



**DETERMINANTS OF LONG ACTING AND PERMANENT FAMILY PLANNING
METHODS UTILIZATION AMONG WOMEN OF REPRODUCTIVE AGE IN ILU ABA
BOR ZONE, SOUTH WEST ETHIOPIA, 2016**

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ABSTRACT

Background: Family planning allows people to attain their desired number of children and determine the spacing of pregnancies. It is achieved through use of contraceptive methods and the treatment of infertility. **Objective:** To assess determinants of Long acting and permanent family planning methods utilization among married women in Ilu Aba Bor zone, Oromia, southwest Ethiopia 2016. **Methods:** Institutional based case control study was conducted. Simple random sampling technique was used to interview total of 700 (233 cases and 467 controls) using interviewer guide questionnaire for data collection. Data were entered to epi data version 3.1 and analyzed by SPSS version 23.0 statistical software. Descriptive statistics and logistic regression were computed to identify and see the relative effect of predictors on the outcome. **Result:** In this study 700 women were included (233 cases and 467 control group). Majority of the cases 145(62.2%) have ever used long acting and permanent family planning methods. Women with Number of alive births two or more are 10 times more likely to use long acting and permanent methods than who had less than two, AOR=10.32 95% CI [3.69-28.89] while women with family size of 3-4 and five or more are 90.7% and 82.9 % less likely to utilize LAMP with AOR= 0.093 95% CI [0.021-0.422] and AOR= 0.171 95% CI [0.042-0.696] respectively than who had family size of two or less. Additionally, women who respond on the decision who can made on the number of birth you want to have as wife, both and God are identified factors of LAMP utilization with AOR=4.79 95% CI [1.37-16.76], AOR=5.637 95% CI [1.69-18.83] and AOR=26.78 95% CI [2.43-295.17] respectively. Women who ever shifted from one to another contraceptive are 84.3% less likely to utilize Long acting and permanent family planning methods than women who Never shifted from one to another contraceptive family planning methods with AOR=0.157 95% CI [0.063-0.386]. **Conclusion:** According to the findings of this study; number of alive births, family size, decision maker on the number of births and type of method shift are statistically significant predictors of utilization of long acting and permanent family planning methods.

KEYWORDS: Long acting and permanent family planning, determinant factors, Illu Abba Bor, Ethiopia.

1. INTRODUCTION

1.1. Background

Family planning allows people to attain their desired number of children and determine the spacing of pregnancies. It is achieved through use of contraceptive methods and the treatment of infertility.

Four contraceptive methods are categorized under LAPMs(long acting and permanent methods): intrauterine devices (IUDs), implants (Implanon, Jadele), female sterilization, and vasectomy. IUDs and implants are long-acting temporary methods; when removed, return to fertility is prompt; and female sterilization and vasectomy are permanent method. Implants are effective from 3 to 7 years depending on type and IUDs are effective for at least 12 years LAPMs are the most

effective(99% or greater) methods Injectables, such as Depo-Provera are considered “short-acting “because their lengths of action are only from 1 to 3 months.^[1]

Recent scientific findings and new understanding about long-acting and permanent methods of contraception underscore their safety and effectiveness. This has Lead to new guidance from the World Health Organization (WHO) as well as continuing strong support by different agencies for family planning in general and for long-acting and permanent methods of contraception in particular.

An increase of 200 million people over the number of people using contraception in 2000. Whereas the rates of modern contraceptive use in North America and Western

Europe are over 70%, such use is still very low in East Africa (17%), Middle Africa (5%), and West Africa (6%). methods of contraception. If the more effective LAPMs have been used, the number of unintended births and induced abortions could have been substantively reduced to help families and countries to achieve their health goals.^[2]

The utilization of contraceptive methods was totally dominated by the use of short-term methods such as pills and injectable in Ethiopia. Long acting and permanent contraception methods are convenient for users and effectively prevent pregnancy and also cost effective for programs overtime. They can result in substantial cost savings for couples, governments, and contribute directly to reaching national and international health goals by providing long lasting contraceptive protection.

In spite of their high effectiveness, the use of provider dependent LAPMs of contraception, have lagged behind. a country cannot meet its lowering fertility goals, reducing maternal and child mortality. Investing in FP(family planning) specifically on LAPMs is one of the key for reducing child and maternal mortality; and to halt/combat HIV/AIDS directly and to achieve other MDG(millennium development goals) indirectly. Only 2.7 million women are currently using these methods in Sub-Saharan Africa.^[3] Thus, the use of LAPMs has not kept pace with short-acting contraceptive methods. family planning utilization in urban and rural areas shows some difference. So it is important to assess determinant factors and utilization of long acting family planning both in urban and rural areas.

1.2. Statement of the problem

As of July, 2012 world population is estimated to be above 7 billion. Africa accounts around 1 billion people, 15% of the world's population. The total fertility rates (TFR) worldwide ranges from 1.1 children per women in Taiwan to 7.1 in Niger.^[4]

Ethiopia is the second most populous country in sub-Saharan Africa (SSA), with an estimated population of over 82 million people, with an average growth rate of 2.6% per year. The population is projected to increase to 166 million by 2050 which makes Ethiopia the 10 the most populous country in the world Ethiopia has a TFR of 4.8; ranging from lowest 1.4 children per woman in Addis Ababa to highest 6.2 in Oromia Studies in countries where fertility is high have showed that, maternal, infant and child mortality rates are high. In Ethiopia there are high maternal mortality ratio (676/100,000 live births), high abortion rate (23/1000), and unwanted pregnancy rate (42%).^[5]

56% of all married women are using a modern method of contraception (United Nations, Department of Economic and Social Affairs, Population Division 2011), up from less than 10% in 1960 (United Nations, Department of Economic and Social Affairs, Population Division 2004).

Sub-Saharan Africa's modern contraceptive prevalence rate (CPR) of 19% masks the important diversity in CPR values that exists across countries, ranging from 1% in Somalia to 60% in South Africa.^[6]

Contraceptive use has increased worldwide over the last decade yet, Africa has high unmet need of family planning (FP). Approximately 25% of women and couples in sub-Saharan Africa (SSA) who want to space or limit their births are not using any type of contraception. In spite of their high effectiveness, the use of provider dependent LAPMs lagged behind. These methods are between 3 and 60 times more effective than short acting methods during a year of typical use, but Only 2.7 million women are currently using these methods in Sub-Saharan Africa Thus, the use of LAPMs has not kept pace with short-acting contraceptive methods. The utilization of contraceptive methods was totally dominated by the use of short-term methods such as pills and inject able in Ethiopia. The most widely used methods were inject able (21%) followed by implants (3.4%), pills (2.1%), female sterilization (0.5%), IUD (0.3%), and male condom (0.2%). Moreover, the discontinuation rate of short term contraceptives was higher than that of LAPMs.^[7]

In the rural areas TFR increased from 5.8 children per woman in 1970 to 8.1 in 1984 and to 8.2 in 1990. In the urban areas however it increased from 4.7 children per woman to 6.3 between these years but declined to 5.7 in 1990.^[8] Having this figure In Illubabour zone few researches are done on the utilization of family planning and the factors that affect it.

1.3. Significance of the study

Population growth in enormous rate is major challenge worldwide. the problem worse in developing country. These problems are the major obstacles which lag countries to achieve their goals. This study is therefore; aims to assess the utilization and determinants of long acting family planning in aforementioned study site. The recommendations from this survey will also be utilized or helpful for local health planners, health administrators and those organization working on family planning to consider during their planning. It will also provide baseline information and directions for further research activities in the area.

2. OBJECTIVES

2.1. General objective

To assess determinants of Long acting family planning methods utilization among women of reproductive age in Illuababor zone, south west Ethiopia, 2016.

2.2. Specific objectives

- To assess socio demographic factors which affect utilization among women of reproductive age in Illuababor zone, south west Ethiopia, 2016.

- To assess reproductive health related factors which affect utilization among women of reproductive age in Illuababor zone, south west Ethiopia, 2016.
- To assess service related factors which affect utilization among women of reproductive age in Illuababor zone, south west Ethiopia, 2016.

3. METHODS

3.1. Study area

The study was conducted in Ilu Ababor zone, Oromia regional state southwest Ethiopia. There are 12 woredas in the Zone and according to 2009 estimated population the total population of the zone is 905,383 from which 3.47% (31417) are females of reproductive group. The capital of the zone, Mettu town is located in south west of Ethiopia at 600 Km from A.A. In the zone there are 38 public health centers, 2 public hospitals.

3.2. Study period

Study was conducted from December 1-30/2016.

3.3. **Study design:-** A facility based case control study design was used.

3.4. **Source population:-** All women of child bearing age (15-49 years) who came for family planning service in Illu ababor zone health institutions.

3.5. Study population

3.5.1. **Study population for cases:-** A Woman who or her partner were using one of LACs (IUD, Implant, female or male sterilization) as a method of contraception service in Ilu Ababor zone health institutions.

3.5.2. **Study population for controls:-** All women of childbearing age group (15-49 yrs) who or her partner who took FP other than LAFP methods.

3.6. Sample size determination

Sample size for factor associated with LAFP utilization was calculated using open EPI version 303. considering listed variables in the table below that are associated with LAFP utilization taken from the study done in Ethiopia using data from the EDHS of 2011 data in 2014 joint decision was found to give the largest sample size with OR of 1.4 and prevalence of joint decision in controls 53.7% and taking 95% level of confidence, 80% power and 1:2 ratio of controls and cases. Finally total sample size determined is 233 for cases and 467 for controls.

3.7. Sampling procedure

From the total 38 Public health centers and hospitals 30% of them were selected by simple random sampling. The sampling allocation was based on the six months average number of client flow for family planning service in each of the health institution. Based on the average load, samples were proportionally allocated for specific facilities. The allocated sample for each institution were collected for one month and the

allocated sample was divided for each institution for one month and systematic random sampling method was used to select the study participant.

3.8. Data Collection process

Instrument: After reviewing relevant literature interviewer administered questionnaire was developed and translated to the local language Afan Oromo. A structured Afan Oromo version questionnaire used after pre-testing on 5% of the same source population other than the sampled population.

3.9. Data Collection Method

Data was collected by Afan Oromo speaker Midwives who were trained intensively for three days on the study instrument and data collection procedure. During the actual data collection process, supervisors were cross check the data on randomly selected 10% of study units every day. The principal investigators were responsible for coordination and supervision of the overall data collection process.

3.10. Data Analysis

The collected data was entered into Epi Data version 3.1 and then exported for analysis to SPSS version 23. The data was cleaned for inconsistencies and missing values. Simple frequencies were run to see the overall distribution of the study subject with the variables under study. Bivariate analysis was used to determine the association b/n different factors and the outcome variable. Binary logistic regression was used to identify the independent predictors of utilization of LAPMs. Confidence interval of 95% will be used to see the precision of the study and the level of significance will be taken at $\alpha = <0.05$.

3.11. Study Variable

Dependent Variable

- Utilization of LAPM(long acting and permanent methods) in Illubabour zone.

Independent Variables

- Socio Demographic and economic variables (Age, Religion, Ethnicity, Education status the women area of resident, family income, occupation of woman and Family size).
- Reproductive variables: (number of alive children, desire for another child, desire for spacing & limiting, contraceptive knowledge, experience of child death, age at first marriage).
- Health system related(availability of LAPM, Provider skill and attitude, accessibility of FP service, getting information on FP service, visited by community based health agents).
- Partner related (educational status, communication on FP, decision role on FP, occupation).
- Exposure and experience of FP(Past use, Exposure to FP messages, drug side effects).

3.12. Operational definition

LAPMs: A contraception methods that provide pregnancy protection for many years and/ or permanently if used once and include methods like implant, IUCD, female sterilization and vasectomy (male sterilization).

Utilization of LAPM: A woman on one of the LAPM methods during data collection time at the study area.

3.13. Ethical issues and fund sources

The research was financially supported by Mettu University. Prior to data collection, ethical clearance was obtained from Research and Ethical review committee of the faculty of public Health and medical sciences of Mettu University Written permission letter also was obtained from Illubabour zonal Health Office, and other concerned bodies in the study area.

4. RESULTS

1. Socio-demographic characteristics participants

In this study 700 women were included i.e 233 women were selected for cases group and 467 women were selected for control group. Most of the cases 120(51.5%) were between age group 15-24 years, while 200 (42.8%) were between the age group of 25-34 years.

Majority of the cases 145(62.2%) have ever used long acting and permanent family planning methods while 312(66.8%) have not ever used (see table 1 and fig 1).

Table I: Socio demographic characteristics of women of reproductive age in Illuababor zone, south west Ethiopia, 2016.

Characteristics	Case n=233(33.3%)	Controls n=467(66.7%)	Total n=700(100%)
Age in years			
15-24	45(6.4%)	200(28.6%)	245(35.0%)
25-34	120(17.1%)	154(22.0%)	274(39.1%)
35-44	65(9.3%)	74(10.6%)	139(19.9%)
>=45	3(0.4%)	39(5.6%)	42(6.0%)
Ethnicity			
Oromo	171(24.4%)	386(55.1%)	557(79.6%)
Amhara	47(6.7%)	6(8.6%)	107(15.3%)
Tigrie	13(1.9%)	21(3.0%)	34(4.9%)
Others	2(0.3%)	0	2(0.3%)
Religion			
Orthodox	81(11.6%)	170(24.3%)	251(35.9%)
Protestant	68(9.7%)	126(18.0%)	194(27.7%)
Muslim	83(11.9%)	171(24.4%)	254(36.3%)
Other	1(0.1%)	0	1(0.1%)
educational level			
cannot read & write	82(11.7%)	166(23.7%)	248(35.4%)
can read and write	33(4.7%)	43(6.1%)	76(10.9%)
grade 1-4	48(6.9%)	82(11.7%)	130(18.6%)
grade 5-8	45(6.4%)	86(12.3%)	131(18.7%)
grade 9-12	20(2.9%)	74(10.6%)	94(13.4%)
Grade 12+	5(0.7%)	16(2.3%)	21(3.0%)
Mother's monthly income(ETB)			
<843.6	118(18.6%)	266(42.0%)	384(60.6%)
843.6-1687.4	61(9.6%)	97(15.3%)	158(24.9%)
>1687.4	32(5.0%)	60(9.5%)	92(14.5%)

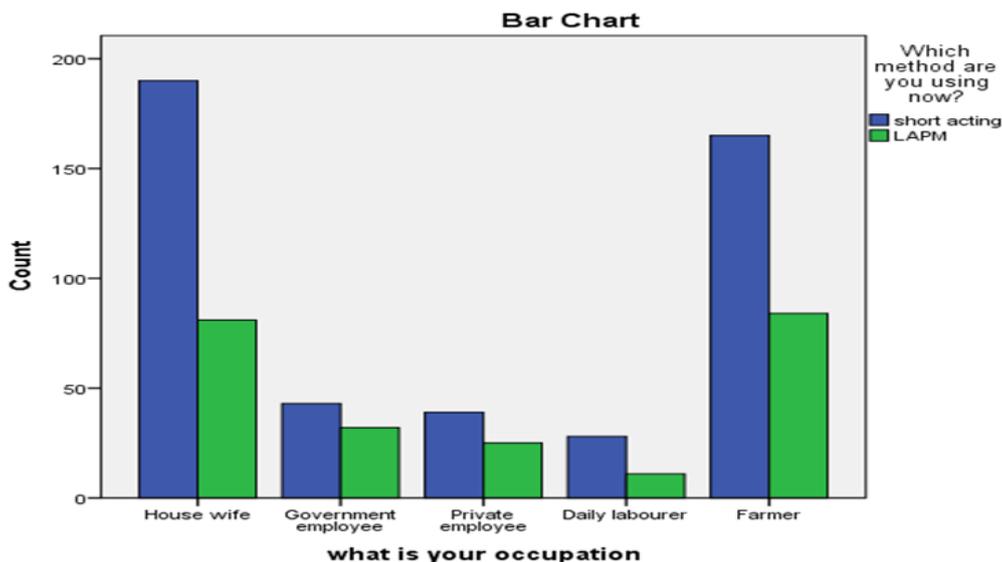


Fig. 1: Occupational status of women of reproductive age in Illuababor zone, south west Ethiopia, 2016.

Among the study participants, 201(28.7%) of cases and 113(16.7%) cases and 252(37.3%) controls want more children and 416(59.4%) controls had history of pregnancy and children (see table 2).

Table 2: Reproductive variables of women of reproductive age in Illuababor zone, south west Ethiopia, 2016.

Characteristics	Case n=233(33.3%)	Controls n=467(66.7%)	Total n=700(100%)
Family size			
two or less	53(7.6%)	68(9.8%)	121(17.4%)
3 - 4	81(11.7%)	196(28.2%)	277(39.9%)
five or more	97(14.0%)	199(28.7%)	296(42.7%)
age at first marriage			
less than 18	87(12.5%)	136(19.5%)	223(31.9%)
>=18 years old	145(20.8%)	330(47.3%)	475(68.1%)
Have you ever been pregnant?			
Yes	201(28.7%)	416(59.4%)	617(88.1%)
No	32(4.6%)	51(7.3%)	83(11.9%)
Age when your first child was born?			
Less than 18	37(6.0%)	60(9.7%)	97(15.6%)
>=18 years old	168(27.1%)	35(57.3%)	524(84.4%)
How many birth you give?			
less than 2	46(7.4%)	114(18.3%)	160(25.7%)
two or more	158(25.4%)	304(48.9%)	462(74.3%)
Do you want more children?			
Yes	113(16.7%)	252(37.3%)	365(54.1%)
No	106(15.7%)	179(26.5%)	285(42.2%)
Don't know	6(0.9%)	19(2.8%)	25(3.7%)
Alive children			
<2	42	255	297
2 or more	167	161	328
How many children do you want to have in your life?			
<=2	161(23.2%)	318(45.9%)	479(69.1%)
3-4	68(9.8%)	146(21.1%)	214(30.9%)
Who decide on the No of children you want to have			
Husband	40(5.7%)	86(12.3%)	126(18.0%)
Wife	59(8.4%)	71(10.2%)	130(18.6%)
Both	117(16.7%)	282(40.3%)	399(57.1%)
God	16(2.3%)	2(4.0%)	44(6.3%)

According to the finding of this research, Yes 95(13.8%) of cases and 162(23.6%) of controls had exposure through media about LAPMs message while 45(27.4%)

of cases and 30(18.3%) controls had method shift from short acting to long acting family planning methods (see table 3).

Table 3: LAPMs information of women of reproductive age in Illuababor zone, south west Ethiopia, 2016.

Characteristics	Case n=233(33.3%)	Controls n=467(66.7%)	Total n=700(100%)
Have you ever exposure through media to LAPMs message			
yes	95(13.8%)	162(23.6%)	257(37.5%)
no	136(19.8%)	293(42.7%)	429(62.5%)
Have you ever used a LAPMs method?			
yes	145(20.7%)	155(22.1%)	300(42.9%)
no	88(12.6%)	312(44.6%)	400(57.1%)
Have you ever shifted from one			
Yes	65(9.3%)	99(14.2%)	164(23.5%)
No	167(23.9%)	368(52.6%)	535(76.5%)
If yes for Q138, From which LAPMs to which contraceptive			
short acting to long acting	45(27.4%)	30(18.3%)	75(45.7%)
long acting to short acting	20(12.2%)	69(42.1%)	89(54.3%)
Do you / your partner want to use any LAPM to delay Px			
Yes	157(22.4%)	233(33.3%)	390(55.7%)
No	67(9.6%)	214(30.6%)	281(40.1%)
I am not sure	9(1.3%)	20(2.9%)	29(4.1%)

3. Logistic Regression analysis of Determinants of Long acting family planning methods utilization among women of reproductive age in Illuababor zone, south west Ethiopia, 2016

Variables considered for multiple logistic regression were those with a p-value <0.2 at bivariate logistic regression analysis and these included age, age at first marriage, Having ever used a LAPMs method, family size, shifting from one to another contraceptive method, decision on No. of children and having alive children.

During multiple logistic regression family size, shifting from one to another contraceptive method, decision on No. of children and having alive children were significant determinant factors Long acting family planning methods utilization. (See Table 4 below).

Table 4: Bivariate and multivariate analysis of Determinant factors of Long acting family planning methods utilization among women of reproductive age in Ilu Aba bor zone, south west Ethiopia, 2016.

Variables	Case n=233(%)	Controls n=467(%)	COR(95%CI)	AOR(95%CI)
Age in years				
15-24	45(6.4%)	200(28.6%)	1	
25-34	120(17.1%)	154(22.0%)	3(0.865, 9.888)	0.37(0.04, 3.7)
35-44	65(9.3%)	74(10.6%)	10(3.056, 33.575)	0.62(0.07, 5.5)
>45	3(0.4%)	39(5.6%)	11.4(3.369, 38.7)	0.55(0.05, 5)
Family size				
Two or less	53(7.6%)	68(9.8%)	1	1
3 – 4	81(11.7%)	196(28.2%)	1.6(1.037, 2.467)	0.093(0.021, 0.422)*
five or more	97(14.0%)	199(28.7%)	0.85(.595, 1.209)	0.171(0.042, 0.696)*
Age at first marriage				
less than 18	87(12.5%)	136(19.5%)	1	1
>18 yrs. old	145(20.8%)	330(47.3%)	1.5(1.05, 2.03)	0.6(0.25, 1.75)
Decision on No. of children				
Husband	40(5.7%)	86(12.3%)	1	1
Wife	59(8.4%)	71(10.2%)	0.8(0.396, 1.67)	4.790 (1.369, 16.762)*
Both	117(16.7%)	282(40.3%)	1.45(0.719, 2.94)	5.637(1.687, 18.833)*
God	16(2.3%)	2(4.0%)	0.73(0.379, 1.39)	26.8 (2.43, 295.17)*

Have you ever used a LAPMs method?				
Yes	145(20.7%)	155(22.1%)	1	1
No	88(12.6%)	312(44.6%)	3.3(2.390, 4.602)	1.5(0.54, 4.17)
Have you ever shifted from one to another contraceptive				
Yes	65(9.3%)	99(14.2%)	1	1
No	167(23.9%)	368(52.6%)	5.2(2.6, 10.2)	0.157(0.063, 0.386) *
Alive children				
<2	42	255	1	1
2 or more	167	161	0.16(0.11, 0.24)	10.32(3.68, 28.89) *

*=*significant variables during multiple logistic regression analysis.*

5. DISCUSSION

The finding of this study indicated that family size, shifting from one to another contraceptive method, decision on number of children and having alive children are significant determinant factors of Long acting family planning methods utilization.

Women with number of alive births two or more are 10 times more likely to use long acting and permanent methods than who had less than two, AOR=10.32 95% CI [3.69-28.89]. This is in line with findings from studies done in Debre Tabor town & East of Iran which revealed that women who have more than 5 children were utilize long acting contraceptive than who have less than 5 children.^[12,13]

Another determinant factor of long acting family planning methods utilization is women's family size. Women with family size of 3-4 and five or more are 90.7% and 82.9% less likely to utilize LAMP with AOR= 0.093 95% CI [0.021-0.422] and AOR= 0.171 95% CI [0.042-0.696] respectively than who had family size of two or less. This is comparable to the studies conducted in Arba Minch and Bati towns that shows family size above 5 were more likely to use modern contraceptive use than those with family size of 1-2.^[9,10]

The finding of this study also confirmed that decision on having number of birth they want also another determinant factor of long acting family planning methods utilization is women's family size. Decision made by wife, both wife & husband and God are identified factors of LAMP utilization with AOR=4.79 95% CI [1.37-16.76], AOR=5.637 95% CI [1.69-18.83] and AOR=26.78 95% CI [2.43-295.17] respectively.

This is also comparable with studies of Debre Birhan and Debre Tabor which revealed husband-wife communication about contraception, often having discussion with husband and deciding together with husbands for using the methods were more likely to use long acting & permanent contraceptive methods than those women whose contraceptive using decided by their husbands.^[11,12]

Women who ever shifted from one to another contraceptive are 84.3% less likely to utilize LAMP than women who Never shifted from one to another

contraceptive family planning methods with AOR = 0.157 95% CI [0.063-0.386]. This result is supported by study done in rural Ethiopia.^[14]

6. Limitation

This study was conducted among only family planning service users in the government facilities.

7. CONCLUSION

In conclusion according to the findings of this study; number of alive births, family size, decision maker on the number of births and type of method shift are statistically significant predictors of utilization of long acting and permanent family planning methods.

8. Recommendation

The federal ministry of health and regional health bureau in collaboration with NGOs

- More work to train health care providers to encourage women to make them able to discuss and persuade their partners on these methods.
- Increase accessibility and availability of LARCs is very essential.

Ilu Abba Bor Zone health bureau

- Focus factors predicting likelihood of modern contraceptive use to further improve modern contraceptive utilization.

Health care providers

- ✓ Information education and communication (IEC) on long acting contraceptive methods should be provided to all and their partners' women giving emphasis to those who have adequate number of children and women don't have future birth intension.

Researchers

- ✓ Further comprehensive study is recommended to assess supply related factors, competency of service providers and considering private facilities, non-users preferably community based study.

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