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Long Acting Reversible Contraceptive Methods Switching and Associated Factors Among Women Attending Family Planning Clinic at Public Health Facilities of Dilla Town, Southern Ethiopia

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Abstract

When a switch is made to another contraceptive method, there is often a period of time between the switch when a person is at risk for unprotected intercourse. Choice of a less effective method increases the risk of an unplanned pregnancy, as does using a method incorrectly or inconsistently. Hence, the purpose of this study was to determine the magnitude of long acting reversible contraceptive method switching and associated factors among reproductive age women attending family planning clinic at public health facilities of Dilla town Southern Ethiopia 2019. An institution-based cross-sectional study was conducted among 381 reproductive age women attending public health facilities of Dilla town from March 1-29, 2019. A structured interviewer-administered questionnaire was used. Bivariable and multivariable analyses were carried out using binary logistic regression to assess the association between explanatory variables and Switching from long acting reversible contraceptive methods to short acting contraceptive methods. Statistical significance was declared at p-value < 0.05. Overall, the magnitude of long acting reversible contraceptive method switching was **27**.6% (CI): 0.253, 0.298). Having primary education [adjusted odds ratio (AOR): 3.652, 95% CI: 1.412, 9.443], being unmarried [AOR: 12.019; 95% CI; 4.250, 33.993], having plan to space birth [AOR: 0.197; 95% CI; 0.076, 0.511], partner opposition [AOR: 3.071, 95% CI: 1.297,7.268], having age 20 and above at first pregnancy [AOR: 0.401, 95% CI: 0.217,0.740], were significantly associated with long acting reversible contraceptive method switching.

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Switching from long-acting reversible contraceptive methods to short acting methods was high in the study area. Thus, empowering women and involving partner in family planning service are invaluable to addressee the problem.

Key word: Contraceptive; Switching; Reproductive Age; Dilla town; public health facility.

1. Introduction

Contraceptive switching refers to the case where a person changes his or her major method of birth control [1].Contraceptive switching behavior is analyzed by examining the user's new contraceptive use status in the month following discontinuation in conjunction with information on the reason for discontinuation. Therefore, the new contraceptive status of a woman in the month following discontinuation is classified into one of four categories: no longer needs contraception, using another modern method of contraception (switching between modern methods), using another traditional method of contraception (switching to traditional method) and not using any contraception [2]. Long acting contraceptives which designed to use for 3-12 year are cost effective only when they serve for the intended period of time. Along with their health impact the economic impact of Early discontinuation of long acting contraceptives and switching to other contraceptive method are very high [8]. Switching between contraceptive methods will have an effect on the level of fertility depending on the timing of adopting the destination method and whether the switching was to a more effective or to a less effective method. Also, the risk of getting pregnant while using a contraceptive method is determined by the effectiveness of the method and is also due to incorrect use of the method [9]. Not all women who discontinue a contraceptive method become nonusers; some switch to another, more (or less) effective method (10).When people switch from long acting method of contraception to short acting, there is often a period of time during which they are at risk of an unplanned pregnancy, because they are still learning how to use the new method accurately and consistently [1]. Pregnancy and childbirth poses a risk to the life of the woman. Repeated pregnancies and child birth restrict women from education, employment and productivity resulting in poor status of women in the community with the resultant poor living standard. Increased family size leads to income and resource sharing. Repeated and too many pregnancies entail early weaning with the consequent high infant morbidity and mortality as well as the high cost of alternative infant feeding option[11]. High fertility and rapid population growth have an impact on the overall socio-economic development of the country in general and maternal and child health in particular. Maternal and child mortality are two of the major health problems challenging healthcare organizations, especially in developing countries. The majority of maternal deaths are the direct result of complications encountered during pregnancy and arising from unsafe terminations of pregnancies [12]. Demographic and Health Surveys (DHSs) conducted between 1990 and 2015 among contraceptive user women in East Africa: Ethiopia, Kenya, Rwanda, Tanzania, and Uganda revealed that contraceptive switching is 6, 11,10,6 and 5% respectively [13]. Contraceptive method switching accounts more than 83% of all discontinuations over 12 month of use in Jimma town. Of all contraceptive use segments 9.6% of them switched to other method by the end of their first year of use. The highest 12 months switching rate was 3.3% and 5.1% for implant and IUDS respectively [14]. Level of switching from long-acting family planning methods to other methods was 40.4 % among revisit clients of public health facilities in Dire Dawa, Ethiopia [15]. The Ethiopian demographic health survey 2016, showed that only 10% FP clients utilized long acting

methods (8% implants and 2% IUCD) and for all women age 15-49 who started an episode of contraceptive use in the 5 years preceding the survey; 6% of the episodes of the woman switched to another method [16]. Despite from its low utilization, switching is common with unknown reasons; long acting reversible contraceptive method switching are dynamic and differ across countries and over time in that case looking for reasons women give for long acting reversible contraceptive method switching while in need has paramount importance is mandatory. So, this study is useful to determine the magnitude and associated factors which are contributing to the switching while women want using long acting reversible contraceptive method.

2. Method and material

2.1. Study area, design and period

This study is conducted in Dilla town Gedio Zone, Southern Ethiopia. Dilla town is located 90 km away from Hawassa (i.e. the capital of the SNNPR) and 363 Km away from Addis Ababa, the capital city of Ethiopia. The population of the town is around 95398; of this, 24,204 were reproductive-age women. The town has 1 referral hospital and 2 health centers. A facility based descriptive cross-sectional study was conducted from March-April 2019 in Dilla town, Southern Ethiopia.

2.2. Population, Sampling Determination and Sampling Procedure

The source population was all reproductive age women who use contraceptive in public health facilities of Dilla town. Reproductive age women who used short acting contraceptive methods during the data collection period were considered as study population. The sample size was calculated by EpiInfo-7 StatCalc using a single population proportion formula using the following assumptions: 40.4% (prevalence of long acting family planning method switching from a study conducted in Dire Dawa, Ethiopia [15], 95% level of confidence, and 5% margin of error. By adding a none response rate of 5% the final sample size was 389. All public health facilities in Dilla town (one referral hospital and two health centers) were included in this study and the sample size was allocated proportionally to each health facility based on the number of family planning service user in the last quarter of 2018. Based on the review, the total number of reproductive age women who came for family planning service was 1433. Then, to get the sampling interval total number of reproductive age women who came for family planning service in the last quarter of 2018 was divided by the number of the required sample size, which is 665/389=1.71. Finally, the data were collected by using a systematic random sampling technique with an interval of three (k =2). However, new contraceptive users were excluded from the study.

2.3. Variables of the study and Operational definitions

Switching from long acting reversible contraceptive methods to short acting Contraceptive methods is an outcome **,** while age of the women , educational level, occupation, partner/ husband education, income ,number of pregnancies, age at first pregnancy, history of abortions, number of living children, future plan of fertility, desired number of children and main decider on type of contraceptive choice, type of contraceptive currently using, history of long acting contraceptive method utilization, Source of information, counseling on possible side effects, myth and misconception are independent variables. **Long acting contraceptive method switching**;

women who are currently using one of the short acting contraceptive method(pills, injectable, condom..) and had ever used long acting contraceptive method and discontinued for any reason [4]. **Short acting contraceptive method**: Methods of contraception those are user-dependent and require frequent administration, pills, injections, condom, contraceptive patch [23]. **Short acting contraceptive user**: women who are using one of the short acting contraceptive like pills, injectable, condom during data collection period. **Myths and misconceptions**: are commonly held beliefs about family planning that have no basis in actual scientific fact, like exaggerated or erroneous reports about side effects, misconceptions about short or long term health problems[24]. Five questions will be asked concerning misconceptions associated with LARC – those who scored below the mean on misconception items will categorize as misconceived and who scored the mean or above the mean to misconception items will categorize as not misconceived.

2.4. Data collection methods and tools

Structured questionnaires were designed in English version and translated to Amharic and local language. Pre-test was carried out on the 5% of sample size at Chichu health center and necessary correction was made prior to the actual data collection. The data was collected by six diploma nurses and two bachelors of Science nurses were recruited as supervisors. A 2-days training about the purpose of the study and process of data collection was given to the data collection team. Data was collected by using face to face interviews. Supervisors checked data for completeness daily based after data collection and principal investigator also randomly cross-checked the data before entry.

2.5. Data Processing and Analysis

The data were visually checked by the investigators and entered to EpiData statistical software

Version 3.1. Then, the data were exported to SPSS version 25.0 for cleaning and analysis. Descriptive summary measures such as frequency, percentages, mean and standard deviation were used to describe characteristics of the participants. Binary logistic regression was carried out to identify the factors associated with long acting reversible contraceptive methods switching. To control possible confounding factors, variables with a p-value of ≤0.25 in the bivariate analysis were taken to the multivariable analysis. Multicollinearity and model fitness was checked using standard error and Hosmer-Lemeshow test respectively. The adjusted odds ratio (AOR), with 95% confidence intervals (CI), was used to identify the independent variables associated with long acting reversible contraceptive methods switching. All tests were two-sided and statistical significance was declared at P-value < 0.05.

3. Results

3.1. Socio-demographic characteristics

A total of 381 participants were involved, making a response rate of 97.9%. The mean (± standard deviation (SD)) age of the participants was 25.6 (±4.48 SD) years. Of the participants, 129(44.9%) were within the age group of 25-29 years, and 62.1 % were protestant by religion. The majority of the participants, 342 (89.8%)

were married, 226 (59.3%) were housewives and 153(42.1%) attained secondary education **(Table 1).**

Table 1: Socio demographic and economic characteristics of short acting contraceptive user attending family planning clinic at public health facility Dilla town, Ethiopia 2019

Variable	Frequency	Percentage
Age		
15-19	17	**4.50**
20-24	129	**33.90**
25-29	171	**44.90**
30-34	44	**11.50**
35 and above	20	**5.20**
Religion		
Orthodox	119	31.20
Protestant	233	61.20
Others**	29	7.60
Educational status		
No formal education	72	18.90
Read and write	19	4.99
Primary education	95	24.93
Secondary education	153	40.16
College and above	40	11.2
Marital status		
Married	342	89.80
Unmarried	39	10.20
Occupational status		
House wife	226	59.30
merchant	60	15.70
Governmental worker	24	6.30
Daily laborer	51	13.40
None governmental worker	20	5.24
Husband education		
No formal education	15	4.10
Read and write	37	10.10
Primary education	95	25.81
Secondary education	106	28.80
College and above	115	31.30
Husband occupation		
merchant	187	**37.28**
Governmental worker	83	**22.55**
Daily laborer	93	**25.27**
None governmental worker	47	**12.77**
Unemployed	8	**2.1**
Family income		
Lowest quintile	71	**18.63**
Lowest quintile388```	81	**21.26**
Lowest quintile	71	**18.63**

3.2. Reproductive health related characteristics

Table 2: Reproductive health characteristics of short acting contraceptive users attending family planning clinic at public health facility of Dilla town, Ethiopia 2019

Variable	Frequency	Percentage
Previous history of pregnancy		
Yes	377	99.0
No	4	1.0
Number of pregnancy		
0-3	316	83.80
3-6	57	15.10
7 and above	1	1.10
History of abortion		
Yes	68	18.4
No	309	81.6
Type of abortion		
Induced	59	86.80
Spontaneous	9	13.20
Age at first pregnancy		
15-19	159	43.20
20 and above	209	56.80
Number of children alive		
1	86	23
2-4	270	72.2
>5	18	4.8
Future plan of fertility		
To limit	50	13.12
To space	331	86.88
Desired no of children		
1-2	6	1.8
3-4	145	43.8
>4	80	54.4
Husband desire to have child in the future		
Yes	299	75.8
No	26	6.8
I don't Know	56	14.7

Among the participants, 377 (99%) had previous history of pregnancy and of them 68(18.04%) had history of abortion. 331(86.9%) of the participant had future plan of fertility so that they were using contraceptive method to space birth; of whom, about 54% desire to have more than 4 children. Majority of the husbands 299(78.5%) want to have children in the future **(Table 2)**.

3.3. Contraceptive use related factors

Among the participant, 294(77.2%) use injectable contraceptive, 332 (87.1%) heard information on LARC method; the main source of information was health professional and HEW.

Table 3: Contraceptive related characteristics of short acting contraceptive method user of women attending family planning clinic at public health facility of Dilla town, Southern Ethiopia 2019.

Variable	Frequency	Percentage
Type of contraceptive currently using		
pills	87	**22.8**
injectable	294	**71.2**
Ever heard about long acting contraceptive method		
Yes	332	87.1
No	49	12.9
Type of long acting contraceptive you know		
Implant	328	98.8
IUCD	262	78.9
Female sterilization	157	.47.6
Vasectomy	107	32.2
Source of information		
Radio		200
TV		211
Poster		43
Magazine		30
Friends /neighbors		251
HP/HEW		266
Discussion with husband		
Yes	151	39.6
No	230	60.4
Husband support towards LARC		
Yes	71	18.6
No	91	23.9
Neutral	257	57.5
Main decider		
Self	254	**66.7**
Husband	44	**11.5**
Jointly	83	**21.8**
Counseling on benefits of LARC		
Yes	281	98.3
No	5	1.7
Counseling on possible side effect		
Yes	203	71.0
No	83	29.0
Satisfaction on counseling		
Yes	213	74.5
No	73	25.5
Perceived myth on LARC		
Above mean (> 2.5)	364	95.5
Below mean (< 2.5)	17	4.5

More than half 53.0% of husbands/ partners does not support /disapprove LARC method and the majority 83(29.0%) participants, were not counseled about the possible side effect of LARC (Table 3).

3.4. Prevalence of switching from long acting reversible contraceptive method

Table 4: Prevalence of long acting reversible contraceptive method switching and associated factors among women attending family planning clinic at public health facility Dilla town, Southern Ethiopia 2019. N=105

Variable	Frequency	Percentage
LARC utilization history		
Yes	105	**27.6**
No	176	**72.4**
Type of LARC		
Implant	92	87.6
IUCD	13	12.4
Reason for choosing the method		
Safety	32	30.5
Effectiveness	13	12.4
Long protection	80	76.2
Reduced appointment	37	35.2
It can be removed any time	12	11.4
Facility where service received		
Health center	83	79
Hospital	19	18.1
Private health facility	3	2.9
Who choose the LARC method		
The women herself	73	69.5
Husband	2	1.9
Health professional	24	22.8
Shared discussion	6	5.2
Side effect they experience		
Menstrual irregularity No	9	13.23
Weight loss	24	35.29
Unusual headache	27	39.70
Difficult to work	17	25.0
Excessive bleeding	34	50.0
Arm numbness	12	17.64
Contraceptive method use before LARC utilization		
Yes	69	**65.7**
No	36	**34.3**
Duration of use before LARC		
0-2 years	60	57.1
More than 2 years	45	42.9

Overall, the prevalence of switching from long acting reversible contraceptive method was 27.6% (95%, CI:

25.3%, 29.8%). Majority 92(87.6%) switched from implant, 80(76.2%) of the women choose LARC by its long protection, 83(79%) women got the service from health center, 71(67.6%) of switchers were used short acting contraceptive method prior to LARC method and 43(42.2%) used the method for more than two years (Table 4).

3.5. Reason for switching from LARC methods to short acting contraceptive method

Majority 68(65%) switched because of Side effect of long acting contraception. The reset mentioned short acting method preference (14%), husband opposition (10%), failure of contraceptive method (5%), breast feeding (3) and fear of infertility as reason for switching from long acting contraception method to short acting methods (Figure 1).

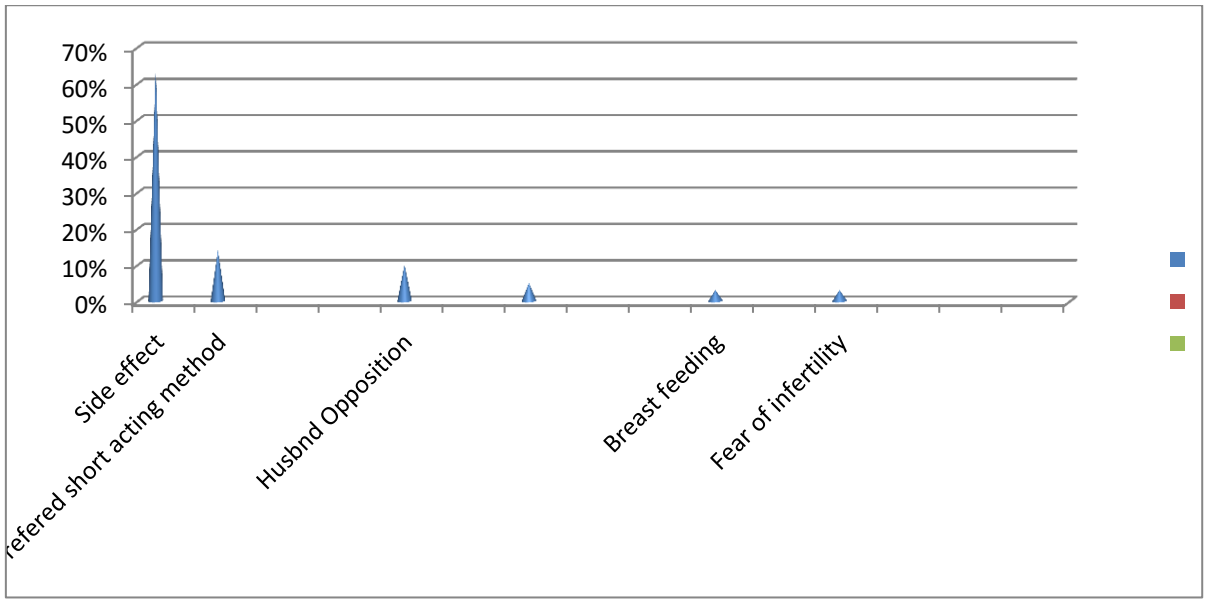

Figure 1: Reason for switching from LARC methods to short acting contraceptive method among women attending family planning clinic in public health facility of Dilla town SNNPR. (n=105)

3.6. Factors associated with switching from long acting reversible contraceptive methods

Table 5

Variable	Category	Switching status		COR 95%CI	AOR 95%
		Yes	No		
age	15-24	60(41.1%	)	2.093(0.722,6.088)	4.354(0.853,22.235)
	25-34	86(59.9%)		0.686(0.235,1.997)	2.503(0.530,11.813)
	35&above	40(18.6%)		1	1
		175(81.4)			
		5(25.0%)			
		15(75.0%)			
Marital status	Married	77(22.5%)		1	1
	Unmarried	265(77.5%)		8.760(4.171,18.401)	12.019(4.250,33.993
		28(71.8)			

		11(28.2)		
Educational status	No formal education	14(19.4)	1	1
	Read and write	58(80.6)	4.603(1.574,13.462)	2.278(0.610,8.500)
	Primary education	10(52.6)	3.283(1.614,6.680)	3.652(1.412,9.443)*
	Secondary education	9(47.4)	0.928(0.455,1.893)	0.956(0.386,2.414)
	College and above	42(44.2)		
		53(55.8)	1.470(0.596,3.673)	2.857(0.863,9.459)
		28(18.3)		
		125(81.7)		
		11(26.2)		
		31(73.8)		
Woman's occupational status	House wife	59(26.1)	1	1
	merchant	167(73.9)	1.029(0.540,1.961)	0.650(0.256,1.646)
	Governmental worker	16(26.7) 44(73.3)	1.415(0.576,3.478)	1.919(0.538,6.846)
	Daily laborer	8(33.3) 16(66.7)	1.071(0.541,2.120)	1.317(0.450,3.856)
	Others*	14(27.5) 37(72.5)	1.887(0.735,4.843)	2.084(0.630,6.892)
		8(40.0) 12(60.0)		
Husband educational status	No formal education	4(26.7) 11(73.3)	1	1
	Read and write	9(24.3) 28(75.7)	0.884(0.225,3.474)	2.248(0.291,17.39
	Primary education	27(28.4) 68(71.6)	1.092(0.320,3.789)	1.333(0.212,8.375)
	Secondary education	32(30.2) 74(69.8)	1.189(0.352,4.017)	1.144(0.185,7.059)
	College and above	33(28.7) 82(71,3)	1.107(0.329,3.725)	1.311(0.209,8.219)
History of abortion	Yes	31(45.6) 37(54.4)	2.661(1.544,4.584)	1.793(0.788,4.080)
	No	74(23.9)	1	1
		235(76.1)		
Fertility plan	To limit	21(42.0) 29(58.0)	1	1
	To space	84(25.4) 247(74.6)	0.470(0.254,0.868)	0.197(0.076,0.511)*
Husband / partner support for LARC	Yes	23(32.4) 48(67.6)	1	`1
	No	49(53.8) 42(46.2)	2.435(1.277,4.644)	3.071(1.297,7.268)*
	neutral	33(15.1) 186(84.9)	0.370(0.199,0.688)	0.645(0.293,1.418)
Main decider On contraceptive Choice	Self	57(22.4) 197(77.6)	1	1
	Husband	21(47.7) 23(52.3)	3.156(1.629,6.111)	2.18(0.779,6.101)
	Both together	27(32.5) 56(67.5)	1.666(0.966,2.876)	1.516(0.670,3.428)
Counseling on possible side effect	Yes	62(30.5) 141(69.5)	1	1
	No	43(51.8) 40(48.2)	2.445(1.448,4.129)	1.172(0.572,2.404)
Satisfaction On counseling Service	Yes	69(32.4) 144(67.6)	0.492(0.287,0.846)	0.816(0.274,2.430)
	No	36(49.3) 37(50.7)	1	1
Age at first pregnancy	15-19 years old	62(39.0) 97(61.0)	1	1
	20 and above	43(20.6) 166(79.4)	0.405(0.255,0.644)	0.401(0.217,0.740)
Myth and misconception	Misconceived (<2.5)	10(58.8) 7(41.2)	1	1
	Not misconceived	95(26.1) 269(73.9)	0.247(0.092,0.668)	1.084(0.218,5.399)

The odds of switching from LARC was 12 times (AOR=12.019; 95% CI: 4.250, 33.993) higher among unmarried women as compared to those who are married. Switching to LARC was 3.652 times (AOR=3.652; 95% CI; 1.412, 9.443) higher among women who have attended primary education as compared to women who do not attain formal education. Likewise, as compared to women whose husband approves/support LARC method the odds of switching was 3 times (AOR=3.071; 95% CI: 1.297, 7.268) higher among women whose husband oppose LARC. Women who were using contraceptive method for spacing or who have future plan of fertility are 80% less likely to switch from long acting reversible contraceptive method as compared to women who want to limit birth (AOR= 0.197; 95% CI; 0.076, 0.511).Moreover, Women who were 20 years and above in their first pregnancy are 60% less likely to switch from LARC as compared to those who were pregnant in their 15- 19 years old (AOR= 0.401;95% CI; 0.217,0.740) (Table 5).

4. Discussion

This study revealed that 27.6% of reproductive age women's exhibit switching from LARC. Marital status, women's educational status, fertility plan and partners' attitude on LARCs, were significantly associated with switching from LARC to short acting contraception. The prevalence of switching from LARC in this study is higher than the studies conducted in Jigjiga , and Agarfa , Ethiopia (4.2%) [20]. On the contrary, it is lower than a study conducted in Dire Dawa, Ethiopia (40.4%) [15] other 14 developing countries which indicated the prevalence of switching varies from 37.8% to 70.5%[25]. This discrepancy might be due to the difference counseling about LARC, study settings, socio cultural difference and period variation. The odd of switching from LARC was twelve times higher among unmarried women as compared to women who are married. This finding is inconsistent with the study done in Dire Dawa and Jigjig town (15, 21). This may be due to women who are married were planned in their fertility since they are always sexually active and they are more likely careful about unwanted pregnancy so they want more effective methods of contraception in the study area. Women who attain primary education were almost four times more likely to switch from LARC method to short acting contraceptive method as compared to those women who do not attain formal education. This finding is similar with the studies conducted in Jijiga, Ethiopia (21) and Senegal (4) it is inconsistent with the study in Gonder, Ghana and Honduran [10, 18,26]. In this study, the likelihood of switching from LARC to short acting contraception was three times higher among women whose husband opposes LARC as compared to those whose husband approves/support LARC method. This finding is in line with studies conducted in Nigeria and Dire Dawa, Ethiopia [15, 27]. This might be due to poor communication between couples in the study area. Likewise, women whose contraceptive intent was to space their fertility experience for child spacing purposes were 80% less likely to switch from long acting reversible contraceptive method as compared to women who want to limit birth. This is in line with the study conducted in Dire Dawa, Ethiopia [15]. But different from studies conducted in Jijiga and Jimma, Ethiopia [14, 21]. This might be probably due to the fact that women who do not want more children were not use specific method for recommended time instead they want to shift another modern contraceptive method. Furthermore, Women who were 20 years and above in their first pregnancy are 60% less likely to switch from LARC methods as compared to those who were pregnant in their 15- 19 years old. This might be probably due to the fact that women who had pregnancy at their 20 years and above are married and want to space birth so they want to continue effective and long protective method of contraception. Generally, this study reported the magnitude of switching using interviewer-administered questionnaires. Due to the cross-

sectional nature of the study, the design could not allow causality to be inferred. Since the study was restricted to public health facilities, it was difficult to generalize to all reproductive age women living in the town. Thus, to minimize the effect of the aforementioned limitations scholars with similar interest are recommended to conduct a community-based study. Overall, the findings from this study are fundamental for policymakers to design appropriate intervention strategies to minimize switching from LARC.

5. Conclusions

In the study area, the proportion of switching from LARC was high. Being unmarried, women's having primary educational level, having plan to space birth, husband/ partners opposition on LARC and having age 20 and above at first pregnancy were statistically significant with switching from long acting reversible contraceptive method. Hence, much work is needed to minimize switching. Empowering women, making service relevant for husbands/partners to participate and their involvement should be considered to enhance LARC utilization at each level.

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