

**ASSESSMENT OF MODERN CONTRACEPTIVE METHODS UTILIZATION AND ITS  
DETERMINANT FACTORS AMONG WOMEN OF REPRODUCTIVE AGE GROUPS  
AT SHIRE ENDASLASIE TOWN, TIGRAY, NORTHERN ETHIOPIA 2011**

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**ABSTRACT**

A woman's preferences, practice and tolerance for various modern contraceptive methods attribute vary according to the type of relations and other aspects of her life. The objective was to assess modern contraceptive methods utilization and its determinant factors among women of reproductive age groups at Shire Endaslasie town, Tigray Region, Northern Ethiopia. A Community based cross sectional study designs were employed on 367 sampled women of reproductive age groups in Shire Endaslasie town in 2011. Stratified sampling techniques were used to select the study subjects. Three kebeles were selected randomly from all five kebeles in the town. After developing a structured questionnaire, pretest was under taken on 10% of the study subjects one week before data collection i.e. 37 mothers on similar and non-selected community. 15 voluntary kebele oriented outreach workers and above 10 grade data collectors were assigned and data was collected through face to face interview. Data-entry, cleaning and statistical analysis was done using Version 16 SPSS software. In conclusion this study have clearly described that women use modern contraceptive Methods after they had higher number children and less desire to limit family size.

**Keywords:** Utilization, modern contraceptive Methods, determinant factors, FMOH, EDHS and stratified sampling technique

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## INTRODUCTION

Worldwide contraceptive prevalence is estimated to be 58 % in 1993. In the more developed countries, regional prevalence variations fall within a relatively narrow range, from 69 % in Eastern and Southern Europe to 78 % in Northern Europe. Among the less developed countries, contraceptive prevalence is lowest in Africa. Use of contraception among married women in less developed countries varies from a low of 8 % in Western Africa to a high of 83 % in Eastern Asia. Modern methods account for the majority of currently global contraceptive practice; almost it covers 9 out of every 10 contraceptive users. Female sterilization, intra - uterine devices and oral pills account for more than two – thirds of all contraceptive practice worlds wide. In the less developed countries, modern methods account for a much larger share of total contraceptive use (90 %) than in the more developed countries (70 %). This is largely because certain traditional methods including withdrawal and various forms of the calendar rhythm method are commonly used in the more developed regions (1,2).

Contraceptive prevalence at the global level will need to be at least 66 % – 75 % in the more developed regions and 67 % in the less developed regions to attain the projected decline in fertility by the year 2025. Those estimates imply a nearly 60 percent increase in the number of contraceptive users among married women. The largest proportional increase will be in Africa where projections call for the number of users to more than double up to 2005, and to continue increase rapidly. Unmet need is higher in sub-

Saharan African countries averaging 26.8 per cent of women currently in union. Fertility is highest among sub-Saharan Africa countries at an average of 5.3 children per women. Ethiopia is one of the highest ranking countries in reproductive health risk worldwide with a maternal mortality ratio 673 per 100,000 deliveries (2, 3, 4).

Two organizations that form the back bone of family planning service delivery in Ethiopia are the Family Guidance Association of Ethiopia (FGAE) and Marie Stops International Ethiopia (MSIE). Many factors: Cultural, economic, political, and Demographic help to explain the low coverage in contraceptive prevalence. Ethiopia is one of the Subs – Saharan countries with alarming population growth rate 2.7% and the total fertility rate is nearly six. Fertility Preferences 78 % of married women say that they either want to delay the birth of their next child or to have no more children (including those sterilized). Fertility preferences are closely related to the number of living children a woman has. In general, as the number of living children increases, the desire to want another child decreases. For example, 58% of currently married women with 5 living children say they want to have no more children or have been sterilized, in contrast to 9% of women with no children (2, 5, 6).

The discrepancy between fertility preferences and contraceptive practice is regarded as an indicator of unmet demand for family planning. So far, it is explained that there is alarming increase in population. Therefore, the solution for this problem is family planning, which is a decision made

by an individual or couple about how many children one would like to have, when to start having children, when to stop having children and how long to rest between each pregnancy. Contraceptive methods are grouped into two: modern and traditional. Modern methods include female sterilization, pill, Intra uterine contraceptive devices (IUCD), injectable, implants, condom, and lactation amenorrhea method (LAM). Traditional methods include periodic abstinence, withdrawal, and folk methods. Overall, the 2005 EDHS (Ethiopia Demographic Health Survey) found that 15 % of married women are using some method of contraception. The majority of users rely on a modern method. Use of modern contraceptive methods has more than doubled from 6 percent of currently married women in the 2000 EDHS to 14 % in the 2005 EDHS (7, 8, 9, 10). The most commonly used modern method is injectable (10 percent), followed by the pill (3 %). The focus of this study is on factors affecting reproductive age Women's practices of modern contraceptive methods in Tigray regional state, shire Endaslasie Town, Ethiopia.

### **Problem statement**

The highest TFR (Total Fertility Rate) is observed in sub-Saharan Africa 5.4 percent, followed by Latin America 3.1 percent and Asia 3.0 percent given such uncontrolled population growth and its impact on the socio economic development of the society great emphasis has been given to family planning, which plays a substantial role to reduce fertility worldwide. Inadequate family planning strategies have continuously exacerbated the vulnerability of developing

countries, culminating into high maternal and infant mortality, increasing hard core poverty, disintegration of the extended family system, high incidence of HIV/AIDS and sexually transmitted infections and a high incidence of morbidity and mortality. At least 25% of all maternal deaths can be prevented by family planning. One in four infant deaths in developing countries can be prevented by spacing birth at least two years apart (1,3,5).

Ethiopia's reproductive health indicators showed that the total fertility rate is 5.9 children per women; Maternal mortality Ratio (MMR) stands among the highest in the world with 850 maternal deaths per 100,000 live births in 1999 and only 6% of the women in the reproductive age use modern contraceptives in 1999 and MMR reduce to 673 per 10,000 live birth in 2005. Abortion places many young women at risk as the termination of pregnancy is usually conducted under unsafe conditions. Unwanted pregnancy followed by unsafe abortion can be avoided by using different contraceptive methods, including modern contraceptive. Information on preference and practice of modern contraceptives among women is particularly important because of high rates of unwanted pregnancies as well as soaring STI and HIV/AIDS rates. Ethiopia has long standing problems of obtaining adequate contraceptive supplies and arises from a combination of logistical difficulties, government apathy, and general shortages of supply. According to Ethiopian Demographic Health Survey (EDHS) in 2000 revealed that more than 80 percent of Ethiopian women know about contraception

and only 8.1 percent use either modern or natural family planning methods. It is estimated that about 36 percent of married women have an unmet need for contraception. EDHS 2000 and 2005 reported that fewer than 10% married girls' ages 15-19 used any modern method, 15% of women ages 20-24 used any modern method and half of young unmarried women 15-24 reported that they used some form of modern contraception (3,4, 5,10).

Contraceptive use differ significantly across regions, with about 3% of women in the Somali region reporting using modern contraception compared to about 60% in Addis Ababa. Urban women are five times more likely to use contraceptives than rural women. The most popular modern methods of contraception are implants and the contraceptive pills. Less than 1% of currently married adolescents ages 15-19 and 1% of currently married women ages 20-24 reported using a condom as a family planning method. The unmet needs for 15-19 year old women are twice as high as the unmet needs for women ages 45-49. Rural women (15-49) have twice as high unmet needs (39%) than women in urban areas (17%). Education is positively associated with contraceptive use. Married women aged 15-19 with secondary or higher education, are five times more likely to use any modern method of contraception than their peers (11, 12).

There are also other factors which affect the practice of modern contraceptive methods use in addition to supply shortage, These are:-illiteracy, fear of side effect, religions factors, negligence of health workers, client flow, socio economic status etc. According

to the FMOH(Federal Minister of Health) health indicators report EFY(Ethiopia Fiscal year) 2001, the Distribution of contraceptives was Pill 3.8%, Depo-Provera 15.5%, Norplant, Implant, jadelle 72.7%, IUCD(Intra Uterine Contraceptive Device) 0.2% , Condom 5%,Other method 2.7%. Contraceptive prevalence of Tigray is 67.8 % the prevalence of ShireEndasilase is 48% in 2002 E.C (Ethiopian Calendar).Modern contraceptive coverage in Shire Endaslasie Town was 48% in 2002. The percentages of different contraceptive methods used by women in Shire town as the woreda annual performance report are as follows: Pill 10%, Depo-Provera 76%, Norplant 6%, IUCD 1% male condom 7% and permanent (sterilization) method of contraception are not offered. Although the Family Planning services are available in most places, the national as well as the regional CPR is still low. In addition there is insufficient distribution of modern contraception and wide range of modern contraceptive choice is also lacking to meet the demand of clients. Therefore, the purpose of this study is to assess utilization of modern contraceptive methods and its determinant factors among women of reproductive age groups at Shire Endaslasie town, Tigray Region, Northern Ethiopia (7,13,14).

### **Significance of the Study**

Although many studies are conducted on modern family planning methods, little is known about the utilization and itsdeterminant factors of modern contraceptive methods among women of Reproductive age groups in the study area. As contraceptive women's choice and practice is a key element of quality care in

family planning service program, knowing utilization status and its determinant factors of modern contraceptive methods is a crucial one. Though as shown in many countries unintended pregnancies are high, wide spread use of modern contraception could prevent very high numbers of unintended pregnancies and abortions. The reproductive Health Impacts of unintended pregnancy and unsafe abortion are high among women's especially in developing countries including Ethiopia. They are also likely to face pregnancy and childbearing complications leading to high maternal mortality. So, preventing unintended pregnancies is the first step for improving the family planning services for the reduction of maternal morbidity and mortality. Inadequate family planning services are problematic in Ethiopia. Understanding determinants in contraceptive methods use may be instructive in the design of interventions to improve family planning outcomes (15,16).

Finally, this study will be used as base line information for researchers to conduct other related findings on modern contraceptive uses. It will help also to maximize health professionals' effort in improving family planning service and policy makers to redesign the existed program towards family planning service to determinant factors on preference and practice of modern contraceptive use among women of reproductive age groups at Shire Endaslasie town, Tigray Region, Northern Ethiopia.

## **METHOD AND MATERIALS**

### **Study Area and period**

The study was conducted in Shire Endasilaseworeda or town from October,

2010 to May, 2011. Shire Endaslasie is situated 1087 km away from Addis Ababa in Northern Ethiopia. The woreda or town is found in Northern west direction at a distance of 304Km from Mekelle (capital city of Tigray regional state). The town has one hospital, one governmental health center and one MCH (Mothers and children Health) center managed by both the regional government and nongovernmental organization. According 2006/07 census report, the total population of Shire town was 51,197 of which 26,031 are females. Women of childbearing age (15-49 years) are also 12,031 and house hold 11,636 .The woreda is divided in to five kebeles. The name of kebeles; zero One kebele (Dedebit), zero two kebele (Suhule), zero three (Hibret), zero four kebele (Adikentibay), zero five kebele (Yekatit). From five kebeles 3 kebele randomly selected (zero One kebele (Dedebit) , zero three (Hibret) , zero five kebeles (Yekatit)) The number of population, females, women of childbearing age and house hold of the three kebeles are ( 10,293 , 5,250 , 2,419 and 2,340 ) , ( 10,998 , 5,609 , 2,585 and 2,499 ) and( 8,995, 4,588, 2,114 and 2,044) respectively and community based cross sectional study design was employed.

### **Source and study population, sample size and eligible criteria**

The source population was all women of reproductive age group (15-49) who reside in shire Endasilase town. Study population was all selected or sampled women of reproductive age group from selected three kebeles in shire Endasilase town. The sample size was calculated by using the single population proportion formula and by

considering Tigray Regional contraceptive coverage of 68% with 95% confidence interval at marginal error of 5% and 10% of non-respondents, the total sample size was 367. Inclusive criteria were all women whose ages were within reproductive age group (15-49) and willing to participate in the study and who can give consent. And all women who were pregnant, critically ill and involuntary to participate were excluded from the study

### **Sampling Procedures and techniques**

Stratified sampling technique was used to select the study participants. Of these 5 kebeles, three kebeles (kebeles 01, 03, &05) were randomly selected using lottery method. Then, the study subjects were selected through systematic sampling every “ $k^{\text{th}}$ ” intervals. To determine the  $K^{\text{th}}$  value the kebele’s households were the sampling frame of the sample. Whereas the first house hold was selected by simple random selection then continuing every  $K^{\text{th}}$  house hold, if no respondent in the house hold continue to the next until the desired sample size attained

### **Data collection tools and procedures**

A structured interviewer administer closed ended questionnaires have been modified by the PI from previous study in Bahrdar and the questionnaire consists of three parts. The first part was socio-economic and demographic questions, the second part Reproductive history and the last consists of questions related to contraceptive interaction. Fifteen voluntary kebele oriented outreach workers and above 10 grade data collector assigned to collect the required data through face to face interview. Data collectors got the willingness of

participants after explaining the purpose of conducting this project and Verbal consent was granted from the participant before data collection.

### **Variables of the study**

Dependent Variables were Modern contraceptive practice or utilization and Independent Variables were Socio-demography characteristics like Age, Religion, Ethnicity, Marital status, Literacy Status, occupation, monthly income and travel distance to health care center. Reproductive History like Parity, Gravidity, birth interval, still birth, Abortion, Age at first pregnancy, age when you get married, no of live children, Client method of contraceptive Interaction like ease and convenient time to using of contraceptive, convenient of the routine activity, discontinuing using contraceptive and self-assessment of after using contraceptive

### **Operational definitions**

Utilization: use of any modern contraceptive method to space the child and to protect unwanted pregnancy.

### **Data quality assurance**

The structured questionnaire was translated to Tigrigna and back to English to maintain its consistency. Pre-test was undertaken in Adidaero town, which are not included on this study. Based on the pre-test findings, the instrument was revised, edited and modified if unclear or confusing questions are found. Data collectors and supervisors were trained for one day on the objective of the study, contents, consistence and logical order of the questionnaire and how to maintain confidentiality and privacy of the participants. The collected data were checked by supervisors and PI on daily

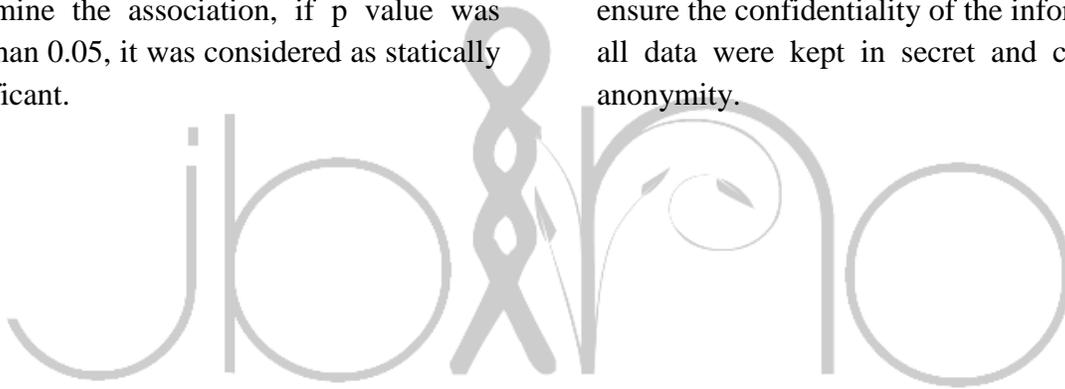
basis. Incompleteness and inconsistency occurs, data collectors were gone back to respondent's house to refill the questionnaire.

#### **Data Processing and Analysis**

After data collection is completed, data entry, cleaning, and analyzed was done by using SPSS version 16 program. In order to describe the summary statistic in relation to variables, frequency and percent was calculated. To determine the association between the dependent and independent variables using statistical analysis: chi-square and odds ratio would be calculated, in this statistical analysis, in order to determine the association, if p value was less than 0.05, it was considered as statically significant.

#### **Ethical Consideration**

Approval of ethical clearance was granted from Addis Ababa University, College of Health Sciences, Department of Nursing and Midwifery IRB committee. Permission was also obtained from Tigray Regional State Health Bureau and Shire Endasilase Woreda Health office. Verbal and written consent was also be received from individual study subject after provided adequate information by reading the information sheet that describes the purpose of the study and its confidentiality. Being participant in the study does not have direct benefit and has no harm on the study subjects. In order to ensure the confidentiality of the information, all data were kept in secret and coded in anonymity.



**RESULT****Socio demographic characteristics**

In this study 367 Reproductive age group women were participated. All distributed questionnaires were filled completely and consistently. This made the response rate of 100%. (See table 1).

**Table 1:** Distribution of the study subjects by socio – economic and demographic characteristics among Reproductive age group in Shire Endaslasie town (n=367), Northern Ethiopia, March 2011.

Variables	Frequency	Percent
<b>Age in years</b>		
15-19	23	6.3
20-24	66	18.0
25-29	106	28.9
30-34	55	15.0
35-39	61	16.6
40-44	39	10.6
45-49	17	4.6
<b>Ethnicity</b>		
Tigray	318	86.6
Amhara	32	8.7
Oromia	9	2.5
Eretria	8	2.2
<b>Religion</b>		
Orthodox	278	75.7
Muslim	69	18.8
Catholic	24	3.8
Protestant	6	1.6
<b>Marital Status</b>		
Married	229	62.4
Single	62	16.9
Widowed	44	12.0
Divorced	32	8.7
<b>Educational status</b>		
Illiterate	75	20.4
Read and write	46	12.5
Elementary	101	27.5
High school	66	18.0
Above high school	79	21.5
<b>Occupation</b>		

Government employs	54	14.7
Retiered	19	5.2
Privet worker	134	36.5
Merchant	86	23.4
Farmer	7	1.9
House wife	67	18.3

### Reproductive related variables

Reproductive and fertility related variables of women reproductive age groups were considered. (see table 2).

**Table 2:** Distribution of study subjects Reproductive history among reproductive age group in Shire Endaslasie town, Northern Ethiopia, March 2011

Variables	Frequency	Percent
<b>Age when she get married (n=367)</b>		
< 15 years	41	13.4
15 - 19 years	216	70.8
20 - 24 years	37	12.1
25 - 29 years	10	3.3
30 - 34 years	62	16.9
35 and above	1	0.3
<b>Had pregnant(n=367)</b>		
Yes	314	85.6
No	53	14.4
<b>Pregnancy in relation to marriage(n=314)</b>		
Before marriage	34	10.8
After marriage	280	89.2
<b>Number of pregnancy before marriage(n=34)</b>		
1 - 2 times	27	79.4
3 - 4 times	6	17.6
5 and above	1	2.9
<b>Age in the first pregnancy (n=314)</b>		
< 15 years	12	3.8
15 - 19 years	190	60.5
20 - 24 years	89	28.3
25 - 29 years	20	6.4
30 - 34 years	2	0.6
35 and above	1	0.3
<b>The age your first child was born(n=314)</b>		
< 15 years	9	2.9

15-19 years	124	39.5
20-24 years	143	45.5
25-29 years	33	10.5
30-34 years	3	1
35 and above	2	0.6
<b>Number of live birth(n=314)</b>		
1-2children	183	58.3
3-5children	94	29.9
6-7 children	26	8.3
≥8 children	11	3.5
<b>The number of live children Total(n=314)</b>		
1 - 2 Children	169	53.8
3 - 5 children	111	35.4
6 - 7 Children	25	8
8 and above	9	2.9
<b>Birth interval (n= 314)</b>		
12<months	38	12.1
12-23months	94	29.9
24-35 months	120	38.2
36-47 months	22	7
48-59 months	15	4.8
60-71 months	13	4.1
72 and above	12	3.8
<b>The number of children you want have (n= 367)</b>		
1 - 2 Children	42	11.4
3 - 5 Children	210	57.2
6 - 8 Children	115	31.4

### Utilization (practice) of modern contraceptive

Regarding modern contraception practices, current users 294 (80.1%) were much more than non-users 73 (19.9%). (See tables 3-5).

**Table 3:** Distribution of study subjects on Clients Practice on modern contraceptive methods among Reproductive age group in Shire Endaslasie town, Northern Ethiopia March, 2011.

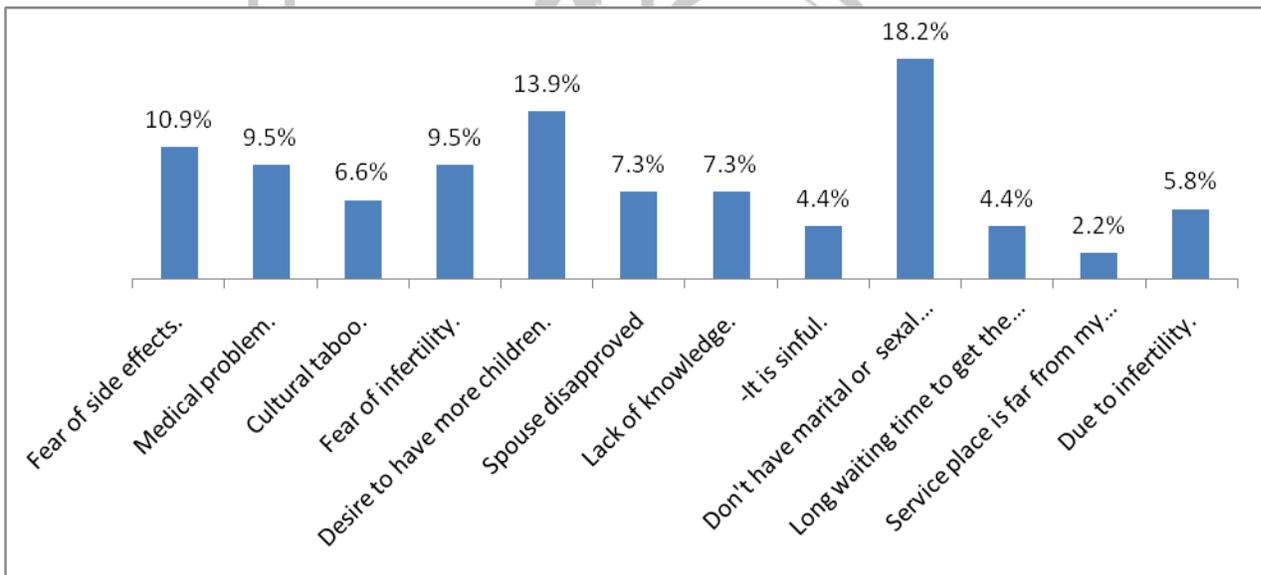
Variables	Frequency	Percent
<b>Utilization of modern contraceptive methods (n= 367)</b>		
Yes	294	80.1
No	73	19.9
<b>Age started modern contraceptive use (n= 294)</b>		
Less than 15 years	7	2.4

15 - 19 years	93	31.6
20 - 24 years	121	41.2
25 - 29 years	47	16
30 - 34 years	20	6.8
35 and above years	6	2
<b>Method of contraceptive use (n = 294)</b>		
Pill	55	18.71%
IUD	14	4.76%
Injectable	152	51.70%
Condom	28	9.52%
Norplant	32	10.88%
Diaphragm	4	1.36%
Spermicidal	7	2.38%
Tubal ligation	1	0.34%
Vasectomy	1	0.34%

**Table 4:** Distribution of reasons for changing the first contraceptive method on Practice modern contraceptive methods among Reproductive age group in Shire Endaslasie town (n= 76), Northern Ethiopia March, 2011

Variables	Frequency	Percent
<b>Fear of side effect</b>		
Yes	50	65.8
No	26	34.2
<b>Medical problem</b>		
Yes	46	60.5
No	30	39.5
<b>Fear of infertility (For ever-users only)</b>		
Yes	29	38.2
No	47	61.8
<b>Cultural taboo</b>		
Yes	5	6.6
No	71	93.4
<b>Preferred method Is not available</b>		
Yes	2	2.6
No	74	97.4
<b>Desire to have more Children</b>		
Yes	9	11.8
No	67	88.2
<b>Spouse disapproved</b>		
Yes	12	15.8

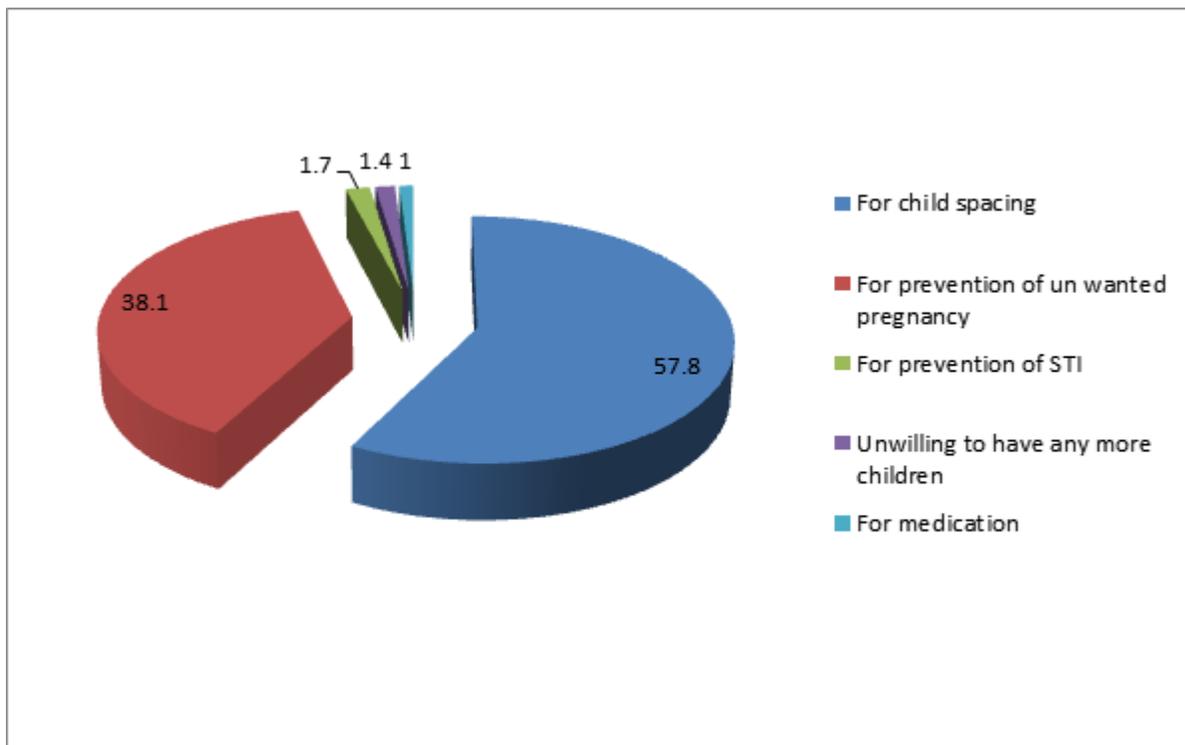
No	64	84.2
<b>Lack of knowledge</b>		
Yes	2	2.6
No	74	97.4
<b>Don't have marital or sexual Partner at present</b>		
Yes	11	14.5
No	65	85.5
<b>Long waiting time to get the method</b>		
Yes	1	1.3
No	75	98.7
<b>Service place is far from my residence</b>		
Yes	1	1.3
No	75	98.7
<b>Widowed/divorced/separated</b>		
Yes	5	6.6
No	71	93.4



**Figure 1:** Reason for non-use of modern contraceptive use by study population, Shire Endaslasie town (n= 73), Tigray, Ethiopia, March 2011.

**Table 5:** Distribution of reasons for practicing modern contraceptive methods and related variable among Reproductive age group in Shire Endaslasie town, Northern Ethiopia March, 2011

Variables	Frequency	Percent
<b>Practicing the same method currently (n=294)</b>		
Yes	218	74.1
No	76	25.9
<b>Long you practice this method (n=119)</b>		
2 years or less	56	47.1
3 - 5 years	43	36.1
10 and above years	20	16.8



**Figure 2:** Reason for modern contraceptive practice by study population, Shire Endaslasie town (n=294), Tigray, Ethiopia, March 2011.

### Client- Contraceptive Interaction

Regarding to interaction of client with contraceptive in shire town, majority of them 161 (54.8%) reported as it was satisfactory on ease and convenient time for contraceptive use and the least 4 (1.4%) were reported as it was not convenient and ease at all. (see table 6).

**Table 6:** Distribution of study subjects Client-Contraceptive Interaction among Reproductive agegroup in Shire Endaslasie town (n = 294), Northern Ethiopia March, 2011

Variables	Frequency	Percent
<b>Ease and convenient time to using of contraceptive</b>		
Not at all	4	1.4
Little	24	8.2
Satisfactory	59	20.1
Fairy	161	54.8
Extremely	46	15.6
<b>Convenience of the Routine activity</b>		
Not at all	9	3.1
Little	14	4.8
Fairy	90	30.8
Satisfactory	121	41.2
Extremely	60	20.4
<b>Discontinuing using Contraceptive</b>		
Never	171	58.2
Seldom	49	16.2
Sometimes	55	18.7
Often	14	4.8
Always	5	1.7
<b>Self-assessment of after using contraceptive</b>		
Never	22	7.5
Seldom	16	5.4
Sometimes	22	7.5
Often	93	31.6
Always	141	48

### Association between use of modern contraceptive method Practice and socio- demographic variable

When compared to the age group under 15-19 years, those respondents in the age group of 20-24 years were 4.5 times more likely to use modern contraceptive, (COR = 4.5; C1=1.249, 16.241; P=.021). The odds of practicing modern contraceptives in the study area was 4.76 (COR=4.76; 95% C1= 1.43, 15.84; P=.011) times higher among 25-29 years as compared to women of 15-19

years of age. The odds of practicing modern contraceptive among married women was 2.47 (COR = 2.47; 95% CI = 1.15, 5.3; P= 0.02) times higher than single women. The odds of practicing modern contraceptive, where educational status was high school, was 3.28 (COR=3.28; 95% CI=1.09, 9.92; P =.035) times higher than who were not be able to read and write. Among socio demographic variables, occupation monthly income and religion had no association with modern contraceptives among reproductive age groups of women in shire town.

**Table7:** Association between use of modern contraceptive method Practice and socio-demographic variable in Reproductive age group, Shire Endaslasie town yes (n=294), No (n=73) Northern Ethiopia March, 2011

Variables	Use of modern contraceptive method Practice		COR(95% CI), P-Value
	Yes	No	
<b>Age in years *</b>			
15-19	14	9	1
20-24	55	11	4.50, (1.249, 16.241),0 .02
25-29	88	18	4.76, (1.431,15.841), .011
30-34	46	9	5.24, (1.314, 20.898),0 .01
35-39	47	14	4.18,(1.074, 16.264) ,0 .03
40-44	33	6	8.17,(1.830, 36.473),0 .00
45-49	11	6	1.38, (.277, 6.950),0 .69
<b>Religion</b>			
Muslim	58	11	1
Catholic	13	1	1.99, (.207, 19.213),0 .55
Orthodox	220	58	0.66., (.296, 1.510),0 .33
Protestant	3	3	0.155, (.023, 1.063),0 .06
<b>Ethnicity</b>			
Tigray	258	60	1
Amhara	22	10	0.57, (.218, 1.490),0 .25
Oromia	8	1	1.24, (.132, 11.657),0 .85
Eretria	8	2	0.70, (.109, 4.547),0 .71
<b>Marital status*</b>			
Single	42	20	1
Married	196	33	2.47, (1.154, 5.297),0 .02
Widowed	31	13	1.27, (.443, 3.656),0 .65
Divorced	25	7	1.50 , (.471, 4.781),0 .49
<b>Literacy status*</b>			
Illiterate	57	18	1
Read and write	32	14	0.57, (.220, 1.482),0 .24
Elementary	77	24	0.95, (.420, 2.162),0 .90

High school	58	8	3.28 , (1.087, 9.924),0 .03
Above high school	70	9	2.31, (.802, 6.693),0 .12
<b>Occupation</b>			
Government employees	48	6	1
Retired	11	8	0.50, (.101, 2.528),0 .40
Private worker	104	30	1.52, (.455, 5.122),0 .49
Merchant	70	16	1.35, (.395, 4.590),0 .63
Farmer	7	0	1.00, (6.985, 9.662),0 .99
House wife	54	13	2.22, (.567, 9.075),0 .24
<b>Monthly income in ETB</b>			
< 100	29	12	1
100 – 500	166	48	1.53, (.634, 3.712), .342
501-1,000	71	11	2.35 , (.773, 7.158), .132
>1,000	28	2	3.76, (.655, 21.608), .137

### Association between use of modern contraceptive method and Reproductive history variable

Age when you get married, age when you first got pregnant and age when your first child born of respondents were the factors which had on association with preference of modern contraceptive methods. Other like number of live birth, number of pregnancy before marriage, total number of Children and number of children you want doesn't have association. ( see table 8).

**Table 8:** Association between use of modern contraceptive method practice and Reproductive history variable in Reproductive age group, Shire Endaslasie town, Northern Ethiopia March, 2011

Variables	Use of modern contraceptive method Practice		COR(95% CI), P-Value
	Yes	No	
<b>Age when she get married*</b>			
Less than 15 years	40	7	1
15 - 19 years	195	40	0.39, (0.005, 0.465), 0.01*
20 - 24 years	28	12	0.10, (0.001, 0.148), 0.00*
25 - 29 years	10	1	0.21, (0.001, 0.402), 0.01*
30 - 34 years	2	1	0.07, (0.000, 0.335), 0.01*
35 and above years	0	1	0.00, (0.000, -), 0.99

Total	275	62	
<b>Number of live birth*(children)</b>			
1 – 2	154	34	1
03-May	79	17	1.138, (.296, 4.374),0.85
06-Jul	24	2	376.6, (10.432, 13599.944), 0.00*
8 and above	10	1	0.01, (0.001, 0.400),0.01*
Total	267	54	
<b>Age when your first child birth in years</b>			
Less than 15	7	3	1
15 - 19	101	27	0.00, (0.00 , -),0.99
20 - 24	128	16	0.00, (0.00 , -),0.99
25 - 29	28	6	0.00, (0.00, -), 0.99
30 - 34	2	1	0.00, (0.00, -), 0.99
35 and above	1	1	0.00, (0.00, -), 1.00
Total	267	54	
<b>Number of pregnancy before marriage</b>			
1 - 2 times	177	38	1
3-4 times	74	12	1.56, (0.458, 5.313),0.47
5 and above	16	7	0.10, (0.008, 1.535),0.10
Total	267	57	
<b>Total number of Children*</b>			
1 – 2	145	27	1
03-May	94	20	0.30, (0.086, 1.083),0.06
06-Jul	20	6	0.00, (0.000,0.173), 0.00*
8 and above	8	1	89.968, (0.636, 12718.900), 0.75
Total	267	54	
<b>Number of children you want</b>			
01-Feb	29	10	1
03-May	163	44	0.15, (0.019, 1.211), 0.07
06-Jul	74	14	0.62, (0.067, 5.727),0.67

8 and above	28	5	0.39, (0.027, 5.848), 0.50
Total	294	73	

### Association between modern contraceptive method for preference of (pill, injectable and Norplant)

Regarding this study subject age 20-24 years and 30-34 years, were 0.12- 0.27 times more likely to preferred pills as compared to 15-19 years with ADR= 0.12, 95% CI (.032, .456), 0.27 95% (.85, .880) Respectively. Married women were 5.3 times more likely to preferred injectable ADR = 5.3 95%CI (2,360, 12, 140), than single. And also married and widowed women were 0.17- 0.13 times more to preferred Norplant ADR= 0.17, 95% CI (.067,.470), 0.13 (.038, .473), than single (see table 9).

**Table 9:** Association between modern contraceptive method for preference of (pill, injectable and Norplant)in Reproductive age group, Shire Endaslasie town, Northern Ethiopia March, 2011

Variables	COR(95% CI), P-Value	Adjusted(95% CI), P-Value
<b>Pill as dependent - Yes= 61 (16.6%) No = 306 (83.4%)</b>		
<b>Age in years*</b>		
15-19	1	1
20-24	.093, (.022, .399).001	.121, (.032, .456), .002*
25-29	.286, (.091, .904), .033	.409, (.152, 1.103), .077
30-34	.186, (.047, .736), .017	.273, (.085, .880), .030*
35-39	.315, (.084, 1.175), .085	.413, (.140, 1.212), .107
40-44	.431, (.115, 1.620), .213	.563, (.181, 1.752), .321
45-49	.292, (.052, 1.645), .163	.402, (.088, 1.825), .238
<b>Injectable as dependent - Yes = 202 (55%) N0=16.5 (45%)</b>		
<b>Marital status*</b>		
Single	1	1
Married	.317, (.166, .608), .001	5.35, (2.360, 12.140), .000*
Widowed	.279, (.129, .604), .001	1.61, (.640, 4.069), .310
Divorced	.168, (.069, .411), .000	1.19, (.440, 3.236), .729
<b>Norplant as dependent - Yes = 47(12.8%) No= 320 (87.2%)</b>		
<b>Marital status*</b>		
Single	1	1
Married	.590, (.191, 1.827), .361	.177, (.067, .470), .001*
Widowed	2.055, (.717, 5.892), .180	.134, (.038, .473), .002*
Divorced	5.386, (1.774, 16.356), .003	.454, (.143, 1.444), .181
<b>Occupation*</b>		
Government employees	1	1
Retired	2.522, (.437, 14.557), .301	1.065, (.397, 2.857), .901

Private worker	1.043, (.310, 3.514), .946	1.171, (.318, 4.317), .813
Merchant	.236, (.053, 1.049), .058	.691, (.299, 1.595), .386
Farmer	.000, (.000, -), .999	.169, (.048, .593), .006
House wife	1.044, (.265, 4.114), .951	.000, (.000, -), .999

**N.B:** = statistically significant at  $p \leq 0.05$

### Association between use of modern contraceptive method Practice and socio-demographic variable

On multivariate analyses socio demographic variables like religion, ethnicity, occupation and monthly income showed no statistically significant difference. But women in the age group 40-44 years, were 8.1 times more likely to use modern contraceptive as compared to all age category (15-39 years) and the age 45-49 years 1.38 times less likely to use modern contraceptive. Multivariate analysis also showed significant difference for that marital status, married women were 2.4 times more than single and literacy status, where those educated to above and high school level were to use contraceptives 2.3-3.2 times more than the illiterate ones respectively. (See table 10).

**Table 10:** Association between use of modern contraceptive method Practice and socio-demographic variable in Reproductive age group, Shire Endaslasie town, Northern Ethiopia March, 2011

Variables	Use of modern contraceptive method Practice		COR(95% CI), P-Value	Adjusted(95% CI), P-Value
	Yes	No		
<b>Age in years*</b>				
15-19	14	9	1	1
20-24	55	11	4.50, (1.249, 16.241), 0.02	3.71, (1.139, 12.089), .030*
25-29	88	18	4.76, (1.431, 15.841), .011	4.21, (1.367, 12.991), .012*
30-34	46	9	5.24, (1.314, 20.898), 0.01	4.60, (1.283, 16.531), .019*
35-39	47	14	4.18, (1.074, 16.264), 0.03	3.59, (1.042, 12.430), .043*
40-44	33	6	8.17, (1.830, 36.473), 0.00	6.71, (1.711, 26.386), .006*
45-49	11	6	1.38, (.277, 6.950), 0.69	1.57, (.362, 6.831), .546
Total	294	73		
<b>Marital status*</b>				
Single	42	20	1	1
Married	196	33	2.47, (1.154, 5.297), 0.02	2.70, (1.329, 5.518), .006*

Widowed	31	13	1.27, (.443, 3.656),0 .65	2.11, (.947, 4.722), .068
Divorced	25	7	1.50, (.471, 4.781),0 .49	1.71, (.654, 4.521), .272
Total	294	73		
<b>Literacy status*</b>				
Illiterate	57	18	1	.1.00
Read and write	32	14	0.57, (.220, 1.482),0 .24	.615, (.262, 1.445), .265
Elementary	77	24	0.95, (.420, 2.162),0 .90	1.04, (.492, 2.204), .915
High school	58	8	3.28, (1.087, 9.924),0 .03	3.55, (1.273, 9.933), .015*
Above high school	70	9	2.31, (.802, 6.693),0 .12	2.21, (.881, 5.557), .091
Total	294	73		
<b>Age when you get married*</b>				
Less than 15	40	7	1	1
15 - 19 years	195	40	039, (0.005,0 .465),0 .01	.281, (.076, 1.041), .057
20 - 24 years	28	12	010, (0.001,0 .148),0 .00	.110, (.025, .492), .004*
25 - 29 years	10	1	021, (0.001,0 .402),0 .01	.062, (.011, .358), .002*
30 - 34 years	2	1	007, (0.000,0 .335),0 .01	.106, (.007, 1.633), .108
35 and above	0	1	000, (0.000, -),0 .99	.000, (.000, -), 1.000
Total	294	73		
<b>Number of live birth*</b>				
1 – 2 Children	154	34	1	1
3-5 children	79	17	1.138, (.296, 4.374),0 .85	.808, (.288, 2.266), .685
6-7 children	24	2	376.6, (10.432, 13599.944), 0,00	8.67, (1.411, 53.263), .020*
8 and above children	10	1	0.01, (0.001, 0.400),0 .01	.436, (.105, 1.812), .253
Total	294	73		
<b>Total number of Children*</b>				
1 - 2 Children	145	27	1	1
3 - 5 children	94	20	0.30, (0.086, 1.083),0 .06	5.24, (1.202, 22.877), .027*
6 - 7 Children	20	6	0.00, (0.000,0 .173), 0.00	5.66, (1.414, 22.681), .014*
8 and above children	8	1	89.968, (0.636, 12718.900), 0.75	4.88, (.509, 46.927), .169
Total	267	54		

NB = \* statistically significant at  $p \leq 0.05$

## DISCUSSION

One of the eight millennium Developmental goal is improving maternal health through reducing maternal mortality by two third. This could be achieved by quality reproductive health and family planning service. Family planning improves community health by helping both men and women to have children when they are physically, emotionally and financially prepared to take the child bring up responsibility. As IPPF gave grate attention to reproductive health for best quality service improvement accessibility, acceptability and convenience are important for contraceptive users.

This study focus on the assessment of determinant factors for preference Modern Contraceptive Methods among women reproductive age group. The study areas Shire Endaslasié town has showed significant difference in socio demographic characteristics such as age, marital status and education. There was also a statistical significant difference by some reproductive characteristics such as age on time of married, number of live birth, total number of children and number of children you want to have.

In this study the age of respondents more than 20 years were significantly associated with modern contraceptive use. Unlike the study done in south wollo zone, in 2010, that was 26.6%, the proportion of women under the age group of 20-24 years were 18.0% (29). This result is also similar to the study done in Ethiopian Demographic and Health survey in 2005, Modern Contraceptive Methods user were higher in age group 25-29 years (10, 30).

The age of respondents was less likely associated with the preference of pills. This is similar to the study conducted in Bahrdar town in 2005, that the age of respondents was negatively associated (4).

Regarding marital status, the result showed that most respondent were married (62.4%) and were 2.70 times more likely to use modern contraceptive than unmarried women. This is unlike to the study done in south wollo zone, in 2010, that was 82.9% among married women (24, 29). Even in the preference of contraceptive, married women were 5.35 timesmore likely to prefer injectable as compared with unmarried women, but it showed that married women were less likely to prefer Norplant contraceptives than single women. This is unlike the study result in south east Ethiopia, in 2004, that married women were more likely to prefer Norplant than single women. This might be related to the probability that the married women needs to conceive child with in short period of time, since injectable is shorter duration than Norplant (8).

Related to educational status, those with high school were more likely to use modern contraceptive method than illiterate. This is like the Demography and health survey study conducted in Ethiopia, 2005, that educated women were more likely to use modern contraceptive than illiterate. In addition, a study done in Bahrdar 2002, women educated up to high school level and above was 2 times more likely to use modern contraceptives as compared to illiterates. It is also similar to the study done in India, showed that the likelihood of modern contraceptive use was higher among

educated women than illiterate. It may be related to that the educated women have awareness about contraceptive. The educational status was not associated with the preference of contraceptive uses. When calculated the age at marriage, those with age of 20-24 years, 25-29 years were less likely to use modern contraceptive than those with age at early marriage (10, 25).

It may be early married mothers have many children that leads to use contraceptive. Unlike to the study done in Bahrdar 2002 those 20 and above at first marriage more use of modern contraceptive than early marriage. The respondent women with number of live birth 6-7 were more likely to use modern contraceptive than those with 1-2 live birth and also statistical significant. This might be related to the limit of number of children among those with 6-7 live births. Unlike study done in Bahrdar 2002 still birth was a statistical significant (1).

Women with number of children 6-7 had highly associated with use of modern contraceptive. The result indicates that women tend to use contraceptive after they had desire children. This is like the study conducted in Dawro town 2005 that it was positively associated with the use of modern contraceptive. In this study number of child you want to have been significantly associated with modern contraceptive use. This is similar to the study conducted in Woreta community 2008, which were positively associated (2, 18, 22).

The present study showed that women use modern contraceptive methods for the first time after they had higher number of children for most of them 1-2 children 145 (27%) and the least 6-7 children 20 (6%). In

Ethiopia contraceptive use among women with one or two child (17%) and lowest among women with no children (12%), about 6% of all women first used a method of family planning when they had 4 or more children 3% at the time with no children at 4% after the birth of their first child. Most women below age 30 started using contraception after they had one child. The majority of respondents reported that the reason for using Modern Contraceptive Methods by women were 170 (57.8%) child spacing, 112 (38.1%) prevention of unwanted pregnancy and the least 3 (1.0%) for medication. The fact women in the study area have access to information, education, communication, health, facilities, occupation and monthly income. This is similar to the study conducted in Bahir-Dar, town in 2002 (1,10).

In study area the majority of women preference of Modern Contraceptive Methods (61%) injectable and the least (0.3%) male sterilization. This show they were aware of family planning and they have knowledge about the difference methods. Like a study done in woreta town, Ethiopia, in 2008, the most commonly preferred Modern Contraceptive Methods (63.2%) was injectable. Unlikely a study done in turkey 70% women were using any family planning method where as 30% were not using. The most preferred method was coitus interrupts. In addition the study show in Iran in all 300 women who were using with drawal took part in the study of these, 210 women (70%). The most common reasons for using with drawal were no cost involvement, did not need medical advice,

having fewer side effects and easier to use than other methods (18,27,28).

In the present study reason for not using MCMs the majority of women mentioned more than one reason not to practice MCs and the most common reason mentioned was as they did not have married 25 (34.5%) & second frequently mentioned reason was desire to have more children 19 (26%). Followed by fear side effect 15 (20.5%), medical problem 13 (17.8%), fear of infertility 13 (17.8) and only 3 (4.1%) reported as for service place to get Modern Contraceptive Methods was another reason. Almost the same the study show in woretta the main reasons for non use of MCs were being single and a desire for more children. In addition show in Iran, the main obstacles to use MCs were health concerns, fear of side effects, miss information, lack of confidence and sexual dissatisfaction (18,27).

## CONCLUSION

This study concluded that Socio-demographic factors like residence, ethnic group, religion, occupation and monthly income at the place of the survey were not associated with current contraceptive use or practices. Educational status at high School level and above, marital status and age were associated with contraceptive utilization. Number of pregnancies, number of age when your first child born, number of pregnancy before marriage, total number of children, number of children you want, number and history of infant loss, number of living children, and ever still birth were not associated with contraceptive utilization but ages when you get married, number of live

birth and total number of children were found positively associated with contraceptive utilization. Modern contraceptive methods like diaphragm and permanent method are poorly practiced.

The reason for to practice modern contraceptive method was 170 (57.8%) for child spacing, 112 (38.1%) for prevention of unwanted pregnancy 5 (1.7%) for prevention of STI and the least unwilling to have any more children 4 (1.4%) for medication 3 (1%). The main reason for change of the first method of practicing MCM were found to be Fear of side effects 50 (65.8%), medical problem 46 (60.5%) and fear of infertility 29 (38.2%). The reason mentioned by non - users in the study area The most common reason mentioned was do not have marital or sexual partner at present and second frequency mentioned reason was desire to have more children 19 (26%), followed by fear of side effects 15 (20.5%), medical problem 13 (17.8%). Fear of infertility 13 (17.8%). Women whose perceived economic status as >1,000 monthly income 3.78 times had more chance to practice modern contraceptive methods more than <100 monthly income. Women use modern contraceptive methods were MCMs use after they had high reproductive and fertility and desire to limit family size and history of past unwanted pregnancy. Their pregnancy was also earlier. Majority of women use modern contraceptive method for the first time after the birth of higher number of children.

## RECOMMENDATION

### To Regional Health Bureau and FMOH(Federal Ministry of Health)

In general this study identified socio – demographic, Reproductive and fertility variation in relation to modern contraceptive utilization in users and non-users so that it lay aground and call the need of strong intervention strategy targeting socio – demographic, reproductively and fertility behavior of women and modern contraceptive utilization, Based on the evidences (findings) that obtained from the present study the following specific interventions are recommended. Family planning intervention should consider not only the health aspect but also demographic and reproductive rights should be equally considered and collaboration of relevant bodies to a very high fertility desire of population is mandatory. Intervention strategies that aimed to control reproductive and fertility should be according to the magnitude of the problem in different ways for the population.

Information, education and communication (IEC) activities regarding family planning service should be strengthened by the MOH and RH through mass media messages and encouraging and broadening the activities of health workers in the study area. It is recommended to include Modern Contraceptive Methods in the educational curriculum both at elementary and

secondary schools by education bureaus so than early knowledge and practice of MCU can be materialized at least for those who are not out of school. Sustainable resources especially injectable contraceptive should be ensured.

### To woreda Health Office

Family Planning IEC Programs in the woreda should target women before marriage in every possible way in schools at junior level and above. Because women in this woreda go for child spacing and birth limiting after they had all the pregnancies and number of children they wanted were born. Since the utilization is good the woreda Health office should be maintain and encourage the pattern.

### To Researchers

Finally we recommend similar research to be conducted in other parts of the country to potentiate previous finding and come up with new finding to fill the remaining gap.

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