Addis Ababa University
Faculty of Medicine
Department of Community Health

Demand for family planning among women Voluntary Counseling and Testing clients: The need for Integration, Dessie town, Northeast Ethiopia

By

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July, 2007

Addis Ababa, Ethiopia

Addis Ababa University
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Dedication

To all Ethiopian women who lost their lives and are affected because of reproductive ill health.

Acronyms

AAU	Addis Ababa University
AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal Care
AOR	Adjusted Odds Ratio
ART	Anti Retroviral Therapy
COR	Crude Odds Ratio
CPR	Contraceptive Prevalence Rate
CRDA	Christian Relief and Development Association
CSWs	Commercial Sex Workers
EDHS	Ethiopian Demographic and Health Survey
EJHD	Ethiopian Journal of Health Development
FDRE	Federal Democratic Republic of Ethiopia
FHI	Family Health International
FM	Faculty of Medicine
FP	Family planning
HAPCO	HIV/AIDS Prevention and Control Office
HIV	Human Immuno-deficiency virus
ICPD	International Conference on Population and Development
IUCD	Intra Uterine Contraceptive Device
MCH	Maternlal and Child Health
MoH	Ministry of Health
MTCT	Mother –To – Child Transmission
NGOs	Non Governmental Organizations
OSSA	Organization of Social Services for AIDS
PLWHA	People Living With HIV/AIDS
PMTCT	Prevention of Mother -To -Child Transmission
RH	Reproductive health
SNNPR	Southern Nations Nationalities Peoples Region
STIs	Sexually Transmitted Infections
TFR	Total Fertility Rate
UNAIDS	United Nations Joint Program on HIV/AIDS
UNFPA	United Nations Population Fund
UNGASS	United Nations General Assembly Special Session
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VCT	Voluntary Counseling and Testing
WHO	World Health Organization
X^2	Chi- square tests

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Abstract

Background - Integrating family planning services with HIV/AIDS services such as Voluntary Counseling and testing (VCT) is imperative in preventing unintended pregnancy, reducing number of AIDS orphans, preventing vertical transmission of HIV and sexually transmitted infections including HIV/AIDS. Information lacks on the family planning needs of VCT clients. It is essential to determine the extent of demand and provision of family planning in VCT settings as well as the potential opportunities & challenges of integrating family planning services with VCT.

Objective - To assess the demand for family planning among VCT clients and the integration of family planning services with voluntary counseling and testing services.

Methods- A facility based cross-sectional study was carried out in VCT centers in Dessie town, Northeast Ethiopia between December, 2006 and February, 2007. The study participants were female VCT clients who are in reproductive age group. The study employed both quantitative and qualitative study methods. The data were entered, cleaned and analyzed using SPSS statistical soft ware version 11.

Result- Of the 422 female VCT clients participated in the study, 11.8% were counseled for family planning. VCT centers owned by NGOs were more likely to counsel their clients on family planning than governmental VCT centers: [AOR (95%CI) = 7.28 (2.07, 25.58)]. Great proportion of VCT clients (90%) want either to limit or to postpone child bearing. Among 166 sexually active clients 35% were current users of family planning methods and out of 384 non users of family planning methods 60% intended to use in the future. The unmet need for family planning among sexually active clients was 55%. The sero-status of the client was not significantly associated with the extent of family planning counseling and the level of unmet family planning need. Multivariate analysis showed that those who were in the age groups 15-19 and 20-24 years were more likely to have high unmet need for family planning as compared to those who were beyond 24 years: [AOR (95%CI) =6.46 [1.65, 25.33], and 5.46 (1.64, 18.20)], respectively. Ninety eight percent of clients and majority of counselors supported provision of family planning services at VCT centers. Though the existing policies, strategies and guidelines seem to be supportive to integration of family planning services with VCT services, the documents do not adequately and explicitly mentioned on what and how to implement.

Recommendations- Provision of family planning services at VCT centers, as well as reviewing of the existing guidelines and developing of the new one is essential.

1. Introduction

The Human Immuno-deficiency virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS) epidemic is continuing to expand, touching all corners of the world and impacting on the lives of countless individuals and communities. It is responsible for over 20 million deaths worldwide, for tens of millions of orphaned children, and today 40 million people are living with HIV [1]. The United Nations Joint program on HIV/AIDS (UNAIDS) reported that in sub-Saharan Africa, for every ten adult men living with HIV, there are about 14 adult women who are infected with the virus. Across all age groups, 59% of people living with HIV in sub-Saharan Africa in 2006 were women. Sub-Saharan Africa with about 10 % of the world population hosts more than 63% of peoples with HIV/AIDS [2]. In Ethiopia, the overall prevalence of HIV infection is high with national estimated prevalence of 3.5 % and 55.3 % of the people living with HIV/AIDS in 2005 were women of childbearing age. There were 744,100 AIDS orphans and 30,300 new HIV positive births in 2005 [3].

Voluntary Counseling and Testing (VCT) for HIV is an entry point to prevention services, HIV-related care, and provides opportunities for people to reduce their risk of acquiring or transmitting HIV. The UNAIDS 2006 report revealed that the number of VCT clients quadrupled from roughly 4 million persons in 2001 to 16.5 million in 2005 globally. According to reports in Ethiopia, the HIV prevalence rate among Women attending VCT services ranges from 15.7% nationally [3] to 31.5% in Kasanchis Health center in Addis Ababa [4] which is by far higher than the adult prevalence rate (3.5%) in 2005. Voluntary Counseling and testing clients are usually sexually active, in reproductive age and disproportionately affected by HIV [4, 5].

Despite gains in access to contraception, over 120 million women still have an unmet need for family planning resulting in 80 million unintended pregnancies, some 45 million of which are terminated and 19 million under unsafe conditions [6].

In Ethiopia, the use of FP services is among the lowest in the world. The contraceptive prevalence rate (CPR) in 2005 is 15 percent [7] and more than 3.2 million married women had an unmet need for FP services in 2000 [8]. Family planning is important instrument in preventing HIV in women and children. Family planning programmes that emphasize the promotion of condoms for dual protection (either alone or with another contraceptive method) in countries affected by HIV protect women from becoming infected and this can also avert HIV infection in infants by enabling interested women to prevent or delay pregnancies. Family planning provides essential benefits by saving lives and enhancing the health status of women and their families there by combating maternal mortality, and significantly increases child survival [9]. In addition, evidences showed that family planning has a great contribution in reduction of abortion by decreasing the number of unplanned pregnancies, thus the number of unwanted pregnancies, and the demand for abortion [10].

However, except some attempts to integrate family planning with HIV/AIDS services, programs continue to be vertical and treat them as different areas of intervention. Furthermore, international attention to the HIV/AIDS pandemic has overshadowed attention to family planning, particularly in Sub Saharan Africa where the HIV/AIDS epidemic is most acute [11, 12]. The Ethiopian National HIV/AIDS policy highlighted the reproductive health rights of women to have access to information and services regarding HIV/AIDS and FP that help them to make reproductive choices and decisions [13]. However, at the Ministry level the HIV/AIDS prevention and control program is under Communicable Disease Control Department while FP is under Family Health Department and the two reproductive health problems are not well

integrated at the Ministerial level [14]. A recent study in southern Ethiopia done by Awoke revealed that FP clients were poorly informed about VCT and the VCT counselors neither counseled nor referred their clients for family planning services [15].

Given that most clients of VCT services are youth, sexually active, of reproductive age and the most affected by HIV [4,5], strengthening integration of family planning with currently expanding VCT programs allows providers to holistically address clients' dual risks of HIV infection and unintended pregnancy. It also provides an opportunity to reach clients who might not utilize usual Maternal and child Health (MCH) or FP services, such as youth, with critical family planning information. Furthermore, unlike prevention of mother-to-child transmission (PMTCT) programs, which are implemented primarily in antenatal care clinics, VCT services provide an additional opportunity to couples and reach women with family planning services before getting pregnant [16]. Promoting family planning services to VCT clients contributes a lot to the achievement of the millennium development goals such as poverty reduction, women empowerment, reducing child and maternal mortality and HIV/AIDS epidemic.

Despite the potential benefits of integrating family planning with VCT services and recent expansion of VCT centers in Ethiopia, information lacks to describe the extent of current demand for and provision of family planning in VCT settings. Possible opportunities facilitating and obstacles hindering effective integration of family planning into VCT programs has to be identified. This study was intended to address these gaps and better understand the potential contribution of integrating family planning services with VCT services in addressing unmet family planning need among women VCT clients.

2. Literature Review

2.1 Fertility and family planning status in Ethiopia

Ethiopia is one of the countries with an estimated population of 77.2 million, the 2nd most populous country next to Nigeria in the continent [17] and the country's population is young with 43% are under 15 years [3]. Ethiopia's National Health Policy gives high priority to the democratization and decentralization of the health service system and emphasizes family planning (FP) services for the optimal health of the mother, child, and family [18]. The Population Policy also emphasizes the expansion of FP through clinical and community-based services .It set objectives to reduce TFR from 7.7 to 4.0 and increase CPR from 4% to 44% by the year 2015 [19].

However, the use of FP services in Ethiopia is among the lowest in the world. According to the Ethiopian Demographic and health survey (EDHS), the contraceptive prevalence rate (CPR) in 2005 was 15 percent. The total fertility rate was 5.4 (2.4 urban and 6.0 rural). The mean ideal number of children for all women were 4.5(3.4 urban and 4.7 rural). There has been a decline of total fertility from 6.4 in 1990 to 5.4 in 2005, a one- child reduction decline in the past 15 years. Seventy eight percent of Ethiopian currently married women want to either stop or postpone childbearing. The unmet family planning need among married women in reproductive age group in the same year was 34% (7). Analysis of EDHS 2000 showed that more than 3.2 million currently married women had an unmet need for FP services in 2000 [8]. According to a study done by Pathfinder international in 2004,current use of contraceptive methods in Amhara region was 20 % and among women currently pregnant over 40% were unwanted or mistimed [20].

A study done in Addis Ababa on adolescents showed that 35% of adolescents aged 15-19 were sexually active, more than 52% of sexually active adolescents had ever been pregnant and among which more than 57 % of them end up with abortion

[21].In line with this great majority of adolescents 98.8% who have ever used contraceptives faced various barriers to use contraceptives [22]. Evidence also showed that Ethiopian urban youth practice risky sexual behavior with low utilization of contraceptive methods [23]. In Ethiopia, clients of the traditional MCH/FP services facilities are usually women who are in union but youth and women living with HIV/AIDS are not using the services [24].

2.2 Status of HIV/AIDS epidemic in Ethiopia

The HIV/AIDS situation in Ethiopia evolved from two reported AIDS cases in 1986. According to the report of MOH, Ethiopia is one of the hardest hit countries by HIV/AIDS epidemic. The country, because of size of the population, hosts large number of people living with the virus with an estimated 1.3 million people living with HIV/AIDS (55% are women) and a national prevalence rate of 3.5%. The major mode of HIV transmission is heterosexual which accounts for 87% of infections. Another 10% of infections occur due to mother to child transmission. The HIV prevalence is higher among women (4.0%) than men (3.0%) [3].Female HIV prevalence was persistently higher from the age 15 years up to 44 years in 2003 [25].

There were about 30,300 HIV positive births, and 744,100 orphaned children due to AIDS in 2005. The National HIV prevalence rate among VCT clients was 11.6% in males and 15.7% in females in the same year [3]. According to a study done by Antenane et.al in Kazanchis Health center in Addis Ababa ,54% of VCT clients were females,88.6% of them had ever sex in the past, and 31.5% female VCT clients (16.2% for males) were HIV positive [4].

2.3 Voluntary Counseling and Testing Services in Ethiopia

In Ethiopia, HIV counseling service began in the late 1980s. In the early 1990s several national level training programs were conducted by the Ministry of Health (MOH), Christian Relief and Development Association (CRDA) and Organization of Social Services for AIDS (OSSA) for nurses and social workers from all regional hospitals and in Addis Ababa. The MOH in collaboration with International Partners has produced national guidelines on VCT [26]. As part of its HIV/AIDS program the Government of Ethiopia is rapidly expanding VCT clinics. According to MOH at the end of 1998 E.C (2005/06), there were 768 (50.7 % total) hospitals and health centers that were providing VCT. In the same year, 564,351 (50.2% were females) clients had undergone VCT nation wide with 13.7% HIV prevalence rate (15.7% for females) (27).

A recent survey done in Addis Ababa on VCT clients showed that 70% of the clients reported were never married and 75% are between the age group of 15 to 29. It also showed that 74.2 % of them were sexually active for the last one year and among them 47.7 % never used condom [5].

2.4 Family planning in Prevention of HIV/AIDS

HIV infection among children is an increasingly serious public health problem, threatening previous gains in reducing child mortality. In 2002, 800,000 children under the age of 15 contracted HIV, and most of them live in Sub-Saharan Africa. Mother-to-child transmission (MTCT) causes more than 90% of all HIV infections in children under 15 years. Preventing mother-to-child-transmission of HIV has become an essential element of the worldwide HIV/AIDS control strategy. The Declaration of Commitment adopted at the Unite Nations General Assembly Special Session on AIDS (UNGASS) set a goal of reducing the proportion of infants infected with HIV by 20% by 2005, and by 50% by 2010 [28].

The severity of the problem of mother-to-child transmission (MTCT) of HIV in Sub-Saharan Africa is due to high rates of HIV infection in women of reproductive age, the large total population of women of reproductive age, high birth rates, and the lack of effective MTCT prevention interventions [29].

World health Organization and UNFPA stated that "contraception –the Best kept Secret in HIV Prevention". Family planning is a potent instrument in preventing HIV in women and children. Family planning programmes that emphasize the promotion of condoms for dual protection (either alone or with another contraceptive method) in countries affected by HIV protect women from becoming infected in the first place. Such programmes should be expanded and intensified to meet a large unmet need for family planning among all women, whether they know their HIV status or not. Infected women who know their status are in particular need of services that can help them to make informed reproductive decisions and provide them with contraception options, if and when desired. This, in turn, can be expected to avert HIV infection in infants by enabling interested women to prevent or delay pregnancies. Family planning provides essential benefits by saving lives and enhancing the health status of women and their families. Enabling women to time and space births lead to important improvements in their health, combats maternal mortality, and significantly increases child survival [9].

Therefore, preventing unintended pregnancy among HIV-positive women through family planning counseling and services is one of the four cornerstones of a comprehensive program for prevention of mother-to-child HIV transmission (PMTCT). Reducing unintended pregnancies among HIV-positive women through family planning reduces the number of children potentially orphaned when parents die of AIDS-related illnesses. It also reduces HIV-positive women's vulnerability to morbidity and mortality related to pregnancy and lactation. It avoids unintended pregnancy to whom test negative (but are sexually active, of reproductive age, and at risk of infection). In

addition, family planning for both HIV-positive and -negative women safeguards their health by enabling them to space births. In all cases, FP is critical to the PMTCT of HIV and to reduce the number of AIDS orphans [30].

The cost-effectiveness analysis demonstrated that any level of expenditure for provision of family planning as part of PMTCT would be more effective than providing Nevirapine (NVP) alone in reducing mother-to-child transmission [31].

The MOH estimated that about 134,586 children (aged 0-14) were living with HIV/AIDS; 20,900 AIDS related deaths occurred to children (aged 0 -14) and 744,100 AIDS orphans in Ethiopia in 2005 [3].

2.5 Integration of Family Planning with VCT

World attention to the HIV/AIDS pandemic and to high maternal and child mortality rates have moved donor focus away from family planning and reproductive health programs. As a result, funding for family planning programs has stagnated [32]. One of the main challenges in addressing sexual and RH services is dilution of global FP funding streams and lack of integration in HIV/AIDS funding streams. While HIV/AIDS programs accounted for just 9% of development assistance population funds in 1995, they in 2005 account for 43%. During this same period, FP programs, which accounted for 55% of population funds a decade ago, in 2005 received just 23% of those resources [33].

Family planning counseling and method provision should be made available to clients who access HIV/AIDS services, whether they are HIV-positive or HIV-negative. This comprehensive approach to reproductive health will assist clients in avoiding both sexually transmitted infections and unwanted pregnancies. Integrated services are

thought to expand access to and coverage of critical services and to improve their efficiency and cost effectiveness by reducing duplication of service delivery function and delivering more services per client contact [31,34].

However, despite the considerable literature on the subject, there is no consensus on what it mean to have integrated services, which services should be integrated or whether integration precludes continuation of stand - alone services [35].Discussion often refers to " one –stop shopping " supported by multifunction workers. But service integration might "involves the linkages of several provider functions at the service delivery point and would require modification of worker roles, allocation of time and referral requirements [36]. UNFPA and IPPF also define service integration as, "incorporating aspects of two or more types of services as a single, coordinated and combined service shaped by local context, existing referral networks, client and community needs, as well as an organization's mission and capacity" [37].

Researchers pointed out that integrating family planning with VCT services as it has Potential benefits it could have challenges hindering the effective integration. The benefits include Expanding access to FP service for all VCT clients, including men and youth. It also has opportunity Increase knowledge of dual protection strategies to prevent both unintended pregnancy and HIV infection contributing to avert HIV-infected births among HIV-infected women. The challenges are family planning service at VCT set up needs providers' skills, contraceptive supplies and unique contraceptive considerations for HIV-infected women [38].

The challenge of Integrating family planning and VCT services under the public health care system in Uganda was, family planning and VCT services were vertical and non integrated—HIV/AIDS under HIV/AIDS Control Program (within the Communicable Diseases unit) while family planning was within Reproductive Health Division [39].

Operations research in Kenya demonstrated high interest among clients and providers in the provision of contraceptives during VCT. All in-charges and VCT counselors agreed that it was a good idea to provide information and education on contraception to VCT clients. When contraceptives were offered during VCT, over a quarter of the VCT clients were interested in avoiding pregnancy but were not currently using a family planning method [40]. However, adding VCT to family planning services where HIV prevalence is low and especially when family planning clients are not those at highest risk for HIV may not be a productive investment of resources for VCT [38].

According to another study conducted in Kenya, all health providers agreed that family planning and HIV/AIDS integration is long overdue and such integrated services could enhance clients' privacy and ease of using services and save time. However, they found a need to train providers on integrated FP and HIV/AIDS service approach and dealing with the increased work load during integration [41].

An intervention study in Zimbabwe on the integration of FP activities into HIV/AIDS programs (VCT, PMTCT) showed that new FP users increased by almost 4% each month and represented 68% of all FP users among women tested in the VCT centers and the use of dual protection methods among women tested HIV positive was 27% compared to 3% for women tested HIV negative [42]. In Haiti, integrating family planning into VCT services resulted in increased use of contraceptives; 19 percent of VCT clients became new users of contraceptives [43]. In Uganda, integrating family planning into VCT services has resulted in increased contraceptive use among VCT clients. Condom use for risk reduction increased dramatically among HIV-positive clients from 10 percent before receiving a positive HIV test result to 89 percent with steady partners and 100 percent with non steady partners six months after receiving test results [44].

The USAID supported study in Kenya revealed that most (89 percent) of VCT clients approved of providing family planning services along with VCT, over 40 percent of sexually active VCT clients reported that they either did not use any contraceptive methods, referrals for family planning services were very low (10%), and clients were less informed about effective pregnancy prevention methods [45].

In Ethiopia, the National HIV/AIDS policy recognized the RH needs of women to have access to information and services regarding HIV/AIDS and FP that help them to make reproductive choices and decisions [13]. Furthermore, the national VCT program aimed to provide FP information and referrals for women of child bearing age who are infected of at risk of HIV infection [26].

3. Objectives

3.1 General objective

To assess the demand for family planning among VCT clients and the integration of family planning services with voluntary counseling and testing services in Dessie town.

3.2 Specific objectives

1. To determine the family planning need among clients of VCT centers.
2. To assess family planning counseling & contraceptive provision at VCT centers.
3. To identify factors that promote or hinder integration of family planning services with VCT services.

4. Methods and Materials

4.1 Study Design

The study was a facility based cross-sectional study which employed both quantitative and qualitative study methods.

4.2 Study Area

The study area was Dessie town which is located in South Wollo zone of Amhara Regional State with 401 KMs away from Addis Ababa to the northeastern part of the country. According to statistical projections for 2006/7, the town population was 201,091 with sex distribution of 53.7% female inhabitants [46]. There were six institutions which provide services related to HIV and voluntary counseling and testing supported by the Amhara region HAPCO during the time of the study. The facilities are Dessie Hospital and Dessie Health Center which are governmental institutions; FGAE clinic, FGAE Youth Center, and OSSA (NGO-based), and Ethio -general Hospital which is a private for profit health institution. The reason for choosing Dessie for study area were firstly, the town is among the big towns in Amhara region and one of the high risk corridor for HIV as the town is on the main way to the northern part of the country. Secondly, the town has high private involvement in the health sector where the two private hospitals in Amhara region found in Dessie. Thirdly, this study could be a bench mark further RH/FP and HIV/AIDS integration studies in the town by the investigator as the town is more accessible for research.

4.3 Source Population

All women in the reproductive age group in Dessie town who are potential clients of VCT were the source population.

4.4 Study population

The study populations were women of reproductive age who are attending voluntary counseling and testing services in Dessie town VCT centers during the study period, December 2006 to February 2007. The study populations were taken from all VCT centers in the town including the public, NGO-based and private for profit health facilities.

4.5 Sample size

A single population proportion formula, [$n = (Z\ a/_2)^2\ p\ (1\text{-}p)\ /\ d^2$], was used to estimate the sample size of clients to be interviewed. Due to lack of previous studies showing the proportion of women being counseled for family planning services at VCT centers, the following assumptions have been made: proportion of VCT clients to be counseled for FP as 50% (p = 0.5), level of significance to be 5% (α = 0.05), Z $a/_2$ = 1.96 and absolute precision or margin of error to be 5% (d = 0.05). Computing with the above formula gives a total sample size of 384. Considering a 10% non-response rate would finally make the sample size 422.

4.6 Sampling procedures

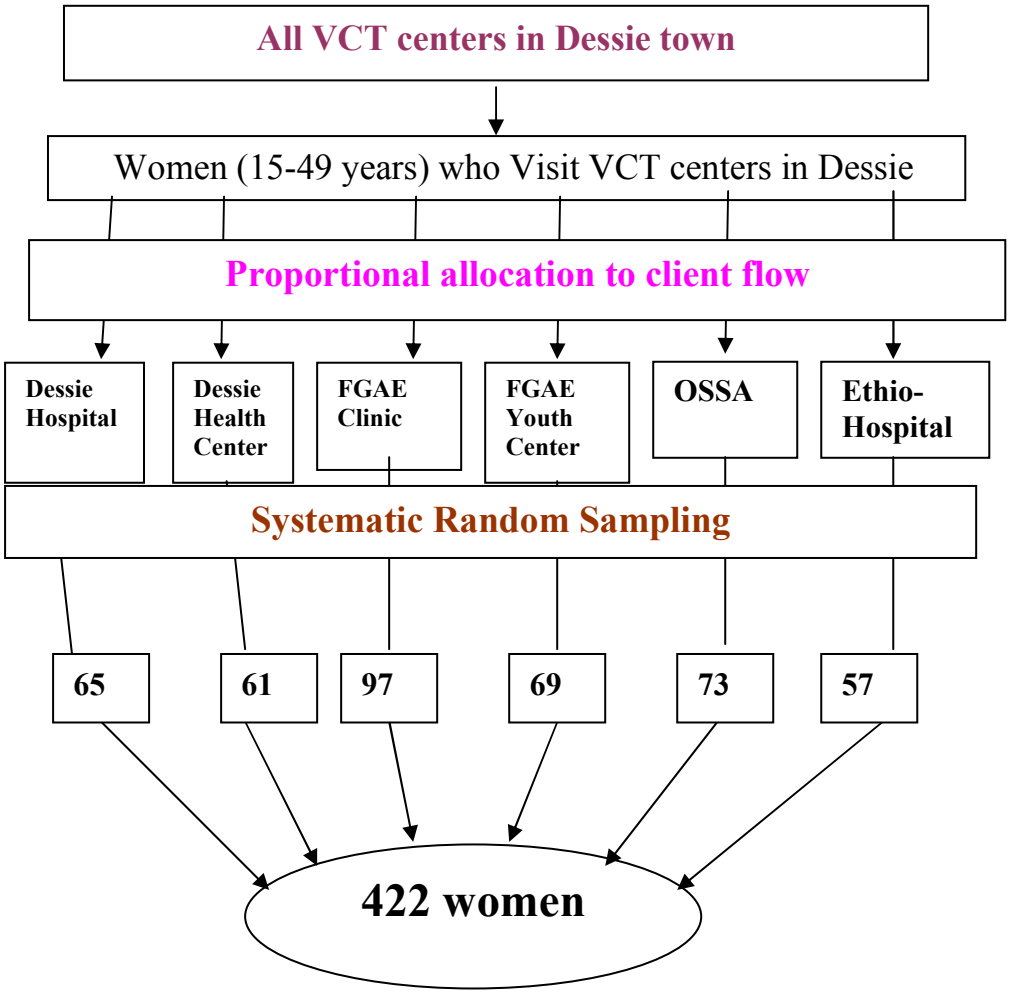
4.6.1 Quantitative study

Women in the reproductive age group who were attending the VCT centers in Dessie town during the study period (from December, 2006 to February 2007) were included. The calculated sample size was used to recruit study subjects from the selected VCT centers proportional to the center's client size.

To allocate the study subjects in the VCT centers proportionally, first the average numbers of clients who visit the VCT centers daily during data collection period was estimated based on the previous daily client flow of the units which was obtained by referring client registration book/ record for a month prior to data collection. Based on

the information obtained from each VCT centers, systematic random sampling was employed to identify study participants from each VCT centers there by every 3rd women VCT client was interviewed during the data collection period. The systematic random sampling was used to improve the representativeness of the study population to all women VCT users in Dessie town.

Figure1. Schematic presentation of the sampling procedure



4.6.2 Qualitative study

In depth interview was conducted among eight VCT counselors and five VCT center or HIV/AIDS program managers or people in charge. VCT centers were observed with checklist for the availability of contraceptives, equipments and materials for family planning services. The National HIV/AIDS policy (developed by the Federal

Government), and guidelines and strategies on VCT, reproductive health and family planning which have been developed by the Ethiopian Ministry of Health were reviewed.

4.7 Data collection instrument

A structured questionnaire was used for the quantitative part of this study. It was prepared in English and translated to Amharic and then translated back in to English to check for consistency. The issues included in the questionnaire were socio-demographic characteristics, discussions on family planning with counselors, contraceptive use and intensions, child desire information and sexual practices. In addition, open ended semi-structured interview guide and observation checklists were used for the qualitative study i.e. in depth interview and observation of VCT centers, respectively. The main issues that were addressed in the in-depth interviews were professional training on family planning, acceptability, feasibility, and readiness of VCT providers and managers for integrating family planning services in to VCT settings. Furthermore, National HIV/AIDS Policy, the VCT guideline, National RH Strategy, National Adolescent and Youth RH strategy and the Third Health Sector Development Programme were reviewed for the content of issues of family planning integration in VCT settings.

4.8 Data collection Procedures

4.8.1 Quantitative study

The data were collected between end of December, 2006 and February, 2007. For administering the structured questionnaire, six female data collectors (one for each VCT center) who have completed at least 10th grade and who are working in Home-Based Care and/or youth friendly reproductive health services were recruited. This was because they are familiar with HIV- positive peoples and expected to have better

communication experience about reproductive health issues with peoples living with HIV/AIDS (PLWHA) and youths. One supervisor who has B.Sc degree in public Health was used for supervisory activities along with the principal investigator. Training was given to data collectors and supervisor for two days on the objective, relevance of the study, confidentiality of information, respondent's right, about pre-test, informed consent and techniques of interview. Moreover, role play of the interview was carried out.

The study participants were interviewed after post-test counseling at the exit and after they had learned their status. This was to asses to what extent their family planning needs have been discussed with their VCT providers during both pre and post test sessions. Before starting the interview, the counselors were informed to request the client to participate in the study. When the client was voluntary, the counselor gave his/her own code (that was not known by anybody else) to the client and it was registered on the questionnaire. Finally, after interviewing all the sample population, the questionnaires were collected from the data collectors and were given to the respective counselors so that he/she registers the serostatus of the study participants according to their codes. Then the questionnaires were collected from respective counselors by the principal investigator. Anonymity was strictly maintained because except the counselor, no one knows the serostatus of the clients. In addition, serostatus of the client was registered only by the counselor and the questionnaires were not returned back to the data collectors after the serostatus had been filled out.
To avoid the counselors' bias and contamination of information, the counselors were neither informed about the specific purpose of the study nor exposed to the questionnaires until the data collection process was completed.

1. 8.2 Qualitative study

To compliment the quantitative part and to see the issues from the health providers' and managers' perspectives, qualitative data were generated through in-depth interview. The participants for in-depth interviews were 8 counselors who were working as VCT provider in those VCT centers and 5 local VCT or HIV/AIDS program managers working in that area. All six VCT centers were observed with check list for family planning setup. This was to see the availability of contraceptives, IEC/BCC materials pertaining to family planning in VCT centers and to triangulate information collected from VCT providers. The National working HIV/AIDS and RH documents were also reviewed to see support of FP_VCT integration from the policy environments.

1.9 Data quality control

Data quality assurances were maintained with the undertakings of the following:

1 Questionnaires were translated to Amharic then back to English for consistency by two peoples.

2 Two supervisors (one who had fist degree in Public Health and the principal investigator) supervised the quantitative data collection process. The qualitative data collection was carried out by the principal investigator.

3 A two days training was given for data collectors and supervisor. The issue of confidentiality and privacy were stressed during the training session. Client exit interviews were done in separate rooms or in a place where no one else could have heard the interview.

4 Questionnaires were pre-tested in the same VCT centers two days before the start of the actual data collection and the results were not included in the main study. Based on the pretest, questions were revised, edited, and those found to be unclear or confusing were removed.

5 Data completeness was checked daily by the supervisor and principal

investigator.

6 Ten percent of the data for the client exit interview were re-entered and checked.

4.10 Data entry and analysis

Quantitative data were entered, cleaned and analyzed using SPSS version 11.0 statistical software. Errors related to inconsistency of data were checked and corrected during data cleaning. The univariate analysis such as proportions, percentages, ratios, frequency distributions and appropriate graphic presentations besides measures of central tendency and measures of dispersion were used for describing data. Bivariate analysis of socio-demographic, family planning information, ownership of VCT centers, HIV serostatus, desire for future child bearing and future and current family planning use associated with family planning counseling and services and the demand for Family planning use were included. Then multivariate logistic regression model was employed to control confounding. Variables included in the model were those significantly related or supposed to be significantly associated at least to one of the two out comes at the bivariate level.

In the qualitative data the entire audio taped interview was transcribed. The transcript then translated to English. The translated transcript was reviewed and examined line-by-line and highlighted using different colors by hand then categorized in to primary codes or themes. Later data were reviewed and combined in to broader concepts. The concepts were open coded in to major themes and analyzed accordingly. Results of policy, strategies and guidelines reviews were also analyzed thematically for content of family planning and concept of integration of family planning in to VCT centers.

4. 11 Ethical Considerations

Recruitment of data collectors were based on their experience on similar studies, their training on reproductive health and HIV/AIDS issues and the recommendation made by the home based care supervising nurses. Training of data collectors was given more attention to the issue of informed consent, privacy and confidentiality. Informed consent was sought from all study participants at all levels.

The offices of Amhara Region South Wollo Health Department, The Zonal HIV/AIDS Prevention and Control Office(HAPCO), the selected VCT centers and Health institutions were communicated with formal letters from the AAU MF/Department of Community Health. The Faculty Research and Publication Committee (FRPC) granted approval for this study.

Efforts were made to maintain the confidentiality of the data. No translator (only those who can speak Amharic were interviewed) or no third person was involved during the client interview. The interviews were done in separate rooms provided by site managers to ensure privacy and confidentiality.

All the study participants were reassured that they would be anonymous. Names or any personal identifiers would not be recorded. Respondents were clearly told about the study and the variety of information needed from them. They were given the chance to ask anything about the study and made free to refuse or stop the interview at any moment they want if that is their choice.

4.12 Study variables

Dependent variables: Family planning counseling, and the demand for family planning

Independent variables: Socio-demographic variables (Socio-demographic characteristics of the clients, sexual and reproductive behaviors, HIV serostatus, ownership of the VCT centers.

4.13 Operational definitions

Integrated Services – A VCT client - counselor interaction that include counseling on family planning, provision of some of contraceptives at VCT center and referral of clients to the family planning clinics for more advanced family planning methods.

Unmet family planning need - refers to proportion of women VCT clients in reproductive age group who are sexually active and want to terminate or postpone child bearing but currently not using any contraception.

Demand for family planning - refers to proportion of sexually active women in reproductive age group who want to limit or postpone childbearing.

Sexually active - those who had penetrative sexual practice during the last one year.

4.15 Dissemination of Results

High priority will be given to the timely dissemination of the study findings to the relevant organizations and stakeholders. The plan of diffusion of the project result includes Presentation at Department of Community Health/AAU, Ethiopian Public Health Association Annual Conference, and Pathfinder International Ethiopia. The report paper will be disseminated to Family Guidance Association of Ethiopia (FGAE), Amhara Region Health Bureau, South Wollo Health Department and other interested governmental and non governmental organizations. Publication in Scientific journal and online dissemination will be considered.

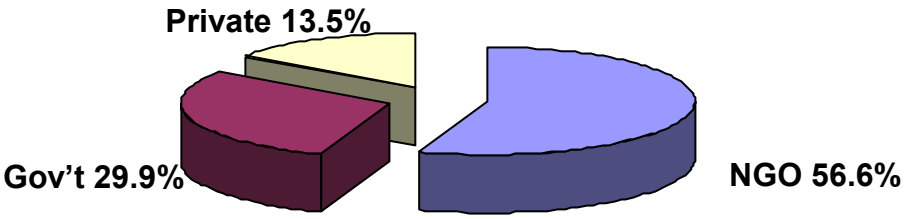
5. Results

5.1 Results of Quantitative study

5.1.1 Socio-demographic characteristics of VCT clients

Four hundred twenty two female VCT clients volunteered for the exit interview. Of the total 422 study participants 67(15.9%) were HIV positive. Among the clients 239 (56.6%), 126 (29.9%) 57 (13.5%) were from NGOs, governmental and private for profit health facilities, respectively. All VCT centers except OSSA were co-located with family planning clinic in the same facility.

Figure 2. Source of study participants by owners of VCT centers, Dessie town, Northeast Ethiopia, 2007



Most of the respondents, 302 (71.6%), reside within the town of Dessie. Majority 162 (38.4%) of the clients were in the age group of 15-19 years, and 75% of the clients were under 25 years .The mean age of participants was 23 years (23.07±6.62). Muslims and the Amhara ethnic groups who were 253 (60.0%) and 414 (98.1%), respectively, were found to be predominant among others. Two hundred sixty seven (63.3%) of the subjects reported to be single and 292 (69.2%) reported that they have no their own income. Among those who had their own income 50% earn less than 305 Birr per month and three forth of them earn below 502 Birr per month (Table 1).

Table1. Socio demographic Characteristics of women attending VCT Centers, Dessie town, Northeast Ethiopia, February, 2007

Characteristics	N= 422	%
Residence of the client		
Dessie town	302	71.6
Out of Dessie town	120	28.4
Age (years)		
15-19	162	38.4
20-24	132	31.3
25-29	60	14.2
30-34	32	7.6
35-39	18	4.3
40-44	9	2.1
45-49	9	2.1
Religion		
Orthodox Christians	163	38.6
Muslims	253	60.0
Other Christians	6	1.4
Education		
Illiterate	84	19.9
Read and write	15	3.6
Primary	91	21.6
Secondary	173	41.0
Post secondary	59	14.0
Ethnicity		
Amhara	414	98.1
Others	8	1.9
Relationship status		
Single	267	63.3
Married/living together	84	19.9
Divorced/widowed	69	16.4
No response	2	0.5
Occupation /employment		
Student	151	35.8
Self/private/ government employed	119	28.2
Unemployed	90	21.3
House wife	62	14.7
Estimated Monthly Income (E. Birr)		
no income	292	69.2
Not known	64	15.2
≤ 365*	32	7.6
365-502	18	4.3
>502	16	3.8

**Ethiopian birr median of income and 502 was the 3rd quartile*

5.1.2 Demand for and use of Family planning

Of the 422 respondents three hundred fifty four (83.9%) of the clients had ever heard about family planning method. Among the FP methods Depo provera 314 (88.7%), Pills278 (78.5%), condom 218 (61.6%) IUCD 57 (17.2%) and Norplant 26 (7.3%) are the commonest that were known by the clients. One hundred twenty six (29.9%) of the clients had ever used family planning methods. Depo provera 71 (56.3 %), pills 41 (32.5%), condom 33 (26.2%), IUCD 3 (2.4%), Norplant 3 (2.4%) and calendar method 3 (2.4%) are the common methods ever been used by the clients. Fifty eight (13.7%) of the total participants (34.9% of sexually active VCT clients) were using family planning methods at the time of survey. Among these methods Injectables 30 (51.7%), condom 14 (24.1%), pills 10 (17.2%), Norplant 3 (5.2%) and IUCD 1 (1.7%) were being used. Of those 58 women who were using contraceptives at the time of survey only 5 (8.6%) were provided family planning methods at that particular VCT center where as the remaining 53 (91.4%) got from somewhere else. Out of 384 current non users of family planning methods 229 (59.6%) of them planned to use in the future. Depo provera was the most preferred method 161 (70.3%)to be used in the future.

Table 2. Distribution of ever heard, Ever used , current use and future desire to use contraceptives by contraceptive types among women VCT clients, Dessie, Northeast Ethiopia, February, 2007.

Methods	Contraceptive ever heard n=354 (%)*	Contraceptive ever used n=126 (%)*	Current use n=58 (%)	Planned to use FP in the future n =229(%)*
OCP	278 (78.5)	41 (32.5)	10 (17.2)	53 (23.1)
Injectables	314 (88.7)	71 (56.3)	30 (51.7)	161 (70.3)
IUD	57 (16.1)	3 (2.4)	1 (1.7)	2 (0.9)
Implants	26 (7.3)	3 (2.4)	3 (5.2)	7 (3.3)
Permanent methods	3 (0.8)	0	0	1 (0.4)
Condom	217 (61.0)	33 (26.2)	14 (24.1)	5 (2.2)
Calendar	0	0	0	5 (2.2)
Others	5 (1.4)	0	0	1 (0.4)

NB. *The sum may exceed **n** because of multiple responses*

The Logistic regression model showed that the common socio demographic characteristics like religion, resident, age, and current marital status were not found to be significantly associated with the current family planning use among sexually active VCT clients.

Table3. Logistic regression output on current use of family Planning among sexually active women VCT clients by selected variables, Dessie, Northeast Ethiopia, February, 2007.

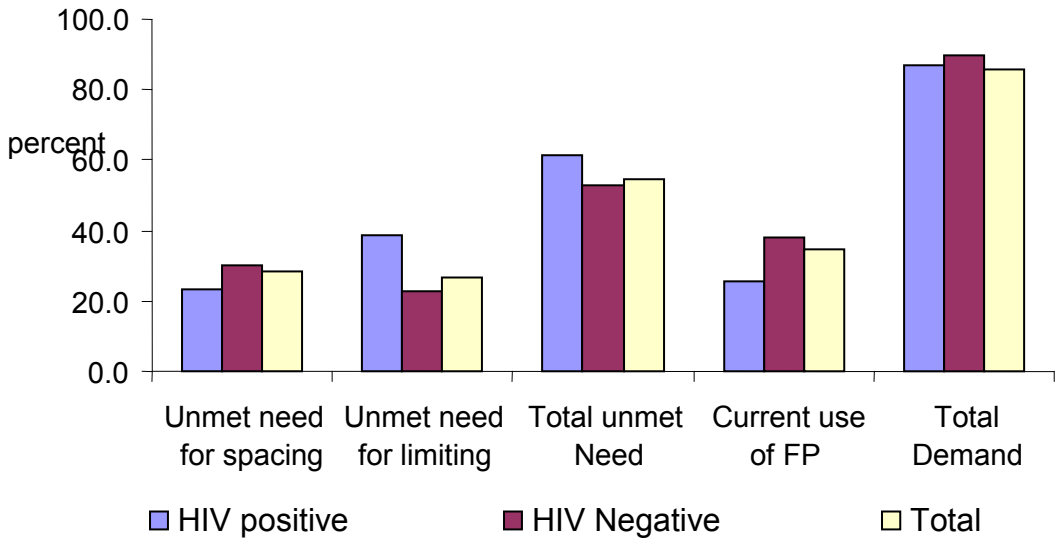
Characteristics	currently using any contraceptive		Crude OR(95%CI)	Adjusted OR(95%CI)
	Yes N (%)	No N (%)		
HIV Status				
Negative	48 (37.8)	79 (62.2)	1.00	1.00
Positive	10 (25.6)	29 (74.4)	0.57 [0.25,1.26]	0.59 [0.23,1.51]
Religion				
All Christians	28 (38.9)	44 (61.1)	1.00	1.00
Muslim	30 (31.9)	64 (68.1)	0.74 [0.39,1.40]	1.37 [0.65,2.91]
Resident				
Dessie town	43 (34.7)	81 (65.3)	1.00	1.00
Out of Dessie	15 (35.7)	27 (64.3)	1.05 [0.50,2.17]	0.85 [0.37,1.97]
Age of clients				
15-19	17 (42.5)	23 (57.5)	2.17 [0.94,5.01]	1.87 [0.73,4.79]
20-24	24 (40.7)	35 (59.3)	2.02 [0.95,4.30]	2.07 [0.69,6.25]
>24	17 (25.4)	50 (74.6)	1.00	1.00
Marital status				
Not currently in union	34 (37.4)	57 (62.6)	1.00	1.00
Currently in union	24 (32.0)	51 (68.0)	0.79 [0.41,1.50]	0.79 [0.33,1.87]
Educational status				
Illiterate or only read/ write	10 (23.3)	33 (76.7)	1.00	1.00
Primary	11 (30.6)	25 (69.4)	1.45 [0.53,3.95]	1.78[0.53,5.94]
Secondary and above	37 (42.5)	50 (57.5)	**2.44 [1.07,5.57] ***	**3.14 [1.06, 9.26]***
Future child desire				
Yes	49 (43.0)	65 (57.0)	**3.77 [1.62,8.77]***	2.28 [0.27,19.57]
No	8 (16.7)	40 (83.3)	1.00	1.00
Number of children desired				
0	11 (19.3)	46 (80.7)	0.30 [0.07,1.30]	0.64 [0.05,8.04]
1-4	43 (43.0)	57 (57.0)	0.94 [0.24,3.72]	0.90 [0.17,4.67]
>4	4 (44.4)	5 (55.6)		1.00
Number of alive children				
0	31 (34.4)	59 (65.6)	1.00	1.00
1-4	25 (37.3)	42 (62.7)	1.13 [0.58,2.19]	**3.66 [1.25,10.71]***
5-9	2 (22.2)	7 (77.8)	0.54 [0.11,2.78]	5.34 [0.63,45.14]

*** *Statistically significant, P<0.05*

Reproductive characteristics like future child desire, number of children desired and sero status of the client were also not associated with current use of family planning methods. However, those being educated to the level of secondary or beyond

were more likely to family planning methods than those who were non educated: [AOR(95 %CI=3.14 (1.06, 9.26)]. Those women who had 1-4 alive children were more likely to use family planning methods as compared to those who have no children: [AOR(95 %CI)= 3.66 (1.25,10.71)] (Table 3)

Figure 3. Unmet need and the demand for family planning among women VCT users in Dessie town, 2007



Those women who had sexual experiences for the last 12 months prior to the survey were grouped as sexually active. Women who were sexually active but did not want to have a child for the next two years (spacers) or those who want no more children (limiters) but not using any contraceptives at the time of survey was regarded as women at risk of unintended pregnancy or women with unmet need. Based on our operational definition, unmet need for family planning among sexually active participants was estimated. Of the 166 sexually active clients 91 (54.8%) have unmet need for Family planning. Forty four (26.5%) of the sexually active clients had unmet need for limiting while 47 (28.3%) of them for spacing. The unmet need with current marital status was analyzed and was found that it was 40 (53.3%) among currently married and 51 (56.0%) among currently unmarried clients. Among 67 HIV positive women VCT clients 24 (61.5%) of them had unmet family planning need while it was 67 (52.8%) among sero-negative clients. Serostatus of the study subjects was not

statistically associated with the level of unmet need. The met need (proportion of women who were using family planning methods at the time of survey out of those who want to space or limit births) for family planning among sexually active client was 52 (31.3%) and there were 6 (3.6%) women who were using family planning method but they want to get pregnant with in the next 2 years. The total demand for family planning (unmet need plus the met need) among women sexually active VCT users was 143 (86.1%) and the family planning demand satisfied (proportion of FP current users out of total demand) was 36.4 %.

Table 4. Association of unmet need for family Planning among sexually active VCT clients by selected variables, Dessie, Northeast Ethiopia, February, 2007.

Characteristics	Have Unmet FP need N=166		Crude OR(95%CI)	Adjusted OR(95%CI)
	Yes N (%)	No N (%)		
HIV Status				
Negative	67 (52.8)	60 (47.2)	1.00	1.00
Positive	24 (61.5)	15 (38.5)	1.43 [0.69,2.98]	0.71 [0.22,2.22]
Religion				
All Christians	37 (51.4)	35 (48.6)		1.00
Muslim	54 (57.4)	40 (42.6)	1.28 [0.69,2.36]	1.38 [0.59,3.22]
Residence				
Dessie town	69(55.6)	55 (44.4)	1.00	
Out of Dessie	22(52.4)	20 (47.6)	0.88 [0.43,1.76]	0.79 [0.31,2.00]
Age of clients				
15-19	22 (55.0)	18 (45.0)	1.05 [0.48,2.31]	**6.46 [1.65,25.33]***
20-24	33 (55.9)	26 (44.1)	1.09 [0.54,2.21]	**5.46 [1.64,18.20]***
>24	36 (53.7)	31 (46.3)	1.00	1.00
Marital status				
Not currently married	51 (56.0)	40 (44.0)	1.00	1.00
Currently married	40 (53.3)	35 (46.7)	0.89 [0.48,1.65]	0.93 [0.32,2.71]
Educational status				
Illiterate or only read/ write	28 (65.1)	15 (34.9)	2.00 [094,4.25]	1.93 [0.71,5.25]
Primary	21 (58.3)	15 (41.7)	1.50 [0.68,3.29]	3.28 [0.94,11.51]
secondary and above	42 (48.3)	45 (51.7)	1.00	1.00
Number of children desired				
0	44 (77.2)	13 (22.8)	**6.77 [1.48,30.88]***	**15.32 [2.20,106.78]***
1-4	44 (44.0)	56 (56.0)	1.57 [0.37,6.64]	1.37 [0.23,8.14]
>4	3 (33.3)	6 (66.7)	1.00	1.00
Number of alive children				
0	51 (56.7)	39 (43.3)	1.00	
1-4	34 (50.7)	33 (49.3)	1.57 [0.37,6.64]	0.40 [0.11,1.40]
5-9	6 (66.7)	3 (33.3)	6.77 [01.48,30.88]	0.09 [0.01,1.38]

* *Statistically significant, P<0.05*

The multivariate analysis on unmet need showed that those women who were in the age group 15-19 years and 20-24 years were more likely to have high unmet family planning need than those beyond 24 years:[AOR (95%CI)= 6.46 (1.65,25.33) and 5.46 (1.64,18.20)], respectively. Those who desired to have no children were more likely to have more unmet need for family planning than those who desired more than four:[AOR (95CI%)= 15.32 (2.20,106.78)] (Table4).

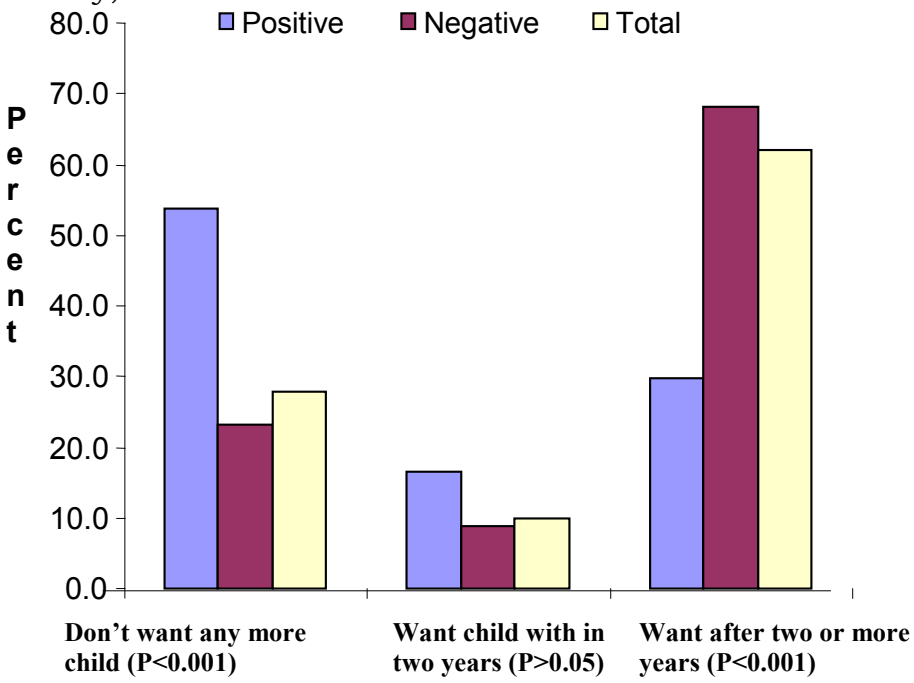
5.1.3. Future child desire

Of the total participants 124 (29.4%) had given live births in their life and 95.2% of them reported that they had alive children at the time of survey. Two hundred ninety eight (70.8%) had no live birth. Four (1%) of VCT clients reported that they were pregnant at the time of the study. All Study participants (those who had alive children and those who had not) were asked about their desire to have a child in the future. Those women who want to have a child in the future were asked how many children she desire in the future and when it should be. Then the number of alive children a woman had and number of children desired in the future as well as the number of years a participant want to get a child were computed.

Three hundred three (71.8%) of the clients want to have children in the future while 119 (28.2%) didn't want. Among those who want child in the future 42 (13.9%) want to have with in the next two years. Among 67 HIV positive women, 35 (53.0%) did not want to have a child and it was 72 (20.3%) for HIV negatives. Of 31 HIV positive mothers who reported to have a child in the future, 11 (35.5%) of them need with in the next two years. It was 33(11.4%) for HIV negative women. The average ideal number of children desired per women was 2.9 and 277 (65.4%) of the clients desired children to be less than 4. Great majority of clients, 380 (90%), didn't want child with in the next two years or not at all. Generally, women who tested positive were more

likely to have low future child desire than HIV negative women: [COR (95%CI) = 0.23 (0.13, 0.41)].

Figure4. Fertility intensions of VCT clients by HIV status, Dessie town, Northeast Ethiopia, February, 2007.



5.1.4. Family Planning counseling and Services at VCT Centers

Of the total study participants, 58 (13.7%) of them were counseled for reproductive health issues such as client's fertility desire, current contraceptive use, condom use for dual purposes (dual protection i.e. protection against unwanted pregnancy and STI/HIV infection). Such reproductive health counseling found to have no statistical significant association with the serostatus of the client.

Only 50 (11.8%) of the clients reported that they had discussed about family planning methods with VCT providers at the VCT centers. It was 5(7.5%) for HIV positives and 45(12.7%) for HIV negatives. Nine (2.1%) of study participants were referred to family planning clinics in either in the same health facility or somewhere else. Five (1.2% of all clients) clients (all of them were HIV negatives) reported that they

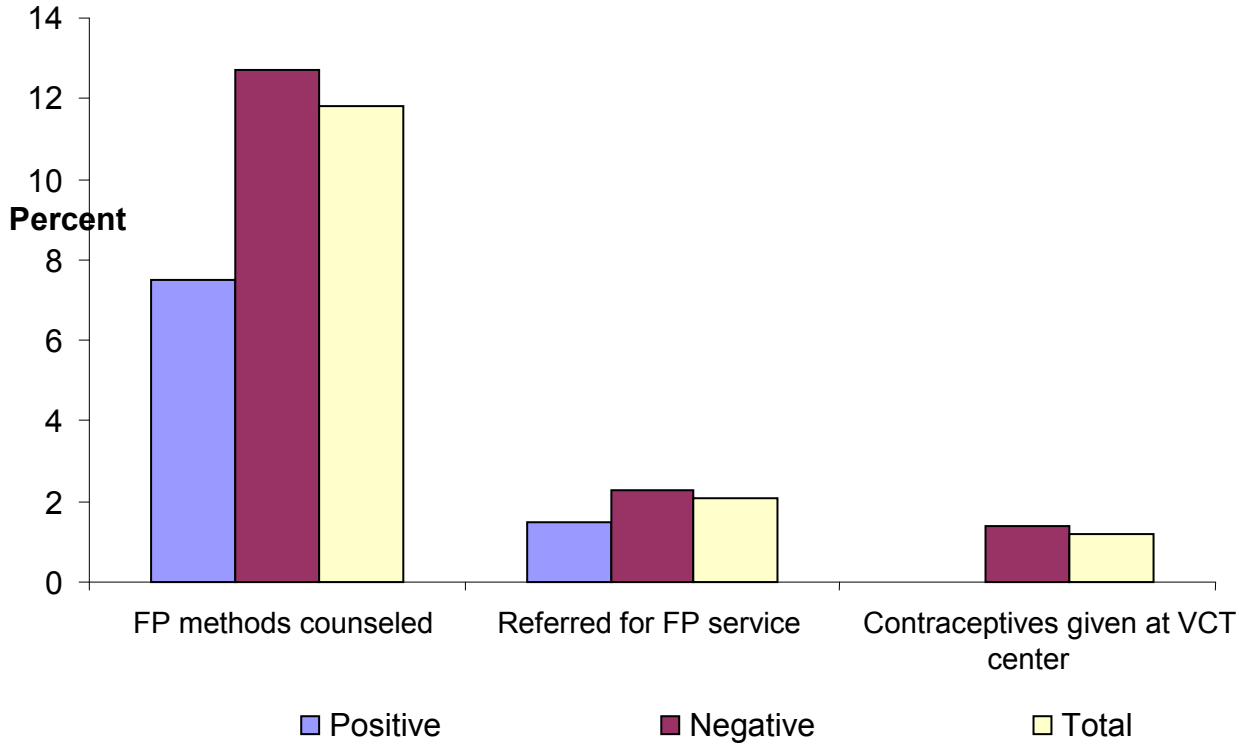
had been provided with contraceptives during VCT counseling. Great majority of the clients 416(98.6%) approved offering family planning services at the VCT settings.

Of those 416 clients who support family planning services at the VCT centers,130 (31.2 %), 153 (36.8%), 132 (31.7%), of them reported that it has to be during pre-test session , post-test session , in both sessions , respectively.

Table 5. Family planning counseling, referral and services given to VCT clients by sexual and reproductive characteristics ,Dessie ,Ethiopia, February, 2007.

	FP methods counseled N(%)	Referred for FP service N(%)	FP services given at VCT center N(%)
Marital status			
Married or cohabited	13 (10.0)	2 (1.7)	1 (0.8)
Single	28 (12.7)	7 (2.5)	4 (1.8)
Divorced/widowed	9 (13.0)	0	0
Child in the future			
Yes with in 2 years	5 (11.9)	1 (2.4)	1 (2.4)
No at all	8 (6.8)	1 (0.8)	2 (1.7)
After 2 or more years	37 (14.1)	7 (2.7)	2 (0.8)
Ever had sex			
Yes	30 (12.8)	5(2.1)	3 (1.3)
No	18 (9.7)	3 (1.6)	2 (1.1)
Missing	2 (100)	1(50)	0
Number of children desired			
0	8 (6.4)	1 (0.8)	2 (1.6)
1-4	39 (14.1)	8 (2.8)	3 (1.1)
>4	3 (15.0)	0	0
Desire FP in the future			
Yes	30 (13.1)	5(2.2)	0
No	8 (6.1)	1(0.8)	3(2.3)
Sexually active for the last 1 year			
Yes	20 (12.8)	3 (1.9)	3 (1.9)
No	10 (13.0)	2 (2.6)	0
VCT counseled with partner			
Yes	26(19.7)	2 (2.4)	2 (1.5)
No	24 (8.3)	7 (1.5)	3 (1.0)

Figure 5. Family planning counseling, referral and service given to Women VCT clients by sero-status, Dessie town, Ethiopia, February, 2007.



Those clients who have attended primary and secondary or more education were more likely to be counseled for family planning than those who had not formal schooling: [AOR (95%CI) = 4.04 (1.29, 12.67)], and [AOR (95% CI)= 4.99 (1.67, 14.98)], respectively. Even though the crude Odds Ratio showed that those who did not desire child for the future were more likely to be counseled for family planning, it was not associated on the logistic regression analysis. The effect of the health facility factor was incorporated in the multivariate logistic regression model and was found that VCT centers owned by non- governmental organizations were more likely to counsel their clients on family planning than governmental health facilities: Adjusted OR (95%CI) =7.28 [2.07,25.58] (Table 7).

Figure 6. Family planning methods counseling, referral and provision to VCT clients by ownership of VCT clients, Dessie, Ethiopia, February, 2007.

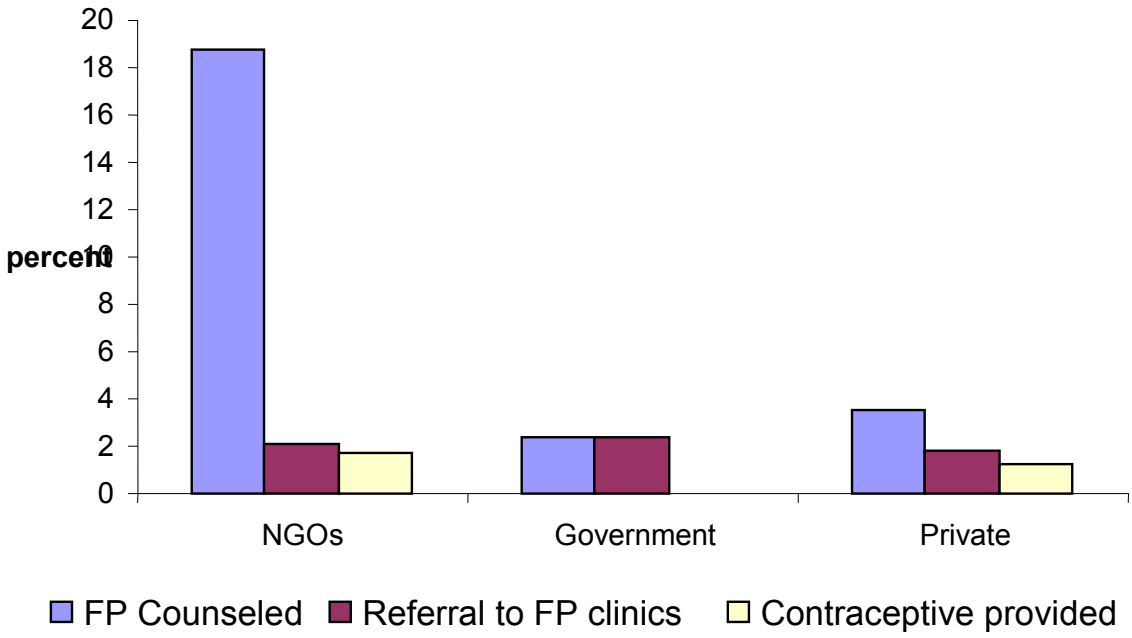


Table 6. Association of family Planning counseling provided by VCT centers by selected variables among Study participants and VCT centers, Dessie, Northeast Ethiopia, February,2007.

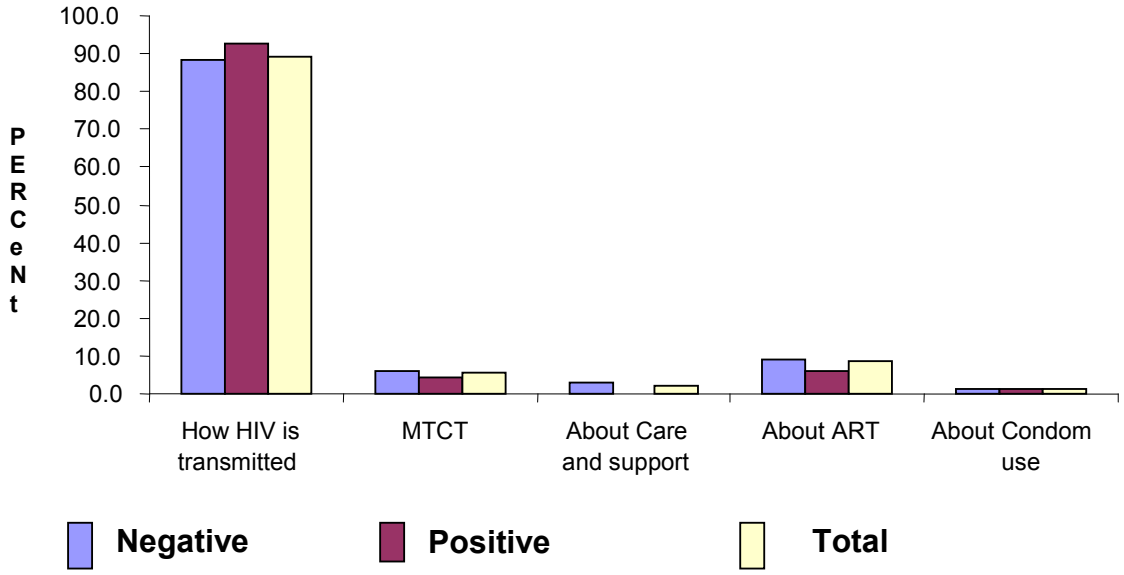
Characteristics	Counseled for FP N =50 (%)	Not counseled for FP N =372(%)	OR(95%CI)	Adjusted OR(95%CI)
HIV Status				
Negative	45 (12.	310 (87.3)	1.00	1.00
Positive	5 (7.5)	62 (92,5)	0.56 [0.21,1.45]	0.90 [0.29,2.75]
Religion				
All Christians	16 (9.5)	153 (90.5)	1.00	1.00
Muslim	34 (13.4)	219 (86.6)	0.67 [0.36,1.26]	1.72 [0 .85,3.48]
Age of clients				
15-19	20 (12.3)	142 (87.7)	1.36 [0.64,2.90]	0.87 [0.34,2.25]
20-24	18 (13.6)	114 (86.4)	1.53 [0.70,3.31]	1.05 [0.42,2.62]
>24	12 (9.4)	116 (90.6)	1.00	1.00
Marital status				
Not currently married	42 (12.4)	296 87.6	1.00	1.00
Currently married	8 (9.5)	76 (90.5)	0.74 [0.33, 1.64]	1.36 [0.68,2.72]
Educational status				
Illiterate or only read/ write	20 (10.5)	170 (89.5)	1.00	1.00
Primary			**2.82[1.03,7.68]***	**4.04 [1.29,12.67]***
Secondary and above	30 (12.9)	202 (87.1)	2.30[0.93,5.72]	**4.99 [1.67,14.98]***
Future child desire				
Yes	42 (13.9)	261 (86.1)	1.00	1.00
No	5 (4.7)	102 (95.3)	**2.32 [1.03,5.21]***	2.44 [0.02,335.34]
Number of children desired				
0	8 (6.4)	117 (93.6)	1.08 [.30,3.85]	0.14 [0.00,19.45
1-4	39 14.1	238 (85.9)	**0.42 [0.19,0.92]***	0.88 [0.22,3.47]
>4	3 (15.0)	17 (85.0)	1.00	1.00
Health facility				
Government	3 (2.4)	123 (97.6)	1.00	1.00
NGO	45 (18.8)	194 (81.2)	**9.51 [2.89,31.25]***	**7.28 [2.07,25.58]***
Private	2 (3.5)	55 (96.5)	1.49 [0.24, 9.17]	1.11[0.17,7.26]

* *Statistically significant, P<0.05*

5.1.5. HIV/AIDS Counseling

Of the total clients participated in the study, 411 (97.4%) reported that they had been counseled for HIV/ AIDS. Three hundred seventy six (91.5%) of them had been counseled about mode of transmission, 24 (5.8%) about mother to child transmission, 10 (2.4%) about care and support, 36(8.8%) about Anti-Retroviral Therapy (ART), and 5 (1.2 %) about condom use. There was no statistically significant difference observed on the extent of HIV counseling between HIV positive and HIV negative clients.

Figure7. HIV counseling to women VCT clients, Dessie town, Northeast Ethiopia, 2007.



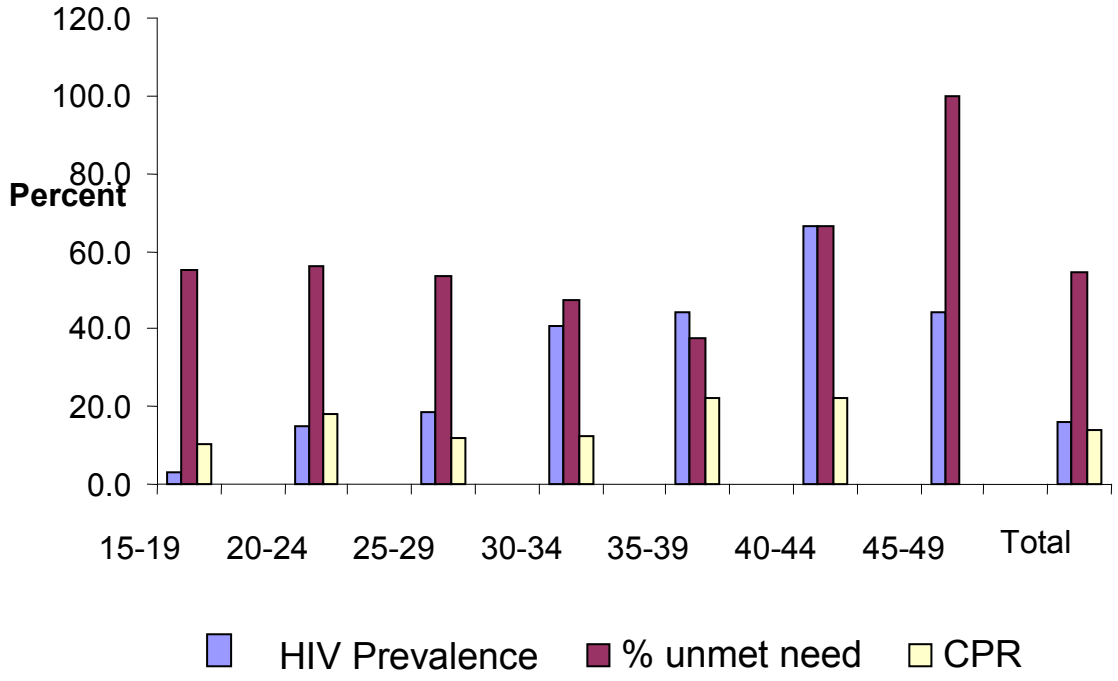
Clients knowledge of Mother to Child transmission (MTCT) of HIV was asked and 376 (89.1%) knew MTCT and 46 (10.9%) didn't. Of the 376 clients 325 (86.4%) of the clients knew at least one ways of mother to child transmission of HIV (pregnancy, child birth or breast feeding), 41 (10.9%) knew two ways of MTCT and only 6 (1.6%) mentioned the three ways of MTCT. Of the 422 respondents 312 (73.9%) reported that there is medication to prevent mother to child transmission of HIV and 186 (44.1%) of the study participants believed that HIV positive mother should not have children. There was no statistically significant difference observed on Knowledge and perception of mother to child transmission of HIV between HIV positive and HIV negative women VCT clients.

5.1.6. Sexual and reproductive behaviors

Two hundred thirty five (55.7%) reported that they ever had sex. The median age of first sexual act was 17 year (range=7-30 years), and 75% of them started sex before or at the age of 18 years. Among 235 clients who ever had sex 166(70.6%) of them reported that they were sexually active for the last one year and of those sexually

experienced women 173(73.6%) of them never used condoms during their sexual exposure.

Figure 8. HIV prevalence, unmet need and contraceptive prevalence rate by age among Female VCT clients, Dessie town, Northeast Ethiopia, February,2007.



Among those 235 respondents who ever had sex, 29 (12.4%) of them ever had multiple sexual partners and only 3(10.3%) of those with multiple partners reported that they always used condom with their partners. Among those who had multiple sexual partners 21(72.4%) of them reported that they never used condoms. Of those who reported ever having sex, thirty four (14.5%) of the client reported that they ever had unwanted pregnancy and 35(15.0%) of the clients reported that they ever had history of abortion. Eleven (4.7%) of the sexually experienced clients reported that they had history of sexually transmitted infections (Table 7).

Table 7. Sexual and reproductive behaviors of women attending VCT centers, Dessie, Ethiopia, February, 2007.

Sexual behaviors	Total N (%)*
Ever had sex N=422	
Yes	235(55.7%)
No	186(44.1%)
Ever had sex for the last 1 year (N=235)	
Yes	166 (70.6%)
No	77(32.8%)
Ever had multiple sexual partner (N=235)	
Yes	29(12.3%)
No	202 (86.4%)
Condom use (N=235)	
Never	173(73.6%)
Some times	30 (12.8%)
Always	30 (12.8%)
Ever had unwanted Pregnancy (N=235)	
Yes	34(14.5%)
No	201(85.5%)
Ever had abortion (N=235)	
Yes	35(15.0%)
No	200(85.1%)
Ever had STIs (N=235)	
Yes	11(4.7%)
No	223(94.9%)

* Sum of percentages may not be 100% because of non response

The multivariate analysis on determinants of HIV positivity showed that those in the age group 20-24 years were more likely to be HIV positive than those in the age group 15-19 years and those educated to the primary level were more likely to be HIV positive than non educated: [AOR (95% CI) =2.60 (1.01, 6.71)] and [AOR (95% CI) = 2.60 (1.01, 6.710)], respectively. Married/ cohabited, divorced and widowed women were more likely to be HIV positive than single women: [AOR= 11.06 (2.80, 43.71)], [AOR(95% CI)= 11.98 (3.18,45.04)],and[AOR(95% CI)=14.50 (3.00,70.79)],respectively (Table 8).

Table 8. Logistic regression model for determinants of HIV infection Dessie, Northeast Ethiopia, February, 2007.

Characteristics	HIV status N= 422		Crude OR(95%CI)	Adjusted OR(95%CI)
	Positive N (%)	Negative N (%)		
Religion				
All Christians	33 (19.5)	136 (80.5)	1.00	1.00
Muslim	34 (13.4)	219 86.6)	0.64 [0.38,1.08]	0.69 [0.33,1.45]
Age of clients				
15-19	5 (3.1)	157 (96.9)	1.00	1.00
20-24	20 (15.2)	112 (84.8)	**5.61 [2.04,15.39]***	**4.02 [1.11,14.58]***
>24	42 (32.8)	86 (67.2)	**15.33 [5.85,40.20]**	3.27 [0.89,12.00]
Marital status				
Single	9 (3.4)	258 (96.6)	1.00	1.00
Married/cohabited	29 (34.5)	55 (65.5)	**15.11 [6.77,33.72]***	**11.06 [2.80,43.71]***
Divorced	18 (42.9)	24 (57.1)	**21.50 [8.72,53.03***	**11.98 [3.18,45.04]***
Widowed	11 (40.7)	16 (59.3)	**19.71 [7.14,54.40]***	**14.50 [3.00,70.79]***
Educational status				
Illiterate or only read/ write	17 (17.2)	82 (82.8)	1.00	1.00
Primary	19 (20.9)	72 (79.1)	1.27 [0.61,2.63]	**2.60 [1.01,6.71]***
Secondary and above	31 (13.4)	201(86.6)	0.74 [0.39,1.42]	1.43 [0.59 ,3.50]
Occupation /Employment				
Non employed	16 (6.6)	225(93.4)	1.00	1.00
House wife	25 (40.3)	37 (59.7)	**9.45 [4.64,19.46] ***	0.88 [0.28,2.75]
Employed	26 (21.8)	93 (78.2)	**3.93 [2.01,7.66]***	0.78 [0.30,2.08]
Ever had multiple sexual partner				
Yes	9 (31.0)	20 (69.0)	1.29 [0.56,3.03]	1.06 [0.38,2.93]
No	52 (25.7)	150(74.3)	1.00	1.00
Condom use				
Always	6 (20.0)	24 (80.0)	1.00	1.00
Some times	11 (36.7)	19 (63.3)	2.32 [0.72,7.41]	0.28 [0.07,1.10]
Never	44 (25.9)	126 (4.1)	1.39 [0.54,3.64]	1.38 [0.31,6.10]
Ever had abortion N=236				
Yes	14 (40.0)	21 (60.0)	2.07 [0.98,4.37]	1.42 [0.57,3.57]
No	49 (24.4)	152 (75.6)	1.00	1.00
Ever had STIs (N=238)				
Yes	7 (63.6)	4 (36.4)	**5.47 [1.54,19.39]***	3.10 [0.73,13.08]
No	55 (24.2)	172 (75.8)	1.00	1.00

***** *Statistically significant, P<0.05.*

5.1.7. Voluntary counseling and testing

Mass media, friends, health workers, and neighbors were reported to be the major sources of information about VCT 154(36.5%), 99(23.5%), 94(22.5%) and 59(14.0%), respectively. The main reason to undergo VCT were to know the status 290(68.7%), for marriage 95(22.5%), and being suspicious to oneself 20(4.7%).Two

hundred ninety (68.7%) were counseled alone and 132(31.3%) were counseled and tested with their partner/husband or fiancée.

5.2 Results of Qualitative study

5.2.1. In-depth Interviews

5.2.1.1. Descriptions of counselors and HIV/AIDS program managers

Eight counselors in six VCT centers and five VCT or HIV/AIDS program managers participated in the in-depth interview. Three of the counselors had worked as VCT counselor for more than 5 years and five of them worked for less than 1 year. Five of the counselors were nurses by profession and the rest three were non health professionals. All, except one, of the program managers were health professionals. The program mangers were responsible to manage the Health facility or the health program. Only one counselor has both basic and refresher training on family planning besides HIV counseling and testing.

5.2.1.2. Family planning counseling in VCT centers

Except Family Guidance Association of Ethiopia (FGAE), counselors of other health institutions did not give family planning counseling and services at the VCT centers. A counselor from NGO stated her feeling as:

"Our job is to test the sreo status of the client. After this we do not discuss about fertility and family planning because it is not our concern".

All of the counselors reported that their VCT clients demand for family planning. Even though the client demand for the family planning services the VCT providers did not address their demand for various reasons such as unavailability of logistics for contraceptives, supportive environment to provide family planning and lack of integration. VCT clients who demand family planning go back their home without being served, appropriately counseled or referred. One counselor expressed her experience on demand for FP by her clients as:

*"Usually when clients, especially the youth, ask for family planning services we tell them to go to the family planning clinic but they do not like to go there because they afraid of being seen by others at the MCH room" (*A counselor from a Public facility).

VCT Counselors in all health facilities agree that it is possible to offer family planning counseling and service at the VCT center. Counselors from Government hospital said that it is possible to give family planning counseling and services in VCT centers but there could be difficulties. Their concern was without providing appropriate working environment, loading the VCT providers with additional work may dilute the quality of VCT services by increasing client waiting time and increasing counselors burn out rate. VCT/HIV/AIDS managers support integrated services. One manager stated his view as:

"It is interesting to integrate the two (FP & HIV) services. HIV services should not be stand alone and they should be integrated with sexual and reproductive services. Provision of VCT alone is not much effective without addressing sexual and reproductive health issues" (A manager from NGO).

HIV/AIDS managers also have similar concerns like counselors with regard to the challenges of integrated services. They recommended the active involvement of the NGO sector in supporting the government to overcome those challenges.

Counselors did not have the same idea on when to counsel VCT clients on family planning. Some of them recommended it during the pretest session and some said hat it should be at post test. One reason given by a VCT provider from the public health center stated that:

"Many clients are asking for family planning services after they know their sero-status. Thus, the post test is a good time"

One midwife nurse counselor from FGAE argued that clients (both HIV positives and negatives) should be counseled for family planning inline with that of HIV counseling and she expressed as:

> *"As HIV/AIDS and pregnancy has similar problems and both involve discussion of the client's sexuality matters, they require similar counseling techniques. It (raising family planning issue) should be at Pre-test, post test and ongoing sessions. It should go equally with HIV counseling".*

All counselors recommended that family planning counseling and services should be given by the VCT counselors. The main reason given by the counselors was, after the clients have been counseled for HIV, they don't want to tell their secrete to somebody else. So they want to have all services by one provider. One VCT counselor from the public hospital stated about integration of family planning and VCT as:

> "*If it is to integrate the two services (FP and VCT), providers at both settings should be trained on both services and both the services should be given to the client in need in the same room by the same provider in both settings. Sending clients here and there is not comfortable. It should be finished at one room".*

5.2.1.3. Facilitating and hindering conditions for Integration

The counselors mentioned different advantages and disadvantages in integrating family planning services in VCT centers. The advantages of integration providers mentioned include: clients meet their need as they want, it avoids missed opportunities, clients could get both needs (VCT and pregnancy prevention) at one point and integration could reduce fear of the youngsters and saves time and energy of the clients. One counselor from the health center expressed the benefit of integration as:

"If you send to other places, they (clients) will not go. It is better to give here as they demand it. They want to use the opportunity".

The disadvantage of integration they mentioned by both counselors and VCT/HIV/AIDS managers include counseling for both services may take more time than counseling for HIV only; integration needs additional registration and adding the two services may increases work load over the providers were some of the possible disadvantages of integration of the two services. The potential opportunities and obstacles in linking Family planning services in VCT settings were asked and the counselors grouped the opportunities as: most VCT clients are youth and students and they do not want to get pregnant and want to use contraceptives and most of clients are sexually active youth and they do not attend the formal FP clinics. In addition both Family planning and VCT need similar counseling techniques. The counselors also stated that HIV tested positive women do not want to be pregnant because of fear of having an orphan and HIV positive child. One HIV/AIDS program manager from the public sector stated that:

"I feel that counselors in public sector are addressing family planning issues especially for HIV positives. There is also a good internal referral linkage with MCH clinics"

Voluntary Counseling and Testing providers and VCT managers were also asked about possible obstacles that hinder to link/integrate family planning with VCT centers and the factors that they feel as obstacles were the need for counselors training on FP integration, provision of contraceptive supplies, increasing the number of health care providers working in the field and consideration of additional incentives to motivate the health workers. One nurse counselor stated his fear on addition of family planning services with VCT services as:

"Giving contraceptive (e.g. Derpo provera) to VCT clients may encourage the youth to practice sex with out condom because the major concern of young Ethiopian woman is unwanted pregnancy rather than HIV infection".

5.2.2. Facility audit for contraceptive logistics

Seven VCT rooms in six VCT centers were checked for the availability of the contraceptives and for the readiness of VCT centers to deliver family planning services. This was done to triangulate the information given by the VCT providers and mangers claiming that they were addressing the family planning need of their clients and also to see what was really available in those centers. Based on the observation of the VCT centers, the only contraceptive available in all VCT center was the male condom. Out of seven counseling rooms in six VCT centers five did not have hormonal contraceptive supplies. None of the VCT centers have injectable contraceptive at the VCT room. oral contraceptive was available in only one VCT center and in this facility the VCT provider reported that injectables were available in the Pharmacy department of the same facility (Table 10)

Table 9. Availability of essential equipments, materials and contraceptives for family planning services at VCT centers, Dessie, Ethiopia February, 2007.

Materials	Present in VCT centers n=7
Basic Equipments	
BP apparatus	**2**
Stethoscope	**2**
Thermometer	**1**
Supplies & Consumable	
Running water in rooms	**2**
Disposable syringes and needles	**3**
Contraceptives	
Male Condom	**7**
Female condom	**0**
Any oral contraceptive	**1**
Injectables	**2**
IUDs	**0**
Norplant	**0**
IEC materials on FP	
Poster	**4**
Flip charts	**2**
Brochure	**1**
Pamphlet	**1**
Demonstrating materials	
Penile model	**5**
Pills	**1**
Male condom	**4**
Female Condom	**0**

5.2.3 Analysis of policies, guidelines, and strategies

This part analyzes how national HIV/AIDS policy and PMTCT and VCT guidelines have addressed family planning in Ethiopia. Here different policies, working guidelines and strategies of Ethiopia were analyzed. The analysis might not be exhaustive enough because the primary objective of the research was not policy analysis. The purpose of this review was to assess facilitating and hindering policy environments for linking or integrating family planning and voluntary counseling and testing services. Thus it focused on matters pertaining to HIV/AIDS specifically to VCT and family planning.

5.2.3.1. The National HIV/AIDS policy

The national HIV/AIDS policy highlights family planning in its introduction to the policy and places reproductive health services within a rights-based context as follows: *The Government of the Federal Democratic Republic of Ethiopia hereby demonstrates its commitment to the prevention and control of HIV/AIDS and has issued this national policy on HIV/AIDS . . . aware of the need for women, including women living with HIV/AIDS, to have access to information and services regarding HIV/AIDS and family planning that help them to make reproductive health choices and decisions.*

Even though the HIV/AIDS policy highlights family planning in the introduction part as a right based context, it does not mention in the main body of the policy such as objectives, general direction and general strategies of the policy.

5.2.3. 2. The National VCT guideline

It is the country's policy that testing and screening should be voluntary and encouraged along with counseling services and VCT facilities should also offer family planning information and services. The national VCT guideline set six objectives and one of the six objectives in HIV counseling and testing were stated as:

> *"To provide family planning information and referrals for women of child bearing age who are infected or at high risk of HIV infection".*

The guideline on VCT for Ante-natal clinic women mentioned family planning content as the following :

> *"Counseling and testing can benefit women who are or who want to become pregnant .Ideally, all women should be advised for and have access to VCT before they become pregnant, so that they can make informed decisions about pregnancy and family planning…Preventing mother- to - child-Transmission (PMTCT) should address the following: counseling about infant feeding options and counseling about available PMTCT including care and support services."*

5. 2. 3. 3. The National HSDP III

In the third national Health Sector Development Programme (HSDP) to be implemented between 2005 and 2008 (HSDP III), the HIV/AIDS prevention and Control Programme except the issues of VCT and PMTCT as part of the priority intervention strategies it did not raise the term 'Family planning'. The HSDP planned

> *'To achieve provision of VCT services in 100% of hospitals & health centers and PMTCT service at 100% of the hospitals and 70% of the health centers, respectively'.*

It designed a strategy to achieve the planned objective by enhancing Behavioral Change Communication; comprehensive management of STIs, and universal precaution; promote condom utilization, VCT, PMTCT, HAART, blood safety and epidemiological surveillance system for the effective prevention and control of HIV/AIDS.

5.2.3.4. The National Reproductive Health Strategy (2005-2015)

This Strategy was issued by Ethiopian MOH in March 2006. The goal of the strategy *is*

"Build on the momentum occasioned by the Millennium Development Goals to garner the multi-sectoral support needed to meet the reproductive and sexual health needs of our culturally diverse population..."

The national strategy identifies six priority areas under RH umbrella as interventions-Socio-cultural determinants of women's reproductive health, fertility and family planning, maternal and newborn health, HIV/AIDS, RH of young people; and reproductive organ cancers. It reaffirmed that most recently HIV/AIDS programs are becoming successful at reaching young people; while traditional FP programs focuses on married women. It set targets to reach CPR to 60%, demand satisfied for FP to 80% by 2015. It stated that by 2015, all ART clients will be counseled and referred for FP

services and all FP clinics will provide VCT services. However, VCT centers are not targeted to provide counseling and referral for family planning services.

5.2.3.5. The National Adolescent and Youth Reproductive health Strategy (2007-2015)

The national strategy acknowledges that the median age of Ethiopian girls is 16 years and unwanted pregnancy is one of the major RH challenges faced by the Adolescents in Ethiopia. The unmet need for family planning is the highest (38%) for young married adolescents15-19 years. To improve access to quality reproductive health and STIs/HIV services, strategies designed include:

1.Building the capacity of health services at all levels to deliver youth friendly services .This include Offering linked and integrated services such as PMTCT, VCT, FP, Nutrition and Immunization with strong referrals.

2. Developing and revising national guidelines and standards

Integrating family planning services in HIV settings is better mentioned in this national strategy .

6. Discussion

This study assessed the demand of female VCT clients for family planning and to what extent this demand had been met at the VCT settings. It has also tried to review the policy environments in addressing this potential demand. All Six VCT centers in the town were included in the study. All, except one, VCT center were 'integrated' VCT centers. Seventeen percent of all clients were from 'the stand alone' or 'free standing' VCT center which means the facility was not co-located with other health services or providing only VCT services.

Majority (84%) of the clients lie in the age group of 15-29 years, and three fourth of the clients were under 25 years. The youthfulness of study population was similar to other studies carried out in Addis Ababa, Oromiya and in FGAE clinics in Ethiopia. Great proportions of the clients were single (63%) which was similar with other studies 70% in Addis Ababa and 57 % in Oromiya Region VCT centers and 65% in all FGAE VCT centers [5, 47, 48]. It shows that VCT centers are becoming successful in reaching the young people as they do not use the formal maternal and Child health programs [24].

Comparisons of this finding with national DHS data could not be appropriate as they are not comparable study populations. However, our finding could be informative for policy makers and program mangers to see the level of reproductive characteristics of women VCT clients as compared to the national figures. The findings on knowledge of family planning among VCT clients were similar with the findings of Ethiopian Demographic and Health Survey (EDHS), 2005. Proportion of women who knew at least one method in Dessie was 84 % and it was 86 % in EDHS [7]. However the mean number of family planning methods mentioned by VCT client was 2.6 methods while it was 3.2 methods in EDHS.

Current use of family planning methods was not significantly associated with socio-demographic and reproductive variables such as age, current marital status, fertility intentions and sero- status of the client. This could be due to high unmet family planning needs in all groups of women. Being educated to the secondary or beyond than non educated, increase more than three times ($P<0.05$) the odds of current family planning method use. This may show that those who were more educated might be in a better position to access the contraceptive needs and education of women to a higher level may be needed to have the desired family planning coverage and fertility level.

The HIV prevalence rate among the study population was 15.9% and it was similar with the national HIV prevalence rate among women VCT clients which was 15.7% [27]. The HIV prevalence in young women was relatively low as compared to their elders and the prevalence rate increased as the age increases up to 44 years. The prevalence increased from 3.1% (15-19 age groups) to 66.7% (40-44 age groups) and it was 44.4 % among 45-49 years age groups. This finding should be interpreted cautionary as the study populations are special groups and those elders usually seek VCT because of suspicious one self, and recommended by the health providers.

Women who were under 30 years constitute nearly 84% of the total participant and their unmet need for family planning was beyond 50%. Their unmet need for family planning in those women above 40 years seems to be artificially high because of the small sample (4.2 % of the total participant) and their feeling of infecundity. Unfortunately, questions on infecundity were not inquired, feeling that these groups of women constitute small proportions and most study subjects are young, which could be the limitation of the tool to measure the unmet need exactly.

Two hundred twenty nine (60%) of all current family planning non users planned to use family planning in the future. Of the sexually active clients 55% were at risk of

an intended pregnancy as they did not want to have a child with in the next two years or later, but sexually active and did not use any contraceptive at the time of survey. Among currently married/ cohabited clients 53% of them had unmet need for family planning. Those youth groups who were between 15-19 years and 20-24 years have high unmet need for family planning than those who were above 24 years. This could be explained by the fact that young women have different barriers to use family planning methods and the current family planning programs do not target these groups. The unmet need among HIV positive women was 62% while it was 53% among tested negative clients. The difference of unmet need among HIV-positive and HIV-negative clients was not statistically significant. This showed the presence of high level of unmet family planning need in all sexually active VCT clients and the HIV positives have similar demand compared to HIV negatives. This study revealed high unmet need as compared to the unmet family planning need among women in Lesotho where unmet need was 31.3 % HIV positive and 44.3 % in HIV negative women. A study by Family Health International in Developing Countries showed that the unmet need for family planning among female VCT clients were 31% (Kenya), 67% (Zimbabwe) and 45% (Haiti) [49]. The high level of unmet need in this study could be due to the effect of the low level of national contraceptive coverage.

The mean ideal number of children was 2.9 per woman while it was 3.4 among urban married women reported by EDHS-2005. These differences might be because of great majority of VCT clients were urban youth, relatively more educated so that they could have high demand for family planning to satisfy their lower fertility needs.

Of the total clients interviewed 53% of HIV positive women and 20.3% of HIV negative women intended to have no more children in the future. Only 10% of participants want to have a child with in the next two years. Women who tested positive had 23% less ($P<0.05$) likely to have low child desire than HIV negative women.

A study in Oromiya region also showed that HIV positive women were more likely to have lower future fertility intension than their counterparts [47]. This might be due to the fact that HIV positive women tend to avoid pregnancy because of fear of leaving orphans, fear of transmitting HIV, and concerns about health and quality of life. This study or similar study in Oromiya VCT centers showed that very high proportion of participants (90%) want to have children in the next two years. This shows high family planning needs among VCT clients.

Even though future fertility intention among HIV women were lower than HIV negatives, great proportion of HIV positive women want child in the future showing considerable potential for mother to child transmission of HIV. Future intention for fertility among HIV positive women in Lesotho was 39% [50], 45% among ART clients in Addis Ababa (51). However, as this study was carried out as soon as the client learned their status, their future fertility intention could be different in the long run when they accept their status in the future. In any way, HIV positive women have high fertility intension (47%) and very high unmet need (62%). This has a great program implication for PMTCT and family planning programs for HIV positive women.

Discussion of family planning issues in VCT centers were 11%. This was similar in other studies in Oromiya region conducted in 2006 where discussion on dual methods was 11% and 16% discussed on short term family planning methods (48). Family planning service provision (2.1%) and referral to family planning clinics (1.2%) were also very low. Voluntary counseling and testing centers owned by NGOs were more likely to provide family planning counseling to their clients as compared to governmental VCT centers. This could be because providers in NGOs settings could be well paid, more dedicated and better informed about family planning integration than those who are in public sector. Even though those VCT centers owned by public sector were co-located with the FP clinics, VCT clients were neither adequately informed

about family planning nor referred to those clinics. Adjusted analysis showed that those VCT clients who had formal education were more likely to be counseled on family planning than those who had no formal education. This finding might be partially explained due to the fact that those who are educated may request counseling services.

Surprisingly, counseling on issues such as family planning, risk of mother to child transmission of HIV, condom use were not influenced by client's HIV status. Discussion on contraceptive options and fertility desire may not be appropriate in a situation where a client just know her HIV status. However, it is not clear why HIV status was not associated with discussion about PMTCT and condom use given that they are key HIV prevention methods. Similar phenomenon were happened in Kenyan studies [52].

Nearly one third of women VCT users were counseled with their current or prospective sexual partners and one in fifth women undergo VCT for engaging in marriage. This could be an ideal opportunity to talk and inform about family planning issues with the couples and for those who would under go marriage in the near future.

Not surprisingly, those who were married, divorced and widowed were more likely to be tested positive than never married. Those educated to only the primary level were more likely to be affected by HIV than non educated. This could be those non educated were from rural areas where the HIV prevalence and premarital sex is not common thus less affected by HIV. Educating above the primary level may be necessary to get desired behavioral change against HIV. Reproductive variables such as multiple sexual partnership, condom use and STI were found to have no association with sero-status. This could be due to small sample size to these variables.

The majority of counselors and local VCT/HIV/AIDS program managers approved that providing family planning services to VCT clients is addressing different reproductive health needs in one roof. There is a possibility that contraceptives such as

condoms, pills and injectables could be provided by trained VCT counselors. Providing family planning services to VCT clients could make the service more comprehensive and increases the client satisfaction. It is also important to improve efficiency of service delivery, to reach more people in need of these services, and to be more cost-effective than separate delivery of these (FP and VCT) services [11].

However, counselors reminded that adding family planning in to existing VCT center could increase the work load, and client waiting time. Similar concern was observed in studies carried out in Kenya. According to such study in Kenya family planning services could be accommodated if the counselors came to work on time, did not leave early and spent time on work related activities to serve their clients [16]. Program managers in others countries also support integration of family planning with VCT services. Providing comprehensive services to clients also increases the quality of care and accessibility of the services [16, 39, 40]. Therefore, there should be orientation of the counselors on family planning and integration of services and ensuring of the contraceptive logistics deserve for attention.

Another challenge of integration could be the attitudes of some health providers. A false perception on the existence of strong service integration was observed among program manger working on government HIV/AIDS programs. Thus, adequate sensitization and advocacy on integration for program mangers also needed. Integrated services delivery could also be inhibited by the problems in health facilities, particularly the low pay, poor morale and lack of motivation among providers and lack of appropriate infrastructure and equipment to render the services. There is no clear evidence on the timing of family planning counseling among VCT clients and providers themselves. Some of the VCT clients and counselors prefer it to during pre-test while some recommended it to be during the post-test session after the client learned her status and counselors from NGO settings said it to be in both sessions. Addressing

family planning issues in all counseling processes would be most powerful in improving the clients' reproductive informed decision.

During inspection of the seven VCT rooms male condom was available in all rooms. Penile model was found in most of VCT rooms. However, very small proportion of participants was counseled for condom use. Educational materials on family planning issues were not available in most of the VCT counseling rooms. In general, most VCT centers were found to be poorly equipped for rendering family planning services.

Even though the HIV/AIDS policy highlights family planning in the introduction part as a right based context, it does not mention in the main body of the policy such as objectives, general direction and general strategies of the policy. The National VCT guideline set objective to provide family planning information and referral services for women of reproductive age who are HIV infected and at risk of infection. However, the guideline does not raise how to address family planning counseling during pre test or post test (especially for HIV positives) by the counselors or how to monitor, supervise, and evaluate family planning counseling and referrals by the program managers and supervisors. It only promotes the availability of condoms at VCT centers.

The VCT guideline for pregnant women acknowledged about the importance of counseling and testing for pregnant women. VCT before getting pregnant is an ideal strategy for informed decisions about pregnancy and family planning. However, how and what types of family planning options should be counseled for such clients for future pregnancy were not mentioned. Integrating family planning services in HIV settings is better mentioned in the National Reproductive Health Strategy. However, it needs an explicit and detail guideline on how to integrate these services.

At the policy level, the documents supports integration of family planning services with HIV/AIDS but not strongly and explicitly addressed integration of family planning with VCT services. At facility level, most VCT centers were co-located with family

planning clinics but these centers were not supplied with necessary family planning logistics. At provider level, most the VCT counselors and HIV/AIDS program managers were not adequately integrated in terms on training of family planning counseling and service provision. However, VCT clients have very high demand for family planning services capitalizing the high level of missed opportunity in reducing the high unmet family planning need, increasing number of AIDS orphans and perinatal transmission of HIV.

Therefore, reorientation of both family planning and VCT services, rather than simple inclusion of family planning into already existing VCT services, might be necessary for successful integration. This could include rethinking the service site's goals, revising policy, retraining providers, and rewriting guidelines and manuals (56).However, it should be remembered that because of differing capabilities among VCT sites, the decision about the level of family planning services that can be integrated should be determined at the facility level which was supported by other similar studies [40].

7. Strengths and Limitations of the study

7.1 Strength of the study

The study employed both quantitative and qualitative study methods and gathered information from different sources such as clients, providers, program mangers and policy documents. The study linked sero-status of the study participants with different outcome and independent variables to compare the family planning needs and fertility intensions of both HIV positive and negative VCT clients.

7. 2 Limitations of the study

The clients of VCT were interviewed during counseling sessions and they might be in stressful condition to give reliable and accurate information. As the study includes more sensitive issues social desirability bias could not also be ruled out. Considering that VCT clients are usually young and pregnant women are expected to go to PMTCT clinics for HIV testing, unmet need of women who are currently pregnant and in fecund were not calculated. There may not be exact estimate of magnitude of unmet need for family planning. There was lack of literatures to compare results of the study.

8. Conclusions

From this study, considering all limitations, it can be concluded that:

1. The unmet need for family planning in women VCT clients was very high and it was not given due attention at VCT centers in the study area.
2. There is no difference in unmet need among HIV positive and HIV negative women.
3. There was high level of missed opportunity to prevent unintended pregnancies and vertical HIV transmission.
4. The extent of family planning counseling, referral and service provision for both groups of clients (HIV positive & HIV negative) as well as Counseling on key HIV prevention methods such as PMTCT and dual protection even for tested positive women were found to be very low.
5. The great majority of the clients, all VCT counselors and most VCT program managers support the provision of family planning services at VCT settings.
6. The majority of VCT centers were not well equipped for rendering family planning services. Counselors in VCT centers were not adequately trained either on basics of family planning or on counseling for family planning to their clients.
7. Though there is a supportive policy environment for integration of family planning services in to VCT centers, the issue is not explicitly and adequately addressed in national HIV/AIDS policy, VCT guidelines, and RH strategies.

9. Recommendations

1. The VCT centers should be adequately responsive to the high level of family planning needs of their clients by providing some types family planning services at VCT setup and establishing strong linkages for other methods.
2. Family planning issues should be discussed both at pre-test and post-test counseling sessions.
3. Provision of contraceptive logistics and trainings to the providers as well as reorientation of FP and VCT centers is essential to facilitate integration of services.
4. Attention should be given on the monitoring of the risk reduction counseling at VCT centers.
5. Strong advocacy to policy makers and program managers on FP-VCT integration.
6. Large scale study on family planning needs of VCT clients and testing the success of integration at VCT centers is important to generate detail information on the use of the integrated services.
7. Reviewing of the existing policies, strategies and guideline and developing FP-VCT integration guideline should be considered.

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11. Annexes

Annex 1. Questionnaires

Addis Ababa University
Faculty of Medicine

Department of Community Health

Consent form to study Participants

Hello. How are you? My name is _____ I am here on behalf of the Ministry of Health and Addis Ababa University, to assist the Government in improving its capability in obtaining information on the provision of Family planning in Voluntary Counseling and Testing for HIV centers. You were selected to participate in this study just by chance. I will also be asking you about your family planning needs, previous sexual experiences. It will take about 30 minutes. The information you provide us is completely confidential and will not be shared with anyone else without your consent. Your name or any identifying information will not be registered. You may refuse to answer any question and choose to stop the interview at any time. The information you provide us is extremely important and valuable, as it will help the Government and the health facilities involved in VCT service provision to improve formulation of policy and the delivery of services.

I would like to assure you your name will not be mentioned in the questionnaire and the information that you will give me will be kept confidential and only used for research purpose. You have full right to refuse to take part or to interrupt the interview at any time. But the information that you will give us is quite useful to achieve the objective of the study and to bring change in the HIV prevention and family planning service provision for women at VCT sites.

Are you willing to participate in the study?

1- Yes 2 - No

If the answer is yes, thanks! Conduct the interview.

If the answer is no, Thanks! Proceed to the next eligible client

Addis Ababa University

Faculty of Medicine

Department of Community Health

Questionnaire on Client Interview VCT services and characteristics of VCT clients

001.Code Number _____

002.Test result _____

003. Region _____

004. Woreda _____

006. Kebele _____

007. Interviewer Name _____

008. Date of Interview ____/____ /_____

dd / mm / yyyy

009. Name of VCT Center _____

Checked by Investigator: Signature _____ Date ____/____ /_____

Department of Community Health
Faculty of Medicine
Addis Ababa University

Structured questionnaire on family planning information, demand for family planning and fertility desire among women attending VCT services in Dessie town, 2006.

PART I – Socio - Demographic characteristics

NO	Questions	Categories	skip
101	How old are you?	------ Years (age in completed years)	
102	What is your religion?	Orthodox ---------- 1 Catholic ---------- 2 Muslim ---------- 3 Protestant ---------- 4 Others (specify) ---------- 89	
103	What is the highest Educational level you completed?	---------- Grade completed Able to read and Wright ---------- 86 Un able to read & Wright ---------- 87 No response ----------99 Other specify ----------89	
104	What Ethnic group do you belong to?	Amhara----------1 Tigre ----------2 Oromo ---------- 3 Gurage ---------- 4 Other (Specify) ----------89	
105	What is your Current Marital / relation ship status?	Married/cohabited ---------- 1 Single ---------- 2 Widowed ---------- 3 Divorced ---------- 5 Non married partner ---------- 6 No response ----------99	
106	What is your total Monthly in come?	Your own income--------- Eth.Birr Husbands income--------- Eth.Birr Other sources income _____ Eth.Birr No income ---------- 1 Don't know ---------- 2 No response ---------- 99 Other (specify)----------89	
107	What is your current Occupation?	Unemployed ---------- 1 Student ---------- 2 House wife ---------- 3 House servant ---------- 4 Daily laborer ---------- 5 Merchant ---------- 6 Sex worker ---------- 7 Government employ ---------- 8 Private employ ---------- 9 Other (specify)---------- 89	

PART II- Information on Child Desire

201	How many live births have you had in your life?	----------Live births I did not give birth at all ------- 97 I do not have any live birth -------- 98 No response ----- 99 Other (specify) -----89	
202	How many alive children do you have now?	No of alive children -------- I do not have children at all ------97 I do not have alive children ------ 98 No response --------- 99 Other (specify) -------89	
204	Did you use FP methods during your last pregnancy?	Yes ---------- 1 No ---------- 2 Don't know -------- 3 No response --------- 99	
205	Was your last pregnancy wanted/timed?	Yes ---------- 1 No ---------- 2 Don't know -------- 3 No response --------- 99	
206	Would you like to have children in the future?	Yes ---------- 1 No ---------- 2 Don't know -------- 3 No response --------- 99 Other (specify) -------89	
207	If the answer for Q 206 yes, when do you prefer to have a child?	----------months /----------years Don't know---------98 No response --------- 99 Other (specify) -------89	
208	If the answer for Q 206 yes, How many (more) children would you like to have in the future?	No of children desired ---------- None ---------- 97 Don't know ---------- 98 No response ---------- 99 Other (specify) -------89	

PART III –Information on Family planning counseling, use, demand and choice

Now I would like to talk about family planning - the various ways or methods that you can use to delay or avoid a pregnancy.

301	Have you (your partner) ever used family planning method before?	Yes ---------- 1 No ---------- 2 Don't remember --------- 3 Don't know --------- 4 No response ---------- 99 Other specify ----------	
302	If yes for Q301 specify the method you /your partner used? (More than one answer can be possible)	Condom ---------- 1 Pill (Ocp) ---------- 2 Injectable ---------- 3 IUD ---------- 4 Implants --------- 5 Tubalegation /Vasectomy -----6 Breast feeding ……7 With drwal method……..8 Rhythm method……..9 No response ---------99 Other (specify) ---------89	
302	Have you ever used any family palnningmethod ?	Yes ---------- 1 No ---------- 2 Don't remember --------- 3 Don't know --------- 4 No response ---------- 99 Other specify ----------	
303	If yes, which family planning method do you ever used?	Condom ---------- 1 Pill (Ocp) ---------- 2 Injectable ---------- 3 IUD ---------- 4 Implants --------- 5 Tubalegation /Vasectomy -----6 Breast feeding ……7 With drwal method……..8 Rhythm method……..9 No response ---------99 Other (specify) ---------89	
305	Are you/your partner/ using Family planning method currently (during the study period)?	Yes ---------- 1 No ---------- 2 I don't know ---------- 3 No response ---------- 99	
306	If yes for question 303, specify the method you are using? (More than one answer can be possible)	Condom ---------- 1 Pill (Ocp) ---------- 2 Injectable ---------- 3 IUD ---------- 4 Implants --------- 5 Tubalegation /Vasectomy -----6 Breast feeding ……7 With drwal method……..8 Rhythm method……..9 No response ---------99 Other (specify) ---------89	

307	would you like to use family planning method in the future?	Yes ---------- 1 No ---------- 2 Don't know ---------- 3 No response --------- 99 Other (specify) ------- 89	
308	If yes, specify the method you intend to use? (More than one answer can be possible)	Condom ---------- 1 Pill (Ocp) ---------- 2 Injectable ---------- 3 IUD ---------- 4 Implants --------- 5 Tubalegation /Vasectomy -----6 Breast feeding ……7 With drwal method……..8 Rhythm method……..9 No response ---------99 Other (specify) ---------89	
309	If no, why don't you want to use family planning?	want to have a child ---------- 1 fear that family planning drugs may affect my health -----2 I abstained from sex ----------3 No response ---------- 99 Other specify----------89	
310	Have you discussed about RH topics with your counselor?	Yes----------1 No----------2	
311	What RH topics discussed during counseling ?	Client's fertility intentions Client's current contraceptive use Short-term contraceptive methods Long-term contraceptive methods Dual method use	
312	Have you discussed about family planning in the VCT services?	Yes----------1 No----------2 No response----------99	
313	If Yes, What type of methods have you been counseled ?	condom----------1 Pills ----------2 injectable--------3 Norplant……4 IUD……5 Others(specify)…..8	

314	If the answer for question 310 is Yes, When was the counseling given ?	Pre-test----------1 Post test ----------2 Both times---------3	
315	Have you been given FP service in the VCT centers?	Yes……1 No…….2 No response…..99	
316	IF yes, what FP methods have you been offered ?	Condoms…..1 Pills……..2 Injectables……3 Norplant……..4 IUD…..5 Others (specify)…….89	
317	Have you been referred to use FP methods?	Yes……..1 No……2 No response…99	
318	If yes, Where have you been referred?	FP clinic in the same facility…….1 FP clinic in another clinic……..2 Others Specify…….99	
319	Do you support provision of Family planning counseling and services in VCT centers?	Strongly support……1 Support…….2 Indifferent……..3 Do not support……4 Strongly oppose…….5	
320	If Yes, When do you prefer it to be?	Pre-test----------1 Post test ----------2 Both times--------3 Another time…….4	
321	Generally have you satisfied with FP counseling & service at VCT centers?	Yes……1 No…….2 No response……99	
322	HIV you discussed about HIV issues	Yes----------1 No----------2	
323	HIV topics discussed during counseling	How HIV is transmitted…….1 Mother to child transmission of HIV…..2 HIV/AIDS support services…..3 ART…..4 Condom use.....5	
324	Dose HIV transmit from mother to child?	Yes ---------- 1 No ---------- 2 Don't know ---------- 3 No response ---------- 99	

		Other (specify) -------89	
325	If yes when dose HIV transmissions occur from mother to child?	During pregnancy ---------- 1 During labor ---------- 2 Through breastfeeding ------- 3 I don't know ---------- 4 No response ---------- 99 Other (specify) ---------- 89	
325	Is there any medication, which may help to prevent mother to child HIV transmission?	Yes ---------- 1 No ---------- 2 Don't know ---------- 3 No response ---------- 99 Other (specify) ----------89	
326	Have you been told about mother to child transmission of HIV during the counseling?	Yes…….1 No……..2 No response……99	
327	Do you believe that HIV positive women should not have children?	Yes…….1 No……..2 No response……99	

Part IV. Sexual history and Condom Use

Now I need to ask you some questions about sexual activity. Any information you give us is completely confidential and your responses will be assigned a number code. No one will ever be able to link your responses with you. It's really important that we get honest answers so that we can address your health needs adequately.

No.	Question	Coding Classification	Skip
401	Did you ever had sexual intercourse?	Yes----------1 No----------2 No response----------99	➔409
402	If yes, at what age you had sex first?	_____ Years old Don't remember--------1 No response----------99	
403	Have you had sexual intercourse in the past ONE year?	Yes----------1 No----------2 No response----------99	
404	If yes, how often you have used condom when you have sexual intercourse in this one year?	Always----------1 Sometimes----------2 Never----------3	
405	Did you practice multi-partner sex?	Yes----------1 No----------2 No response----------99	
406	With how many different people have you had intercourse during the past one year?	_____	
407	How often you have used condom with all the sex partners?	Always----------1 Sometimes----------2 Never----------3	
408	Have you ever had unwanted pregnancy?	Yes……..1 No …….2 No response…….99	
409	Do you have any history of abortion in your life?	Yes----------1 No----------2 No response----------99	
410	If yes, How many times?	_____	
411	Do you have any history of STIs ?	Yes……..1 No …….2 No response…….99	

Part V- Voluntary Counseling and Testing

Now I would like to ask you something else, about VCT.

No.	Question	Coding Classification	Skip
501	What was your first source of information about this service?	Health worker/facility----------1 Mass media----------2 Friends----------3 Neighbors----------4 Other (Specify) _____89	
502	Why do you under go VCT?	To know the status……1 For PMTCT……2 Provider initiated……3 For marriage……4 To go abroad……5 Self suspicion……6 Others……..89	
	With whom did you first come to this center?	my self alone ----------1 With husband or Partner----------2 With my friends----------3 With Parents/relatives----------4 Other (Specify) _____89	
503	Did your partner tested?	Yes……..1 No……..2 No response…….99	
504	Do you know the status of your partner?	Yes……..1 No……..2 No response…….99	
505	Will you tell your result to your partner?	Yes……..1 No……..2 No response…….99	
506	Why did you have VCT?	To know my HIV status----------1 To have PMTCT……..2 In time of illness----------3 Pre-marriage----------4 To go abroad----------5 In doubt----------6 Other (Specify) _____89	
507	Why do you prefer this health institution?	Good care----------1 Attractive environment----------2 Good technical competence----------3 Treat with respect and dignity----------4 Affordable----------5 Confidential----------6 Privacy secured----------7 Near to home----------8 Other (specify) _____89	

510. Any recommendation, suggestion and comment about FP and VCT services for future interventions?

_____.

Thank you very much for your Cooperation!

Annex 2. Guideline for Health providers In-depth interview

Introduction

I am a researcher and the aim of the study is to assess family planning needs & provision and means on how best to improve the delivery of family planning information and services to the VCT clients. Today, the Purpose of my visit is to discuss with you issues of family planning in light of HIV/ AIDS particularly VCT. This will enable program planners and policymakers to find suitable ways of how best to improve the delivery of FP services in Ethiopia in light of VCT programs.

Background

Could you tell me about yourself ? Your marital status and number of children. For how long have worked as a VCT counselor provider, the courses you have attended and briefly how the VCT and FP services are conducted in your clinic?

1. Health Institution ----------
2. Public, Private, NGO _____
3. Position_____
4. Profession _____
5. Do you have Trainings on Family planning?
    1 In- service?
    2 Pre-service?
    3 both ?
6. Are you rendering FP counseling and services to your VCT clients
   If yes, What type of service and how? If not, why not?
7. Do you think that it is possible to offer FP services to the clients?
8. If yes, when does it be preferable? (Pre-test, Post-test, Follow up..)
   If no, why not?
9. Who shall give the service? (Counselor or somebody else)
10. Can you tell me the advantages and disadvantages of offering FP services to VCT clients?
11. What could be the potential opportunities and obstacles in linking the two services?
12. What do you advise about the sexual activity pf a woman tested positive ?
13. Are there women asking you for FP methods? If so or not, what could be the reason?
14. What FP methods do you recommend to HIV positive women

Annex 3.Check list for facility observation of VCT rooms

Availability of essential equipments, materials and contraceptives for family planning services at VCT centers, Dessie, Ethiopia.

Materials	**Present**	**Absent**
Basic Equipments		
BP apparatus		
Stethoscope		
Thermometer		
Supplies & Consumable		
Running water in rooms		
Disposable syringes and needles		
Contraceptives		
Male Condom		
Female condom		
Any oral contraceptive		
Injectables		
IUDs		
Norplant		
IEC materials on FP		
Poster		
Flip charts		
Brochure		
Pamphlet		
Demonstrating materials -Penile model -pills -condom -others		

Annex 4. In-depth interview Guideline for VCT program Managers

- **Health Institution**_____**(**Public, Private, NGO),
- Position_____
- Profession _____

Introduction

I am a researcher and the aim of the study is to assess family planning needs & provision and means on how best to improve the delivery of family planning information and services to the VCT clients. Today, the Purpose of my visit is to discuss with you issues of family planning in light of HIV/ AIDS particularly VCT. This will enable program planners and policymakers to find suitable ways of how best to improve the delivery of FP services in Ethiopia in light of VCT programs.

1. What types of Health services programs do you have in this health facility?
2. Who are you major clients to your HIV/AIDS (VCT) programs? What is the extent of unmet reproductive health needs of your clients?
3. What type of reproductive health services are provided in your HIV/AIDS (VCT) programs?
4. Do you think that the VCT clients have family planning need? If so, to what extent their need is addressed in VCT services? What type of family planning services and to which group(s) off clients is the services are provided?
5. Do you think that HIV positive client need FP methods? If so, which FP methods can be given to HIV positive women? If yes, what type of service and how? If not, why not?
6. Do you feel that it is possible to offer FP services to the clients at VCT clinics? If yes, How? What elements? , when does it be preferable? (Pre-test, Post-test, Follow up) If no, why not?
7. Who shall give the service? (Counselor or somebody else)
8. To what extent family planning services can be integrated in to VCT centers?
9. Can you tell me the advantages and disadvantages of offering FP services to VCT clients? What could be the potential opportunities and obstacles in linking (Integrating) the two services? What has to done to integrate the two services?
10. Do you think that Ethiopian HIV/AIDS and RH policies and guidelines properly addressed integration of FP and VCT?
11. How far do your organizational policy support integration of family planning and VCT services? If your organization supports it, to what extent it is practiced?
12. Do you have Trainings on Family planning integration on HIV/AIDS programs? If so, what type of training and when do you get the training?

Annex 5. List of National Documents reviewed

1. *Policy on HIV/AIDS of the Federal Democratic Republic of Ethiopia, August, 1998.*

2. *National Guidelines for Voluntary Counseling and Testing in Ethiopia*
MoH, Disease Prevention and Control Department, HIV/AIDS and other STIs prevention and Control Team, April 2002

3. *The Third National Health Sector Development Programme (2005/6-2009/10)*
Federal Ministry Of Health, Planning and Programming Department, 2005

4. *The National Reproductive Health Strategy(2006-2015)*
FDRE, Ministry of Health, March 2006

5. *The National Adolescent and Youth Reproductive health Strategy (2007-2015)*
FDRE, Ministry of Health

Annex 6. Amharic Questionnaires

አባሪ 1. የቃለ መጠይቅ ቅጽ

በአዲስ አበባ ዩኒቨርሲቲ የህክምና ፋኩልቲ የህብረተሰብ ጤና ትምህርት ክፍል በፈቃደኝነት ላይ ተመሰረተ የኤች.አይ.ቪ/ኤድስ ምርመራና ምክር አገልግሎት መስጫ ጣቢያዎች የአገልግሎት ተጠቃሚ ሴቶች የመዉለድና የቤተሰብ እቅድ አገልግሎት ፍላጎታቸዉን ለማጥናት የተዘጋጀ የግለሰቦች ፈቃደኝነት መጠየቂያ ቅጽ::

እነደምን አደሩ/ዋሉ ?እንደምን ነዎት? ስሜ _____ ይባላል :: በአዲስ አበባ ዩኒቨርሲቲ የህክምና ፋኩልቲ የህብረተሰብ ጤና ትምህርት ክፍል የጥናት ቡድን አባል ነኝ:: የዚህ ጥናት ዋና ዓላማ በፈቃደኝነት ላይ የተመሰረተ የኤች አይ ቪ /ኤድስ ምክርና ምርመራ ማዕከላት የሚሰጡትን የቤተሰብ ዕቅድ ምክርና አገልግሎት አሰጣጥን ለመዳሰስ ነው::እርስዎ በጥናቱ እነድሳተፉ የተመረጡት በዕጣ ነው:: የእርስዎን የቤተሰብ ምጣኔ ፍላጎት፣ የወሲብ ህይወትን በተመለከተ እጠይቅወታለሁ:: ቃለ ምልልሱ በግምት 20-30 ደቂቃዎች ይፈጃል:: እርስዎ የሚሰጡኝ መረጃ ሚስጥራዊነቱ ሙሉ በሙሉ የተጠበቀ ነው:: የእርስዎ ስምም ሆነ መለያ መረጃዎች አይመዘገብም :: እርስዎ በጥናቱ የመሳተፍም ሆነ ያለመሳተፍ መብት ያለዎት ሲሆን ጥያቄዎችን ያለመመለስ ወይም የማቋረጥ መብትዎ የተጠበቀ ነው:: ነገር ግን እርስዎ የሚሰጡን መረጃ በማዕከላቱ የሚሰጠውን አገልግሎት ለማሻሻል ና ፖሊሲዎችን ለማውጣት በጣም ጠቃሚ ነው::

አሁንም በድጋሜ ላረጋግጥልዎት የምፈልገው ነገር የእርስዎ ሰም በዚህ ቅጽ ላይ አይመዘገብም :: የሚሰጡን መረጃ ሚስጥራዊነቱ ፍጹም የተጠበቀ ሲሆን መረጃዉ ለጥናቱ ዓላማ ብቻ ይውላል:: እባክዎን ጥናቱን በተመለከተ የሚጠይቁኝ ነገር አለዎት ?

በጥናቱ ለመሳተፍ ፈቃደኛ ነዎት?

1. አዎ 2. አይደለሁም

አዎ ካሉ : አመስግነው ቃለ-ምልልሱን ይቀጥሉ

አይደለሁም ካሉ: አመስግነው ደንበኛዋን አሰናብተው ወደ ሌላ ተጠያቂ ይለፉ

ፈቃደኛ ስለመሆናቸው የጠያቂው ፊርማ ----------

አዲስ አበባ ዩኒቨርሲቲ
ህክምና ፋኩልቲ
የህብረተሰብ ጤና ት/ት ክፍል

በአዲስ አበባ ዩኒቨርሲቲ የህክምና ፋኩልቲ የህብረተሰብ ጤና ትምህርት ክፍል በፈቃደኝነት ላይ ተመሰረተ የኤች.አይ.ቪ/ኤድስ ምርመራና ምክር አገልግሎት መስጫ መስጫ ጣቢያዎች የአገልግሎት ተጠቃሚ ሴቶች የመዉለድና የቤተሰብ እቅድ አገልግሎት ፍላጎታቸዉን ለማጥናት የተዘጋጀ ቃለ-መጠይቅ ቅጽ::

Questionnaire on Client Interview VCT services and characteristics of VCT clients

001. የኮድ ቁጥር _____

002. የምርመራ ውጤት [redacted]

003. ክልል _____

004. ወረዳ _____

006. ቀበሌ _____

007. የጠያቂው ስም_____

008. ቃለ መጠይቅ የተደረገበት ቀን ____/____ /1999 ዓ.ም.

009. የ VCT ማዕከሉ ስም _____

የተቆጣጠሪው ስም_____

ፊርማ _____ ቀን ____/____ /1999 ዓ.ም.

ቃለ መጠይቁ የተጀመረበት ስዓት _____

ክፍል 1. ማህበራዊ እና ሥነ-ህዝባዊ ገጽታዎች

ተ.ቁ	ጥያቄዎች	ምድብ	ዝለል
101	ዕድሜዎ ስንት ነው?	[_ _] ዓመት	
102	የሚከተሉት የትኛውን ሀይማኖት ነው?	ኦርቶዶክስ -1 እስልምና -2 ፕሮቴስታንት -3 ካቶሊክ -3 ሌላ (ይገለጽ) _____	
103	ያጠናቀቁት ከፍተኛ የትምህርት ደረጃ ስንት ነው?	[_ _] ክፍል ያጠናቀቀች -1 ቴክኒክና ሙያ ሰርተፊኬት -2 ኮሌጅ ድፕሎማ -3 ድግሪና ከዚያ በላይ -4 ማንበብና መጻፍ -5 ያልተማረች -6 መግለጽ ያልፈለገች - 99 ሌላ (ይገለጽ) _____	
104	ብሄርዎ ምንድን ነው?	አማራ -1 ትግሬ -2 ኦሮሞ -3 ጉራጌ -4 ሌላ (ይገለጽ) _____	
105	የጋብቻ ሁኔታ	ያገባች / አብራ የምትኖር -1 ያላገባች -2 የሞተባት -3 የፈታች -4 ጓደኛ ያላት -5 መግለጽ ያልፈለገች -99	
106	ጠቅላላ ወርሃዊ ገቢዎ ስንት ነው?	የግል ወርሃዊ ገቢ [_ _ _ _ _] ብር የባለቤት ወርሃዊ ገቢ [_ _ _ _ _] ብር ሌላ ምንጭ [_ _ _ _ _] ብር ገቢ የሌላት -1 አይታወቅም -2 መግለጽ ያልፈለገች -99 ሌላ (ይገለጽ) _____	
107	የሥራ ሁኔታ	ሥራ የሌላት -1 ተማሪ -2 የቤት እመቤት -3 የቤት ሰራተኛ -4 የቀን ሰራተኛ -5 ነጋዴ -6 ሴተኛ አዳሪ -7	

		የመንግስት ሰራተኛ -8 የግል ተቀጣሪ -9 ሌላ (ይገለጽ) _____	

ክፍል 2. መረጃ ስለ ልጅ ፍላጎትን በተመለከተ

201	በህይወት ዘመንዎ የወለዱት ልጅ ብዛት	የተወለዱ ልጆች ብዛት [_ _] ምንም ልጅ አልወለድኩም - 97 በህይወት ያለ ልጅ አልወለድኩም - 98 መመለስ አልፈልግም - 99 ሌላ (ይገለጽ) - 89	➔206
202	አሁን በህይወት ያሉ ልጆች ብዛት	በህይወት ያሉ ልጆች ብዛት[_ _] ምንም ልጅ አልወለድኩም-97 በህይወት ያለ ልጅ አልወለድኩም-98 መመለስ አልፈልግም-99 ሌላ (ይገለጽ) _____	
204	በመጨረሻው እርግዝናዎ ወቅት የወሊድ መቆጣጠሪያ ዘዴ ይጠቀሙ ነበርን ?	አዎ-1 አይደለም-2 አላዉቅም-3 መመለስ አልፈልግም-99	
205	ያለፈውን እርግዝና የተፈለገ ወይም ወቅቱን ጠብቆ የተከሰተ ነበርን?	አዎ-1 አይደለም-2 አላዉቅም-3 መመለስ አልፈልግም-99	
206	እርስዎ በአሁኑ ወቅት ነፍሰ ጡር ነዎት ?	አዎ-1 አይደለም-2 አላዉቅም-3 መመለስ አልፈልግም-99	
207	ወደፊት ልጅ መውለድ ይፈልጋሉን ?	አዎ-1 አይደለም-2 አላዉቅም-3 መመለስ አልፈልግም-99 ሌላ (ይገለጽ) _____	➔ክፍል3
208	መልስዎ አዎን ከሆነ መቸ ልጅ መውለድ ይፈልጋሉ ?	[_ _] ዓመት በኋላ አላውቅም- 98 መመለስ አልፈልግም-99 ሌላ (ይገለጽ) _____	
209	መልስዎ አዎን ከሆነ ካሁን በኋላ ስንት ልጆች መውለድ ይፈልጋሉ?	ካሁን በኋላ መውለድ ሚፈልጉት ብዛት[_ _] ምንም መውለድ አለፍልግም- 97 አላውቅም- 98 መመለስ አልፈልግም -99 ሌላ (ይገለጽ) _____	

ፍል 3. መረጃ ስለ የቤተሰብ እቅድ ምክር፤አጠቃቀም፤ ፍላጎት፤እና ምርጫን በተመለከተ

አሁን ደግሞ ስለ የቤተሰብ እቅድ በተመለከተ እንወያያለን.

301	ከአሁን በፊት ስለ የቤተሰብ እቅድ ዘዴ ሰምተው ያዉቃሉን?	አዎ- 1 አይደለም - 2	➔303
302	መልስዎ አዎን ከሆነ የትኛዉን የቤተሰብ እቅድ ዘዴ ሰምተው ያዉቃሉ? (ከአንድ በላይ መልስ ይቻላል)	ኮነዶም - 1 እንክብል (ፒልስ) - 2 መርፌ (ድፖ) - 3 የማህጸን ሉፕ - 4 በክንድ የሚቀበር(ኖርፕላንት) - 5 ዘለቄታዊ ዘዴ - 6 ጡት ማጥባት - 7 ዘርን ውጪ ማፍሰስ - 8 ለእርግዝና አስጊ ወቅት በመታቀብ - 9 መግለጽ አልፈልግም-99 ሌላ (ይገለጽ) _____	
303	ከአሁን በፊት እርስዎ/ ባለቤትዎ የቤተሰብ እቅድ ዘዴ ተጠቅመው ያዉቃሉን?	አዎ - 1 አይደለም - 2 አላስታውስም - 3 አላውቅም - 4 መግለጽ አልፈልግም-99 ሌላ (ይገለጽ) _____	➔305
304	መልስዎ አዎን ከሆነ የትኛዉን የቤተሰብ እቅድ ዘዴ ተጠቅመው ያዉቃሉ? (ከአንድ በላይ መልስ ይቻላል)	ኮነዶም -1 እንክብል (ፒልስ) -2 መርፌ (ድፖ) -3 የማህጸን ሉፕ -4 በክንድ የሚቀበር(ኖርፕላንት) -5 ዘለቄታዊ ዘዴ -6 ጡት ማጥባት -7 ዘርን ውጪ ማፍሰስ -8 ካሌንደር ዘዴ -9 ለእርግዝና አስጊ ወቅት በመታቀብ -10 መግለጽ አልፈልግም -99 ሌላ (ይገለጽ) _____	
305	በአሁኑ ወቅት እርስዎ/ ባለቤትዎ የቤተሰብ እቅድ ዘዴ እየተጠቀሙ ነውን?	አዎ - 1 አይደለም - 2 መግለጽ አልፈልግም -99 ሌላ (ይገለጽ) _____	➔307
306	መልስዎ አወን ከሆነ በአሁኑ ወቅት የትኛዉን የቤተሰብ እቅድ ዘዴ እየተጠቀሙ ነው?	ኮነዶም -1 እንክብል (ፒልስ) -2 መርፌ (ድፖ) -3 የማህጸን ሉፕ -4 በክንድ የሚቀበር(ኖርፕላንት) -5 ዘለቄታዊ ዘዴ -6 ጡት ማጥባት -7 ዘርን ውጪ ማፍሰስ -8 ካሌንደር ዘዴ -9 ለእርግዝና አስጊ ወቅት በመታቀብ -10 መግለጽ አልፈልግም -99 ሌላ (ይገለጽ) _____	

307	ወደፊትስ የቤተሰብ እቅድ ዘዴ መጠቀም ያስባሉ ?	አዎ - 1 አይደለም - 2 አላውቅም - 3 መግለጽ አልፈልግም -99 ሌላ (ይገለጽ) _____	➔309
308	መልስዎ አዎን ከሆነ የትኛውን የቤተሰብ እቅድ ዘዴ መጠቀም ያስባሉ ? (ከአንድ በላይ መልስ ይቻላል)	ኮነዶም -1 እንክብል (ፒልስ) -2 መርፌ (ድፖ) -3 የማህጸን ሉፕ -4 በክንድ የሚቀበር(ኖርፕላንት) -5 ዘለቄታዊ ዘዴ -6 ጡት ማጥባት -7 ዘርን ውጪ ማፍሰስ -8 ካሌንደር ዘዴ -9 ለእርግዝና አስጊ ወቅት በመታቀብ -10 መግለጽ አልፈልግም -99 ሌላ (ይገለጽ) _____	
309	የቤተሰብ እቅድ የማይጠቀሙ ከሆነ ምክንያትዎ ምንድን ነው ?	መውለድ ስለምፈልግ -1 ወሲብ ስለማልፈጽም -2 ስለቤተሰብ ምጣኔ ዕውቀት ስለሌለኝ -3 ወደ ጤና ድርጅት መሄድ ስለምፈራ -4 ሀይማኖቴ ስለማይፈቅድልኝ -5 ጓደኛዬ/ባለቤቴ ስለማይፈቅድልኝ -6 የመድሃኒቱን የጎንዮሽ ጉዳት ስለምፈራ -7 የወሊድ መከላከያ ለመግዛት ውድ ስለሆነ-8 ሌላ (ይገለጽ) _____	
310	በአሁኑ ጉብኝትዎ ከአማካሪዎ ጋር ስለ ስነ-ተዋልዶ ጤና ተወያይታችኋል?	አዎ- 1 አይደለም - 2	
311	አዎ ካሉ፤ ስለየትኞቹ ስለ ስነ-ተዋልዶ ጤና ርዕሶች ተወያይታችኋል?	ስለ ወሊድ ፍላጎትዎ -1 ስለ ወቅታዊ ቤተሰብ ምጣኔ አተቃቀምዎ -2 ስለአጭር ጊዜ የወሊድ መከላከያ -3 ስለ ረጅም ጊዜ የወሊድ መከላከያ -4 ስለ ኤች. ኤይ. ቪ.. ና እርግዝና.መከላከያ -5 ሌላ (ይገለጽ) _____	
312	በአሁኑ ጉብኝትዎ ከአማካሪዎ ጋር ስለ የቤተሰብ እቅድ ተወያይተዋል?	አዎ- 1 አልተወያንም - 2 መግለጽ አልፈልግም -99	➔316
313	አዎ ካሉ፤ ስለየትኞቹ የእርግዝና መከላከያ ዘዴዎች ተወያዩ ?	ኮነዶም -1 እንክብል (ፒልስ) -2 መርፌ (ድፖ) -3 የማህጸን ሉፕ -4 በክንድ የሚቀበር(ኖርፕላንት) -5 ዘለቄታዊ ዘዴ -6 ካሌንደር ዘዴ- 7 ለእርግዝና አስጊ ወቅት በመታቀብ - 8 ሌላ (ይገለጽ) _____	
314	አዎ ካሉ፤ በየትኛው የምክክር ወቅት ነበር የተወያያችሁት?	ከምርመራ በፊት -1 ከምርመራ በኋላ -2 በሁለቱም ጊዜ -3	

315	በአሁኑ ወቅት በዚህ ጤና ድርጅት የቤተሰብ እቅድ አገልግሎት ተሰጥተዋል ?	አዎ- 1 አይደለም - 2	➔317
316	አዎ ካሉ፤ የትኛውን የእርግዝና መከላከያ ዘዴ ተሰጠዎት?	ኮነዶም -1 እንክብል (ፒልስ) -2 መርፌ (ድፖ) -3 የማህጸን ሉፕ -4 በክንድ የሚቀበር(ኖርፕላንት) -5 ዘለቄታዊ ዘዴ -6 ሌላ (ይገለጽ) _____	
317	በምክክርዎ ወቅት የቤተሰብ እቅድ አገልግሎት ከሌላ ቦታ እንድጠቀሙ ተመክረዋል?	አዎ- 1 አይደለም - 2 ሀሳብ አልሰጥም -99	➔319
318	አዎ ካሉ፤ ከየት መጠቀም እንደሚችሉ ተነገርዎት ?	በጤና ድርጅቱ ውስጥ ቤተሰብ ምጣኔ ክፍል-1 ከጤና ድርጅቱ ውጪ ባሉ ክሊኒኮች-2 ከቀበሌ ጤና ወኪሎች-3 ከፋርማሲ-4 ሌላ (ይገለጽ) _____	
319	የቤተሰብ እቅድ መረጃ፤ምክርና አገልግሎት በኤች አይ ቪ ምርመራ ማዕከል ቢሰጥ ይደግፉታል ?	በጣም እደግፋለሁ -1 እደግፋለሁ -2 ችግር የለውም -3 እቃወማለሁ -4 በጣም እቃወማለሁ -5 ሀሳብ አልሰጥም -99	
320	የሚደግፉት ከሆነ፤ ቤየተኛው ምክክር ወቅት ቢሆን ይመርጣሉ ?	ከምርመራ በፊት -1 ከምርመራ በኋላ -2 በሁለቱም ጊዜ -3 በሌላ ጊዜ -4	
321	በአጠቃላይ በምርመራ ማዕከሉ በሚሰጠው የቤተሰብ እቅድ መረጃ፤ ምክርና አገልግሎት ረክተዋል ?	አዎ- 1 አይደለም - 2 ሀሳብ አልሰጥም -99	
322	ከአማካሪዎ ጋር ስለ ኤች አይ ቪ/ ኤድስ ተወያይተዋል?	አዎ- 1 አይደለም - 2	➔324
323	አዎ ካሉ፤ ስለየትኞቹ ኤች አይ ቪ/ ኤድስ ርዕሰ ጉዳዎች ተወያዩ ?	ስለመተላለፊያ መንገዶች -1 ስለ ከእናት ወደ ልጅ መተላለፍ -2 ስለ ኤድስ እንክብካቤና ድጋፍ አገልግሎት -3 ስለ ኤድስ ህክምና -4 ስለ ኮንዶም አጠቃቀም -5	
324	ኤች አይ ቪ ከእናት ወደ ልጅ ይተላለፋል ብለው ያስባሉ ?	አዎ- 1 አይደለም - 2 አላውቅም- 3 ሌላ (ይገለጽ) _____	➔326
325	አዎ ካሉ፤መቼ የሚተላለፍ ይመስልዎታል ?	በእርግዝና ወቅት -1 በምጥ/ ወሊድ ወቅት -2 በማጥባት ወቅት -3 አላውቅም -4 ሌላ (ይገለጽ) _____	

326	ኤች አይ ቪ ከእናት ወደ ልጅ እንዳይተላለፍ መድኃኒት አለ ብለው ያስባሉ ?	አዎ- 1 አይደለም - 2 አላውቅም- 3	
327	ከኤች አይ ቪ ቫይረስ ጋር ምትኖር እናት ልጅ መውለድ የለባትም ብለው ያምናሉ?	አዎ- 1 አይደለም - 2 አላውቅም- 3	

ክፍል 4. መረጃ ስለ ወሲብና ኮንዶም አጠቃቀም በተመለከተ

አሁን ስለ የግብረ ሥጋ ግንኙነት እና የኮነዶም አጠቃቀም በተመለከተ ጥቂት ጥያቄዎችን አነሳለሁ. አሁንም በድጋሜ ላረጋግጥልዎት የምፈልገው ነገር እርስዎ የሚሰጡኝ ማንኛውም መረጃ ሙሉ በሙሉ ሚስጢራዊነቱ የሚጠበቅ ሲሆን መረጃዎችም የሚመዘገቡት በቁጥር ኮድ ነው። በታማኝነትና በቅንነት የሚሰጡን መረጃ በጣም ጠቃሚና የጤና ችግሮችን ለመፍታት ይረዳናል ።

ተ.ቁ	ጥያቄዎች	ምድብ	ዝለል
401	ከአሁን በፊት የግብረ ሥጋ ግንኙነት ፈጽመው ያውቃሉ?	አዎ- 1 አላውቅም - 2 ሀሳብ አልሰጥም -99	➔ክፍል5
402	አዎ ካሉ፡ መጀመሪያየግብረ ሥጋ ግንኙነት የፈጸሙበት ዕድሜዎ ስንት ነበር ?	[_ _] ዓመት አላስታውስም-1 ሀሳብ አልሰጥም -99	
403	ባለፉት12 ወራት ውስጥ የግብረ ሥጋ ግንኙነት ፈጽመዋል?	አዎ- 1 አይደለም - 2 ሀሳብ አልሰጥም -99	
404	አዎ ካሉ፡ ኮንዶም አጠቃቀምዎ እንደት ነበር ?	ሁል ጊዜ እጠቀማለሁ -1 አንዳንድ ጊዜ እጠቀማለሁ -2 ፈጽሞ አልጠቀምም -3	
405	ከአንድ በላይ የወሲብ ጓደኞች ነበርዎት ?	አዎ- 1 አይደለም - 2 ሀሳብ አልሰጥም -99	
406	አዎ ካሉ፡ ባለፉት12 ወራት ዉስጥ ስንት የወሲብ ጓደኞች ነበርዎት?	[_ _]	
407	ከእነዚሁ ጓደኞችዎ ጋር ኮንዶም አጠቃቀምዎ እንዴት ነበርን ?	ሁል ጊዜ እጠቀማለሁ -1 አንዳንድ ጊዜ እጠቀማለሁ -2 ፈጽሞ አልጠቀምም -3	
408	በህይወትዎ ያልተፈለገ እርግዝና አጋጥምዎት ያውቃል ?	አዎ- 1 አይደለም - 2 ሀሳብ አልሰጥም -99	
409	በህይወትዎ ውርጃ አጋጥምዎት ያውቃል ?	አዎ- 1 አይደለም - 2 ሀሳብ አልሰጥም -99	
410	አዎ ካሉ፡ ስንት ጊዜ ዉርጃ አጋጥምዎት ያውቃል?	[_ _]	
411	በህይወትዎ የአባላዘር በሽታ ታምመው ያውቃሉ ?	አዎ- 1 አይደለም - 2 ሀሳብ አልሰጥም -99	

ክፍል 5. ስለ በፈቃደኝነት ላይ የተመሰረተ የኤች አይ ቪ/ ኤድስ ምክርና ምርመራ በተመለከተ

አሁን ደግሞ ስለ ሌላ ጉዳይ ማለትም ስለ በፈቃደኝነት ላይ የተመሰረተ የኤች አይ ቪ/ ኤድስ ምክርና ምርመራ በተመለከተ እጠይቀዎታለሁ፡፡

ተ.ቁ	ጥያቄዎች	ምድብ	ዝለል
501	ለዚህ አገላግሎት የመጀመሪያ የመረጃ ምንጭዎ ምንደን ነው ?	ከጤና ባለሙያ/ጤና ድርጅት -1 ከራድዮ/ቴሌቪዢን -2 ከጓደኛ -3 ከጎረቤት -4 ሌላ (ይገለጽ) _____	
502	ምርመራውን ሚያደርጉት ለምንድን ነው ?	ራስን ለማወቅ -1 ወደ ልጅ እንዳይተላላፍ ለመከላከል -2 በጤና ባለሙያ አነሳሽነት -3 ለቅድመ ጋብቻ -4 ወደ ውጪ ለመሄድ -5 ራሴን ስለምጠራጠር(ስጋት ስላለብኝ) -6 ሌላ (ይገለጽ) _____	
503	ለመጀመሪያ ጊዜ ለዚህ አገልግለት ከማን ጋር ነው የመጡት ?	ራሴ ለብቻዬ -1 ከባለቤቴ/ ጓደኛዬ ጋር -2 ከጓደኞቼ ጋር -3 ከዘመዶቼ/ከጓደኞቼ ጋር -4 ሌላ (ይገለጽ) _____	
504	የምክርና የምርመራ አገልግሎት ከማን ጋር ነው የተሰጠዎት ?	ለብቻ -1 ከባለቤት/ጓደኛ ጋር -2	
505	ባለቤትዎ/ ጓደኛዎ ተመርምረዋልን ?	አዎ - 1 አላተመረመረም - 2 አላውቅም -3 ባለቤት/ገዋደኛ የለኝም-4 ሀሳብ አልሰጥም -99	
506	አዎ ካሉ፡ የባለቤትዎን/ ጓደኛዎን የምርመራ ውጤት ያውቃሉን ?	አዎ- 1 አላውቅም - 2 ሀሳብ አልሰጥም -99	
507	የእርስዎን የምርመራ ውጤት ለባለቤትዎ/ለጓደኛዎ ይነግራሉን?	አዎ- 1 አልነግርም - 2 ሀሳብ አልሰጥም -99	
509	ይህን የምርመራ ማዕከል ለምን መረጡ ?	ጥሩ እንክብካቤ ስለሚደረግ -1 አካባቢው ማራኪ ስለሆነ -2 ባለሙያዎቹ ጎበዞች ስለሆኑ -3 ስብዕና እና ክብር ስለሚጠብቁ -4 ክፍያው ዝቅተኛ ስለሆነ -5 ሚስጢር ስለሚጠብቁ -6 ግለኝነት ስለሚጠበቅ -7 ለቤቴ ቅርብ ስለሆነ -8 ሌላ (ይገለጽ) _____	

510. የቤተሰብ ምጣኔ አገልግሎት እና የኤች አይ ቪ ምክርና ምርመራ በተመለከተ የሚሰጡን አስተያየት፤ ቅሬታ ወይም ወደፊት መስተካከል የሚገባው የሚሉት ነገር ካለ_____

ስለትብብርዎ በጣም አመሰግንዎታለሁ !!

Declaration

I, the undersigned, declare that this thesis is my original work in partial fulfillment of the requirement for the Degree of Masters of Public Health and has not been presented for a degree in this or any other university. All source of materials used for this thesis have been duly acknowledged.

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This thesis has been submitted for examination with our approval as the university advisors.

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