

Determinants of long acting reversible contraceptive Utilization in Bahir Dar city, Ethiopia-results from institutional based cross sectional study.

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Abstract

Background:

Ethiopia is the second most populous country in Africa. Now a day, Adolescent sexual activity, unintended pregnancy, unsafe abortion, high maternal mortality and poverty has become a major issue in Ethiopia. The prevalence of contraceptive utilization is slanted to short acting.

Methods:

Institutional based cross-sectional study was conducted from public health facility in Bahir Dar City from April 1 to 30/2018. systematic sampling technique was used to select study participants and allocated to each public health institution proportionally. Data entry and analysis was made by using Epi info version 7 and SPSS versions 23 respectively. The association between the independent and outcome variables was first computed using bivariate analysis, $p\text{-value} \leq 0.25$ was included into multivariable analysis. Finally, multivariable analyses were carried out with $p\text{-value} \leq 0.05$.

Result:

The overall utilization of long acting reversible contraception was 18.4%. Among the variables, desired number of children, women wish to have 0-3 number of children were 2.4times more likely to use long acting reversible contraceptives compared to those who want to have more than 4 children with (AOR=2.4:95%CI:1.22-4.8). Similarly, having good knowledge were found positively associated with long acting reversible contraceptive those who had good knowledge were 3 times (AOR=3:95%CI:1.52-5.9) more likely to utilize than those who had poor knowledge and also , favourable attitude were found to be positively associated with long acting reversible contraceptive methods utilization, women who had favourable attitude were 4.9 times more likely to utilize (AOR=4.9:95%CI:2.26-10.6) than those women's who had unfavourable attitude.

Conclusion:

Utilization of long acting reversible contraceptive is low. Desired number of children, knowledge and attitude were determinant factors identified. So, Health education on long acting reversible contraceptives focusing on increasing women's knowledge and attitude directed to women of reproductive age

Background

Family planning is defined as the way of controlling birth and allows people to attain their desired number of children and determine the spacing of pregnancies. Access to family planning through preferred and effective methods contributes to health of mothers, supports the health and development of community as well as access to Informed choice, safe, voluntary family planning method is a human right⁽¹⁾.

Long-acting reversible contraceptives are methods of birth control that includes Intra-Uterine Device and implants; provide effective contraception for an extended period without requiring user action. So their 'typical use' failure rates, at less than 1% per year, are about the same as 'perfect use' failure rates. In addition to being long-lasting and convenient, they are very cost effective. Typically, LARC users can save thousands of dollars over a five-year period compared to the use of condoms and birth control pills (2, 3).

Access to family planning through preferred and effective methods contributes to health of mothers supports the health and development of community (1, 2). And also WHO highly recommended Long-acting reversible contraception for adolescents, to help decrease the teen pregnancy rate and for women of any age no matter how many times they have given birth.

Long acting reversible family planning methods provide uninterrupted protection to women for 3 to 12 years and by far the most effective (99% or greater) and very safe (4). When it was removed, return to fertility is prompt (5). Current scientific findings and new understanding about long-acting reversible family planning methods of contraception underscore their safety and effectiveness (6).

Wider access to and use of family planning, especially of long-acting reversible family planning methods of contraception, which are the most effective contraceptive, can substantially reduce the high levels of maternal mortality and morbidity in developing countries including Ethiopia, as well as unwanted pregnancies and abortion (7).

Globally, 57 per cent of married or in-union women of reproductive age used a modern method of family planning, constituting 90 percent of contraceptive users. When users of traditional methods are counted as having an unmet need for family planning, 18 percent of married or in-union women worldwide are estimated to have had an unmet need for modern methods (8).

Contraceptive prevalence is projected to increase from 17 to 27 percent in Western Africa, from 23 to 34 percent in Middle Africa, from 40 to 55 per cent in Eastern Africa, Yet unmet need for family planning is still projected to remain high in 2030, above 20 per cent in all these regions, except in Eastern Africa, where it is projected to decrease from 24 per cent to 18 per cent between 2015 and 2030 (9).

Even though Long acting reversible contraceptive methods are around 20 times more effective than other type of reversible contraceptives and LARC use and continuation has been proven to effectively reduce unintended pregnancy thereby reducing abortion, not more than 18% of women utilize LARC worldwide and slanted to short acting contraceptive methods (10).

Long acting reversible contraceptive methods have significant effect globally, to prevent unintended pregnancies and improve pregnancy spacing among adolescents and youth will reduce maternal and infant morbidity and mortality, decrease rates of abortion, improve nutritional status, keep girls in school and improve economic opportunities, and contribute toward reaching the Sustainable Development Goals (12).

Complications during pregnancy and childbirth are the leading cause of death for women in Africa and voluntary family planning empowers women and men to decide when to have a child and to avoid unintended pregnancies and abortions which results in healthier families, communities, and nations, complications of unintended pregnancy rests on African region (13).

Total Fertility Rate of Ethiopia was 4.6 children per women, population growth rate was estimated to be 2.7% per year and modern contraceptive prevalence rate was only 29% with LARC utilization of 6.1%, At which Fertility declined from 4.8 to, 4.6 children per woman between 2011 - 2016 which had decrease by about one child and the decrement also very slow and time taking, the Federal Ministry of Health (FMOH) has considered the important role of long-acting reversible contraceptive methods and aim to provide all family planning clients with the long-acting and permanent methods. (14, 15).

Statement of the problem

Globally, Population density is one of the major social indicators, especially in developing countries including Ethiopia.

Ethiopia is one of the most populated countries in Africa making the second nation in Africa. Its population has also increased nearly seven times from 11.8 million at the beginning of the 20th century to about 100 million and above now days (16). The total fertility rate of Ethiopia is 4.2 children per women and contraception use among married women ages 15 to 49 was 36 percent; In addition, among currently married women, the most popular methods are injectable (23%), implants (8%), IUCD, and the pill 2% each (17).

Inability to access these highly effective family planning methods by the majority of sexually Active women in reproductive age has tremendous negative consequences. Challenges which Culminate from low use of LARC methods in Ethiopia include rapid population growth which Results from the high birth rate of 4.6 children per women (EDHS 2016), If the country continues to have a high fertility rate, it is predicted that Ethiopia will not attain economic growth and development, as well as maternal mortality and morbidity will increase.

Ethiopia is characterized by a high rate of unintended pregnancy, 38% which is a result of contraceptive failure, poor use of short term methods (pills, condoms) and non-use of modern Contraception, these unintended pregnancies have negative consequences on the health and wellbeing of women and their families (UNFP,2011). Studies indicate that children born from unintended pregnancies are less likely to be breastfed, more likely to be stunted and have a higher risk of child mortality than children from wanted pregnancies (Gipson, Koenig, and Hindin, 2008). The quickest way to eliminate these negative health outcomes is through an increase in the use of LARC methods (18).

Globally, MMR is 216 and 99% (302, 000) of MMR are in developing regions—sub-Saharan Africa alone accounting for roughly 66% (201, 000), followed by Southern Asia (66, 000). the estimate of the maternal mortality ratio for Ethiopia was 412 deaths per 100,000 live births and Accelerated progress will be needed to achieve the SDG goal; at least 7.5% reduction (The Lancet, 2015), but and more than 350 million couples worldwide have limited or no access to effective and affordable contraceptive methods especially to LARC (19).

There is low use of LARC methods in developing countries like Ethiopia, Despite of many advantages, and sometimes missing, component of many national reproductive health and family planning programs in fact FP services are made accessible nearly at all areas in Ethiopia (20).

Therefore, it is imperative to focus of solving the challenge of low LARC utilization in Ethiopia for the Country to enjoy better socio economic conditions, to decrease maternal mortality and morbidity, to decrease UN wanted and UN intended pregnancy and its outcome.

Justification

Ethiopia is the second populous country in Africa and Use of family planning in Ethiopia has traditionally been slanted to short-acting methods such as injectable and pills [19]. long acting reversible contraceptives are more useful for spacing and limiting than short acting. However, currently utilization of LARC less 10% in Ethiopia which is low (24). This study will help to assess the utilization of LAC and its associated factors among reproductive age women in Bahir Dar city.

Little is known this topic in the study area; therefore, it is essential to assess the utilization of LARC methods and associated factors among reproductive age women.

The study findings also help in developing new approaches for increasing utilization of LAFP methods among married women in reproductive age. The research will help to generate ideas for reducing women's negative perceptions and attitudes towards use of long acting family planning methods.

There is knowledge gap in terms of what factors are affecting utilization of LARC methods among women in reproductive age family planning users. Addressing this gap in turn helps in the improvement of awareness on the family planning clients. The recommendations made by this study may play a role towards improving effective use of contraceptives and family planning services.

The results of this study will help to improve the utilization of long acting family planning of the area and also serve as baseline data for program managers, decision makers and advocates so as to design and focus on interventions.

Objectives

General objective

- To determine Utilization of Long Acting Reversible Contraceptive Methods and Its associated factor among women who Came for family planning Service in public health institutions in Bahir Dar city, North West, Ethiopia, 2018.

Specific objectives

- To determine Utilization of long acting reversible family planning methods.
- To Identify factors associated with utilization of long acting reversible family planning method.

Methods

Study design and setting

An institution-based cross-sectional study was conducted from April 1to 30/2018 in Bahir Dar City public health facility, northwest Ethiopia. The city is 578 K.m North West of Addis Ababa situated on the southern shore of Lake Tana, Ethiopia's largest lake. Bahir Dar city especial zone had a total population of 221,991, of whom 108,456 were male and 113,535 were female(14) and had two public Hospitals, six health centres and two NGO.

Sample size and sampling procedure

Sample size for the first objective was determined by using a Formula for estimating single population proportion, by taking the assumptions of 95% confidence interval, margin of error (d) (0.05), proportion of women who use LARC P = (25.2%) from a study done in Mizan Aman(15) and Sample size for the second objective was determined by using a Formula for estimating double population proportion formula by, taking the assumptions of 95% confidence interval, margin of error (d) (0.05), those who shift methods (33.9%) from previous study and by comparing the two samples, the largest sample size was taken and by adding 10% non-response rate the total sample size was 359. The calculated sample size was proportionally allocated to each health facility based on the previous consecutive one-month average daily client flow of the units which was obtained by referring client registration log books. The average monthly client flow of women in all selected health facilities was found to be 1988 in a month. All reproductive age

women attending family planning services was allocated proportionally to each public health facility based on the average client flow and each participant were selected by using systematic random sampling method.

Data collection tools and procedure

The data was collected from April 1 to 30/2018 by eight midwives and 2 supervisors by using face to face interview, a structured questionnaire adopted from different literatures.

Before the actual data collection, the tool was translated to local language(Amharic) and pre-tested on (18) participants in Enjibara hospital which is 45 km north from Bahir Dar to check for clarity of the items and also to identify any confusing or vague items in the questioner. Based on the pre-test, the time needed for the complete interview and the number of data collectors in need was estimated. The principal investigator trained eight Diploma midwives as data collectors and two BSc midwives as supervisors for two consecutive days on objective, data collection tools and interview techniques including privacy and confidentiality of participants. The interview was conducted in a place where the woman feels free to express their feeling and ideas. Supervisors made spot checking and reviewing the completed questionnaires on daily bases to ensure completeness and consistency of the information which was collected.

Measurement

Knowledge of all reproductive age women was measured by the total number of correct answers to 8 items on knowledge with a minimum score of 0 and maximum of 8. To measure the knowledge, it was categorized based on the percent of knowledge of the distinct characteristics of LARC as: "good" those who knew above the mean and "poor" those who knew mean and below from knowledge measuring questions.

Items on attitude of reproductive age women was measured by asking attitude measuring questions about the use of LARC were grouped in to three categories as "agree" "disagree" and "not sure". For analysis purpose to measure the attitude of the all reproductive age women, two categories were assigned: favourable Attitude - those who scored above the mean to the correct answers from attitude measuring items and "unfavourable Attitude" - those who scored the mean or below to attitude measuring items.

Finally, reproductive age women's use or not use of long acting reversible contraceptive methods among study units was set as binary outcome variable.

Data processing and analysis

A checked data was entered into Epi info version 7 and exported to SPSS version 23 for analysis. Frequency distribution and cross tabulations were used to check for missed values during analysis. Any errors were corrected after the revision of the original data using the code numbers of the questionnaires. Bivariate logistic regression was done for each independent variable with outcome variables to estimate the crude odds. All variables with p value <0.25 were considered for the final multivariate model. Multivariable logistic regression method was used to assess the independent effect of different variables after simultaneously controlling for the effect of confounding factors. Finally, variables which show significant association in the multivariable analysis with a p value less than 0.05 were reported as Adjusted Odds Ratio (AOR) with 95 percent confidence interval. Descriptive statistics were summarized using frequencies and percentages. Tables and figures were used to give a condensed picture of the data.

Results

1. Socio-demographic characteristics

A total of 359 reproductive aged women were included in analysis with response rate 100%. The mean age of the study participants were 26 years old with S.D \pm 4.77years. Of the respondents of the study, majority were Amhara 337(93.9%) in ethnic group and regarding occupational status 178(49.6%),82(22.8%),39(10.9%)were housewives, governmental employ and merchant respectively, whereas Regarding educational level 119(23.1%) women had no formal education,45(12.5%) had primary education, 119(33.1%) secondary and 76(21.1%) completed college/university. Concerning husbands educational level 89(24.7%) had no formal education,79(22%) completed college /university. (*Table1*).

2. Reproductive performance of the study participants

From 359 study participant's majority of the respondents had given birth, 220(61.3%) as well more than 180(50.1%) of them gave birth after age twenty years. Majority of 327(91.1%) had no abortion history. (*Table 2*)

3. Information about long acting reversible contraceptives among study participants

Most women had information about long acting reversible contraceptives331(92.2%) of those the most common source of information for the study participants was 12(45.1%) health professionals and of those study participants 224 (65.2%), heard or aware about implant during study period. (*Table 3*).

4. Knowledge of women about long acting reversible contraceptives

Out of the study participants 230 (64.1%) know IUCD can prevent pregnancy for 12 years and 228 (63.5%) did not know IUCD do not interfere with sexual intercourse. Majority of the study participants 207(57.7%) had knowledge about the notion that implants can prevent pregnancy for 3–5 years but 152(42.3 %) of them did not know, 225(62.7%) of women had knowledge that after removal of the Implant, return to fertility is prompt. Majority of them 184(51.3%) had poor knowledge and the remaining 175(48.7%) had good knowledge. (*Table 4*).

5. Attitude of the study participants towards LARC

Among the study participated women only 169(47.1%) agreed that insertion of IUCD does not lead to lose privacy and 186(51.8%) agreed that IUCD do not restrict from performing daily activity. 42.9% of women had favourable attitude and 57.1% of women had unfavourable attitude towards LARC. (*Table 5*).

6. Utilization of contraceptive methods among study participants

Among the study participant the utilization of long acting reversible contraceptive was 18.4% of those the majority used implant (16.2%) and 2.2% used IUCD. From the participants 36.5% of women were shifted or switched from one contraceptive to other, of those the main reason to shift from one contraceptive method to another contraceptive method, (10%) were due to side effect followed by (10%) were due to inconvenience of the previous method. (*Table 6*).

7. Factor associated with the utilization of long acting reversible contraceptives.

In the study, age, women education, husband education, Information about LARC, knowledge, attitude, source of information, desired number of children were significantly associated with long acting reversible utilization in bivariate analysis.

The final result in multivariate analysis of this study confirmed that knowledge, attitude and desired number of children were identified as significant determinants of utilization of long acting Reversible contraceptive methods.

In this study women's levels of knowledge on long acting reversible family planning methods found to be one of the determinants of utilization, those who had good knowledge 3times (AOR = 3:95%CI:1.52–5.9) more likely to utilize LARC than those who had poor knowledge.

Comparing from women who had unfavourable attitude about long acting reversible family planning usage and those women who had favourable attitude were 4.9times more likely to utilize long acting reversible family planning methods(AOR = 4.9:95%CI:2.26–10.6).

The other predictor of LARC utilization is desired number of children, women wish to have in the future than those who wants 0–3 number of children were 2.4times more likely to use LARC compared to those who want to have > = 4 children with (AOR = 2.4:95%CI:1.22–4.8) were remained statistically significant with the utilization of long acting reversible contraceptives.(Table 7).

Discussion

This study was mainly identified magnitude of LARC users and predictors determining utilization among women of reproductive age, which was 18.4%(14.5–22.6), the commonly used long acting reversible method were implant (16.2%) and 2.2% used IUCD, in Bahir Dar city public health facility.

The result of this study is lower than the result reported from USA 49.3%(66), china (43%)(67), Areka(29.7%)(68), Addis Ababa (34.8%)(15) Harer(16), in line with study result in Debremarkos(19.5%)(17),Mizan aman (18.2%)(18),Dendy (17.5%)(17),whereas high relative to previous studies conducted in Mekele town (12.3%)(19).

In USA (49.3%) institutional based study was done among health professionals, the differences might be due to the fact that USA is more developed than Ethiopia and participants were health professionals, so that awareness of the study participants, access to information and services the cultural and socio-demographic status of participants might be the core reason.

In china (43%) institutional based study was conducted, among reproductive age group, who came for abortion services, the utilization was high. The reason might be china is more developed than Ethiopia and participants might have better knowledge and attitude as well as different socio-demographic status of participants. The other core reason might be the participants were women who came for abortion services, so that awareness of the study participants, access to information and services, intension to use LARC might higher.

In Areka (29.7%) Community based cross-sectional study was conducted, among reproductive age married women and the difference might be all private and NGO institutions were included and also the study participants were all married women, as well as there may be age difference between participants.

In Addis Ababa (34.8%), Community based cross-sectional study was conducted, among reproductive age women and the difference might be different sociodemographic status of participants and those participants have different source information about LARC.

The other reason might be private and NGO institutions were included, and more NGO and other health related sectors may contribute for utilization like giving training for health professionals, availability of LARC, sponsor for mass media, since Addis Ababa is a central city.

in Harer facility based cross sectional study was conducted on utilization of long acting reversible contraceptive among mother of reproductive age which was 38%.

The difference may be due to aggressive community mobilization and awareness creation on long acting reversible contraceptive. The other reason might be The comprehensive long acting reversible contraceptive training was given to most health care providers. The other reason might be and the government is working on accessibility of service.

This study was line with study conducted in Debre Markos(19.5%)(17),Mizana Aman (18.2%)(18),Dendy (17.5%)(17) respectively.

In Debre Markos institutional based study was conducted on utilization and Factors Affecting the use of Long-Acting Reversible Contraceptive which was 19.5% which is in line with the result of this research. This might be due to the study participants might have nearly similar sociocultural and demographic characters. They might have comparable level of awareness, or it might be similar study design was done.

Institution based Cross sectional study was conducted in health centres on determinants of Long Acting Reversible Contraceptives among Child Bearing Age Women in Dendi District, and found to be 17.5% in line with the result of this research.

This might be due to the fact that the study was done only among public health facility or the study participants might have nearly similar awareness and attitude towards LARC.

In Mizan aman the study was done on Utilization of Long Acting Reversible Contraceptive Methods and Its Associated Factors among Women of Reproductive Age Groups which was 18.2%, in line with this study. This might be due to fact that most participants were at the age of 25–30 years or comparable level of awareness and attitude towards LARC.

The prevalence of LARC utilization was high relative to previous studies conducted in Mekele town (12.3%)(19).In Mekele A cross sectional community based survey was conducted with LARC utilization of 12.3%. This result is lower than the result of this research, the reason might be differences in the study area, access to information and the services, cultural and socio-demographic status of participants, knowledge attitude difference and female empowerment might be the core reason.

Knowledge was a significant predictor for Utilization of long acting reversible methods. Accordingly, women who had good about LARC were 3times more likely to utilize LARC as compared to those who had poor knowledge. This finding was in consistent with the study done in Mekelle town (20).

The reasons might be having good knowledge might be attributed to better understanding of family planning messages in general and LARC in particular.

The other reason might be women who are more knowledgeable, also better equipped with discussion to health professionals, manage side effects and more likely to fairly weigh the risks and benefits of using contraception and giving sound decision.

The other significant predictor of long acting utilization was attitude, participants who had favourable attitude were 4.9times more likely to utilize long acting reversible family planning methods(AOR = 4.9:95%CI:2.26–10.6).

In this result is with evidence from Ethiopian demography and health survey report [EDHS, 2016], the odds of long acting contraceptive utilization increased for mothers who had favourable attitude towards long acting reversible

contraception.

This might be Mothers who had favourable attitudes towards long acting reversible may not simply accept myths and misconception. The other reason might be those who had positive attitude might accept providers counselling and might also have good knowledge.

The other predictor of LARC utilization is desired number of children women wish to have in the future than those who wants 0–3 ideal number of children were 2.4 times more likely to use LARC compared to those who want to have ≥ 4 children with (AOR = 2.4; 95% CI: 1.22–4.8).

This study exposes the desired number of children to be a predictor of LARC utilization. A woman who wants to have more children has lower odds of LARC use. This is in line with the study done in Arbaminich (21).

This might be due to those participants who need more children may prefer short term methods, due to need of pregnancy in short period. On the other hand, it might be due to they may have fear of fertility return after the use of long acting reversible contraceptive methods.

Conclusion

The study revealed that utilization of long acting reversible family planning among reproductive age women in Bahir Dar city, public health facility is low. Majority of the study participants had poor knowledge on long acting reversible contraceptive methods. More than half of a women had unfavourable attitude towards long acting reversible contraceptive methods.

Recommendations

After reviewing the findings of the study, the following recommendations were made:

1. Health institution and Health Professionals

- it is imperative to ensure availability of printed materials like leaflets that help family planning users to understand the benefits of LARCM use more.
- Emphasis has to be given to IEC to increase knowledge, attitude towards LARC during provision of any family planning methods.
- Any health institution must prepare mass education centres about LARC as part of regular activities
- Researchers:
- Need to conduct further studies on assessing the quality of service given and factors affecting the utilization of the long acting reversible family planning methods including the husbands.
- Incorporate quantitative with qualitative research.

Declarations

Abbreviations

AOR: Adjusted Odds Ratio; CDC: Communicable disease control; CI: Confidence Interval; EDHS: Ethiopian Demographic and Health Survey; FMOH: Federal Ministry of Health; IUCD: Intra uterine Contraceptive Device; LARFPM:

Long Acting Reversible Family Planning Methods; MDGs: Millennium Development Goals; OCP: Oral Contraceptive Pills; OR: Odds Ratio; WHO: World Health Organization.

Ethics approval and consent to participate

Before the actual data collection letter of clearance were obtained from ethical clearance committee of Bahir Dar University, college of medicine and health science and Letter of permission were obtained from Amhara National Regional Bureau and Official letter were submitted to public health facility which were included in the study. Before proceeding to the formal data collection written formal consent were obtained and the right of the respondents to refuse to answer for any or all questions were respected.

Consent for publication

Not applicable

Availability of data and materials

The dataset supporting the conclusion of this study are available within the manuscript.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

Asteray Assmie) designed the study, performed the statistical analysis and drafted the manuscript. (Amlaku Mulat) and (Toyiba Hiyaru) participated in the study design, implementation of the study. All authors contributed to the data analysis and read and approved the final manuscript.

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Tables

Due to technical limitations, Tables 1 - 7 are only available as download from the Supplementary Files section.

Supplementary Files

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