Prevalence and factors associated with Long Acting Reversible Contraceptives utilization among youth in Mekelle City, Ethiopia

Mahlet Mahari[1],Mussie Alemayehu [1], Abate Bekele[2], Reda Shamie[1], Mebrahtu Kalayu[1*]

[1]School of Public Health, College of Health Sciences, Mekelle University, Mekelle, Ethiopia
[2]School of Public Health, College of Health Sciences, Arbaminch University, Arbaminch, Ethiopia

*** Corresponding author:** E-mail- kmebrahtu1990@gmail.com

Abstract

Background: Contraceptive use could prevent one-third of maternal deaths. Despite of high fertility rate in Ethiopia, the utilization of long acting reversible contraceptives (LARCs) still remains low among youth.

Objective: The study aimed to assess the prevalence and factors associated with long acting reversible contraceptives utilization among youth in Mekelle city, Tigray, Ethiopia.

Methods: A community-based cross-sectional study was conducted in Mekelle city, Ethiopia from April-May 2018. A total of 335 subjects were included in this study. Three stage sampling was applied to approach the study participants. Data were collected using a structured questionnaire. Data were analyzed using SPSS version 21. Multivariable logistic regression was conducted to identify factors associated with LARCs utilization. Results were described using frequency and percentage, and presented by tables. The strength of association was measured by odds ratios along with their 95% CI. A p-value <0.05 was used to declare statistical significance.

Result: A total of 335 participants were interviewed making the response rate 98.5%. The current utilization of long acting reversible contraceptives was 14%. Marital status (AOR=13 95 CI= (4.9, 34.8)) and knowledge about LARCs (AOR=7.5 95% CI= (2.8, 19.9) were positively associated with LARCs utilization.

Conclusion:-The utilization of long acting reversible contraceptives was low. High knowledge about LARCs and being married were factors associated with long acting reversible contraceptives utilization. Increasing youth knowledge on long acting reversible contraceptives would be vital for better utilization.

Keywords: Prevalence, Long acting reversible contraceptives, Youth, Ethiopia

Background

Worldwide, 358,000 women and 3 million newborns die each year because of complications related to pregnancy and childbirth (1). In sub-Saharan Africa women under age 25 account for 51 percent of unsafe abortions (2). Approximately 16 million adolescents, ages 15-19, give birth annually and risks of early childbearing for both adolescent women and their children is associated with increased maternal and newborn morbidity (3,4).

Teenage pregnancy is a major health concern because of its association with higher morbidity and mortality for both the mother and the child. Childbearing during adolescence is known to have adverse social consequences, particularly regarding educational attainment, as women who become mothers in their teens are more likely to drop out of school (5).

Ethiopia is experiencing substantial growth in its youth population. Approximately 33 million of Ethiopia's population is younger than age 25 about (6). In Ethiopia, 13% of women age 15-19 have begun childbearing: 10% have given birth, and an additional 2% are pregnant with their first child (7).

A key component to ensuring youth sexual and reproductive health rights (SRHR) and reducing unmet need is to make the full range of contraceptive methods available, including LARCs. The government of Ethiopia has taken many initiatives to enhance the utilization of long-acting contraceptives yet more than 50 percent of the youngest age group (ages 15 to 19) uses short acting contraceptive methods (8).

Identifying factors associated with LARCs use helps in improving utilization of LARCs among young women. But few studies have been conducted in our country. Therefore this study aims to identify the prevalence and factors associated with utilization of long acting reversible contraceptive utilization among youth in Mekelle city, Ethiopia.

Methods

Study area and period

The study was conducted in Mekelle City, Tigray region from April/30-May/30 2018 G.C. It is located around 783 kilometers north of the Ethiopian capital Addis Ababa. Administratively; Mekelle is considered a Special Zone, which is divided into seven sub-cities: Kedamay Woyane, Ayder, Hadinet, Adihaki, Semen,Hawelti and Quiha, sub-cities. Mekelle City has an estimated population of 447166 in 2010 GC with 217365 males and 229801 females. The

city has one referral hospital (Ayder), three general hospitals and 10 health centers.

Study design

A community-based cross-sectional study was done among females who were 15-24 years old.

Sample size determination

Using the proportion of LARCs use (p= 8.3%) from similar studyconducted in DebreBerhan city, Ethiopia(9),with the assumption of 95% Confidence interval, 80% /power, design effect of 1.5 and by adding a 10% non-response rate, the final sample size estimated was 340.

Sampling technique and procedure

A three-stage sampling was applied to select eligible subjects. Primarily, 3 Sub-cities-Ayder, Semen and Hawleti-were selected randomly out of the seven sub-cities. Secondly, 9 kebele were selected randomly from each of the selected sub-cities making a total of 27 kebele. At third stage,4000 households were selected using systematic random sampling. The sample for the subjects was allocated to each Kebele using proportional allocation. If there was more than one youth in the household, one participant was selected randomly.

Data collection tool and data collection procedure

A standardized, structured and pre-tested questionnaire was used to interview study participants. Data was collected and information on socio-demographic variables, reproductive health variables, health related, family planning information, knowledge and attitude variables was sought using a questionnaire adopted from Ethiopian demographic health survey tool and studies conducted in Mekelle, Debrebrhan, and Uganda by reading other literatures as well (9–11). The questionnaire was prepared in English and then translated into the local language (Tigrigna) then retranslated into English to check for consistency.

Data were collected by five female youth who are college graduates. It was supervised by two bachelor degree holders. Data were collected by going house to house and conducting a face-to-face interview. Female youths that were found in the selected household during data collection were interviewed after explaining the objective of the study. In households where there was no female youth the next selected household was selected based on the original interval.

Data quality control

The questionnaire was pretested in 5% of the total study population (11) outside the study area. All necessary amendments were done on question clarity, language and appropriateness of wording, sequence and coherence and skip patterns. Daily checkup of the filled questionnaires was done before data entry began. Training was provided for data collectors and supervisors for data accuracy and completeness. Close communication, support, and coordination of the data collection procedure were done by the principal investigator.

Measurements

LARCs ever use: Participants who have used LARCs in the past and participants who are using LARCs currently.

LARCs current use: Participants who are using LARCs currently or during the study period.

Pregnancy scare: A phenomenon where a woman thinks she is pregnant but actually is not.

Knowledge: Knowledge was measured as high knowledge (those who scored above 80% of the questions on knowledge section), moderate knowledge (those who scored 60-79% of the questions) and, low (those who scored below 60% of the questions)(11).

Attitude was finally categorized for measurement as positive attitude (those who score above the mean of the attitude question) and negative attitude (those who scored below the mean of the attitude questions).

From reading other literatures knowledge and attitude about LARCs variables were found to influence the utilization of LARCs. They were used as independent predictors of utilization of LARCs in this paper. That's why the measurements are illustrated here.

Dependent variable

Long-acting reversible contraceptives utilization (use or not use)

Independent variables include socio-demographic, reproductive and healthy facility variables and knowledge and attitude about LARCs

Data analysis

Data entry and cleaning was done using Epi data version 3.1 and analysis was done using SPSS version 21.0 statistical software. Frequencies and percentages were also done for categorical data. Non-normally distributed continuous variables were summarized using the median and IQR.

Multivariable logistic regression analysis was done to estimate the independent effect

of explanatory variables on the LARCs use. Thus, the strength of association was measured through adjusted odds ratios with 95% CI. Those variables with P-value<0.05 in the multivariable analysis were considered as significantly associated variables. Multicollinearity test was checked among independent variables using a Variance inflation factor using a cut-off point of <10 and no multicollinearity was found among independent variables. Hosmer and Lemeshow test for model goodness of fit was done.

Results

Socio-demographic and reproductive history of the participants

Of the total study population, 335 sexually active female youths completed the interview making the response rate 98.5%. The median age of the participants was 22 (IQR= [25^{th} -75^{th}] years. High proportion 293(87.5%) of the study participants were within the age category of 20 -24 years. Two hundred seventy-four (81.8%) of the respondents live with their parents. Regarding marital status, 290(86.6%) of the study participants were not married. More than nine in ten 312(93.1%) study participants had secondary and above educational level.

The mean age at first sex for the participants was 19.36 (SD=1.5) years and more than seven in ten 238 (71%) initiated their first sexual intercourse at the age of 18 years and above. Sixty-eight (20.3%) of the study participants had a history of pregnancy of which 22 (34%) was an unwanted pregnancy. Eighteen (26.4%) of participants had a history of abortion [Table 1].

Knowledge and attitude LARCs related of female youth regarding LARCs use in Mekelle

One hundred-eighteen (35.2%) of the study participants visited a health facility in the past 12 months. Of these, 46 (39%) of them went for family planning. 64(54.2%) visited a health facility for family planning. 56(87.5%) of these were counseled on family planning method choice. Fifty-Seven (89.1%) claimed they were counseled about implants during their visit [Table 2].

Almost all of the study participants 334(99.7%) claimed that they have heard of LARCs. When asked about the benefits of Intra-Uterine Contraceptive Device (IUCD), 257(96.1%) believed as it prevents unwanted pregnancy, 237(71.1%) limits family size, 166(49.7%) spaces births and 28(8.4%) prevents child and maternal mortality and morbidity. Majority

321(96.1%) claimed they knew implants and 257(76.9%) while 310(92.8%) knew about IUCD. Regarding source information about LARCs 296(88.6%), 185(55.4%), 56(16.7%), 47(14.1%), 27(8.1%) and 10(3%), heard from media, health facility, friends, school, family and non-governmental organizations respectively. Two hundred five(61.4%) and 272(81.4%) of the study participants knew about the duration of effectiveness of IUCD and Implants respectively.

Two hundred –five (61.4%) respondents knew that IUCD prevents pregnancy for more than 10 years; IUCD is appropriate for females at risk of getting STI (26.9%) and doesn't interfere with sexual intercourse (42.2%). Besides, 176 (52.7%) knew that pregnancy is immediately reversible after IUCD removal, 97(29%) respondents knew that using IUCD cannot cause cancer, 272(81.4%) implants can prevent pregnancy for five years, 236 (70.7%) implant requires minor surgical procedure during insertion and removal and, 228(68.3%) knew that pregnancy is immediately reversible after implant removal**.** One hundred-Eighty five (55.4%) of the study participants believed that using an implant can cause irregular bleeding. 176 (52.7%) of respondents believed that the insertion and removal of the implant is very painful. 138 (41.3%) of respondents believed that insertion of IUCD can cause to lose privacy and 108 (32.3%) believed that using IUCD can restrict normal daily activities [Table 3].

In general 122(36.5%) of participants had positive attitude towards LARC while 212(63.5%) of them had negative attitude towards LARCs. Regarding knowledge about LARCs 67(20.1%) had high knowledge, 25(7.5%) had moderate knowledge, and 242(72.5%) had low knowledge about LARCs.

Utilization of long-acting reversible contraceptives

Around fifty seven participants (17%) claimed they have ever used LARCs and 40 (70.2%) ever used implants. The current use of LARCs among the study participants was 47(14%) and thirty two (60.1%) use implants currently. The majority (96%) get LARCs in public health facilities. Thirty three (57.9%) decide to use LARCs after they discuss with their partner/husband [Table 4].

Marital status and knowledge about LARCs were found to be predictors of LARCs utilization. Study participants who were married were more likely to utilize long-

acting reversible contraceptives compared to their counterparts (AOR=12.8 95% CI= (4.7, 34.5)). Youth who had high knowledge about long-acting reversible contraceptives were 8.5 times more likely to use LARCs (AOR=8.5 95% CI= (3.2, 22.7)) than youth who had low knowledge LARCs [Table 5].

Discussion

The aim of the study was to assess the prevalence and the factors associated with the utilization of LARCs among sexually active youth in Mekelle City, Tigray, Ethiopia. The current use of LARCs utilization among sexually active youth in this study was 14%. Study participants who were married and had high knowledge about LARCs had increased odds of utilizing LARCs.

In this study, the prevalence of current LARCs use was 14 % with 95 CI= (10.4, 17.6). The finding was consistent with previous studies conducted in Mekelle and Arbaminch City, Ethiopia (11,12). But it was lower than the study done in Mexico, Gambia, Malawi, Harar, DebreBerhan, in which the prevalence of LARCs utilization ranges from 23-88.7% (9,13–16). This could be due to the fact that the current study only focused among youth and it was community-based study while the other studies were done in women of reproductive age and the study conducted in the Gambia was done in a single health facility and included injectable as LARCs(14)while the current study only used implants and IUCD as LARCs. This show the utilization of LARCs in the present study is relatively low compared to other studies. This implies the need for efforts to increase LARC utilization among youth by improving the knowledge gap about LARCs. The current finding was higher than the EDHS2016 report in which the utilization of long-acting reversible contraceptives among youth was 8.3% (7). This could be due to the fact that the Ethiopian demographic health survey is a nationwide survey that encompasses urban and rural, participants with different educational status and other different characteristics as well but the current study was done at urban area only in which the population might have easier access to family planning information and use. On the other hand, according to EDHS current use of modern contraception is higher in urban areas than in rural areas (7). The implication is that since the majority of the Ethiopian population live in rural areas efforts to increase LARC utilization among rural women should also be increased.

Female youths who were married were more likely to utilize LARCs than their unmarried ones. This is similar to a study conducted among adolescents in Mexico where 80% of LARCs users were exposed to marriage or cohabitation (9). This implies that most LARCs users are married women and that unmarried women should also get focus. Since LARCs are also evidenced to be effective for unmarried and nulliparous women (17) efforts to increase the utilization of LARCs among youth should be made.

The study revealed that youth who had high knowledge were more likely to use LARCs. It was in line with other studies (11,12). This indicates that having high knowledge about LARCs makes women more likely to balance the benefits and disadvantages and also decide easily to use the method (9).

Limitation

Interview was done by face to face interview which could make the study participants to withhold information on sensitive subjects.

Conclusion

The utilization of long-acting reversible contraceptives in this study was low. Marital status and knowledge about long-acting reversible contraceptives were found to be the factors associated with LARC use. Increasing youth knowledge on long-acting reversible contraceptives would be vital for better utilization.

Declaration

Abbreviations

IUCD: Intra-Utrine Contraceptive Device. LARCs: Long Acting Reversible Contraceptives. SRHR: Sexual and Reproductive Health Rights.

Ethical approval and consent to participate

The study protocol was approved by an Institutional Review Board of Mekelle University, College of Health Sciences. Written informed consent was taken from the participants after explaining the objectives the study, the benefit and risks of the study. Participation was voluntary and the right of the respondent to withdraw from the interview or not to participate was respected. The information collected from the study subjects was kept confidential and it was used only for study purpose. Ascent was taken from families of participants less than 18 years.

Consent for publication

Informed consent was obtained from each subject so that the study would be published and presented at different workshops without the anonymity of the participants.

Availability of data

All data generated or analyzed during this study are included in this manuscript and its supplementary information files.

Competing interests

The authors declare that they have no competing interests.

Funding

The study was financially supported by College of Health Sciences, Mekelle University. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the supporting offices. The funders had no role in the study design, data collection, and analysis, decision to publish, or preparation of the manuscript.

Authors' contributions

MM, MA, AB, and RS had made substantial contributions to the conception and design of the survey. MM has designed the study, participated in data collection, analysis, interpretation, and write-up, drafted the manuscript and critically revised it. MA has participated in study design, analysis, interpretation, and critically revised the manuscript. AB has participated in the study design, analysis, and interpretation drafted the manuscript and critically revised the manuscript. RS has participated in the reanalysis of the study findings, interpretation, and critically revised the manuscript. All authors read and approved the final manuscript.

Acknowledgments

We are grateful to the study participants. We are also thankful for Mekelle University for funding the study.

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Annex:

Table 1: Socio-demographic and reproductive characteristics of respondents Mekelle, Tigray, 2018

Variables	Number	Percent
Age (n=335)		
15-19	42	12.5
20-24	293	87.5
Living status (n=335)		
With parents	274	81.8
With a partner/husband	61	18.2
Marital status(n=335)		
Not married	290	86.6
Married	45	13.4
Educational status (n=335)		
Primary education	23	6.9
Secondary and above	312	93.1
Age at first sexual intercourse(n=335)		
Less than 18	97	29
18 and above	238	71
History of pregnancy(n=335)		
Yes	68	20.3
No	267	79.7
History of a pregnancy scare(n=335)		
Yes	25	7.5
No	310	92.5
Pregnancy scare action(n=25)		
I took family planning	11	44
I talked to my husband	4	16
I didn't do anything	10	40
Unwanted pregnancy history(n=68)		
Yes	22	34
No	46	66
Abortion history (n=68)		
Yes	18	26.4
No	50	73.6
Abortion type(n=18)		
Spontaneous	2	11.1
Induced	16	88.9
Fertile period knowledge(n=335)		
Yes	72	21.4
No	263	78.6

Table 2: Healthcare seeking reasons and health service contents in Mekelle, Tigray 2018

Variables	**Number**	**Percent**
Health facility visit in past 12 months(n=335)		
Yes	118	35.2
No	217	64.8
Reason for visit(n=118)		
ANC	11	9.3
Family planning	46	39
PNC	3	2.5
Delivery	3	2.5
Other *	55	46.6
Family planning counseling during the visit(n=118)		
Yes	64	54.2
No	54	45.8
Family planning counseling about(n=64)		
Side effects	26	40.6
Family planning method choice	56	87.5
Duration of effectiveness	44	68.7
Family planning counseling on(n=64)		
Pill	46	71.9
Injectable	38	59.4
Implant	57	89.1
IUCD	55	85.9

Table 3:LARC knowledge and attitude related characteristics of respondents Mekelle, Tigray 2018(N=334)

Knowledge	**Yes (%)**	**No (%)**
Know LARCs (n=335)	334(99.7)	1 (0.3)
Know Implants (n=334)	321(96.1)	13 (3.9)
Know IUCD(n=334)	310 (92.8)	24 (7.2)
Benefits of IUCD (n=334)		
Prevents unwanted pregnancy	257 (76.1)	77 (23.9)
Limits family size	237(71)	97 (29)
Spaces births	166(49.7)	168 (50.3)
Prevents child and maternal morbidity and death	28 (8.4)	306 (91.6)
Know the duration of effectiveness of IUCD (n=334)	205 (61.4)	129 (38.6)
Know the duration of effectiveness of Implants	272 (81.4)	62 (18.5)
Source of information (n=334)		
Media	296 (88.6)	38 (11.4)
Health facilities	185 (55.4)	149 (44.6)
Friends	56 (16.7)	278 (83.3)
School	47 (14.1)	287 (85.9)
IUCD can prevent pregnancy for more than ten years	205(61.4%)	129(38.6%)
IUCD is appropriate for females at high risk of getting STI	90(26.9%)	244(73.1%)
IUCD has no interference with sexual intercourse or desire	141(42.2%)	193(57.8%)
Pregnancy is immediately reversible after IUCD removal	176(52.7%)	158(47.3%)
IUCD cannot cause cancer	97(29%)	237(71%)
An implant can prevent pregnancy for 5 years	272(81.4%)	62(18.6)
Implant requires a minor surgical procedure during insertion and removal	236(70.7%)	98(29.3%)
Pregnancy is immediately reversible after implant removal	228(68.3%)	106(31.7)
Attitude	**Disagree (%)**	**Agree (%)**
Using implant can cause irregular bleeding (n=334)	149 (44.7%)	185(55.4)
The insertion and removal of Implanon is very painful(n=334)	158(47.3%)	176(52.7%)
Insertion of IUCD can cause to lose privacy(n=334)	196(58.7%)	138(41.3%)
Using IUCD can restrict normal activities (n=334)	226(67.7%)	108(32.3%)

Table 4:LARCs utilization among respondents Mekelle, Tigray 2018

Variables	Number	Percent
Have you ever used LARCs (n=334)		
Yes	57	17
No	277	83
Type of LARCs ever used (n=57)		7.8
Implant	40	70.2
IUCD	17	29.8
Reason for not ever using LARCs(n=277)		
Fear of side effect	103	37.1
Health problem	8	2.9
Fear of infertility	4	1.4
Partner/husband disapproval	14	5
Wants to get pregnant	10	3.6
I am not married	6	2.17
Currently using LARCs(n=57)		
Yes	47	82.5
No	10	17.5
Type of LARCs currently using		
Implant	32	60.1
IUCD	15	31.9
Reason for not using LARCs currently (n=10)		
I changed the family planning method	1	10
I stopped using family planning	9	90
Why did you stop using or change family planning method(n=10)		
Fear of side effect	3	30
I wanted to get pregnant	5	50
I am single	2	20
Where did you get LARCs(n=57)		
Public health facility	55	96.
Non-governmental organization	2	3.5
Who decided to use (n=57)		
Discussion with partner/husband	33	57.9
Personal interest	13	22.8
Partner/husband interest	11	19.3

Table 5: Bivariate and Multivariate analysis of LARC utilization among youth in Mekelle, Tigray region, 2018.

Variables	**LARC utilization**		**COR [95%]**	**AOR [95%]**
	Yes	**No**		
	N (%)	**N (%)**		
Marital status				
Married	28(62.2%)	17(37.8%)	23.4(10.9,50)	12.8(4.7,34.5)**
Not married	19(6.6%)	271(93.4%)	1	1
Educational status				
Secondary and above education	37(11.9%)	275(88.1%)	0.18(.072,.427)	0.43(.11,1.6)
Primary education	10(43.5%)	13(56.5%)	1	1
History of pregnancy				
Yes	31(45.6%)	37(54.4%)	13.1(6.5,26.3)	2.53(.99,6.46)
No	16(6%)	251(94%)	1	1
Pregnancy scare				
Yes	13(52%)	12(48%)	8.8(3.71(20.8)	1.8(.53,6.1)
No	34(11%)	276(89%)	1	1
Fertile period knowledge				
Yes	23(27.4%)	61(72.6%)	3.56(1.8,6.7)	1.6(.7,3.73)
No	24(9.6%)	227(90.4%)	1	1
Knowledge about LARC				
High knowledge	21(31.3%)	46(68.7%)	5.06(2.5,10.1)	8.5(3.2,22.7)**
Moderate knowledge	6(24%)	19(76%)	3.5(1.25,9.77)	3.2(.82,13.04)
Low knowledge	20(8.3%)	222(85.9%)	1	1
Attitude towards LARC				
Positive	23(18%)	99(81.1%)	1.82(.97,3.38)	1.01(.43,1.6)
Negative	24(11.3%)	188(88.7%)	1	1
LARC source of information media				
Yes	35(11.8%)	261(88.2%)	.291(.135,.627)	.35(.122,.1.01)
No	12(31.6)	26(68.4%)	1	1