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Magnitude and Factors Affecting Long-acting Reversible Contraceptive Utilization among Reproductive Age Women in Silti District, Southern Ethiopia.

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ABSTRACT

Background: Worldwide the utilization of long-acting reversible contraceptive (LARC) methods has been suggested as the first-line; extremely effective choices for prevention of pregnancy. However, in developing countries including Ethiopia many women use the short-acting contraceptives. This study intended to assess the magnitude and factors affecting LARC utilization among reproductive age women in Silti District, Southern Ethiopia.

Method: A community-based cross-sectional study was applied on 528 women using a systematic sampling technique in the period May 1-30, 2018. The data were collected by a pre-tested and structured questionnaire. Data were entered into Epi-data (version3.1) and analyzed through SPSS (version 22). A multivariable logistic regression was utilized to ascertain the associated of LARC utilization at 95% confidence interval. P-value <0.05 was taken as a cut of point to declare the level of statistical significance.

Results: The overall prevalence of LARC was 18.3%. The significantly associated factors of LARC were; maternal educational level of college and above (AOR=4.4, 95% CI:1.48-12.99), having positive attitude towards LARC (AOR=1.76, 95% CI:1.01-3.04), having a moderate and high level of knowledge towards LARC(AOR=2.09, 95%CI: 1.15-3.80) and(AOR=2.28, 95% CI:1.15-4.5), respectively.

Conclusions: The uptake of LARC was still underused in the study setting. Maternal educational status, having a moderate and high level of knowledge besides to a positive attitude towards LARC was found to have a significant association with the uptake of LARC. Improving educational status of the mothers, advancing their knowledge and creating a positive attitude towards LARC are very important to raise LARC utilization.

Keywords: Long-acting reversible contraceptive; Magnitude; Associated factor

Abbreviations: AOR: Adjusted Odds Ratio; CI: Confidence Interval; COR: Crude Odds Ratio; ANC: Antenatal Care; IUCD: Intra Uterine Contraceptive Device; LARC; Long-Acting Reversible Contraceptive; SPSS: Statistical Package for the Social Sciences

INTRODUCTION

Worldwide 800 women die every day due to complications of pregnancy and childbirth. Almost all (99%) of maternal mortality occurred in developing countries [1]. In Ethiopia according to 2016 national study report, the maternal mortality ratio was 412 maternal deaths per 100,000 live births [2]. The leading causes of maternal mortality are haemorrhage, hypertensive disorders of pregnancy, obstructed labor, infection

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and unsafe abortion [3,4]. Nevertheless, provision of family planning service is an important strategy for the step-down of maternal mortality [5-7].

Family planning is a conscious effort made by couples to limit or space the number of children they have through the utilization of contraceptive methods [8]. Additionally, access to safe family planning is a human right [9]. There are many types of family planning techniques consisting of LARC methods (Intrauterine Contraceptive Device (IUCD) & implants), and short-acting (pills, condoms, spermicide injection, and other methods) [10].

The LARC prevents more unintended pregnancies than short acting methods [11]. The LARC is promptly reversible after its removal [11,12] and it is best effective, reliable, appropriate, cost-effective, have an extra non-contraceptive benefits and it does not depend on women's adherence. Besides, their failure rates were found in the ranges of 0.6-1.0% and 0.05%, respectively [13]. It is also suitable for use nearly in all women, including young and nulliparous [14,15].

Even though, contraceptive utilization has increased substantially, in low-income countries its rate has remained to be low [16,17]. The global the prevalence of LARC is about 14.4%. However, this prevalence varies widely across the countries, i.e. 17.8 % in Asia and 3.5% in sub-Saharan Africa [17]. In Ethiopia, there is a broad wavering in reported prevalence of LARC ranging from 7.3-38% [18-21].

Given the complexness of contraceptive decision making, a large body of survey informs the question of why LARCs are underutilized in developing countries. These include; low knowledge of mothers towards LARC, health concerns, fear of side effects, lower maternal educational status, partner's opposition, desire for more children, absence of male involvement, and non-existence of discussion with partners [22]. The government of Ethiopia has made a remarkable progress in maternal health care services including family planning [23]. Despite of this fact, in Ethiopia LARC utilization is only 10% [2].

In Ethiopia so far many studies have focused on analyzing factors that affect all modern contraceptive methods. Thus, the current study intended to assess the magnitude and factors affecting LARC utilization among reproductive age women in Silti District, Southern Ethiopia. Conducting an investigation on LARC could be important to develop desirable strategies for inspiriting better usage of long-acting contraceptives.

MATERIALS AND METHODS

Study area, period and population

It was a community-based cross-sectional study conducted in Silti district, Southern Ethiopia in the period May 1-30, 2018. The source populations were all reproductive age women residing in Silti district for the last six months preceding the survey during the study period. On the other hand, the study populations were encompassed selected reproductive age women during the study period. Women who were critically ill during the study period were excluded from this study.

Sample size determination and sampling procedure

The sample size was determined using a single population proportion formula by assuming; 95% confidence interval, 5% degree of precision and prevalence of LARC uptake which was 29.7% (taken from a study done in Areka town) [19]. After adjusting 10% for non-response rate and 1.5 a design effect. The calculated sample size was 528. First, from 42 kebeles of the Silti woreda, ten kebeles were selected by lottery method. Then, the total sample size was allotted for the respective kebeles using proportional allocation by size. Before the actual data collection, a census was conducted to identify reproductive age women in each kebele. The sampling interval was obtained by dividing the number of reproductive age women in each kebele by the proportionally allocated sample for each kebele. The study participants were selected by systematic random sampling technique. Every seventeen woman was incorporated until the intended sample size for each kebele is attained. The initial woman was selected by a lottery method. If the eligible household has two or more women, one of them were selected using a simple random sampling method.

Data collection procedure

The data were collected by using a pre-tested structured questionnaire. The questionnaire was adapted from related published literatures by considering the objective of the study and local circumstances [18-21]. It comprised five parts, that are socio-demographic characteristics, reproductive history, source of information, knowledge and attitude towards LARC. Content validity was utilized for assessing the validity of the tool. Reliability test was done for knowledge and attitude items after conducting the pre-test. The Cronbach's alpha coefficients were obtained at 0.84 and 0.75, respectively, which shows that the items were proper for the study. Four midwives with diploma and two with a bachelor's of degree were recruited for data collection and supervision, respectively. To maintain the quality of data, the tool was initially prepared in English language, translated to Amharic and then translated back to English to check for consistency. Its consistency was checked by translating it back to English by experts. The tool was pre-tested on 5% of the sample size in the Hulbarag district. Based on kind of the gaps observed in the pre-test result, necessary amendments were performed. Also, two days training was given for data collectors and supervisors on the study objectives, questionnaire and how to fill responses. Further, the principal investigator and the supervisors have checked the questionnaires every day at the end of the data collection period.

Data analysis

Data were entered into Epi-data (version3.1) and analyzed using SPSS (version 22). Descriptive statistics, proportions and frequency were computed to summarize the data. Bivariate logistic regression analyses were conducted to identify associated factors of LARC. Firstly, bivariate logistic regression was done to identify candidate variables for multivariable logistic regression. Those variables which have p-value ≤ 0.25 at bivariate logistic regression were entered into multivariable logistic regression. The multivariable logistic regression was conducted to see

independent predictors of the outcome variable and to control the potential confounders. Odds ratio (OR) with their 95% confidence interval (CI) was calculated to determine the strength of association. The Hosmer-Lemeshow had a p-value of 0.78 which shows that it is not statistically significant which proved the model was a good fit.

Ethics approval and consent to participate

Ethical clearance and approval was secured from the Ethical Review Committee of Addis Ababa University. Additionally, an official permission letter was obtained from the Silti district health office. A written informed consent was obtained from each study participant. The participants were told about the purpose, procedures, possible risks, and benefits of the survey. Moreover, the participants were ensured that rejection to consent or withdrawal from the study could not change or put at risk their right to receive care.

Measurement

Long-acting reversible contraceptive utilization was considered when a woman used either implants or IUCD. It was categorized as a binary outcome variable (used=yes; not used=no).

Knowledge toward LARC was evaluated using eight questions. A high score was considered when a woman answered ≥ 80% of the knowledge questions correctly, moderate when a woman answered ≤ 60-79% of the knowledge questions and low when a woman answered < 60% of the knowledge questions correctly [20-25].

Attitude towards LARC was measured using six questions, by a 3-point Likert scale. The order of scoring for positive statements encompassed agree: 1. not sure: 2. disagree: 3. The overall mean score was achieved and computed to classified into positive and negative attitudes. A score ≥ the mean value was labelled as having a positive attitude; and, a score < the mean value was classified as having a negative attitude [26].

RESULTS

Socio-demographic and reproductive characteristics

A total of 528 mothers was involved in the study and making a response rate of 100%. The mean age of the mothers were 28.8 (standard deviations ± 5.85) years. The majority of them, 514(97.3%) were Silte in ethnics, 489(92.6%) were Muslims, 354(67%) were housewives and 355(67.2%) were not educated (Table 1).

Nearly all of mothers, 520(98.5%) ever gave birth and 219 (41.5%) were multiparous. The overall prevalence of LARC uptake was 18.3%, other reproductive factors are shown in (Table 2).

Knowledge and attitude of women towards LARC

Out of the total respondents, 237(44.9%) were aware that IUCD prevent pregnancy for 12 years, 395(74.8%) thought IUCD was not appropriate for preventing sexually transmitted infections(STIs), 176(33.3%) recognized IUCD did not interfere with sexual intercourse or desire while, 271(51.3%) identified that IUCD do not cause cancer. The majority of participants, 380(72%) known that implant prevents pregnancy for 3-5 years, 234 (44.3%) acknowledged that after removal of implant women can become pregnant promptly and 351 (66.5%) distinguished that implant does not interferes with sexual intercourse or desire. Overall knowledge level and attitude towards LARC are shown in (Table 3).

Factors affecting LARC utilization

A multivariable logistic regression analysis revealed that, educational status of the women, having a positive attitude towards LARC and high as well as a moderate level of knowledge towards LARC were factors associated with the uptake of LARC. Women who attended college and above level of education were 4.4 times more likely to use LARC as compared to those women with no education (AOR=4.4, 95% CI: 1.48-12.9). Similarly, those women who had a high level of knowledge 2.28 times (AOR=2.28, 95% CI:1.15-4.5) and women who had a moderate knowledge 2.09 times (AOR=2.09, 95% CI:1.15-3.8) were more likely to utilize LARC than those who had a low level of knowledge. Moreover, women having a positive attitude towards LARC were 1.76 times more likely to use LARC as compared to their counterparts (AOR=1.76, 95% CI:1.01-3.04) (Table 4).

Table 1: Socio-demographic characteristics of study participants in Silti District, Southern Ethiopia, May 2018.

Variables	Frequency	Percent
Women's age		
<20	10	1.9
20-24	129	24.4
25-34	306	57.9

≥35	83	15.8
Ethnicity		
Silte	510	96.5
Gurage	6	1.2
Oromo	5	0.9
Amhara	7	1.4
Religion		
Muslim	489	92.6
Orthodox	29	5.5
Protestant	10	1.9
Women's education		
No formal education	355	67.2
Primary education	125	23.7
Secondary education	33	6.2
College and above	15	2.8
Women's occupation		
Housewife	354	67
Daily labourer	28	5.3
Merchant	98	18.6
Government employee	34	6.4
Self-employee	14	2.7
Husband's education		
No formal education	338	64
Primary education	105	19.9
Secondary education	59	11.2
College and above	26	4.9
Husband's occupation		
Farmer	320	60.6
Daily labourer	61	11.6
Merchant	86	16.3
Government employed	45	8.5

	16	3
Self-employed		

Table 2: Reproductive characteristics of participants in Silti District, Southern Ethiopia May 2018.

Variables	Frequency	Percent
Number of birth		
01-Feb	113	21.4
03-Apr	196	37.1
≥4	219	41.5
Number of alive children		
01-Feb	118	22.3
03-Apr	211	40
≥4	199	37.7
Ever heard about modern contraceptive methods		
Yes	495	93.8
No	33	6.2
Types of modern contraceptive methods heard		
Tablet	227	81.5
Injectable	497	94.8
Implant	376	71.8
IUCD	288	55
Condom	199	38
Permanent	96	18.3
Source of information about contraceptive		
Friends	106	21.8
Health care providers	203	41.7
Health extension workers	159	32.6
Others	18	3.9
Modern contraceptive currently used		
Pills	71	13.4
Injectable	224	42.4
Implant	82	15.5

		15	2.8
IUCD			

Table 3: Knowledge and attitude questions Southern Ethiopia, May 2018.

Attitude and knowledge question	Agree		Not sure		Disagree	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Using implant does not cause irregular vaginal bleeding	139	26.3	247	46.8	142	26.9
Insertion of IUCD does not lead to lose privacy	122	23.1	287	54.4	119	22.5
IUCD doesn't move through the body after insertion	121	22.9	316	59.8	91	17.2
Using IUCD do not restrict from performing daily activities	133	25.2	307	58.1	88	16.7
Insertion and removal of implant is not highly pain full	176	33.3	263	49.8	89	16.9
Implant doesn't move through the body after insertion	186	35.2	258	48.9	84	15.9
Attitude score towards LARC	Frequency			Percent		
Positive attitude	88			16.7		
Negative attitude	440			83.3		
Knowledge level towards LARC	Frequency			Percent		
High level of knowledge	111			21		
Moderate level of knowledge	252			47.7		
Low level of knowledge	165			31.2		

Table 4: Factors affecting LARC among women in Silti district, Southern Ethiopia, May 2018.

Variables	Uptake of LARC		COR (95% CI)	AOR (95% CI)
	Yes	No		
Educational status of the women				
No formal education	55	300	Reference	Reference
Primary education	26	99	1.43(0.85,2.40)	1.20(0.70,2.05)
Secondary education	8	25	1.74(0.74,4.06)	1.40(0.59,3.36)
College and above	8	7	6.23(2.17,17.9)	4.4(1.48,12.99)
Knowledge towards LARC				
High	26	85	2.66(1.36,5.18)	2.28(1.15,4.55)
Moderate	54	198	2.37(1.32,4.26)	2.09(1.15,3.80)
Low	17	148	Reference	Reference
Attitude towards LARC				

Positive	26	62	2.17(1.29,3.67)	1.76(1.01,3.04)
Negative	71	369	Reference	Reference

DISCUSSION

The current study has attempted to assess the prevalence and contributing factors of LARC utilization among reproductive age women in the Silti district, Southern Ethiopia. The overall prevalence of LARC was 18.3%. However, this figure is higher than studies done in various parts of Ethiopia like Jinka, Arbaminch, Jimma, Mekelle, Dendi which reported as, 7.3, 13.1, 16, 16.6 and 17.6%, respectively [18,24-27]. This discrepancy between the findings of the present study and the above-mentioned studies may be due to difference in study area and interventions undertaken in the study periods. In contrast, this prevalence was lower than studies conducted in different towns of Ethiopia like Areka town, Gondar, Harar and Adama were 29.7%,33.7%, 38% and 27.9% [19-21,28] and African countries suchlike Kenya, Uganda and Nigeria, which were 20.6, 31.7% and 38.7%, respectively [29-31].. The difference could be attributed to variations in the study setting, culture, socioeconomic status, reproductive characteristics and use of health care services.

Women's educational status was significantly associated with LARC uptake. Women who attended college and above educational level were 4.4 times more likely to use LARC as compared to uneducated women. Similar results were reported from Arbaminch and Kenya [24,29]. The reason could be because educated women have a better awareness about the benefits of contraception methods and they also have better motivation to visit health facility and acquire the service as compared to uneducated women.

Having a moderate and high level knowledge towards LARC were the associated factors of LARC. This finding is consistent with studies conducted in Adama, Gesupa and Hossana, Ethiopia [28,32,33]. The reason could be educated women are more likely to have a better knowledge and access to information about the benefit of LARC.

Having a positive attitude towards LARC was also another associated factor of LARC uptake. Women with a positive attitude towards LARC were 1.76 times more likely to use LARC as compared to their counterparts. This finding is supported by previous studies conducted in Mekele, Uganda and Burkinafaso [26,30,34]. This could be having a positive attitude towards LARC made the women to decline mistaken belief and tolerate the expected side effects of LARC.

LIMITATION OF THE STUDY

This study did not incorporate the qualitative method and the cross-sectional nature of the study makes it difficult to ascertain the true cause and effect relationship.

CONCLUSION

The uptake of LARC was still underused in the study setting. Maternal educational status, having a moderate and high level of knowledge besides to a positive attitude toward LARCs was found to have a significant and positive association with the uptake of LARC. Therefore, to enhance its utilization, the concerned bodies should give emphasis; for improving educational status of the mothers, boosting their knowledge and creating a positive attitude towards LARC by provision of proper counselling about the benefits of LARC are extremely essential. Furthermore, we recommend another study to be conducted using a mixed-method (quantitative and qualitative approaches by involving health care provider and male partners).

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