qualitative Study In-depth Interview Guide:

**Direction**:

Please read the questions slowly and give time for the respondent to list her thoughts. Repeat the questions and try to clarify, if the respondent does not understand the question at all. Please use probes as necessary.

Date of Interview: ____/____/____E.C.

Time Interview started: _____:____

Time Interview Ended: _____:____ Interviewer Name:_____

1. What are the most likely negative or positive outcomes of an HIV positive women preference for being Pregnant and having once own child.
2. Who do you think are the important people or groups that most influence your pregnancy decision?
3. What are the factors that might facilitate or hinder you to be pregnant?
4. Do you intend to be pregnant and have your own child?

**We would like to thank you for your cooperation!!**

**Annex II: Amharic Version Questionnaire**

**ጅማ ዩኒቨርስቲ**

**የህብረተሰብ ጤና ሳይንስ እና የህክምና ሳይንሶች ኮሌጅ**

**የድኅረ-ምረቃ ትምህርት ክፍል**

**<u>የ ኤች.አይ.ቪ ቫይረስ በደማቸው ውስጥ ያለባቸውን ሴቶች የመውለድ ፍላጎት/ እቅድ ለማጥናት የተዘጋጀ መጠይቅ</u>**

**መግቢያ:**

**እንደምን አድረዋል/ውለዋል? ስሜ.....ይባላል:: እኔ በእዚህ ሆስፒታል በኤ.አር.ቲ ክፍል ውስጥ የምሰራ ነርስ ነኝ:: በአሁኑ ሰዓት በዚህ ሆስፒታል ውስጥ ከጅማ ዩኒቨርስቲ እና በዚህ በኤ.አር.ቲ ክፍል ውስጥ አገልግሎት ከሚያገኙ ሴቶች ጋር በመተባበር ጥናት እየተካሄደ ነው:: ይሄ ጥናት የድኅረ-ምረቃ ትምህርት ፕሮግራም አካል ነው::**

**ወደ ፊት ልጅ ለመውለድ ስላለዎት ፍላጎትና ከዚሁ ጋር የሚያያዙ የተወሰኑ ጥያቄዎችን እንጠይቅዎታለን:: የሚሰጡን መልስ ሚስጢራዊነቱ የተጠበቀ ይሆናል ለሌላም አካል አይተላለፍም:: የሚሰጡን ምላሽ የግል ሃሳብዎትን ነው:: ጥያቄዎቹ ምንም ትክክል ወይም ስህተት ተብሎ የታሰበ መልስ የላቸውም::በዚህ ጥናት ውስጥ የሚሳተፉት በፍላጎትዎ ሲሆን በመሳተፍዎ ወይም ባለመሳተፍዎ የሚደርስብዎት ምንም አይነት ጉዳት አይኖርም:: ያልተመቾትን ጥያቄዎች አለመመለስ ይቻላል:: ሆኖም የሚሰጡን ምላሽ ትክክለኛ የሆነ አገልግሎት የሚሰጥበትን መንገድ ስለሚጠቁመን በጥያቄና መልሱ በነቃ ሁኔታ እንደሚሳተፉ አምናለው:: ጥያቄውን ለመጨረስ ምናልባት ከ30 እስከ 40 ደቂቃ ሊፈጅ ይችላል::**

**በጥናቱ ለመሳተፍ ፈቃደኛ ነዎት? አዎ ፈቃደኛ ነኝ:: ☐ ፊርማ:.....**

**(በጥናቱ ለመሳተፍ ፍቃደኛ ከሆኑ እባክዎ በክፍት ቦታው ላይ ይፈርሙ!)**

**ፍቃደኛ አይደለሁም:: ☐**

## Section I: ART Record Review

**Direction**:

This is the first section of the questionnaire. It is filled after having the consent of the selected study participant. The study participant needs to have at least one visit to the ART unit, in reproductive age range (15-49 years old), with no pregnancy and mental disability.

For study participants who fulfill the inclusion criteria please fill the informations listed below,

**Section I: ART Record Review**

| Q. no. | Records to be filled | Coding Category | Skip |
|---|---|---|---|
| Q101 | ART Unique ID. No. | | |
| Q102 | Patient Card No. | | |
| Q103 | Date of HIV Diagnosis | _____._____._____E.C. | |
| Q104 | Date ART started (fill only for client in OA) | _____._____._____E.C. | |
| Q105 | WHO HIV/AIDS stage (Latest) | | |
| Q106 | Latest HIV Viral Load | | |
| Q107 | Latest CD4 count | | |

**Note: Please use *dd.mm.yy* E.C. format to fill the date.**

Date of record: _____/_____/_____

Data clerks' name: _____

Date of submit to supervisor: ____/_____/_____

Supervisors' name: _____

Supervisors' signature:_____

**ክፍል ሁለት፡ የሥነ-ሕብረተሰብና የሥነ-ተዋልዶ መጠይቅ፡፡**

| ተ.ቁ. | መጠይቆች | የመልስ አማራጮች | የሚዘለል |
|---|---|---|---|
| Q201 | ዕድሜዎ ስንት ነው? | _____ ዓመት | |
| Q202 | የት ነው በቋሚነት የሚኖሩት? | _____ | |
| Q203 | የትዳር ሁኔታዎ እንዴት ነው? | ☐ 1=አላገባሁም፡፡<br>☐ 2=ባለ ትዳር ነኝ፡፡<br>☐ 3=ተፋትቻለሁ፡፡<br>☐ 4=ባለቤቴ በህይወት የለም፡፡ | |
| Q204 | ብሔረሰብዎ ምንድን ነው? | ☐ 1=ኦሮሞ ነኝ፡፡<br>☐ 2=አማራ ነኝ፡፡<br>☐ 3=ጉራጌ ነኝ፡፡<br>☐ 4=ትግሬ ነኝ፡፡<br>☐ 5=ሌላ ከሆነ ይገለጽ..... | |
| Q205 | ሃይማኖትዎ ምንድን ነው? | ☐ 1= ኦርቶዶክስ ነኝ፡፡<br>☐ 2= ሙስሊም ነኝ፡፡<br>☐ 3=ፕሮቴስታንት ነኝ፡፡<br>☐ 4=ካቶሊክ ነኝ፡፡<br>☐ 5=ሌላ ከሆነ ይገለጽ..... | |
| Q206 | በአሁኑ ሰዓት ከማን ጋር ነው የሚኖሩት? | ☐ 1=ብቻዬን፡፡<br>☐ 2=ከባለቤቴ ጋር፡፡<br>☐ 3=ከወላጆቼ ጋር፡፡<br>☐ 4=ሌላ ከሆነ ይገለጽ..... | |
| Q207 | እስከ ስንተኛ ክፍል ድረስ ተምረዋል? | ☐ 1= የመጀመሪያ ደረጃ (ከ 1ኛ-8ኛ)<br>☐ 2= ሁለተኛ ደረጃ (ከ9ኛ-10ኛ)<br>☐ 3= የመሰናዶ ወይም ከ11ኛ-12ኛ<br>☐ 4= የቴክኒክና ሙያ ትምህርት(TVET)<br>☐ 5= የከፍተኛ ትምህርት(ከ12ኛ በላይ)<br>☐ 6= አልተማርኩም፡፡ | |

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| Q208 | **የሚሰሩት ስራ ምንድን ነው?** | ☐ 1=**የመንግስት ሰራተኛ ነኝ::**<br>☐ 2=**የግል ድርጅት ተቀጣሪ ነኝ::**<br>☐ 3=**መንግስታዊ ባልሆነ ድርጅት ውስጥ**<br>☐ 4=**ነጋዴ ነኝ::**<br>☐ 5=**ገበሬ ነኝ::**<br>☐ 6=**የቤት እመቤት ነኝ::**<br>☐ 7=**የጉልበት ሠራተኛ ነኝ::**<br>☐ 8=**ተማሪ ነኝ::**<br>☐ 9=**ሥራ የለኝም::**<br>☐ 10= **ሌላ ከሆነ ይገለጽ.....** | |
| Q209 | **የራስዎ የሆነ ልጅ ወይም ልጆች አሎት?** | ☐ 1=**አዎ አለኝ::**<br>☐ 2=**የለኝም::** → | **ወደ ጥያቄ Q211 ይሂዱ::** |
| Q210 | **ስንት ልጅ ነው ያለዎት?** | ☐ 1= **አንድ ልጅ ነው ያለኝ::**<br>☐ 2= **ሁለት ልጆች ናቸው ያሉኝ::**<br>☐ 3= **ሦስት ልጆች ናቸው ያሉኝ::**<br>☐ 4= **አራት ልጆች ናቸው ያሉኝ::**<br>☐ 5=**አምስት እና ከዚያ በላይ** | |
| Q211 | **አሁን ያለዎትን የጤና ሁኔታ እንዴት ይመለከቱታል?** | ☐ 1=**እጅግ በጣም ደህና ነኝ::**<br>☐ 2= **ደህና ነኝ/የተወሰነ ለውጥ አለኝ::**<br>☐ 3= **ምንም ለውጥ የለኝም::**<br>☐ 4=**እየባሰብኝ ነው::** | |
| Q212 | **ቀድሞ ፀንሰው ከነበረ የPMTCT አገልግሎት ተሰቶት ወይም አግኝተው ነበር?** | ☐ 1= **አዎ በአገልግሎቱ ተጠቅሜያለው::**<br>☐ 2= **አልተገለገልኩም::**<br>☐ 3=**ፀንሼ አላውቅም::** | |

## ክፍል ሦስት፡ የመውለድ ፍላጎትን ወይንም ዕቅድን ለመለካት የተዘጋጀ መጠይቅ፡፡

**በዚህ ክፍል ያሉት ጥያቄዎች ወደፊት ያለሽን/ ያለዎትን የመውለድ ፍላጎት ወይንም ዕቅድ ለመመልከት የተዘጋጁ ናቸው፡፡**

**ማብራሪያ**፡ እባክዎ ከዚህ በታች በተዘረዘሩት ዓረፍተ ነገሮች ምን ያህል እንደሚስማሙ በጣም እስማማለሁ ፣ እስማማለሁ ፣ እርግጠኛ አይደለሁም ፣ አልስማማም ወይም በጣም አልስማማም ከሚሉት አማራጮች አንዱን ብቻ በመምረጥ ይመልሱ፡፡

| 1<br>በጣም አልስማማም | 2<br>አልስማማም | 3<br>እርግጠኛ አይደለሁም | 4<br>እስማማለሁ | 5<br>በጣም እስማማለሁ |
|---|---|---|---|---|

| ተ.ቁ. | መጠይቆች | የመልስ አማራጮች | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Q301 I | ኤች.አይ.ቪ. ፖዘቲቭ ሴቶች መውለድ ይችላሉ፡፡ | በጣም አልስማማም፡፡ | 1 | 2 | 3 | 4 | 5 | በጣም እስማማለው፡፡ |
| Q302 I | የራሴ ልጅ እንዲኖረኝ እፈልጋለሁ፡፡ | በጣም አልስማማም፡፡ | 1 | 2 | 3 | 4 | 5 | በጣም እስማማለው፡፡ |
| Q303 I | የራሴ ልጅ እንዲኖረኝ አቅጃለሁ፡፡ | በጣም አልስማማም፡፡ | 1 | 2 | 3 | 4 | 5 | በጣም እስማማለው፡፡ |
| Q304 I | ወደፊት ስንት ልጆች/ልጅ እንዲኖዎት ይፈልጋሉ? | ምንም ልጅ አልፈልግም፡፡ | 1 | 2 | 3 | 4 | 5 | ከ5 በላይ፡፡ |
| Q305 AT | የኤች.አይ.ቪ. ቫይረስ በደሟ ውስጥ ለሚገኝ ሴት መጸነስ | በጣም ጎጂ ነው፡፡ | 1 | 2 | 3 | 4 | 5 | በጣም ጠቃሚ ነው፡፡ |
| | | በጣም መጥፎ ነው፡፡ | 1 | 2 | 3 | 4 | 5 | በጣም ጥሩ ነው፡፡ |
| | | በፍጹም አያስደስትም፡፡ | 1 | 2 | 3 | 4 | 5 | በጣም አስደሳች ነው፡፡ |
| | | በፍጹም አያስፈልግም፡፡ | 1 | 2 | 3 | 4 | 5 | በጣም አስፈላጊ ነው፡፡ |
| Q306 SN | ብዙዎቹ እኔን የሚቀርቡኝ ሰዎች የራሴ ልጅ ሊኖረኝ ይገባል ብለው ያስባሉ፡፡ | በጣም አልስማማም፡፡ | 1 | 2 | 3 | 4 | 5 | በጣም እስማማለው፡፡ |
| Q307 SN | የራሴ ልጅ እንዲኖረኝ ይጠበቅብኛል፡፡ | በጣም አልስማማም፡፡ | 1 | 2 | 3 | 4 | 5 | በጣም እስማማለው፡፡ |
| Q308 SN | ሰዎች የራሴ ልጅ እንዲኖረኝ ተጽእኖ እያሳደሩብኝ እንደሆነ ይሰማኛል፡፡ | በጣም አልስማማም፡፡ | 1 | 2 | 3 | 4 | 5 | በጣም እስማማለው፡፡ |

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|---|---|---|---|---|---|---|---|---|
| Q309 SN | እኔን በጣም የሚቀርቡኝ ሰዎች ፀንሼ የራሴ ልጅ እንዲኖረኝ ይፈልጋሉ ብዬ አስባለሁ፡፡ | በጣም አልስማማም፡፡ | 1 | 2 | 3 | 4 | 5 | በጣም እስማማለው፡፡ |
| Q310 PBC | ልጅ እንዲኖረኝ ብፈልግ ፀንሼ ልጅ እንዲኖረኝ ማድረግ እንደምችል እርግጠኛ ነኝ፡፡ | በጣም አልስማማም፡፡ | 1 | 2 | 3 | 4 | 5 | በጣም እስማማለው፡፡ |
| Q311 PBC | ለኔ መጸነስና መውለድ | በጣም ከባድ ነው፡፡ | 1 | 2 | 3 | 4 | 5 | በጣም ቀላል ነው፡፡ |
| Q312 PBC | መጸነስና ልጅ እንዲኖረኝ የማድረጉ ውሳኔ ከኔ አቅም በላይ ነው፡፡ | በጣም አልስማማም፡፡ | 1 | 2 | 3 | 4 | 5 | በጣም እስማማለው፡፡ |
| Q313 PBC | መጸነስና ልጅ እንዲኖረኝ የማድረጉ ውሳኔ ሙሉ በሙሉ በእኔ የሚወሰን ነው፡፡ | በጣም አልስማማም፡፡ | 1 | 2 | 3 | 4 | 5 | በጣም እስማማለው፡፡ |

**ክፍል አራት፡ ልጅ ከመውለድ ጋር ተዛማችነት ያላቸውን ሁኔታዎች ለማየት የተዘጋጀ መጠይቅ፡፡**

| ተ.ቁ. | መጠይቆች | የመልስ አማራጮች | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Q401 BB | ጸንሼ ልጅ ብወልድ ዘራን የምተካ ይመስለኛል፡፡ | በጣም አልስማማም፡፡ | 1 | 2 | 3 | 4 | 5 | በጣም እስማማለው፡፡ |
| Q402 BB | ጸንሼ ልጅ ብወልድ ልጅ እንዲኖረኝ ያለኝን ፍላጎት የማሟላ ይመስለኛል፡፡ | በጣም አልስማማም፡፡ | 1 | 2 | 3 | 4 | 5 | በጣም እስማማለው፡፡ |
| Q403 OE | ለእኔ ዘራን መተካት | በፍጹም አያስፈልግም፡፡ | 1 | 2 | 3 | 4 | 5 | በጣም አስፈላጊ ነው፡፡ |
| Q404 OE | ለእኔ ልጅ እንዲኖረኝ ያለኝን ፍላጎት ማሟላት | በፍጹም አያስፈልግም፡፡ | 1 | 2 | 3 | 4 | 5 | በጣም አስፈላጊ ነው፡፡ |
| Q405 NB | ቤተሰቦቼ እንደሚያስቡት ከሆነ እኔ | በፍጹም..... የለብኝም፡፡ | 1 | 2 | 3 | 4 | 5 | የግድ..... አለብኝ፡፡ |
| | | | ልጅ መውለድ | | | | | |
| Q406 NB | የምቀረባቸው ጓደኞቼ | .....በፍጹም አይስማሙም፡፡ | 1 | 2 | 3 | 4 | 5 | .....በጣም ይስማማሉ፡፡ |
| | | | በእኔ መጸነስና ልጅ መውለድ | | | | | |
| Q407 NB | የትዳር ጓደኛዬ ወይም እጮኛዬ | .....በፍጹም አይፈልግም፡፡ | 1 | 2 | 3 | 4 | 5 | .....በጣም ይፈልጋል፡፡ |
| | | | የራሳችን ልጅ እንዲኖረን | | | | | |

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|---|---|---|---|---|---|---|---|---|
| Q408 MC | ቤተሰቦቼ እኔ እንደጸንስና እንድወልወድ ያላቸው ፍላጎት እኔን | ምንም አያሳስበኝም። | 1 | 2 | 3 | 4 | 5 | በጣም ያሳስበኛል። |
| Q409 MC | በእኔ መጸነስና ልጅ መውለድ ላይ የቅርብ ጓደኞቼ መስማማት ለእኔ | በፍጹም አያስፈልግም። | 1 | 2 | 3 | 4 | 5 | በጣም አስፈላጊ ነው። |
| Q410 MC | ባለቤቴ ወይም እጮኛዬ ልጅ እንዲኖረን ያለውን ፍላጎት ማሟላት ለእኔ | በፍጹም አያስፈልግም። | 1 | 2 | 3 | 4 | 5 | በጣም አስፈላጊ ነው። |
| Q411 CB | ጤናማ የሆነች ኤች.አይ.ቪ. ፖዘቲቭ እናት ልጅ ትወልዳለች። | በጣም አልስማማም። | 1 | 2 | 3 | 4 | 5 | በጣም እስማማለው። |
| Q412 CB | መልካም የሆነ ገቢ ያላት ኤች.አይ.ቪ. ፖዘቲቭ እናት ልጅ ትወልዳለች። | በጣም አልስማማም። | 1 | 2 | 3 | 4 | 5 | በጣም እስማማለው። |
| Q413 CB | በደሟ ውስጥ ብዙ የሆነ CD4 ሴል ያላት ኤች.አይ.ቪ. ፖዘቲቭ እናት ልጅ ትወልዳለች። | በጣም አልስማማም። | 1 | 2 | 3 | 4 | 5 | በጣም እስማማለው። |
| Q414 CB | መልካም የሆነ የቤተሰብ ድጋፍ ያላት ኤች.አይ.ቪ. ፖዘቲቭ እናት ልጅ ትወልዳለች። | በጣም አልስማማም። | 1 | 2 | 3 | 4 | 5 | በጣም እስማማለው። |
| Q415 PC | መልካም የሆነ ጤንነት ላይ ብሆንም ለእኔ ልጅ መውለድ.... | በጣም አስቸጋሪ ነው። | 1 | 2 | 3 | 4 | 5 | በጣም ቀላል ነው። |
| Q416 PC | በቂ የሆነ ገቢ ቢኖረኝ ልጅ የምወልድ..... | በፍጹም አይመስለኝም። | 1 | 2 | 3 | 4 | 5 | በጣም ይመስለኛል። |
| Q417 PC | ብዙ የሆነ CD4 ሴል ቢኖረኝ ልጅ የምወልድ | በፍጹም አይመስለኝም። | 1 | 2 | 3 | 4 | 5 | በጣም ይመስለኛል። |
| Q418 PC | በቂ የሆነ የቤተሰብ ድጋፍ ቢኖረኝም ለእኔ ልጅ መውለድ | በጣም አስቸጋሪ ነው። | 1 | 2 | 3 | 4 | 5 | በጣም ቀላል ነው። |

**ክፍል አምስት፡ የኤች.አይ.ቪ. ኤድስ ቫይረስ ከእናት ወደ ልጅ የሚተላለፍበትን መንገድና መከላከያውን በተመለከተ የቀረበ መጠይቅ፡፡**

| ተ.ቁ. | መጠይቆች | የመልስ አማራጮች | የሚዘለል |
|---|---|---|---|
| Q 501 | አንድ ሀፃን ኤች.አይ.ቪ. ኤድስ ሊይዘው የሚችልበት አጋጣሚ አለ፡፡ | ☐ 1. ትክክል ነው፡፡<br>☐ 2. ስህተት ነው፡፡<br>☐ 3. እርግጠኛ አይደለሁም፡፡ | |
| Q502 | በፅንስ ወቅት የኤች.አይ.ቪ. ቫይረስ ከእናት ወደ ልጅ ሊተላለፍ የሚችልበት አጋጣሚ አለ፡፡ | ☐ 1. ትክክል ነው፡፡<br>☐ 2. ስህተት ነው፡፡<br>☐ 3. እርግጠኛ አይደለሁም፡፡ | |
| Q503 | በወሊድ ሰዓት የኤች.አይ.ቪ. ቫይረስ ከእናት ወደ ልጅ ሊተላለፍ የሚችልበት አጋጣሚ አለ፡፡ | ☐ 1. ትክክል ነው፡፡<br>☐ 2. ስህተት ነው፡፡<br>☐ 3. እርግጠኛ አይደለሁም፡፡ | |
| Q504 | አንድ ሀፃን የእናቱን ጡት በሚጠባበት ወቅት የኤች.አይ.ቪ. ቫይረስ ከእናት ወደ ልጅ ሊተላለፍ የሚችልበት አጋጣሚ አለ፡፡ | ☐ 1. ትክክል ነው፡፡<br>☐ 2. ስህተት ነው፡፡<br>☐ 3. እርግጠኛ አይደለሁም፡፡ | |
| Q505 | የኤች.አይ.ቪ ቫይረስ ከእናት ወደ ልጅ የሚተላለፍበትን ሁኔታ መከላከል ይቻላል፡፡ | ☐ 1. ትክክል ነው፡፡<br>☐ 2. ስህተት ነው፡፡<br>☐ 3. እርግጠኛ አይደለሁም፡፡ | |

**መጠይቁን ጨርሰናል፡፡**

**ጥያቄዎቹን በመመለስ ስለተባበሩን እጅግ በጣም እናመሰግናለን!!**

## የዳሰሳ ጥናት ቃለ-መጠይቆች

**ማብራሪያ፡** እባክዎ ከዚህ በታች የቀረቡትን ጥያቄዎች በእርጋታ ለጥናቱ ተሳታፊ ያንብቡላቸው::ምናልባት ግልጽ ያልሆኑ ጥያቄዎች ካሉ ጥያቄውን በድጋሚ በማንበብ ያብራሩት:: በተቻለ መጠን በቂ የሆነ ሃሳብ ለመሰብሰብ ይሞክሩ::

**ቃለ-መጠይቁ የተደረገበት ቀን፡...../...../.....ዓ.ም.**

**ቃለ-መጠይቁ የተጀመረበት ሰዓት፡.....:.....**

**ቃለ-መጠይቁ ያለቀበት ሰዓት፡.....:.....**

**ቃለ-መጠይቁን ያደረገው ሰው ስም፡.....**

| | |
|---|---|
| **Q1** | **የኤች.አይ.ቪ. ቫይረስ በደሟ ውስጥ ያለባት ሴት ልጅ በመውለዷ የምታገኘው ጥቅም ምን ሊሆን ይችላል ብለው ያምናሉ?** |
| **Q2** | **የኤች.አይ.ቪ. ቫይረስ በደሟ ውስጥ ያለባት ሴት ልጅ በመውለዷ የሚደርስባት ጉዳት ምን ሊሆን ይችላል ብለው ያምናሉ?** |
| **Q3** | **ከዚህ ጋር በተያያዘ ሌላ ሊነግሩኝ የሚችሉት የራስዎ የሆነ አመለካከት አሎት?** |
| **Q4** | **ምናልባት እርስዎ ቢጸንሱ በእርስዎ መፀነስና እና ልጅ መውለድ የሚስማሙ ሰዎች እነማናቸው ብለው ይገምታሉ?** |
| **Q5** | **ምናልባት እርስዎ ቢጸንሱ በእርስዎ መፀነስና እና ልጅ መውለድ የማይስማሙ ሰዎች እነማናቸው ብለው ይገምታሉ?** |
| **Q6** | **ከዚህ ጋር በተያያዘ ሌሎች ሰዎች በእርሶ መጸነስ ወይም ልጅ መውለድ ሊኖራቸው የሚችለውን አመለካከት ተጨማሪ ሊነግሩን የሚችሉት ነገር አለ?** |
| **Q7** | **እርስዎ ልጅ እንዲኖሮት የሚያስችሉ ምን አይነት ሁኔታዎችና አጋጣሚዎች መሟላት አለባቸው ብለው ያስባሉ?** |
| **Q8** | **እርስዎ ልጅ እንዳይኖሮት እንቅፋት የሚሆኑ ወይም የማያስችሉ ምን አይነት ሁኔታዎችና አጋጣሚዎች አሉ ብለው ያስባሉ?** |
| **Q9** | **ከዚህ ጋር በተያያዘ ሌላ እርስዎ ልጅ እንዲኖርዎ ወይም እንዳይኖርዎ ሊያደርጉ የሚችሉ ተጨማሪ ሁኔታዎች ወይም አጋጣሚዎች አሉ?** |

**ጥያቄዎቹን በመመለስ ስለተባበሩን እጅግ በጣም እናመሰግናለን!!**

## የተጨማሪ ማጠናከሪያ ጥናት ቃለ-መጠይቆች (Qualitative Study)

**ማብራሪያ፡** እባክዎ ከዚህ በታች የቀረቡትን ጥያቄዎች በእርጋታ ለጥናቱ ተሳታፊ ያንብቡላቸው፡፡ምናልባት ግልጽ ያልሆኑ ጥያቄዎች ካሉ ጥያቄውን በድጋሚ በማንበብ ያብራሩት፡፡ በተቻለ መጠን በቂ የሆነ ሃሳብ ለመሰብሰብ ይሞክሩ፡፡

**ቃለ-መጠይቁ የተደረገበት ቀን፡...../...../.....ዓ.ም.**

**ቃለ-መጠይቁ የተጀመረበት ሰዓት፡.....፡.....**

**ቃለ-መጠይቁ ያለቀበት ሰዓት፡.....፡.....**

**ቃለ-መጠይቁን ያደረገው ሰው ስም፡.....**

1. **አንድ የኤች.አይ.ቪ ቫይረስ በደሟ ውስጥ የሚገኝ ሴት የራሷ ልጅ እንዲኖራት ፈልጋ ብትጸንስ እና ልጅ ቢኖራት ሊኖረው የሚችለው መልካም ወይም መጥፎ ጎኑ ምንድን ነው?**
2. **በእኔ መፀነስና ልጅ እንዲኖረኝ በምወስነው ዙሪያ በመደገፍ ወይም በመቃወም ተጽእኖ ሊያሳድሩብኝ ይችላሉ ብለው የሚገምቷቸው ሰዎች እነማን ናቸው?**
3. **የእርሶን መጸነስ እንዲመቻች ወይም እንዳይሳካ ሊያደርጉ የሚችሉ ሁኔታዎች ምን ምን ሊሆኑ ይችላሉ?**
4. **ወደፊት ጸንሰው ልጅ እንዲኖርዎ አቅደዋል?**

**ጥያቄዎቹን በመመለስ ስለተባበሩን እጅግ በጣም እናመሰግናለን!!**

## Annex III: Qualitative Findings

### Qualitative Findings

A total of 14 purposively selected HIV positive women (7 married, 7 unmarried), who were volunteer to participate in the study were interviewed. Some variables that were found significant in the quantitative result and those variables given a higher importance in the qualitative data to determine HIV positive women pregnancy intention were selected and discussed here. Early in the quantitative result, History of PMTCT service, respondents' age, PMTCT knowledge from distal variables, attitude and perceived behavioral control from TPB components were found significant to determine HIV positive women pregnancy intention. Evidences were also gathered from an in-depth interview that supports the quantitative finding.

**History of PMTCT service**

Having previous history of PMTCT service was seen as a supportive factor to pregnancy intention that was shared by many of the interviewers.

Married "*I know that HIV transmission from mother to child is preventable, I have seen it in my own child and I am not afraid to have another child, of course I will have one more child in the near future."*

Another interviewer had also explained her thought as

Married "*I need to have a son I have two girls, thanks for God both of them are free of HIV, this is because I had served PMTCT. If God allows, I am very eager to have a boy."*

These explanations could show that personal experience is very important for an intended behavior to occur. Another interviewer also disclosed that

Unmarried "*I did not know I was HIV positive, the nurses has told me that I need to check HIV if in case while I came for pre-delivery services, and I was agreed and told me that I am positive and sure I had served PMTCT, and my child is 3years old he is free of HIV, I wish him to have a sister."*

**PMTCT Knowledge**

PMTCT knowledge has also shown an effect in pregnancy intention, those who had well informed had explain as there it is possible to prevent HIV transmission from mother to child, while some others had taken the lesson but they were not sure of it.

Unmarried "*I had taken many lessons here from the peer educators, and I know that mother to child transmission is preventable. They have told us others' experience and their own experiences. The nurses had also told me that they provide PMTCT service."*

Married "*I heard and learnt about it, but I don't believe it! It happens only by the will of God. Some said they have positive child and some others said they have negative child, how could it happen? It has to work for all. I am not sure of it and I don't want to have a child."*

Unmarried "*I know everything about HIV; I know how it transmits from person to person and from mother to child. I do know also the way it cannot be transmitted for instance, you can prevent it by using condom, or a pregnant woman can consult to health professionals in order to get what's called 'PMTCT'. It is possible to have a negative child, I am thinking of it."*

**Age**

Age was also seen to have a determinant effect to have pregnancy intention,

Married "*My age is running, I don't think I will have another child. It may be difficult for a woman aged 39 with that of HIV to think of pregnancy and wish to have a child, it seems insane."*

Most of the women were seen their age as a very determinant factor for being pregnant,

Unmarried "*I am only 23, young, I need to have a child before I get old. It is difficult for an older HIV positive woman to get pregnant; I think it deteriorates her health status. I need to marry in the few years and have a child."*

Another woman has aged 42 had said that Married "*Are you joking, I am 42, my husband is older than me. Who is going to look after the child? Moreover, I don't think I will regain my health again if I get pregnant and born a child. Oh! I have never thought of it!"*

**Latest CD4 cell count**

It is clear that an increased in number of CD4 cell is highly correlated with one's health regain. This fact had been clearly discussed by some of the interviewee as it affects the day to day activity, sexual practice and pregnancy intention.

Unmarried "You *need to be healthy. You cannot jump and get pregnant from the ground. The CD4 count should be very high. For example, my current CD4 count is 467; it is not possible to get pregnant with this. It should be increased."*

Married "*What you need to do is, consult the nurses here, talk to them that you feel very healthy and you want to get pregnant. They usually order CD4 cell count. If you are healthy you will have high CD4 count."*

**Attitude**

In the quantitative result it was shown that having a supportive or an awkward attitude to pregnancy intention significantly affects the behavior to occur. Similar trends had been seen from the thoughts in in-depth interviewers.

Unmarried "*I did not think it is advisable to an HIV positive woman to get pregnant, it hearts her, she will get seriously sick, she lose too much blood, and she will weaken. I feel remorseful when I think of this upon me."*

Married "*I want to live healthy; I want to be happy for the rest of my life. I don't want to take anything that risks my health. Pregnancy deteriorates HIV positive woman's health very much. I heard that some of the women's health had affected much and worsen."*

Some others had also moderate supportive attitude towards pregnancy,

Married "*There was nothing happed to me! Indeed, I lost some blood and I was sick for days but I recovered soon. Nothing will happen, it may not be very good as well it is not that much harmful."*

**Subjective Norm**

Most of the women were living with their children and some others with their families. They did not have intimate friend other than their families and those joined in the ART unit. Some of them had said that,

Married "*We live with my families. They usually asked me to have one more child, I am waiting my husband's agreement; they had also nagging him. I am waiting until my husband gets ready and fully accepts the issue. I have tried to convince him."*

Married *"Oh! I don't know why others concerned about your number of children. There are some that didn't even think of your health, they usually said " lej belejenet new". I don't know where I shall live?"*

**Perceived Behavioral controls**

Even if there are some factors that can definitely affect women's decision regarding the issue of pregnancy, it was seen in the quantitative result that perceived behavioral controls had ultimately affects pregnancy intention. Comparable thoughts were also collected from the in-depth interview. It was seen that the decision to be pregnant or not is definitely a matter once own will. This thought was expressed by some of the interviewee,

Married "*People say simply what they feel about, but you know your conditions, like your health status, your economic status, even your housing condition. So, you are the one who decide for yourself. It is you, the one to take the advantage or the risk."*

Unmarried "*How can you get pregnant with nothing? You need to have adequate income; you have to have something to feed your child, to dress, to pay for school. You should have good health. You need to have someone to take care of your child; no one knows what will happen tomorrow. This all should be satisfied. I don't think of having a child without this."*

Married *"I don't like my child to live like me. I want to make my child very happy. I want to fulfill everything to him of course I should. Otherwise why should I have a child? If I have good job, I can satisfy my child's desire. Generally you should have money."*

**Annex IV: Result Output Tables**

***Table 2. Responses to knowledge assessment items, Assela referral hospital, 2010.***

| Responses | A child can get HIV. | | HIV can transmit to a fetus during pregnancy. | | HIV can transmit to the newborn at delivery. | | HIV transmit to the new born while breast feeding. | | MTCT to the new born is preventable. | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Freq. | % | Freq. | % | Freq. | % | Freq. | % | Freq. | % |
| Correct | 322 | 93.6 | 315 | 91.6 | 318 | 92.4 | 307 | 89.2 | 279 | 81.1 |
| Incorrect | 0 | 0 | 1 | 0.3 | 2 | 0.6 | 0 | 0 | 2 | 0.6 |
| Not Sure | 22 | 6.4 | 28 | 8.1 | 24 | 7 | 37 | 10.8 | 63 | 18.3 |
| Total | 344 | 100 | 344 | 100 | 344 | 100 | 344 | 100 | 344 | 100 |

***Table 11a. Model Summary: Normative belief (NB) and Motivation to comply (MC) to predict subjective norm towards HIV positive pregnancy intention, Assela referral hospital, 2010.***

| Model | R | R square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | 0.493 | 0.243 | 0.230 | 0.61583 |

***Table 11b. ANOVA: Normative belief (NB) and Motivation to comply (MC) to predict subjective norm towards HIV positive pregnancy intention, Assela referral hospital, 2010 .***

| Model | Sum of squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 21.058 | 3 | 7.019 | | |
| Residual | 65.609 | 173 | 0.379 | 18.509 | .000 |
| Total | 86.667 | 176 | | | |

***Table 11c. Normative belief (NB) and Motivation to comply (MC) to predict subjective norm towards HIV positive pregnancy intention, Assela referral hospital, 2010.***

| Model | Unstandardized coefficients | | standardized coefficients | t | Sig. | 95%confidence interval for B | |
|---|---|---|---|---|---|---|---|
| | B | Std. Error | Beta | | | Lower bound | Upper bound |
| Constant | 1.512 | 0.096 | | 15.740 | .000 | 1.323 | 1.702 |
| NBMC_1 | 0.069 | 0.013 | 0.478 | 5.404 | .000 | 0.044 | 0.094 |
| NBMC_2 | 0.010 | 0.015 | 0.060 | 0.668 | .505 | -0.020 | 0.040 |
| NBMC_3 | -0.009 | 0.009 | -0.069 | -0.909 | .365 | -0.027 | 0.010 |

*(NB-Normative Belief, MC-Motivation to comply)*

***Table 15a.Model Summary: Control beliefs (CB) and power of control (PC) to predict perceived behavioral control towards HIV positive pregnancy intention, Assela referral hospital, 2010.***

| Model | R | R square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | 0.832 | 0.693 | 0.689 | 0.43296 |

***Table 15b. ANOVA: Control beliefs (CB) and power of control (PC) to predict perceived behavioral control towards HIV positive pregnancy intention, Assela referral hospital, 2010.***

| Model | Sum of squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 143.383 | 4 | 35.846 | | |
| Residual | 63.547 | 339 | 0.187 | 191.225 | .000 |
| Total | 206.930 | 343 | | | |

***Table 15c. Control beliefs (CB) and power of control (PC) to predict perceived behavioral control towards HIV positive pregnancy intention, Assela referral hospital, 2010.***

| Model | Unstandardized coefficients | | standardized coefficients | t | Sig. | 95%confidence interval for B | |
|---|---|---|---|---|---|---|---|
| | B | Std. Error | Beta | | | Lower bound | Upper bound |
| Constant | 1.080 | 0.051 | | 21.045 | .000 | 0.979 | 1.181 |
| CBPC_1 | 0.029 | 0.007 | 0.205 | 4.354 | .000 | 0.016 | 0.042 |
| CBPC_2 | 0.046 | 0.008 | 0.347 | 6.057 | .000 | 0.031 | 0.061 |
| CBPC_3 | 0.042 | 0.006 | 0.308 | 7.503 | .000 | 0.031 | 0.052 |
| CBPC_4 | 0.012 | 0.008 | 0.092 | 1.511 | .132 | -0.004 | 0.027 |

(*CB-Control Beliefs, PC-Power of Control*)

***Table 20a. Model Summary: Age, Marital Status, and Status of Having a Child to predict HIV positive women pregnancy intention, Assela referral hospital, 2010.***

| Model | R | R square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | 0.386 | 0.149 | 0.142 | 0.89902 |

***Table 20b. ANOVA: Age, Marital Status, and Status of Having a Child to predict HIV positive women pregnancy intention, Assela referral hospital, 2010.***

| Model | Sum of squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 48.185 | 3 | 16.062 | | |
| Residual | 274.802 | 340 | 0.808 | 19.872 | .000 |
| Total | 322.987 | 343 | | | |

***Table 20c. Age, Marital Status, and Status of Having a Child to predict HIV positive women pregnancy intention, Assela referral hospital, 2010.***

| Model | Unstandardized coefficients | | standardized coefficients | t | Sig. | 95%confidence interval for B | |
|---|---|---|---|---|---|---|---|
| | B | Std. Error | Beta | | | Lower bound | Upper bound |
| Constant | 2.574 | 0.344 | | 7.484 | .000 | 1.897 | 3.250 |
| Age | -.026 | 0.008 | -.165 | -3.107 | .002 | -.043 | -.010 |
| Marital Status | -.005 | 0.053 | 0.053 | -.093 | .926 | -.109 | 0.099 |
| Has child or not | 0.725 | 0.124 | 0.309 | 5.822 | .000 | 0.480 | 0.970 |

***Table 21a. Model Summary: Duration since HIV diagnosis and ART start, Latest CD4 count and Perceived general health status to predict HIV positive women pregnancy intention, Assela referral hospital, 2010.***

| Model | R | R square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | 0.189 | 0.036 | 0.021 | 0.99825 |

***Table 21b. ANOVA: Duration since HIV diagnosis and ART start, Latest CD4 count and Perceived general health status to predict HIV positive women pregnancy intention, Assela referral hospital, 2010.***

| Model | Sum of squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 9.789 | 4 | 2.449 | | |
| Residual | 264.071 | 265 | 0.996 | 2.458 | .046 |
| Total | 273.869 | 269 | | | |

***Table 21c. Duration since HIV diagnosis and ART start, Latest CD4 count and Perceived general health status to predict HIV positive women pregnancy intention, Assela referral hospital, 2010.***

| Model | Unstandardized coefficients | | standardized coefficients | t | Sig. | 95%confidence interval for B | |
|---|---|---|---|---|---|---|---|
| | B | Std. Error | Beta | | | Lower bound | Upper bound |
| Constant | 2.739 | 0.232 | | 11.819 | 0.000 | 2.283 | 3.196 |
| Latest CD4 cnt. | 0.001 | 0.000 | 0.106 | 1.635 | 0.103 | 0.000 | 0.001 |
| P.Health Status | -.218 | 0.106 | -.126 | -2.059 | 0.040 | -.426 | -.010 |
| Duration HIV dx | -.002 | 0.009 | -.021 | -.176 | 0.861 | -.019 | 0.016 |
| Duration ART | 0.004 | 0.009 | 0.060 | 0.493 | 0.623 | -.013 | 0.022 |

***Table 22a. Model Summary: PMTCT knowledge and History of PMTCT service to predict HIV positive women pregnancy intention, Assela referral hospital, 2010.***

| Model | R | R square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | 0.380 | 0.144 | 0.139 | 0.90026 |

***Table 22b. ANOVA: PMTCT knowledge and History of PMTCT service to predict HIV positive women pregnancy intention, Assela referral hospital, 2010.***

| Model | Sum of squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 46.614 | 2 | 23.307 | | |
| Residual | 276.372 | 341 | 0.810 | 28.757 | 0.000 |
| Total | 322.987 | 343 | | | |

***Table 22c. PMTCT knowledge and History of PMTCT service to predict HIV positive women pregnancy intention, Assela referral hospital, 2010.***

| Model | Unstandardized coefficients | | standardized coefficients | t | Sig. | 95%confidence interval for B | |
|---|---|---|---|---|---|---|---|
| | B | Std. Error | Beta | | | Lower bound | Upper bound |
| Constant | 0.937 | 0.248 | | 3.781 | 0.000 | 0.449 | 1.424 |
| PMTCT Ser. Hx | 0.460 | 0.070 | 0.328 | 6.541 | 0.000 | 0.322 | 0.598 |
| PMTCT Knowl. | 0.179 | 0.043 | 0.208 | 4.148 | 0.000 | 0094 | 0.265 |

***Table 23a. Model Summary: Distal variables to predict HIV positive women pregnancy intention, Assela referral hospital, 2010.***

| Model | R | R square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | 0.493 | 0.244 | 0.217 | 0.89265 |

***Table 23b. ANOVA: Distal variables to predict HIV positive women pregnancy intention, Assela referral hospital, 2010.***

| Model | Sum of squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 66.694 | 9 | 7.410 | | |
| Residual | 207.175 | 260 | 0.797 | 9.300 | 0.000 |
| Total | 273.869 | 269 | | | |

***Table 23c. Distal variables to predict HIV positive women pregnancy intention, Assela referral hospital, 2010.***

| Model | Unstandardized coefficients | | standardized coefficients | t | Sig. | 95%confidence interval for B | |
|---|---|---|---|---|---|---|---|
| | B | Std. Error | Beta | | | Lower bound | Upper bound |
| Constant | 2.023 | 0.532 | | 3.805 | 0.000 | 0.976 | 3.069 |
| Age | -.030 | 0.011 | -0.170 | -2.802 | 0.005 | -0.050 | -0.009 |
| Marital status | -.015 | 0.062 | -0.015 | -0.249 | 0.803 | -0.137 | 0.106 |
| Have Child | 0.347 | 0.247 | 0.142 | 1.403 | 0.162 | -0.140 | 0.833 |
| Duration ART | 0.003 | 0.008 | 0.037 | 0.332 | 0.740 | -0.-13 | 0.019 |
| Duration HIV dx | 0.000 | 0.008 | 0.002 | 0.019 | 0.985 | -0.015 | 0.016 |
| P. Health Status | -.172 | 0.096 | -0.099 | -1.799 | 0.073 | -0.361 | 0.016 |
| Latest CD4 Cnt. | 0.000 | 0.000 | 0.057 | 0.965 | 0.335 | 0.000 | 0.001 |
| PMTCT Know | 0.143 | 0.052 | 0.159 | 2.726 | 0.007 | 0.040 | 0.246 |
| PMTCT Ser. Hx | 0.316 | 0.139 | 0.218 | 2.278 | 0.024 | 0.043 | 0.590 |

(*Have Child- whether have a child or not; Duration ART- Duration since ART started; Duration HIV dx- Duration since HIV diagnosis; P.Health status- Perceived current general health status; Latest CD4 Cnt- Latest CD4 count; PMTCT Know- PMTCT Knowledge; PMTCT Ser. Hx- History of exposure to PMTCT Service*)

DECLARATION

I, the undersigned, declare that this thesis is my original work, has not been presented for a degree in this or any other university and that all sources of materials used for the thesis have been fully acknowledged.

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