

Research Article

Utilization of Reversible Long Acting Contraceptive Methods and Associated Factors among Women Getting Family Planning Service in Governmental Health Institutions of Gondar City, Northwest Ethiopia 2015

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Abstract

Introduction: Ethiopia is the second most populous country in Sub-Saharan Africa. Fertility Rate of Ethiopia is 4.1 children per women, contraceptive prevalence rate is 29%. Long acting reversible contraceptives are family planning methods that prevent unwanted pregnancy for 3-12 years. It includes the implants and intrauterine contraceptive device. 25% of women and couples in sub-Saharan Africa who want to space or limit their births are not using any type of contraception. In a country like Ethiopia with high fertility rate and unmet need of contraceptive shifting towards long-acting methods thus potentially playing an enormous role in reducing maternal and child deaths.

Objective: The objective of this study was to assess utilization of long acting contraceptive methods and associated factors among women of reproductive age group in Gondar city

Methods: Institution based cross-sectional study was conducted from March 15 to Feb 25 2015. In governmental health facilities in Gondar city. The study included a total of 614 women Data collectors were recruited and a structured pretested questionnaire using interview technique was used for data collection. Data entry and cleaning was done using EPI-INFO 7 and analysis was done using SPSS version 20 odds ratio with 95% CI was computed and variables having p- value less than or equal to 0.05 in the multiple logistic regression model were consider as statistically significant.

Result: The overall prevalence LACM among the study population was 33.7% [95% CI: 29.9 -37.5], the proportion was high among old age 46.1%. The proportion of IUD utilization was 11.4% [95% CI: 8.8 -13.9], while Implant 22.3% [95% CI: 19.0-25.6]. The prevalence of LACM utilization increase with increasing knowledge (28.9% in low knowledge, 46.4% moderate and 54.2% was found high among high knowledge.

Conclusion: All over knowledge, educational level of women, knowledge about advantages of LACMs were found to have statistically significant association to the long acting contraceptive use., Information education communication should focus on alleviating factors hinder from practicing of LACMs.

Keywords: Utilization; Long acting contraceptive; Gondar ethiopia

Introduction

Statement of the problem

Long acting reversible contraceptives are family planning methods that prevent unwanted pregnancy for minimum three years to 10-12 years when removed return of fertility is prompt. It includes the implants and intrauterine contraceptive devices.

Family planning helps to meet the need for spacing limiting births which has the potential to prevent large number of maternal mortality [1]. The reversible long term contraceptive (implant and

IUD) is a long-acting and effective contraceptive method appropriate for women wishing to limit child bearing, as well as to space births, thus potentially playing an enormous role in reducing maternal mortality [2].

Globally 13% of married women use long acting but, an estimated 80 million unintended pregnancies both mistimed and unwanted occur each year [2]. The prevalence of unintended childbirth was 14.4%. Long acting contraception methods is convenient for users and effectively prevent pregnancy and also cost effective for programs over time [3]. They can result in substantial cost savings for couples,

governments, and contribute directly to reaching national and international health goals.

Rapid population growth is the character of many developing countries contributed high fertility. In Sub Saharan Africa (SSA), the rate of population growth one of the highest (2.8%) and compare to developed countries. Because of the low prevalence level of contraceptive use and higher total fertility rate in developing countries including Ethiopia, unwanted pregnancy and births are increasing which affects maternal and child health [1].

The Ethiopian ministry of health has planned and is working on the provision of long acting in the lowest service delivery level and in most instances at lower or no cost for the utilization [1] the contraceptive method mix is dominated by short term methods like pills and Injectables [3]. Even though long term is the most widely used contraceptives because of its being safe, effective, rapid return to fertility, and relatively less expensive [4], it had less utilized in the area. There are no studies that have examined the factors contributing to long term utilization. The present study is intended to contribute to bridging information gap about and subsequently the coverage of long term contraceptive method utilization in the city.

Literature review

According to USAID 2007, woman in Africa gives birth on average to five or six children in her life time .data from demographic and health survey from four SSA countries show that the proportion of women currently using long acting is significantly lower than the proportion using short-acting methods [4]. In many countries of the region, fewer than 5% of women who are using long acting. However, in SSA countries desired for family size declines and the demand for limiting family size rise sharply [1].

Study in India revealed that, determinants of adolescent pregnancy include early marriage, sexual coercion and lack of access to and use of contraception. Nearly 85% of the world's adolescent population lives in developing countries .a number of in sub-Saharan Africa [5].

Utilization of reversible long acting contraceptive methods: According to WHO the Long acting contraceptive methods are suitable for those who wish to space, delay, or limit births [6], and it is appropriate for women who are postpartum or post abortion. Thirteen percent of the worlds married women more than 150 million women overall use the long acting methods as their method of contraception. The long term is the most highly effective, convenient, cost-effective, and widely used FP methods. Long acting contraceptives protect pregnancy from 3 to 10-12 years and few failure rates (10 per 1000 women) in the first year for IUD [2].

Most women can use the long term method, including young women, women who have not had children, HIV-infected women and women with AIDS who are clinically well on treatment [7].

According to FHI30 global: Family planning is not an end in itself it is a broad health and quality of life providing evidence of family planning impact on health. Using FP helps to averts 187 mill unintended pregnancies -in turn prevents: 54mill unplanned births, 112 mill induced abortions, 1.2 mill infant deaths, 230,000 maternal deaths [4].

In developing countries, almost one out of every four women (23%) who are using contraception use the long acting contraceptives, although there are wide variations among countries in long acting contraceptive prevalence rates, and the research figures largely reflect long term contraceptive (IUDs & implants) use in a few populous countries such as China, Egypt, and Vietnam. In developing countries excluding China, 5% of married women and Africa, 1% of married women use the method [7].

According to FHI per capital is associated with CPR South chorea has high GNP CPR=70%, Mali has low GNP CPR=5%. [5]. The Contraceptive Prevalence Rate (CPR) increases at young age (15-24) and decreases near menopause (45-49). The CPR in Ethiopia becoming increased from 2005 (15%) to 2011 (29%) urban women has only slightly increased in the last five years [4]. Studies in mekele Ethiopia suggest that long term contraceptives have the potential to reduce unintended pregnancies but the contraceptive choice and utilization are highly dominated by short term contraceptives that leads to high fertility. The total fertility rate of Ethiopia is 4.8 thirty-seven percent of women want no more children but only few use LACs. The overall prevalence of Long Acting contraceptive Methods (LAMs) in the study area was 12.3%.

Factors affecting long acting contraceptive utilization: Using another method of contraception is the main reason for not using long term. A significant amount of the women had low knowledge on LACs [5] 38.4% for all women and 37.2% for married women indicates demand for contraception .by indicating Determining the utilization weekly income directly associated with number of pregnancies. FP prolongs education and empowers women. Women who use FP more likely to be employed than non-users developed countries like Indonesia, Zimbabwe, Bolivia relations, family well-being, and community involvement like Philippines helps to increase CPR and decreases maternal and child mortality. Unplanned pregnancies interrupt work and carrier. Study in bale zone Goba town revealed that contraceptives and unmet need for contraceptives indicates demand for contraception potential users of LACs [6].

Family Planning service that provides accurate and complete information about contraceptive methods meets the need of their clients. Still, early marriage and producing too many children, which are close to each other is a common practice of developing countries including Ethiopia. The contraceptive prevalence rate at national level was 28.6%. The unmet need for family planning was 25%. Knowledge of LACs in Oromia region was 12.2%, previous use and current use in oromia region was less than one percent [5].

Across-sectional study conducted in mojo town revealed that the level of knowledge and approval of family planning were high, 91.5 and 82.2% respectively. However, the actual practice of family planning methods was found to be low where only 38.3 were using any family planning method [7,8]. The most common methods for both previous and current users were Injectables, pills and condom, whereas the most common source of family planning information was clinics. Family planning service utilization is higher for those with higher parity, literate, approved use of family planning methods, discussed with husband/partners and those exposed to mass media. Fertility related, opposition, methods related, and access to sources/knowledge were reported reasons by non-users [7,9].

Table 1: Socio-demographic characteristics of woman getting family planning services, Gondar city march to June 2015 (n=614).

Variable		frequency	%
Age	15-19	85	13.8
	20-24	157	25.6
	25-29	213	34.7
	30-34	97	15.8
	35-39	49	8.0
	40 and above	13	2.1
Marital status	single	53	8.6
	married	541	88.1
	divorced	4	0.7
	widowed	1	0.2
	separated	15	2.4
Ethnicity	Amhara	487	79.3
	Tigre	38	6.2
	kimant	83	13.5
	Other	6	1.0
Religion	orthodox	536	87.3
	Muslim	62	10.1
	Protestant	16	2.6
residence	urban	531	86.5
	rural	83	13.5
Woman educational level	Unable to read & write	161	26.2
	primary	143	23.3
	secondary	219	35.7
	Diploma & above	91	14.8
Husband education	Unable to read & write	117	19.1
	primary	130	21.2
	secondary	170	27.7
	Diploma & above	141	23.0
Occupation of women	House wife	297	48.4
	Government employee	73	11.9
	Private employee	41	6.7
	Daily laborer	78	12.7
	merchant	28	4.6
	student	88	14.3
Husband occupation	Government employee	150	24.4
	Private employee	98	16
	Daily laborer	187	30.5
	merchant	74	12.1
	student	26	4.2
	other	23	3.7

In developing countries, family planning program managers may be reluctant to offer long acting. This in turn impedes long term Provision. The availability of the LACs may also be restricted

to adequately equipped health facilities in urban settings, thus limiting its access for individuals living in rural communities. At the individual level, potential long term users may be influenced by their level of knowledge of the method, its risks and benefits, and the acceptability of planning within their community. A recent study in six sub-Saharan African countries showed that use of any method of contraception was significantly associated with community commitment of family planning [10]. For instance, data from Ghana and Tanzania showed that low level of community awareness on long term leads to decreased contraceptive prevalence rate and high mortality rate) compared to the rest of the world. Equally, the number of people in need of health and education, among other public goods is large and increasing which in. In Sub-Saharan Africa (SSA), the rate of population growth is one of the highest in the world, (2.8 percent turn requires large amounts of resources, personnel and infrastructure. This Several factors investigate utilization of long term According to Maries tops international under- utilization of the long term in sub-Saharan Africa might be explained by different factors affecting family planning service provision at the policy, program and individual levels. At the policy and program level, family planning programs might favor the promotion and provision of one contraceptive method over another [10].

A study done in tiger region Mekelle shows that, as compared with use of another method of contraceptive woman knowledge, residence, income ,occupation ,religion marital status ,number of live birth ,method side effects, non availability of service, not allowed by husband and medical problem, women general awareness about LACs and source of information affects utilization [11]. Study showed that women who had moderate knowledge about LACs uses six times more than that of who had low knowledge. Mothers with two or more pregnancies were 3 times more likely to use LACs as compared with those who had been pregnant only once [9] in addition studies in Bale zone Goba town showed that there is association b/n previous history of LAC use increases the chance of current LAC use by seventeen Fold [10].

Study in jimma Ethiopia showed Husband`s and wive`s knowledge on family planning have statistically significant association with couple`s current contraception use .Couples who had communication on family planning were 2.5 times more likely to use long term contraceptive than couples who didn`t do so. Couples where the wife perceives that her husband approves of family planning was 6.8 times more likely to be current contraception users than their counterparts [12] (Figure 1).

Justification of the Study

According to EDHS on average one of every three unintended birth resulted from contraceptive failure. More than half of unintended births were detected even the women were using contraception. More than half of all induced abortions result from contraceptive failure. Long acting contraceptive method is highly effective, with failure rates ranging from zero to 1.8 percent.

Considering the current low utilization of long term contraceptive, achieving growth and transformation health program will be a major challenge for Ethiopia. To reach the health transformation goal giving an attention to the achievement of human reproductive and health rational family planning service is the basic tool to control

high fertility and improve life by decreasing maternal morbidity & mortality caused by unintended pregnancy end up with an safe abortion. Increase school achievement and women empowerment the preferable method to fertility reduction is long acting contraceptive, because it is effective, safe, less costly, protect pregnancy for 10-12 years, immediate fertility return. Long term contra captive is most widely used contra captives in the world but research evidence indicated that low utilization in Ethiopia. There are no studies that have examined the factors contributing to long acting contraceptive utilization.

The present study is intended to contribute to bridging information gap and subsequently the coverage of long acting contraceptive utilization in the city.

Objectives

General objective

To assess the utilization of reversible long acting contraceptive methods and associated factors among women getting family planning service in Governmental Health Institutions of Gondar City, Northwest Ethiopia, 2015.

Specific objectives

To assess utilization rate of reversible long acting contraceptive methods among women getting family planning service in governmental health institutions of Gondar City.

-To assess utilization rate of reversible long acting contraceptive methods among women getting family planning service in governmental health institutions of Gondar City.

-To identify associated factor of reversible long acting contraceptive methods use among women getting family planning service in governmental health institutions of Gondar City.

Methodology

Study design

Institutional based cross-sectional study design was conducted.

Study area and period

The study was conducted in Gondar City administration Government health facilities. Gondar city administration is found in north Gondar Northwest Ethiopia. The city is divided in to 24 kebeles with a total population of 315, 856 from which 48.99% females and 48.1% are reproductive age (15-49). There is one university hospital, eight health centers, in Gondar administration The study period is from March 25 to April 25, 2015, (Gondar city administration health office).

Source population

All women of reproductive age using modern contraceptive methods in governmental health institutions of Gondar city

Study population

All selected women of reproductive age using modern contraceptive methods in governmental health institutions of Gondar city

Inclusion and exclusion

Inclusion criteria: All women of reproductive age using modern

contraceptive methods in Governmental health institutions of Gondar city

Exclusion criteria: Clients who are not able to communicate

Study Variables

Dependent variable

Long acting reversible contraceptive utilization

Independent

Socio demographic variables

- Age
- Religion
- Ethnicity
- Monthly Income
- Occupation
- Residence (Urban vs. Rural)
- Educational status
- Marital status
- Husband education
- Husband occupation
- Service delivery related variables
- Service distance,
- Availability of service
- Parity related variables
- Desire number of children
- Number of live birth
- Contraceptive related facto
- Fear of side effect
- Individual factor
- Miss conception
- Knowledge of long acting contraceptive
- Source of information
- Partner related factor
- Husband opposition

Operational definition

Long acting reversible contraceptive method: IUDs, implants are categorized as long acting contraceptive methods that they do not require daily use or repeated visits to obtain resupply knowledge of long acting reversible contraceptives: respondents know about long term contraceptives as a method of spacing children and benefits which are expressed through statement. Knowledge is considered as “high” if a woman correctly answer 80% of knowledge questions and above; “moderate” if she correctly answer 60 - 79% knowledge questions; and “low” if she correctly answer less than 60% of the

knowledge questions. But, where did you get these knowledge questions?

Sample size determination

Assumptions: Sample size was determined by using a single population proportion formula. The assumptions considered were:

p=16.4% obtained from previous study in mekelle [9]

95% =confidence level and

Margin of error = 3%.

$n = (Z / 2) 2 P (1-P)$

d2

$n = (1.96) 0.164(1-0.164)$

$(0.03)^2$

n = 585

Sampling procedure

The family planning service of the nine health institutions of the last 6 months in Gondar city are: Azezo Health center 2169, Teda Health center 678, Blajig Health center 43, Maraki Health center 1768, Poli Health center 1155, ingot 20 Health center 839, Gebreal health center 457, Woleka Health center 629, Gondar University Hospital 755.

Therefore the total sample size were proportionally allocated to the nine health institutions based on their client flow i.e. Azezo Health center 157, Teda Health center 49, Blajig Health center 3, Maraki Health center 128, Poli Health center 83, ginbot 20 Health center 61, Gebreil Health center 33, Woleka Health center 45, Gondar University Hospital 55. All Study participants were interviewed until sample size satisfied (Figure 1).

Data collection procedure

A structured and pre-tested questioner used for the data collection. The questioner was translated from English to Amharic language and retranslated back from Amharic to English to check consistency. Face to face interview has been the technique of data collection. For administering the interview eight diploma nurse data

collectors and two BSC supervisors were selected.

Data quality control

Questionnaire was pre-tested on 5% of the sample size in Bihar dar city, shimbt health center then the questioner were modified accordingly. Training has been given to the data collectors and supervisors. Supervision has been done for the data collectors by the supervisors and investigator. Questioner were checked every day by the supervisors and investigator for completeness.

Data processing and analysis

Data was entered to EPI-Info 7 then exported to SPSS version 20 for analysis. The collected data were coded, and cleaned for completeness. Binary logistic regression model were used for analysis. Descriptive and inferential analysis were computed to see the frequency distribution and variable analysis to test the association of the independent variable with the dependent variable. Independent variables whose p-values less or equal to 0.2 will fit to multivariable analysis. Then p-value less than 0.05 were considered as statistically significant.

Ethical Consideration

Ethical clearance was obtained from university of Gondar research and publication office. Permission for conducting the study was secured from Gondar city administration health office. Then official letter was written to each study health facilities in the town. Consent was also obtained from all the study participants after they are briefed about the objectives and the aim of the research. And confidentiality of the information gathered was assured to the interviewee.

Results

Socio-demographic characteristics

A total of 614 reproductive age woman were participated with a response rate 100%.

Two-handed thirteen (34.7%) of them were in age group of 25 to 29 with a mean age of 25.9 (SD±5.75). Four hundred eighty seven (79.3%) were Amhara by Ethnicity and 536 (87.3%) of them were orthodox Christian religion followers.

Ninety one (14.8%) of women had attended diploma and above,

Table 2: Multivariate analysis on determinants of long acting reversible contraceptive method use among women getting family planning service in Gondar city.

Predictors	Frequency LACM		COR (95% CI)	AOR (95% CI)
	Yes	No		
Knowledge				
Low knowledge	1	1	1	1
Moderate	33	43	.345 [.208-.572]	2.2862 [1.1708,4.4644]
High knowledge	39	33	.643 [.339-.242]	3.5077 [1.7311,7.1074]
Education Level				
Unable to read & write	161	26	1	1
Primary	13	130	.034 [.016,074]	.2475 [0.982,.6236]
Secondary	74	145	.011 [.004,027]	1.8610 [.8255,4.1957]
Diploma and above	82	9	.056 [.027,118]	29.447 [8.68,99.9]
By husband decision	9	27	1.458 [.984-2.161]	1.2332 [.3071,4.9521]
misconceptions				1.71 (1.08- 2.72)

and 48.4% were house wives (Table 1) where is the text related to other socio-demographic characteristics which are included in (Table 1).

The overall prevalence LACM among the study population was additionally give actual number of women using LACM! 33.7% [95% CI: 29.9 -37.5], the proportion was high among old age 46.1%. The proportion of IUD utilization was 11.4% [95% CI: 8.8 -13.9], while Implant 22.3% [95%cl19.0-25.6]. Link the text with the figure.

Determinants of long acting reversible contraceptive method use

Age, marital status, Ethnicity, place of residence, Educational level of women, occupation of women, Husband educational level, husband occupation, misconceptions about LACMs, time when the women, plan to have the next baby, discussion with husband, sources of information about LACMs, were tested at p -value <0.2 for their association by using bi variable logistic regression analysis. Only all over knowledge, educational level of women, were found to have statistically significant association to the long acting contraceptive use during multivariate analysis.

As the knowledge of women increases the likelihood of utilizing LACMs also increase Please give the odds ratios and the confidence interval to show the strength of association. Women who had high knowledge were about three times to use long acting contraceptive methods than women with poor. You should not discuss on findings in the result section. That should be done in the discussion section!!

Women attended college and above were use long acting contraceptives than women with no education Ors? (Table 2).

Discussion

The overall prevalence of LACM among the study population was 33.7% [95% CI: (29.9 -37.5)], the proportion was high among old age 46.1%. The proportion of IUD utilization was 11.4% [95% CI: (8.8 -13.9)], while Implant 22.3% [95% CI (19.0-25.6)]. The prevalence of LACM utilization increase with increasing knowledge (28.9% in low knowledge, 46.4% moderate and 54.2% was found high among high knowledge

The result of the study showed that the odds of using LARCMs among women attending diploma and above was 23 times higher than among women who was not educated [AOR 22.99 (95% CI (7.036,75.18))]. The odds of using LARCMs among women with moderate knowledge is 2.5 times higher than as compared to a women with low knowledge [AOR2.48 (95% CI(1.27,4.84))] and the odds of using LARCMs among women with high knowledge is 4 times higher than as compared to a women with low knowledge. The result in this study agreed with Mojo is this place in Ethiopia in 2011 [7] as knowledge increases the probability to use long acting contraceptive methods also increases, even though contraceptive choice for younger and older women may be influenced by several factors, the possible reason for this may be the need that the women to limit the number of children and fertility declines for women in middle age why are you talking about age while age was not significantly associated, so they prefer to use the long acting reversible contraceptive method than short acting contraceptive The study finding is also agreed [12-14].

The result of this study show that there was a strong relationship

between women`s educational status, all over knowledge and use of long acting reversible contraception methods.

Women attended university and college were about four times likely to use long acting reversible contraceptive than women with no education. This finding is lined up with the previous studies done in mojoy town Ethiopia [7].

In this study, a higher level of education was found to be a significant predictor of long acting reversible contraceptive utilization. This finding is agreed with studies conducted across the developing world women is, the more likely she showed that the better educated a women is, the more likely she is to Use contraception [11,15].

Similarly in Ethiopia Gizaw a Nigatu, Regassa. Family planning service utilization in mojo town Ethiopia: A population based study journal of geography, and regional planning, pp 2011; found strongly associations between women`s education and contraceptive use [7,11].

Illiterate women had a risk of not using any contraceptive methods that was many times higher than literate women [16].

There are a number of explanations that suggest? Why education is a key determinant of LARCMs use. For example education is likely to enhance female autonomy so that the women can develop confidence, to make decision regarding their own health and demand higher quality of life [17]. Studies in Bale zone Goba town showed that there is association between previous history of LARCM use increase the chance of current use by seven fold means, if the women were knowledgeable about LARCM, she has a chance of using the appropriate method [17,18].

Partner approval was most important factor the probability of respondents to use family planning was 83% compared to a women with no partner approval the difference between this study and current study was because of socio demographic, economic socio cultural factors.

Another predictor that has also shown as unimportant influence on LARCMs utilization was husband wife discussion `those women having discussion with their husbands on contraceptive were more likely use LARCMs than women who did not have discussion [12]. In this study the prevalence of misconception were 325 (52.8) lined with study in mekele Tigre region the level of miss conception affects the utilization of LARCM.

A Women who had no myths and misconceptions on LAPMs were found to be 1.7 times more intention to use LAPMs compared to women who had myths and misconceptions (AOR = 1.71; 95% CI: 1.08- 2.72). Likewise, women who attained secondary

and higher level of education were found to be 2 and 2.8 times more intention to use LAPMs compared to women with no education, respectively [(AOR = 2. 10; 95% CI: (1.11- 3.98)] and [AOR = 2. 80; 95% CI:(1.15- 6.77)] [19].

Probably you fail to get significant association for many variables due to small number of women using LACM.

Conclusion

The overall prevalence LACM among the study population was

33.7% [95% CI: 29.9 -37.5], the proportion was high among old age 46.1%. The proportion of IUD utilization was 11.4% [95% CI: 8.8 -13.9], while Implant 22.3% [95% CI 19.0-25.6]. Among several factors that affect utilization of long acting reversible contraceptive methods, women's education, all over knowledge of women about long acting reversible contraceptive methods found to be determinants of long acting reversible contraceptive method use.

Recommendation

The findings have implication for family planning programs to deeply examine ways to increase contraceptive use for those especially on long acting contraceptive methods. Which of these recommendations are substantiated by your results? Make sure your recommendations are supported by the results

- FMOH needs intensive promotion focused on long acting reversible contraceptive method.
- Continuous information education communication should focus addressing the needs of long acting reversible contraceptive methods.
- Further study should be conducted focusing on service provider, male partners, service delivering institutions
- Working in collaboration with local community organizations

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References

1. USAID: Longacting and permanent methods: dressing unmet need for family planing in africa. Issue Brief Washington DC 2007.
2. Agency CS. Survey Eh: Ethiopia Demographic and Health Survey March. In: CF International Calverton, Maryland, USA. 2011: 8-12.
3. Gebremariam A, Addissie A. Intention to use long acting and permanent contraceptive methods and factors affecting it among married women in Adigrat town, Tigray, Northern Ethiopia. *Reproductive Health*. 2014; 11.
4. Cates W. 360 F: Family Planning and the Millennium Development Goal. 2013.
5. CSA: Ethiopia mini DHS. 2014.
6. Takele A, Degu G, Yitayal M. Demand for long acting and permanent methods of contraceptives and factors for non-use among married women of Goba Town, Bale Zone, South East Ethiopia. *Open Access*. 2012; 9.
7. Gizaw A, Nigatu. Regassa: Family planning service utilization in Mojo town, Ethiopia: A population based study. *Journal of Geography and Regional Planni*. 2011; 4: 355-363.
8. Abdissa Bulto G, Zewdie TA, Beyen TK. Demand for long acting and permanent contraceptive methods and associated factors among married women of reproductive age group in Debre Markos Town, North West Ethiopia. *Bulto et al BMC Women's Health*. 2014: 14.
9. Gebremichael H, Haile F, Dessie A, Birhane A, Alemayehu M, Yebo H. Acceptance of long acting contraceptive methods and associated factors among women in Mekelle city, Northern Ethiopia. *Science Journal of Public Health*. 2014; 2: 349-355.
10. International LMS: Promising results for the IUD in sub-Saharan Africa. 2011.
11. Alemayehu M, Belachew T, Tilahun T. Factors associated with utilization of long acting and permanent contraceptive methods among married women of reproductive age in Mekelle town, Tigray region, north Ethiopia *Open Access*. 2012; 12.
12. Haile F, Enqueselassie F. Women's autonomy on couple's contraception use in jimma town Ethiopia. *Ethiopia journal of health development*. 2006; 2: 145-151.
13. Kari White PD, Kristine Hopkins PD, Joseph E. Potter PD, Daniel Grossman MD. Knowledge and attitudes about long-acting reversible contraception among Latina women who desire sterilization. *Womens Health Issues*. 2013; 23.
14. Dixon, muller R, Germain A. Fertility regulation and reproductive health in MDGS. *American journal of public health*. 2007; 97: 45-51.
15. Okech TC, Wawire DNW, Mburu DTK. Contraceptive Use among Women of Reproductive Age in Kenya's City Slums. *International Journal of Business and Social Science*. 2011; 2.
16. Okech TC, Wawire NW. Contraceptive Use among Women of Reproductive Age in Kenya's City Slums. *International Journal of Business and Social Science*. 2011; 2.
17. Takele A, Degu G, Yitayal M. Demand for long acting and permanent methods of contraceptives and factors for non-use among married women of Goba Town, Bale Zone, South East Ethiopia. *Reprod Health*. 2012; 9: 4755-4759.
18. WHO: guidelines on preventing early pregnancy and poor reproductive health outcomes among adolescents in developing countries. 2011.
19. Alemayehu, Tilah TBT. Factors associated with utilization of long acting and permanent contraceptive methods among married women of reproductive age in Mekelle town, View at Publisher View at Google Scholar View at Scopus underlyin. *BMC Pregnancy and Childbirt*. 2012; 12.