

ADDIS ABABA UNIVERSITY, COLLEGE OF HEALTH
SCIENCES, SCHOOL OF PUBLIC HEALTH

EARLY DISCONTINUATION RATE OF IMPLANON AND ITS ASSOCIATED FACTORS AMONG
WOMEN WHO EVER USED IMPLANON IN 2012/2013 IN OFLA WOREDA, TIGRAY, NORTHERN
ETHIOPIA,2014

BY: KALAYU BIRHANE

A THESIS SUBMITTED TO THE SCHOOL OF PUBLIC HEALTH, COLLEGE OF HEALTH
SCIENCES, ADDIS ABABA UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF MASTER OF PUBLIC HEALTH IN REPRODUCTIVE HEALTH

JUNE, 2014
ADDISABABA, ETHIOPIA

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LIST OF ACRONYMS AND ABRIVATION

CSA	Central Statistical Agency
CORHA.....	Consortium of Reproductive Health Associations
ID	Implanon Discontinuers
EDHS	Ethiopian Demographic and Health Survey
FMOH	Federal Ministry of Health
FP	Family planning
HEW.....	Health Extension Worker
IC	Implanon continuers
IFHP	Integrated Family Health Program
Km.....	Kilometer
LAFP	Long Acting Family planning
MSI	Marie Stopes International
OR	Odds Ratio
SPSS	Statistical Package for Social Sciences
UK	United Kingdom
U.S	United States
TFR	Total Fertility Rate

ABSTRACT

Background: Contraceptive use plays an important role in reducing fertility; and at times contraceptive prevalence has been used to evaluate the effect of family planning programs. Quality of family planning services is an important determinant of contraceptive use because it is likely to affect contraceptive adoption and, more significantly, contraceptive continuation i.e. poor access to quality Family Planning services, high discontinuation rate and low motivation to use modern FP methods.

Objective; the objective of the study was to determine early discontinuation rate of Implanon and to identify its associated factors among women who ever used implanon in 2012/2013 in Oflla woreda, Tigray, North Ethiopia ,2014

Methods: a community based cross sectional study design with structured and pre tested questionnaires was administered for 244 participants from January 20-March 09, 2014. Six data collectors and two supervisors who were trained on the objective of the study and data collection techniques to administer the questionnaire were recruited in the data collection process. All women who ever used implanon in 2012/2013 were included in the study and the data was collected house to house by taking the list of the participants from the family planning registration book of each Health institutions. The data was entered and cleaned in Epi Info by the principal investigator then exported to SPSS version 20 for analysis. Multivariate Logistic regression was used identify factors associated with early discontinuation of implanon.

Result: The mean (\pm SD) ages of the participants were 26.9 \pm 6.9 years. More than half of the participants 168(68.9%) were married, and 199(81.6%) were farmer by occupation.

The overall early implanon discontinuation rate in this study was 16% with mean duration of implanon use of 6.6 \pm 2.8 months. The main reason for early discontinuation of implanon was Health concerns and side effects followed by desire to have more children. Women who have developed side effects during using of implanon, women who didn't appointed for follow up and women who didn't satisfied by the service given during the implanon insertion were the predictors of early implanon discontinuation.

Conclusions: early implanon discontinuation rate in this study was in a considerable number and the main reason for discontinuation was Health concerns. Pre insertion counseling, close monitoring and follow up of implanon users should be made to increase implanon continuation rate.

1. INTRODUCTION

1.1 Background

Family planning (FP) could prevent as many as one in every three maternal deaths by allowing women to delay motherhood, space birth, avoid unintended pregnancies and abortion and stop childbearing when they reached their desired family size[1].

Evidence suggests that more than half of all couples in the developing world are using family planning to delay, space or limit future pregnancies, yet the need for FP keeps increasing as the number of women of reproductive age continues to grow[2].

Globally, contraceptive prevalence has reached 63%, the most remarkable change having taken place in the developing world, where it has increased from only 8% in the 1960s to 62% currently and Total fertility rates (TFRs) are decreasing in most regions with the exception of sub-Saharan Africa.

The early part of the 20th century saw improvements in child and maternal mortality resulting in people in the developed world choosing to have smaller families. In the developed world for a variety of socio economic reasons, the average number of years between the onset of sexual activity and childbearing is widening, leading to an increased demand for contraception to prevent unwanted pregnancy during the intervening years. Making the choice to have a smaller family relies on the availability and effective use of contraception. From the mid-20th century the development of modern methods of contraception has made fertility control easier to achieve. In developing countries during the past 40 years contraceptive use has risen from 10% to 60%. The choice of contraceptive methods has also increased, and with that expansion, method mix has evolved differently in different countries.

However, despite there being a wide range of contraceptive methods, which are freely available, there are still large numbers of unintended pregnancies end in abortion every year.

Additionally, in virtually all countries use of limiting methods remains low and discontinuation rates for spacing methods remains relatively high. For numerous reasons many people find it difficult to use contraception consistently and correctly [3].

Getting a clearer understanding of contraceptive choice and discontinuation in programs at different levels of development and with different histories is a priority issue for family planning and reproductive health programs in sub-Saharan Africa[4].

Ethiopia is the second most populous country, next to Nigeria, in Africa with the total population of about 83 million and with TFR of 4.8. Ethiopian Demographic and Health Survey (EDHS) of 2011 revealed that knowledge of contraception has remained consistently high in Ethiopia over the past five years with 97% of currently married women having heard of at least one method of contraception. Even though, data from the past two decades indicate a simultaneous increase in use of modern methods of contraception and a drop in unmet need for FP, still actual contraceptive practice among women of reproductive age group remained low particularly the use of implants with 3.4%[5]. Use of FP in Ethiopia has traditionally been limited to short acting methods such as injectables and pills due to limited access to Long Acting FP (LAFP) methods, commodity shortages, and lack of skilled health care providers to offer services at the community level. In recent years, the Federal Ministry of Health of Ethiopia (FMOH) in collaboration with its development partners such as Integrated Family Health Program (IFHP), Consortium of Reproductive Health Associations (CORHA), Marie Stopes International (MSI) and others had made available the provision of progestogen contraceptive implant, Implanon, at Hospitals, Health centers and Health Post at the community level in all regions including Tigray [6].

Implanon is a single-rod about the size of a matchstick, long-acting implantable contraceptive (40 mm long, 2 mm in diameter) which contains 68 mg of the progestin hormone called etonogestrel [7]. Once implanted in the non-dominant upper arm, it remains effective for up to 3 years. It was developed in the 1980s and has been tested extensively in clinical trials in 17 different countries. It is currently in use in more than 30 countries, including Ethiopia [8].

Implanon is a hormone-releasing birth control implant use by women to prevent pregnancy for up to 3 years. It prevents pregnancy by stopping the release of an egg from ovary, by thickening the mucus of the cervix and this change may keep sperm from reaching the egg, and also by changing the lining of the uterus[9].

1.2 Statement of the problem

Early implanon discontinuation is defined as discontinuation at less than 2.5 years after insertion of implanon[10].

Contraceptive use, as proximate determinant of fertility, plays an important role in reducing fertility; and at times contraceptive prevalence has been used to evaluate the effect of family planning programs. Contraceptive prevalence is the outcome of annual acceptance and the

discontinuation rate. Quality of family planning services is an important determinant of contraceptive use because it is likely to affect contraceptive adoption and, more significantly, contraceptive continuation[11-12].

Nigerian Demographic and Health Survey, 2008 indicated poor access to quality Family Planning services, high discontinuation rate and low motivation to use modern FP methods.

Many experts believed implanon to have the higher continuation rates as compare to other methods of contraceptives but evidences from different studies indicated that implanon discontinuation rates within the first one year of use ranges from 2% in Nigeria to 23% in UK, Malaysia, Australia and Egypt [10, 13-15] and despite well tolerance and cost effectiveness, many women discontinue implanon use within one year of initiating a method. The major reasons that women discontinue use of implanon method are side effects, and health concerns, and a desire to become pregnant. Menstrual disturbance is the most common reason side effect for discontinuation of implanon use. Other less frequent reasons also include, spouse disapproval, and switching to another method[16-18].

Use of less effective methods, infrequent use, and method discontinuation have an effect on the rate of unintended pregnancies. In different countries significant number of women becomes exposed to the risk of conception after discontinuation and accidental pregnancies that end in miscarriage, stillbirth or abortion [19-20].

Unintended pregnancies have consequences and are becoming increasingly concentrated among minority and socioeconomically disadvantaged women. It has been suggested that providing counseling and support may be the most important way to help clients continue on implanon. Studies indicate that the discontinuation rate is significantly lower in women who received intensive structured counseling than in women who received basic information about the method, in spite of the fact that users report a significant incidence of side effects [19, 21].

1.3 Justification of the study

The single rod, long acting and reversible sub dermal contraceptive Implanon inhibits ovulation within one day of insertion and provides effective contraception for up to three years.

Despite its proven safety, effectiveness, and cost-effectiveness, the sub dermal implant is not widely used in Ethiopia with only 3.4% of women taking contraceptives between the ages of 15 - 49 years use Implants and 2.7% implanon users in the study area. reasons for lack of use of this highly effective reversible method include: women's and provider's knowledge and attitudes

toward the methods; practice patterns among providers; myths and misconceptions regarding the side effects of the method[22-23].

Although many women who use the contraceptive implanon are happy with their choices, significant numbers of women chooses the method and then request early removal.

To date there is no published data on discontinuation rates and reasons of discontinuation among women's of Implanon users in Ethiopia.

The purpose of this study is to assess discontinuation rate of implanon and to identify its determinants among women who ever used implanon in 2012/2013 in Ofla woreda, Tigray, North Ethiopia, 2014.

1.4 Significance of the Study

The findings of the study will in general help the health managers at a higher level and Health professionals in particular to understand the extent of the early implanon discontinuation.

The findings will also enhance the capacity of planning and decision making to look for possible solutions to solve the problem in collaboration with concerned stake holders so as to provide future appropriate Implanon services in the woreda as well as in the regions .In addition, the paper may be useful to other researchers as reference while conducting further studies.

Determining the rate and identification of associated factors with discontinuation of implanon will also help to increase the continuation rate of implanon users and improve future national family planning programs in Ethiopia particularly, Tigray and Ofla woreda.

2. LITERATURE REVIEW

A study in United Kingdom (UK), among one hundred ninety women who ever used Implanon, discontinuation rates were 16% and 33% at 6 and 12 months respectively. In this study, the main reasons for removal were bleeding problems (34%), mood swings (24%), weight gain (12%), planned pregnancy (10%) and other reasons (27%) but no significant relationship was found between time to removal of Implanon and parity, current contraception and gap between counseling and insertion. A relationship was found between age and time to removal. Younger women were more likely to have the device removed early[24].

A multicenter retrospective non-comparative study (n = 1183) in Switzerland reported the early removal of Implanon in 24% of users at 9 months, primarily because of side effects (20%). Side effects leading to discontinuation were mainly bleeding disturbances (45%), acne (12%), weight gain (7%), depressive moods (5%) and insertion site problems (3%) among Implanon users[25]. Similar study (n=92) in Thailand in 2005, reported 7.6% discontinued using Implanon during the one year period of study. Nearly half of all reasons for discontinuation were non-medical reasons (42.8%) included; planned pregnancy and divorce. Amenorrhea (40.2%) and infrequent bleeding (39.1%) were also the most menstrual adverse events while the non- menstrual adverse events were headache/dizziness 27.2% and 23.9% lower abdominal pain[26].

A study in Malaysia among 140 women reported the majority of users (62.9%) heard the information on Implanon from medical personnel during counseling on contraception. All implanon users chose Implanon because of non-compliance, and 72.1% of the users also believed the implant to be cost-effective in the long term. Nearly half (44%) of the women had used more than one contraceptive method before, switching to Implanon, whereas 14.3% had never previously used any form of contraception. In this study, 32 users (23%) discontinued use of Implanon. But there was no discontinuation reported within the first six months of insertion and 25% of the users decided not to have another Implanon inserted after completing 36 months of use. The most common reason for discontinuation was irregular bleeding (56.3%) followed by a wish for further pregnancy (31.3%) and the most frequent non-menstrual adverse events were; weight gain, hair loss, headache, nausea, mood swings, and loss of libido but no user reported pain at the implanted site as a reason for discontinuation. The discontinuation of Implanon was not significantly related to age, ethnicity, parity, educational level, or socioeconomic factors [14].

In Queensland, Australia discontinuation rates showed that at six months after insertion, 6% of women discontinued, 26% discontinued at one year, and 50% discontinued at two years.

The main reason for early discontinuation was bleeding pattern dissatisfaction but other common reasons for removal also cited included desiring a pregnancy, contraception no longer being required, mood changes and weight gain. In this study the location of the clinic was the only significant covariate Implanon discontinuation. Those who attended the regional clinic experienced significantly shorter survival times (or time to removal. Metropolitan women were more likely than rural women to discontinue use because of dissatisfaction with bleeding patterns[10].

A study conducted in nine countries showed that 64 (10%) women had discontinued after 6 months. At 1 year, another 62 women had discontinued use, resulting in a total of 126 (20%). After 2 years the total number of women who discontinued was 196 (31%). In the third year, 59 (6%) women had discontinued. The majority of women who discontinued the use, 17.2% in the first 2 years and 0.7% in the third year, was because of an unacceptable bleeding pattern and 3.5% in 2 years and 2.0% the third year women had discontinued for other reasons included those who wanted to become pregnant, those who were no longer in need of a contraceptive method, or those moving away from the study center. U.S women using the implant had discontinuation rates of 17% at one year[27].

According to the study done in Egypt, women had discontinued Implanon use 27% at 1 year, 28% at 2 years and 45% at 3 years and of these 55% of the implanon discontinuers (ID) were less than 30 years old at time of Implanon insertion versus 42% of Implanon continuers (IC). Hence, there was a statistically significant difference in the age distribution of (IC) who used the method for three years and more and Implanon discontinuers (ID) at time of Implanon but there was no statistically significant difference between IC and ID regarding the educational and occupational status. For ID who were FP users before Implanon 39% were OCs, 32% IUD, 24% Injectables, 1% Condom and 5% were Implanon users and of the ID 31% were shifted to OCs, 32% IUD, 23% Injectables, 5% Condom, and 10% to Implanon i.e. continuing using the Implanon method.

Regarding the reasons of discontinuation, almost 80% were related to unsatisfactory quality of counseling (39% side effects, 31% desire for pregnancy, 12% desire to use another method and 2% physicians' advice against Implanon use) but among 2% of ID pregnancy had occurrence due to improper insertion of Implanon/failure to put the capsule in place. Among ID who

reported side effects ,nearly half(41%) were Spotting,33% Uterine hemorrhage,28% backache,23% Pain at site of insertion and 24% Increase in body weight[15].

A study in Jos University Teaching Hospital, North-Central Nigeria showed out of total of 669 women who ever used implanon, thirty (4.5%) of women were removed at 2 years. The most common reasons for removal were menstrual disruption (33.3%) followed by desire for another pregnancy (30.0%) and weight gain (13.3%). Spousal disapproval was also a reason for removals in two cases. Two (6.7%) women were pregnant at insertion of the implant. Majority of the clients (66.7%) had used a modern method of contraception before accepting the Implanon. 20% condom, 20% oral contraceptive, and 13.3% Norplant were the methods of contraception used by the clients prior to accepting implanon while ten (33.3%) had not used any modern method of contraception before this time[28].

In study in Jos among 404 clients who accepted implanon,7(1.7%) women was discontinued in the first year. the commonest reason for removal was menstrual disturbance (57.1%).Other reasons for removal were also include side effects 6 (menstrual disorders 4, acne 1, and headache 1[29].

Similarly, a study in Jos Central Nigeria in 2008, four (2.1%) women had discontinued Implanon in the 10 months period. The reasons for removal were adverse side effects 2, husband's disapproval 1, and pregnancy before insertion of the implant 1[30].

Another study in Central Nigeria, also indicated that implanon discontinuation rate at 3 years was 5.4%.The common reasons for discontinuation were desire for pregnancy 5 (71.4%) and intermenstrual bleeding 2(28.6%).Fifteen clients had unwanted side effects: of these spotting 60%, menorrhagia 13.3%, and intermenstrual bleeding 13.3% were the most prevalent side effects. Eighty seven (51.8%) clients changed from other contraceptive method to implanon[31].

As different studies indicated that the discontinuation rate of implanon varies from area to area ranging from 1.7% to 27% at one year of insertion but in Ethiopia this discontinuation rate of implanon is not yet determined. Likewise, the most common reason for early removal of implanon is vaginal bleeding followed by desire for conception, spouse disapproval, switching to another method and weight gain. However, no study was conducted about factors associated with early removal of implanon.

2.1 Conceptual framework

The conceptual framework of this study (**figure 1**) highlights two outcomes of implanon use, either the method is discontinued or the method continues beyond the end of the study period. Time one represents the adoption of a method, while time two represents the duration of implanon use and whether or not the user experiences any side effects of the method. Time three represents the ultimate state of the user once the episode of implanon is over. The line between time 2 and time 3 represents the decision of the user to either continue or discontinue their method. Again numerous factors may influence this decision.

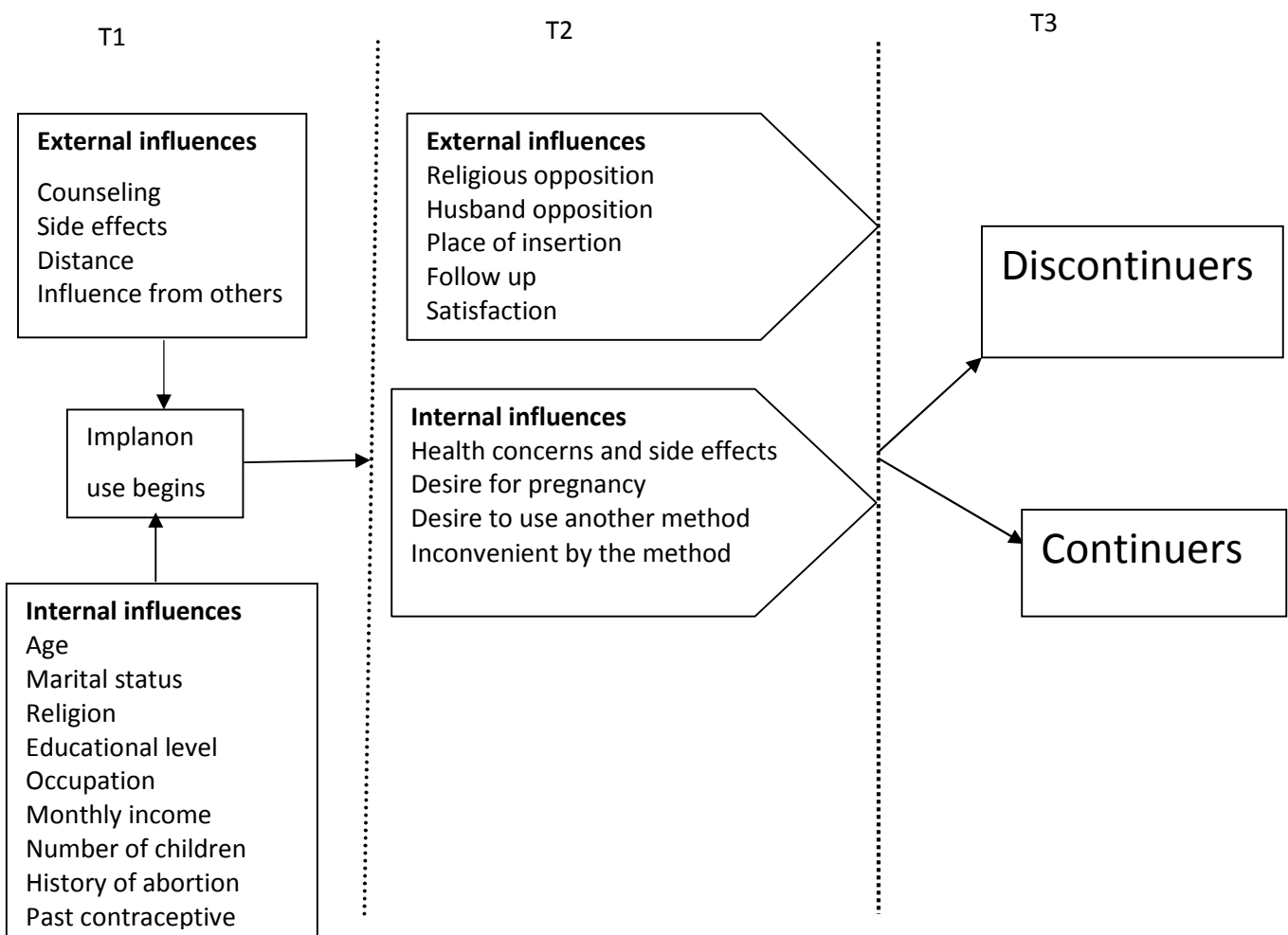


Figure 1: Frame work of early Implanon discontinuation among women who ever used implanon in 2012/2013, in Ofla woreda, Tigray, Northern Ethiopia, 2014

(Adopted from **Contraceptive Discontinuation and Side Effects: Longitudinal Evidence from Southern Ghana**)

3. OBJECTIVES OF THE STUDY

3.1 General objective:

To assess Implanon early discontinuation rate and identify the associated factors with it among women who ever used implanon in 2012/2013 in Ofla woreda, Tigray, North Ethiopia, 2014

3.2 Specific Objectives

To determine early discontinuation rate of Implanon among women who ever used implanon in 2012/2013 in Ofla woreda, Tigray, North Ethiopia, 2014

To identify factors associated with early discontinuation of Implanon among women who ever used implanon in 2012/2013 in Ofla woreda, Tigray, North Ethiopia, 2014

4. METHODS AND MATERIALS

4.1 Study area

This study was carried out in Ofla, one of the rural Woreda's in the Tigray regional state of Ethiopia and located 162 Km from Mekelle the capital of Tigray regional State and 620 Km from Addis Ababa. Part of Southern Zone, Ofla is bordered on the South by Raya Alamata, on the West by Wag Kemra Zone of Amhara Regional State, on the North by Endamohoni, and on the East by Raya Azebo. Based on the 2007 National Census conducted by Central Statistical Agency of Ethiopia (CSA), projection the woreda has a total population of 144,217 of whom 70,666 (49%) male and 73,550 (51%) women. The contraceptive coverage of woreda in 2012/2013 was 37.3% with 2.7% of implanon. Ofla has a population density of 125.4 person per square kilometer, which is greater than the Zonal average of 53.91 person per square kilometer and an area 1333 square kilometers. 96.6% of the population of the woreda is Orthodox Christians', and 3.38% Muslim. The climatic condition of the Woreda is 20 % Kola, 47% Wena Dega and 33% Dega. The Woreda has 6 Health centers, 22 Health post with 47 Health Extension Workers (HEW).

4.2 Study design and period

A community based cross-sectional study design was conducted from January to March, 2014.

4.3 Population

Source and Study population

All women who ever used implanon in Ofla Woreda from July 8, 2012 to July 7, 2013

4.4 Eligibility criteria

Inclusion

All Women who ever used Implanon from July 8, 2012 to July 7, 2013 in Ofla woreda where their list found in the Family planning registration book of the respected Health institutions

4.5 Study Variables

Dependent variable

Early discontinuation of implanon

Independent Variables

Age at the time of implanon insertion

Marital status

Religion

Educational level

Occupation

Number of children

Past Contraceptive History

Counseling Services

Place of insertion

Reasons for removal of implanon

Future intention of to use FP

4.6 Sample size determination and Sampling procedure

The numbers of women who ever used implanon in 2012/2013 in Ofla woreda in each Health institutions were 264 women.

All the 264 women in thirteen kebeles of the woreda were included in the study and the data was collected house to house by taking the list of the women from the Family planning registration book of the respected health institutions.

4.7 Data collection procedure

A structured and pre- tested interview based questionnaire with both open ended and closed ended questions was used to collect the data. The questionnaire comprises socioeconomic and demographic, past contraception history and Knowledge on Implanon, partner involvement, counseling status, future intention and Information specific to the use of Implanon types of questions. Among the discontinuers, further information was sought regarding duration of Implanon use and the reason for removal. The age, date of insertion and removal of implanon was taken from family planning registration book but again asked during the data collection process for similarity. The questionnaire was adopted from reviewing different literatures and scientific facts. Questionnaire was first prepared in English and translated to Tigrigna by RH specialist local language speaker to make it understandable by the study participants and to check

whether the translation was consistent with the English version. The questionnaire was back retranslated to English by another person.

4.8 Data Quality control

Six female who have completed grade ten, as data collectors and two B.Sc Nurse as supervisors were recruited and trained on the objectives of the study, data collection tools and interview techniques for two days by the principal investigator. Before the actual data collection, the questionnaire was pre tested in 5 % (18 women) outside of the study area, in Korem town. Based on the pretest, necessary modification was made on the questions and the data of the pretest was excluded in the actual data analysis.

The data was collected by taking the lists of the users from Family planning registration book of the respected health institutions and interviewing all women house to house in a place where the participants feel free to express their feelings and ideas.

Additionally, in occasions where the women have not accessed for absence, up to three attempts were being endeavored for interviewing to lessen the non-response rate. The data collectors were checking for completeness and consistency before leaving the interviewee. Moreover, the supervisors were also checking on daily basis for completeness of each data.

The study participants were asked after the data collectors explained the purpose of the study and obtaining verbal consent from each respondent.

4.9 Data processing and analysis

After the data collection have finished, the data was entered and cleaned in Epi- Info version 3.5.4 by the principal investigator and was double entered for consistency, the error rate was 1% then exported to Statistical package for social sciences (SPSS) version 20.0 for analysis.

Frequencies of the different variables were run to identify missing values.

House hold income was excluded from the analysis because of missing value and unwilling to tell income level in 37.7% of the participants. Age of the women at the time of insertion, grade level of the women and their husband, and occupation were coded. Coded variables with very low frequencies were also recoded. Means, standard deviation and proportions for the different variables were calculated and the data was presented in tables and figures. Owing to some missing answers to certain questions, the denominator in percentage computation varies according to the responses obtained for each question. Then, bivariate analyses were done for the

independent variables with the outcome variable (early implantation discontinuation) to select candidate variables for the multivariate analyses.

Finally, Variables with $P \leq 0.2$ on the bivariate analysis were entered to multivariate binary logistic regression model to identify their independent effects on the outcome variable.

Their respective odds ratios (OR) associated with these potential factors was reported as a measure of strength, together with the respective 95% confidence intervals.

4.10 Ethical consideration

Ethical clearance was obtained from research and ethical committee (REC) of Addis Ababa University, School of Public Health. Permission for conducting the study was also obtained from the Tigray Regional Health Bureau and the Ofla Woreda Health Office. Then official letter was written to each service delivery points. Information sheet that contains about the benefit and risk of participating of the respondents in this study with verbal informed consent was attached to each questionnaire to brief and obtain each study participant.

4.11 Dissemination of findings

The final report will be presented as partial fulfillment of the degree of Master of Public Health to School of Public Health, College of Health sciences, Addis Ababa University and copies will be sent to Ofla Woreda Health office, Tigray Regional Health Bureau, and other stake holders. It will also be disseminated through publication on local or international journals and presentation of on scientific conferences.

5. RESULT

5.1 Sociodemographic characteristics

A total of two hundred forty four (244) participants have responded to the questionnaires making a response rate of 92.4%. The age of study participants were between 16 and 45 years with the mean (+SD) age 26.9±6.9 years. More than half of the participants 168(68.9%) were married, 219(89.8%) Orthodox Christians and 199(81.6%) were farmer by occupation. One hundred eighty eight (77%) of the women had living children between one and nine at the time of insertion and 51 (20.9%) had history of abortion between one and three times with a mean (+SD) number of living children and mean of abortion history 3.03±1.9 and 1.4 ±0.6, respectively. More than half of the study participants 159 (65.2%) and more than three quarter of her husband's 116(79.1%) educational status were illiterate (**Table 1**).

Table 1: Sociodemographic status of women who ever used implanon in 2012/2013 in Ofla Woreda, Tigray, Northern Ethiopia, 2014 (n=244)

Characteristics		Number	%
Women's Age at the time of Implanon insertion	<20	39	16.0
	20-24	53	21.7
	25-29	62	25.4
	30-34	45	18.4
	35+	45	18.4
Women's marital status	Married	168	68.9
	Others(Widowed, Single, Divorced)	76	31.1
Religion	Orthodox	219	89.8
	Muslim	25	10.2
Women's Educational status	Illiterate	159	65.2
	Primary	62	25.4
	Secondary	23	9.4
Husband's Educational status(n=168)	Illiterate	116	69.0
	Primary	36	21.5
	Secondary	16	9.5
History abortion	Yes	51	20.9
	No	193	79.1
Women's Occupation	Farmer	199	81.6
	Others(merchant,G.employee, Student)	45	18.4

5.2 Past Contraceptive history and Counseling status during Implanon insertion.

One hundred sixty nine (69.3%) of participant have ever heard the any contraceptives before inserting Implanon. Nine in ten women have ever heard about Injectable followed by Pills 105(62.1%) but only 73(43.2%) have ever heard about Implanon.

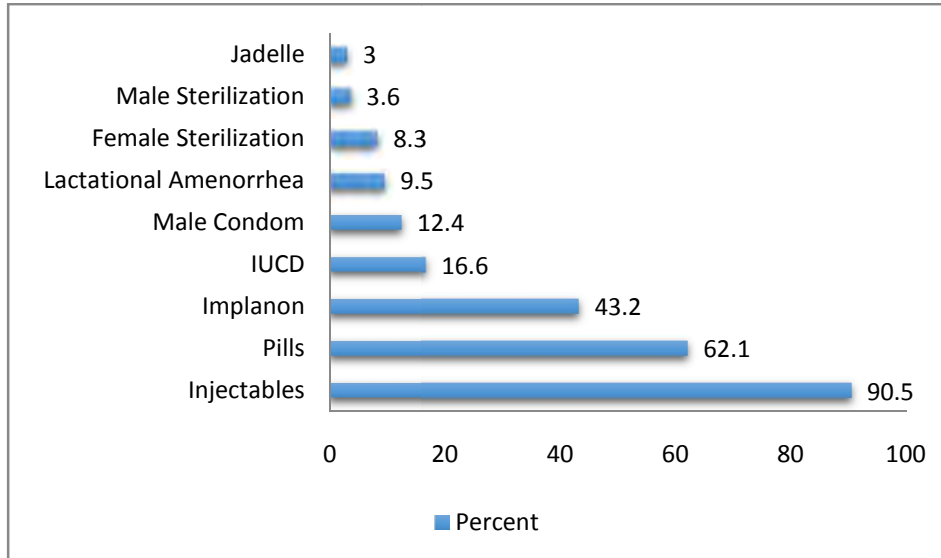


Figure 2: Type of contraceptive which were known by women before inserting implanon (n=169)

Among those who have ever heard about Implanon (n=73) 55(75.3%) of the participants reported they know the benefit, 45(61.6%) its duration of action and 35(47.9%) its effectiveness. The main sources of information for the participants were Health care providers 137(81.1%) followed by mass media and Relatives & friends 38(22.5%), 29(17.2%) respectively each.

More than half of the participants, 143(58.6%), didn't use any type of modern contraceptive before inserting Implanon (i.e. Implanon was used for the first time). The rest 101(41.4%) had used modern methods of contraceptives, and were only switching over to Implanon. pills and Injectables were the only two modern contraceptive which were used by the women in 18 (17.8%) and 83(82.2%) respectively.

Nearly three quarter of the participants (71.7%) got counseling service during inserting implanon with 91(52.0%) individual, 30(17.1%) mass and 54(30.9%) with husband counseling(**Table 2**).

Among who got counseling service during insertion, 145(59.4%) were counseled about implanon benefit, 94(38.5%) about its effectiveness and 91(37.3%) were also about its duration of action but only 22(9.0%) of participants reported they get counseling about side effects of Implanon.

One hundred forty five (59.4%) and 99 (40.6%) of the participants have inserted implanon in the Health Center and Health Posts respectively with the mean (\pm SD)distance from the place where the women inserted implanon to their home was 58.33 \pm 44.94 minutes(**Table 2**).

Table 2: Past Contraceptive history, counseling status of women who ever used implanon within last one year in Ofla Woreda, Tigray, Northern Ethiopia, 2014

Information of ever heard about any contraception before using Implanon (n=244)		Frequency	Percent
	Ever heard	169	69.3
	Not ever heard	75	30.7
Type of information they know about implanon before inserting(n=169 , some clients had more than one response)	Benefit	55	75.3
	Duration of action	45	61.6
	Effectiveness	35	47.9
	Side effects	10	13.7
	Others	4	5.5
Ever used any contraceptive before using Implanon (n=244)	Yes	101	41.4
	No	143	58.6
Type of contraceptive they used before inserting Implanon (last method ,n =101)	Injectables	83	82.2
	Pills	18	17.8
Counseling service during inserting implanon	Yes	175	71.7
	No	69	28.3
Type of counseling (n=175)	Individual counseling	91	52.0
	With husband counseling	54	30.9
	Mass counseling	30	17.1
Type of information obtained during counseling(n=175, some clients had more than one response)	Benefit	145	59.4
	Effectiveness	94	38.5
	Duration of action	91	37.3
	Side effect	22	9.0
	Others	2	0.8

Main reason for choosing Implanon given by the participants were safety (62.7%), convenient to use (59.4%), and effectiveness (48.8%) but a total of 33(13.5%) participants were reported as chosen by Health service provider for them. Other less frequent reasons for choosing implanon were the only method known by the women, and its long term prevention of pregnancy. Almost three in ten women have developed side effects after inserting implanon. Of the women who reported perceived side effects, 49(70%) Headache, 35(50%) abnormal vaginal bleeding, 5(7.1%) weight gain, 3(4.3%) acne and 13(18.6%) also others like abdominal pain, abdominal

distention, and fatigue. More than half (55.7%) of the women reported irregular menses during use of Implanon. In addition, a significant number of the women (57.3%) had an overall decrease in menstrual blood loss. Even though 153(62.7%) of the participants didn't appointe at a specific time for follow up after implanon insertion, 178(73%) were satisfied by the service given during the insertion.

5.3 Early Implanon Discontinuation

Of the 244 who ever used implanon in the last one year, the overall early implanon discontinuation rate was (16%). The 39 women that had the implanon removed had used implanon for the duration of between 2 and 14 months with a mean of 6.6 ± 2.8 months. Almost all (97.4%) of the discontinuers had used implanon only for duration of less than year, following for less than 6 months (53.8%) and 14 months (2.6%).

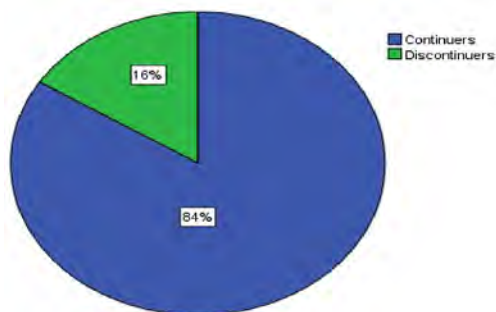


Figure 3: Number of who ever used implanon in the last one year in Ofla Woreda, Tigray, Northern Ethiopia, 2014

The main reasons for early discontinuation of implanon were 18(46.2%) Health concerns, 17(43.6%) want more children, 14(35.9%) side effects and 11(28.2%) shifting to other methods. Husband opposition, religious prohibition, inconvenience of use and contraceptive failure were also other less frequent reasons for early implanon discontinuation. The common side effects for discontinuation of implanon were 11(78.6%) Menstrual disruption& Headach each and 5 (35.7%) weight gain. Among the women who had discontinued by shifting to other methods, 10(90.9%) and 1(9.1%) were shifted in to Inject able and pill respectively.

Among the women who are using implanon, more than half (56.6%) has intended to continue implanon use until three years but 42(20.5%) was plan to discontinue at any time before three years whereas 22.9% of them didn't decide yet whether to continue or discontinue . The main reasons for not to continue implanon until three years were 20(9.8%) health concerns/issues

,18(8.8%) side effects, 18(8.8%) want of more children but only 6(2.9%) of the participants were plan to shift to other methods of contraceptives.

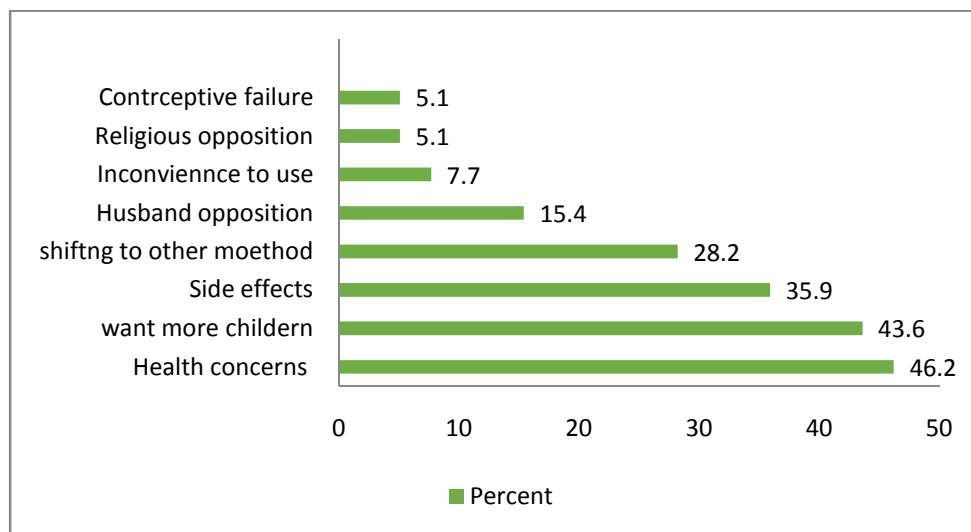


Figure 4: The reasons for early implanon discontinuation among women who ever used implanon in 2012/2013 in Ofla woreda, Tigray, North Ethiopia, 2014

5.4: Factors associated with Early Implanon discontinuation

All the socio demographic factors and counseling relating factors were assessed for the presence of association with early discontinuation rate of implanon in bivariate analysis .hence, counseling about benefit and effectiveness, place of insertion, experience of side effects, abnormal vaginal bleeding, weight gain, appointment for follow up and satisfaction by service were significantly associated with early discontinuation of implanon in the bivariate binary logistic regression analysis but in the multivariable binary logistic regression analysis showed that developing of side effect after the insertion of implanon, appointment for follow up, and satisfaction by the service given during implanon insertion were found to have statistically significant association with early discontinuation of implanon but early discontinuation of Implanon was not significantly related to age, marital status, parity, educational level, or socioeconomic variables.

The results demonstrated that Women who had developed side effects after inserting of implanon (Adjusted Odds Ratio (AOR) = 2.79 [95% CI: 1.10-7.07] who weren't appoint for follow up (AOR = 3.23 [95% CI: 1.17-8. 93] and those women who weren't satisfy by the service given during the insertion of implanon (AOR = 3.40[95% CI: 1.32-8.76] were more likely to have an early discontinuation of implanon compared to Women who had not developed

side effects, who were appoint for follow up and women who were satisfy by the service given during the insertion of implanon (**Table 3**).

Table 3: Factors associated with early implanon discontinuation among women who ever used implanon in 2012/2013 in Ofla Woreda, Tigray, Northern Ethiopia, 2014

Variables	Continuation of implanon		Crude OR (95 % C.I)	Adjusted OR (95% C.I)
	Yes (%)	No (%)		
Religion				
Orthodox	187(85.4)	32(14.6)	1	1
Muslim	18(72)	7(28)	2.27(0.88-5.88)	3.33(0.93-11.9)
Living children				
Yes	162(86.2)	26(13.8)	1	1
No	43(76.8)	13(23.2)	1.88(0.89-3.97)	1.61(0.67-3.88)
Counseling about benefit				
No	76(76.8)	23(23.2)	2.44(1.21-4.90)*	0.92(0.30-2.78)
Yes	129(89.0)	16(11.0)	1	1
Counseling about effectiveness				
No	120(80)	30(20)	2.36(1.07-5.23)*	1.45(0.43-4.93)
Yes	35(90.4)	9(9.6)	1	1
Place of insertion				
HC	117(80.7)	28(19.3)	1	1
HP	88(89.9)	11(11.1)	0.52(0.25-1.1)	0.54(0.22-1.33)
Presence of side effects				
Yes	50(71.4)	20(28.6)	3.26(1.61-6.60)*	2.79(1.10-7.07)**
No	150(89.1)	19(10.9)	1	1
Abnormal vaginal bleeding				
No	180(86.1)	29(13.9)	1	1
Yes	25(71.4)	10(28.6)	2.48(1.08-5.70)*	0.452(0.13-1.57)
Weight gain				
No	203(84.9)	36(15.1)	1	1
Yes	2(40)	3(60)	8.46(1.37-52.40)*	4.23(1.48-37.61)
Headach				
No	167(85.6)	28(14.4)	1	1
Yes	38(77.6)	11(22.4)	1.73(0.79-3.77)	0.31(0.08-1.26)
Appointment for follow up				
Yes	140(91.5)	13(8.5)	1	1
No	65(71.4)	26(28.6)	4.31(2.08-8.92)*	3.23(1.17-8.93)**
Satisfaction				
Yes	160(89.9)	18(10.1)	1	1
No	45(68.2)	21(31.8)	4.15(2.04-8.45)*	3.40(1.32-8.76)**

NB **=Statistical significant at $p < 0.05$

6. DISCUSSION

This study dealt with the discontinuation rate of implanon among women who ever used implanon using a community based cross sectional study.

The early discontinuation rate of implanon among women who ever used implanon in last one year was 16% with a mean duration of 6.6 ± 2.8 months. This is higher than the studies conducted in Nigeria, Malaysia and Thailand [14, 26, 29, 31] but lower than the studies in Egypt, Australia, and UK [10, 13, 15] which were conducted in rural and urban setting. This could be because of due to different reasons. One might be due to the educational status of the study participant's as majority women in the other studies [14, 26, 29, 31] were literate compare to the current study. The other possible reason might also be due to age level. Because women of the current study were a younger age than the previous studies [14, 26, 29, 31] and being young has high probability desire to have more children which intern this leads to high discontinuation rate. The third reason might due to inadequate pre insertion counseling particularly about the expected side effects of the method. Finally, it might be due to study setting as the current study was conducted in rural whereas the others were either in urban or in both urban and rural.

Main reasons cited by the women for early discontinuation of implanon were Health concerns and side effects followed desire to have more children. The most common side effects of implanon were menstrual disruption and Headach. This is consistent with other studies conducted in Nigeria, Egypt, Thailand and Malaysia [15, 26, 28-29]. Although, menstrual disruption have no serious effects on health but can interfere with daily activities, especially interfere with their sexual relationships with their husbands. Women who had removed implanon due to side effects could be because of to lack of prior information on the expected side effects of the method and intolerance of the side effects. Women with lack of prior information and had not used any form of contraception before may be also more concerned about vaginal bleeding and would want the implanon removed in order not to interfere with their sexual relationships with their husbands. In a follow up study of contraceptive discontinuation in Niger and the Gambia, researchers found that approximately 30% of family planning users discontinued use within the first eight months of acceptance, primarily because of side effects, spousal disapproval or a desire to become pregnant. The rate of discontinuation was higher among women who reported that they had not been adequately counseled about side effects [32]. Providing counseling about the possible side effects of the method and support by the service providers may be the most

important way to help women continue on implanon contraception. Husband's opposition of the method was the reason for discontinuation in 15.4% of the women. This is alarming and requires that the male involvement should be incorporated in counseling issues regarding the implanon.

As to the independent associated factors presence of side effects, appointment for follow up and satisfaction by the services during insertion of implanon were the predictors of early discontinuation.

Women who have developed side effects after inserting implanon were 2.79times more likely to discontinue as compared to women who did not developed side effects which is similar with study conducted in Egypt[15].This might be related to the fact that inadequate pre insertion counseling about the possible side effects during the insertion of implanon by service providers and intolerance of the side effects of the method.

The odds of early discontinuation rate among those who didn't appoint for follow up were 3.23 times more than who appointed. This may be due to the inadequate pre insertion counseling on the expected side effects specific to implanon

Lastly, Women who didn't satisfy by the service given during the insertion of implanon were 3.40 times more likely to discontinue implanon as compared to those who satisfied by the service given during insertion of implanon. This is because women who were not interested by the method choice, privacy, explanation of the service provider and other service provision during insertion of implanon may remove their method early.

The study has its own strengths and limitations

Being community based was taken as strength. However, despite its strength, the study was not without limitations. The study did not assure causality due to the nature of the design. Besides, there a question of inference as some of the women who ever used implanon in 2012/2013 outside of the woreda was excluded from the study.

7. CONCLUSIONS AND RECOMMENATIONS

7.1 CONCLUSIONS

Early implanon discontinuation rate in this study is in a considerable number. In addition, significant amount of women were also planned to discontinue before 3 years.

The main reasons for early discontinuation of implanon were Health concerns, desire to have more children and side effects. Generally, more than 90% of the causes of early implanon discontinuation were related to unsatisfactory quality of counseling (side effects, desire for pregnancy, desire to use another method).

Women who have developed side effects during using of implanon, women who didn't appointed for follow up and women who didn't satisfied by the service given during the implanon insertion were the predictors of early implanon discontinuation.

Socio demographic variable including religion, age, educational level, number of live birth and marital status have not been found to be significant Predictors of early Implanon discontinuation.

7.2 RECOMMENATIONS

Based on the findings, the following recommendations are made

- A great effort should be made to address women's perceptions and understanding through mass media and health education programs in order to increase the continuation rate of implanon use.
- Health care providers should also give appropriate pre insertion counseling based on manual to the clients by giving emphasize on side effects.
- Close monitoring and follow up of implanon users should be made to increase implanon continuation rate.
- Political leaders, Health mangers ,NGOs and all stakeholder should work in collaboration to decrease early implanon discontinuation rate
- Further research should be done on large scale sampling supported by qualitative data in order to identify determinants of early implanon discontinuation.

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9. ANNEX

9.1 Information sheet

Addis Ababa University, College of Health Sciences, School of Public Health

Hello! My name is..... And I am working in a study conducted by Mr. **Kalayu Birhane**, from Addis Ababa University, School of Public Health. This study is on Implanon early discontinuation rate and associated factors for discontinuation among women who had used implanon in 2012/13 in Ofla woreda, Tigray, North Ethiopia. I would very much appreciate your participation in this study. I would like to ask you about your aspects on using implanon. This information will help the woreda, region and country as well as other stakeholder to plan Family planning Services. The questionnaire only takes between 15 and 20 minutes to complete. Whatever information you provide will be kept strictly confidential and will not be shown to other persons.

By participating in this research project you may feel some discomfort in wasting your time (a maximum of 20 minutes). However, your participation is definitely important to identify the determinant factors for the early discontinuation of implanon among women who had used implanon in 2012/13 so as to improve the Family planning services in the woreda, Region as well as the country. There are no any incentives or direct benefits as well as risks in participating in this research project.

Participation in this study is voluntary and you can choose not to answer any individual question or all of the questions. However, I hope that you will participate in this study since your views are important.

Consent (Verbal Consent):-

Given all the above information,

Respondent agrees to be interviewed Start interview..... 1	Respondent doesn't agree to be interviewed Terminate Interview..... 2
---	--

Name of interviewer: _____ Signature _____ Date: _____

Name of supervisor: _____ Signature: _____ Date: _____

Questionnaire code _____ Kebele _____ Gote _____

9.2 Questionnaire- English version

Instruction: - Circle the responses for questions with alternatives and for open ended questions write on the space provided.

Part I: Socioeconomic and Demographic characteristics

QN	Questions and filter	Coding categories	Skip
101	What was your age at time of insertion?	Age .....in years	
102	What was your marital status at time of insertion?	Single.....1 Married .....2 Widowed .....3 Divorced /separated .....4	
103	Have you ever attended a School?	Yes .....1 No .....2 No but I can read and write .....3	If No skip to 105
104	What is the highest grade you completed?	Grade.....	
105	Have your husband ever attended a School?	Yes .....1 No .....2 No but I can read and write .....3	If No skip to 107
106	What is the highest grade your husband completed?	Grade.....	
107	What is your religion?	Orthodox.....1 Muslim .....2 Others (specify)	
108	What is your main occupation?	.....
109	How much is your Monthly income(Birr)	.....

Part -ii Gynaecological History

QN	Questions and filter	Coding categories	Skip
201	Did you have children during insertion of implanon?	Yes .....1 No .....2	If No skip to 204
202	If yes how many children did you have?	.....
203	How many more children do you want to have?	.....
204	Do you intend to have children?	Yes .....1 No .....2	If No skip to 206
205	If yes how many do you want to have?	.....
206	Did you have any history of abortion?	Yes .....1 No .....2	If No skip to 301
207	If yes how many times?	.....

Part III Past knowledge and utilization of contraceptive methods

QN	Questions and filter	Coding categories	Skip
301	Have you ever heard of any contraceptive methods?	Yes .....1 No .....2	If No skip to 305

302	Which kind of contraceptive method have you ever heard of? You can answer more than one.	Pills .....1 IUCD .....2 Injectables .....3 Female Sterilization .....4 Male Sterilization .....5 Implanon .....6 Jadelle .....7 Lactation Amenorrhea .....8 Male condom .....9 Others (specify).....	
303	From where did you obtain the information?	.....
304	What type of information did you know? (Multiple answers possible)	Effectiveness .....1 Side effects .....2 Duration of action .....3 Benefit .....4 Others (specify)	
305	Have you ever used any contraception before using Implanon?	Yes .....1 No .....2	If No skip to 307
306	Which method you did use? (last method)	Pills .....1 IUCD .....2 Injectables .....3 Others (specify).....	
307	What was the main reason for not using any contraceptive method before?	.....

Part-IV Role of Partner and Counseling services

QN	Questions and filter	Coding categories	skip
401	Did you get counseling service before inserting the implanon?	Yes .....1 No .....2	If No skip to 406
402	What type of counseling did you obtain?	Individual counseling.....1 Mass counseling .....2 With husband counseling .....3 Other (specify)	
403	For how long did you get the counseling service	.....
404	After how long the counseling service of did you inserted implanon?	.....
405	What type of information did you obtain during the counseling? (Multiple answers possible)	Advantage .....1 Side effects .....2 Duration of action .....3 Effectiveness .....4 When to insert and remove .....5 Other (specify)	
406	Did you first discuss with your partner exactly to use this method of FP?	Yes.....1 No .....2	If “yes” skip to 408

407	Why not you discuss with your husband?		
408	Did he accept at that time?	Yes.....1 No .....2	
409	Who accompanied you?	.....
410	Who was decided inserting the Implanon?	.....
411	When did you insert the Implanon?	...../...../2005 E.C	
412	Where did you insert Implanon	.....
413	Why did you choose to use Implanon?	.....
414	How long did it take to reach the source of implanon from your Home?	.....
415	Did you feel any side effect after inserting implanon?	Yes .....1 No .....2	If No skip to 417
416	If yes, what type of side effect(s)?	.....
417	How it comes your menstrual cycle after you have started using implanon?	Regularly .....1 Irregular .....2 It already stops.....3	If it is already stops skip to 419
418	Was there any change in the amount of menstrual loss after you have started using implanon?	No change .....1 Increased .....2 Decreased .....3 Others (specify).....	
419	After the insertion of implanon, did they appointment you at a specific time?	Yes .....1 No .....2	
420	Did you satisfy by the service given to you by the FP service providers during the insertion?	Yes .....1 No .....2	

Part-V Reasons for removal of Implanon use

QN	Questions and filter	Coding categories	Skip
501	Are you still using the implanon?	Yes.....1 No .....2	If “Yes” skip to 601
502	For how long did you utilize implanon?	.....
503	When did you remove the implanon?	...../...../.....E.C	
504	What was the reason you had remove using of implanon?	.....
505	If the reason is shifting to other method, which method is using currently?	Pills .....1 IUCD .....2 Injectables .....3 Others (specify).....	

Part-VI future intention to use family planning

QN	Questions and filter	Coding categories	Skip
601	Do you intend to continue using Implanon until 3 years?	Yes .....1 No .....2 Don't Know .....3	If no skip to 603 and If Don't Know skip to 604

602	Why do you intend to continue using Implanon until 3 years?	.....
603	Why don't you intend to continue using Implanon until 3 years?	.....
604	Do you intend to use any contraceptive method in the future?	Yes .....1 No .....2 Don't Know .....3	
605	If yes, which method do you intend to use?	Pills .....1 IUCD .....2 Injectables .....3 Implanon .....4 Others (specify).....	
606	If no, what is the main reason that you will not use a family planning method in the near Future?	.....

Thank You for Your Participation

9.4 ትግርኛ ቃለ መጠይቅ

መምርሒ: መማሪያ ዘለም ሕቶታት አብ ተመልሲ እኹን በቦ/ቢ ብዮ ከምኡ ድማ መማሪያ ዘይብሎም ሕቶታት አብ ተክፍቲ ቦታ ምልክቶ/አዮ::

ቅጥዒ 1: ማሕበራዊ ኢኮኖሚያዊ ምግራፊያ ዊንኩነታት

ታሪኽ ቁጥር	ሕቶታት	ከድ	ዝለል
101	ኢምፕላናሽን ከተከለኸ ከንዕድመ ክንክንደይ ነይሩ?	ዕድመ	
102	ኢምፕላናሽን ከተከለኸ ከንዕድመ ኩነታት እንታይ ይመስል?	ሓዳር ዘይመስረተት .....1 ብዓል ተሓዳር .....2 ብዓል ገዝአዝሞታ .....3 ዝፈትሐት .....4	
103	ትምህርቲ ተማሂርኩ ከንደይ ነይሩ?	አዎ .....1 አይፋሉን .....2 አይፋሉን ምንባብን ምፅሓፍን ይኸእል .....3	“አይፋሉን” ናብ 105
104	እንድሕር ተማሂርኩ ከንደይ ነይሩ? ከንዕድመ ኩነታት እንታይ ይመስል?	ትምህርቲ ደረጃ .....1	
105	ብዓል ገዝአዝሞታ ተማሂርኩ ከንደይ ነይሩ?	አዎ .....1 አይፋሉን .....2 አይፋሉን ምንባብን ምፅሓፍን ይኸእል .....3	“አይፋሉን” ናብ 107
106	እንድሕር ተማሂርኩ ከንዕድመ ኩነታት እንታይ ይመስል?	.....
107	ሃይማኖት ከንታይ ነይሩ?	አርቶዶክስ .....1 ሙስሊም .....2 ካሊእ (ይግሓድ)	
108	ዋና ስራ ሕክምና ከንታይ ነይሩ?		
109	ወርሓዊ ኢታዊ ክንክንደይ ነይሩ?	.....

ቅጥዒ 2- ሕሉፍ ታሪኽ ስነ ወሊድ

ታሪኽ ቁጥር	ሕቶታት	ከድ	ዝለል
201	ኢምፕላናሽን ከተከለኸ ከንታይ ይመስል/ ቆይታ ከንታይ ነይሩ ከንደይ ነይሩ?	እወ .....1 አይፋሉን .....2	“አይፋሉን” ናብ 204
202	ከንደይ ቆይታ/ዕድሜ ከንታይ ነይሩ ከንደይ ነይሩ?	.....
203	ከንደይ ተወሳኺ ቆይታ ከንታይ ነይሩ ከንደይ ነይሩ?	.....
204	ቆይታ ከንደይ ነይሩ ከንታይ ነይሩ/ ቆይታ ከንታይ ነይሩ ከንደይ ነይሩ?	እወ .....1 አይፋሉን .....2	“አይፋሉን” ናብ 206
205	ከንደይ ቆይታ/ዕድሜ ከንታይ ነይሩ ከንደይ ነይሩ?	.....
206	ቅድሚያ ሐዘ ጥንሲ ከይዳክን ዶ ይፈልጥ?	እወ .....1 አይፋሉን .....2	“አይፋሉን” ናብ 301
207	ዕንድሕር ከይዳክን ከንደይ ነይሩ?	.....

ቅጥዒ -3 ሕሉፍ ፍልጠት ን ኣጠቓቕማ መከላከሊ ጥንሲ

ታሪኽ ቁጥር	ሕቶታት	ከድ	ዝለል
301	ቅድሚያ ኢምፕላናሽን ከተከለኸ ከንታይ ነይሩ ከንደይ ነይሩ?	እወ .....1	“አይፋሉን” ናብ 305

	ዝኸነዓይነት መከላከሊ ጥንሲ ሰሚዕኸን ደትፈልጣ?	አይፋሉን .....2	
302	አየናይዓይነት መከላከሊ ጥንሲ? (ካብ ሓደ ልዕቅብ መልሲ ይካኣል እዩ)	ክኒን .....1 ሉፕ .....2 መርፍእ/ዲፖ .....3 ናይጋልኣንስተይቲ ቀዋሚ መከላከሊ .....4 ናይወዲተባዕታይ ቀዋሚ መከላከሊ .....5 ኢምፕላኖል .....6 ጃደል .....7 ጠብብም ጠባይ .....8 ናይወዲተባዕታይ ኮንዶም .....9 ካሊእ (ይጻሓፍ)	
303	እቲ ሓበሬታ ካብ መንሸሚዕኸን ንኣ?	.....
304	እንታይ ዓይነት ሓበሬታ ትፈልጣ ነይርክን? (ካብ ሓደ ልዕቅብ መልሲ ይካኣል እዩ)	ውዒኢታዊነት .....1 ዜተደለየ ሳዕቤን .....2 ዘገልግሎ ስሞን .....3 ጥቕሙ .....4 ካሊእ (ይጻሓፍ)	
305	ቅድሚኢም ፕላን ልምድ ኣታውክን/ምጥቃምክን/ ዝኸነዓይነት መከላከሊ ጥንሲ ተጠቂምክን ደትፈልጣ?	እወ .....1 አይፋሉን .....2	“አይፋሉን” ናብ 307
306	አየናይዓይነት መከላከሊ ጥንሲ እዩ? (እቲ ኣብ ቀረባ ግዜ ዝተጠቀመኣ ይጻሓፍ)	ክኒን .....1 ሉፕ .....2 መርፍእ/ዲፖ .....3 ካሊእ (ይጻሓፍ)	
307	ዘይምጥቃምክን ጥንሲ ክንደይ ኣንታይ ነይሩ?	.....

ቅጥዒ -4 ናይ ብዓል ገዛእስተዋፀኣን ኩነታት ምኽሪ ኣገልግሎትን

ታሪቕ ፅሪ	ስቶታት	ኮድ	ዝለል
401	ቅድሚኢም ፕላን ልምድ ኣታውክን/ናይምኽሪ ኣገልግሎት ረኺብክን ደን ይርከን?	እወ .....1 አይፋሉን .....2	“አይፋሉን” ናብ 406
402	እንታይ ዓይነት ናይምኽሪ ኣገልግሎት ረኺብክን?	ናይውልቀምኽሪ .....1 ናይሓባርምኽሪ .....2 ምስ-ብዓል ገዛይምኽሪ .....3 ካሊእ (ይጻሓፍ)	
403	ንኸንደይ ዝኣከል ግዜ እዩ?	.....
404	ድሕሪ ክንደይ ግዜ ናይምኽሪ ኣገልግሎት እዩ ምዃን ምጥቃም ኣኣቲ ምዃን ልክን?	.....
405	ኣብ እዋን ናይምኽሪ ኣገልግሎት እንታይ ዓይነት ሓበሬታ ረኺብክን? (ካብ ሓደ ልዕቅብ መልሲ ይካኣል እዩ)	ጥቕሚ .....1 ዘይተደለየ ሳዕቤን .....2 ዘገልግሎ ስሞን .....3	

		ውዕኢታውነት .....4 መዓዘክምዘኢትውንዘወፅእ? .....5 ካሊእ(ይገጥፍ)-----	
406	ብመጀመሪያታምሱብዓልገዛኸን-በዛዓባኢምጥላኛልምጥቃምተማኸርኩምዶይይርኩም?	እወ .....1 ኣይፋሉን? .....2	“እወ” ናብ407
407	ንምንታይዘይተማኸርኩም?	.....
408	ምኸክሩተቀቢሉምዶይይሩ?	እወ .....1 ኣይፋሉን? .....2	
409	ኢምጥላኛልንምእታውክትኸዳከለኸንምንምሳኸንኣካዩዱክን?	.....
410	ኢምጥላኛልምእታው-ብመንተወሲኑ?	.....
411	ኢምጥላኛልማዓዘኢትውክንኣ?	...../...../..... ዓ.ም	
412	ኢምጥላኛልኣበይኣኢትውክንኣ?	-----	
413	ኢምጥላኛልንምንታይመሪፅክንኣ?	-----	
414	ካብገዛኸንና-ብኢምጥላኛልዘእተውክናሉቦታክነደይዘኣክልይወስ?	.....
415	ድሕሪኢምጥላኛልምጥቃምምጅማርክንዘኸንዓይነትዘይተደለየሳዕቤንተሰማዒ-ኩንዶይፈልጥ?	እወ .....1 ኣይፋሉን? .....2	“ኣይፋሉን” ናብ 417
416	እንታይዓይነትዘይተደለየሳዕቤን?	.....
417	ድሕሪኢምጥላኛልምጥቃምምጅማርክንወርሐዊፅግድኸንከመይእዩዝመፅእ?	ብተኸታታሊ .....1 ብምቁርራፅ .....2 ጠቅላላኣቋሪፀ-እዩ.....3	
418	ድሕሪኢምጥላኛልምጥቃምምጅማርክንዘፈሰሰመጠንናይወርሐዊፅግድምለውጡእንታይይመስል?	ለውጢዮብሉ? .....1 ወሲኹ .....2 ቀኒሱ .....3 ካሊእ(ይገጥፍ).....	
419	ድሕሪኢምጥላኛልምጥቃም ቆፀሮ ሂሳብኸን ዶ ነይሮም?	እወ .....1 ኣይፋሉን? .....2	
420	ብመከላኸሊጥንሲ ብዓል ሞያታትዝዋሃብኣገልግሎትረኺፅኸንዶ?	እወ .....1 ኣይፋሉን? .....2	

ቅጥዒ -5 ንኢምጥላኛልምቁራፅዘኸንምኸንደታት

ታሪቕፅፅ	ሕቶታት	ኮድ	ዝለል
501	ክሳብሐዘኢምጥላኛልእናተጠቀምክንዲኸን?	እወ .....1 ኣይፋሉን? .....2	“እወ” ናብ601
502	ንኸንደይዘኣክልግዜተጠቐመክንኣ?	.....
503	ማዓዘኣኣውጺኢኸንኣ/ኣቋሪፅክንኣ?	...../...../..... ዓ.ም	
504	ልምውግእምቁራፅ/ ዋናምክንደታት/ታትእንታይነይሩ/ ነይሮም?	.....
505	እንድሕርድኣምኸንደታት-ብካሊእዓይነትመከላኸሊጥንሲምቅደርኮይኑ፣ሐዘእንታይዓይነትመከላኸሊጥንሲትጥቀማኣለኸን?	ክኒን? .....1 ኑፕ .....2 መርፍእ/ዲፖ .....3 ካሊእ(ይገጥፍ).....	

ቅጥዒ-6 ናይቀግሊመከላኸሊጥንሲናይምጥቃምድሌት

ታሪክ	ሕቶታት	ኮድ	ዝለል
601	ንቀፃሊ ኢምፕላሜንትሜንት ስልጠና ተቀባይነት ለሰው ሀብት ለማድረግ ለምን ዓይነት ስልጠናዎችን ይደረግላቸዋል?	እው .....1 አይፋሉን? .....2 አይፈልጉን? .....3	“አይፋሉን” ናብ 603፣ “አይፈልጉን” ናብ 604
602	ንምንታይ ኢምፕላሜንት ስልጠናዎችን ይደረግላቸዋል?	.....
603	ንምንታይ ኢምፕላሜንት ስልጠናዎችን ይደረግላቸዋል?	.....
604	ንቀፃሊ ዝኾነ ዓይነት ስልጠና ስልጠና ስለምን ዓይነት ስልጠናዎች ይደረግላቸዋል?	እው .....1 አይፋሉን? .....2 አይፈልጉን? .....3	“አይፋሉን” ናብ 607 <div style="border: 1px solid black; padding: 2px; display: inline-block;">ወደኣ</div>
605	አየር ደረጃ ዓይነት ስልጠና ስልጠና ስለምን ዓይነት ስልጠናዎች ይደረግላቸዋል?	ክኒን .....1 ኑፕ .....2 መርፍኣ/ዲፖ .....3 ኢምፕላሜንት .....4 ካሊኦ (ይፃሓፍ).....	
606	ቀፃሊ ስልጠና ዓይነት ስልጠና ስልጠና ስለምን ዓይነት ስልጠናዎች ይደረግላቸዋል?	.....

DECLARATION

I hereby declare that, to the best of my knowledge, this thesis is my original work and has never been submitted to this University or any other institution of higher learning for an academic award or publication.

I hereby submit it for the award of a degree of Masters of Public Health of Addis Ababa University.

AUTHOR:

..... Date.....

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This thesis has been submitted for examination with the approval of the following advisors

..... Date.....

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..... Date.....

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