

Original Research Article

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

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### ABSTRACT

**Background:** Bearing many children are among the factors which affect maternal health status. The total fertility rate trend in the last two decades for Ethiopian women to give birth was more than 7 children in their life. According to the recent Mini-Ethiopian Demographic Health surveillance (EDHS) 2014, the average total fertility rate among Ethiopian women has reduced to 4.1 with 2.2 in urban and 4.5 in rural areas and contraceptive prevalence rate is 42%. Countries like Ethiopia with high fertility rate and unmet need of contraceptive shifting towards long-acting methods thus potentially playing an enormous role in reducing maternal mortality and child death. Hence, assessing Utilization of Reversible Long Acting Contraceptive Methods (LARCM) and associated factors among Women is of paramount importance.

**Objective:** To assess utilization of reversible long acting contraceptive methods and associated factors among women getting family planning service in governmental health Facilities of Gondar town.

**Methods:** Institution based cross-sectional study was conducted from March 25 to April 25, 2015 in governmental health facilities found in Gondar city. A total of 614 women were included in the study. Data was collected with a structured pre-tested questionnaire using face to face interview technique. Data entry and cleaning was done using EPI-INFO version 7 and exported to SPSS version 20 for further analysis. Bivariate analysis was employed to see relationship between variables. Predictors having p-value  $\leq 0.2$  in Bivariate analysis were included in the multivariate model. Odds ratios and their 95% confidence intervals were computed. A p-value of  $\leq 0.05$  was considered as statistically significant in multivariate model.

**Results:** A total of 614 reproductive age woman were interviewed with a response rate 100%. Two-hundred thirteen (34.7%) of them were in age group of 25 to 29 with a mean age of 25.9 (SD $\pm$ 5.75). The overall utilization of long acting contraceptive methods (IUD& implants) among the study population was 33.7% [95%CI: 29.9 -37.5]. The proportion of IUD utilization was 11.4% [95%CI: 8.8 -13.9].The utilization of LACM increase with increasing knowledge (28.9% in low knowledge, 46.4% moderate and 54.2% was found high among high knowledge). In the multivariate logistic regression the odds of LARCM utilization were 26.9 times higher among highly educated mother than illiterate (AOR = 26.9; 95% CI: 8.31, 87.08). Similarly, the odds of LARCM utilization were 3.5 times higher among highly knowledgeable about LARCM than lower knowledge (AOR= 3.5; 95%CI: 1.78, 6.89).

**Conclusion and Recommendation:** The overall utilization of long acting contraceptive method among the study population was high. Women`s education, overall knowledge of women about long acting reversible contraceptive methods found to be strongly associated with long acting reversible contraceptive method use. Information, education and communication provision to family planning

users is important to increase their knowledge which in turn may increase LARCMs service utilization.

**Key words:** Utilization, Reversible, Long Acting, Contraceptive Methods, Family Planning, Gondar, Ethiopia

## INTRODUCTION

Reproductive health services are one of the key components for the improvement of quality of life among maternal and children. Bearing many children are among the factors which affect maternal health status. Globally, 13% of married women use long acting but, an estimated of 80 million unintended pregnancies both mistimed and unwanted occur each year. Family planning helps to meet the need for spacing, limiting births which have the potential to prevent large number of maternal mortality. Reversible long term contraceptive [implant and Intra Uterine device (IUD)] is a long-acting and effective contraceptive method appropriate for women wishing to limit child bearing, as well as to space births, thus potentially playing an enormous role in reducing maternal mortality. <sup>(1)</sup> The prevalence of unintended childbirth was 14.4% and long acting contraception methods are convenient for users and effectively prevent pregnancy and also cost effective for programs over time. <sup>(2)</sup> They can result in substantial cost savings for couples, governments, and contribute directly to reaching national and international health goals.

Rapid population growth is the character of many developing countries contributed high fertility. In Sub Saharan Africa (SSA), the rate of population growth 2.8% which is one of the highest compared to developed countries. Because of the low prevalence level of contraceptive use and higher total fertility rate in developing countries including Ethiopia, unwanted pregnancy and births are increasing which affects maternal and child health. In sub Saharan African countries, desired for family size declines and the demand for limiting family size rise sharply but fewer than 5% of women are using long acting

contraceptive methods. <sup>(1)</sup> According to USAID 2007, woman in Africa gives birth on average to five or six children in her life time. Data from demographic and health survey from four SSA countries showed that the proportion of women currently using long acting is significantly lower than the proportion using short-acting methods. <sup>(3)</sup>

## Utilization of Reversible Long Acting Contraceptive Methods

According to World Health Organisation (WHO), the long acting contraceptive methods are suitable for those who wish to space, delay, or limit births, and it is appropriate for women who are postpartum or post abortion. Thirteen percent of the worlds married women and greater than 150 million over all women were use the long acting methods as their method of contraception. <sup>(4)</sup> The long term is the most highly effective, convenient, cost-effective, and widely used Family planning (FP) methods. Long acting contraceptives protect pregnancy from 3 to 10-12 years and few failure rates (10 per 1000 women) in the first year for IUD. <sup>(2)</sup> Most women can use the long term contraceptive method ,including young women ,women who have not had children ,HIV-infected women and women with AIDS who are clinically well on treatment. <sup>(5)</sup>

A cross-sectional study conducted in Mojo town Ethiopia revealed that the level of knowledge and Practice of family planning were high, 91.5% and 82.2% respectively. However, the actual practice of family planning methods was found to be low, only 38.3% were using any family planning method. <sup>(3)</sup> According to FHI30 global, Family planning is not an end in itself, it is a broad health and quality of life providing evidence of family planning impact on health. Using contraceptive

methods helps to averts 187 million unintended pregnancies, prevents 54 million unplanned births, 112 million induced abortions, 1.2 mill infant deaths, and 230,000 maternal deaths. <sup>(5)</sup>

According to the acquire project, in developing countries, almost one out of every four women (23%) who are using contraception use the long acting contraceptives, although there are wide variations among countries in long acting contraceptive prevalence rates, and the research figures largely reflect long term contraceptive (IUDs & implants) use in a few populous countries such as China, Egypt, and Vietnam. In developing countries excluding China, 5% of married women and Africa, 1% of married women use the method. <sup>(6)</sup>

A study conducted in Mekelle Ethiopia suggested that long term contraceptives have the potential to reduce unintended pregnancies but the contraceptive choice and utilization are highly dominated by short term contraceptives. The total fertility rate of Ethiopia is 4.1. About thirty-seven percent of women want no more children but only few use LACMs. The overall prevalence of long acting contraceptive methods (LACMs) in the study area was 12.3%. <sup>(7)</sup> Another study conducted in six different developing countries revealed that only 20-30% of women were using oral contraceptives or Injectables which was stopped within two years of starting because of the side effects and other health consequences. Many of these women could be benefit by changing their choice to LACMs. <sup>(8)</sup>

#### **Factors affecting long acting contraceptive utilization:**

In developing countries, family planning program managers may be reluctant to offer long acting. This in turn impedes long term Provision. The availability of the LACs may also be restricted to adequately equipped health facilities in urban settings, thus limiting its access for individuals living in rural

communities. At the individual level, countries like Indonesia, Zimbabwe, Bolivia relations; family health and community involvement in family planning services helps to increase LARCMs utilization and decreases maternal and child mortality caused by Unplanned pregnancies that interrupt work and carrier. <sup>(1)</sup> Study in India revealed that, determinants of adolescent pregnancy include early marriage, sexual coercion and lack of access to and use of contraception. Nearly 85% of the world's adolescent population lives in developing countries in sub-Saharan Africa. <sup>(4,5)</sup>

**Socio-demographic Factor:-** A study done in Tigray Region Mekelle Ethiopia showed that, woman knowledge, residence, income., occupation ,religion, marital status affects utilization directly associated with number of pregnancies. <sup>(7)</sup>

**Individual and service Factor:-** The most common methods of contraception for both previous and current users were Injectables, pills and which were the main reason for not using long acting contraceptive methods. One million pregnancies result from faulty use of oral contraceptive each year because of this unintended pregnancies remain common, family planning information, low knowledge of LACM utilization. <sup>(9)</sup>

#### **Partner &Parity related factor**

Mothers with two or more pregnancies were more likely to use LACMs as compared with those who had been pregnant only once, family Planning service that provides accurate and complete information about contraceptive methods helps to long acting contraceptive utilization. Still, early marriage and producing too many children, which are close to each other is a common practice of developing countries including Ethiopia with contraceptive prevalence rate at national level was 29%. <sup>(10)</sup> A recent study in six sub-Saharan African countries showed that use of any method of contraception was significantly associated with community commitment of family planning. Data from Ghana and Tanzania

showed that low level of community awareness on long term leads to decreased contraceptive prevalence rate and high mortality rate) compared to the rest of the world. Equally, the number of people in need of health and education, among other public goods is large and increasing. According to Marie stops international, under- utilization of the long term family planning services provision in sub-Saharan Africa might be affected by different factors such as policy, program and individual levels. At the policy and program level, family planning programs might favor the promotion and provision of one contraceptive method over another. <sup>(11)</sup> A study done in Tigray Region Mekelle Ethiopia showed that, as compared with use of another method of contraceptive woman knowledge, residence, income, occupation, religion, marital status, number of live birth, side effects, non availability of service, not allowed by husband and medical problem, women general awareness about LACMs and source of information affects utilization. <sup>(7)</sup> Study in Jimma Ethiopia showed Husband`s and wives` knowledge on family planning have statistically significant association with couple`s current contraception use. Couples who had communication on family planning were 2.5 times more likely to use long term contraceptive than couples who didn`t do so. A couple where the wife perceives that her husband approves of family planning was 6.8 times more likely to be current contraception users than their counterparts. <sup>(12)</sup> The Ethiopian ministry of health has planned and is working on the provision of long acting in the lowest service delivery level and in most instances at lower or no cost for the utilization. <sup>(1)</sup> The contraceptive method mix is dominated by short term methods like pills and Injectables. <sup>(3)</sup> Even though long term are the most widely used contraceptives because of their safety, effectiveness, rapid return to fertility, and relatively less expensive, <sup>(4)</sup> there was no studies conducted in Gondar town that have examined the utilization and factors

contributing to long term utilization. Therefore, this study was intended to contribute to bridging information gap about LACM for the program effectiveness and program planners and subsequently improve the coverage of long term contraceptive method utilization in the town.

## **MATERIALS AND METHODS**

### **Study design, period and area**

Institution based cross-sectional study design was carried out among women of reproductive age group from March 25 to April 25, 2015. The study was conducted in health facilities found in Gondar town, North Gondar administrative Zone, Amhara National Regional State, Northwest Ethiopia. Its capital city is Gondar which is one of the historical towns in the country and located at 727km Northwest of Addis Ababa. According to the North Gondar health bureau, the zone has total population of 3,050,486, of 2,721,921(84%) are living in rural areas and 1,497,943 women; Gondar town is divided in to 24 kebeles with a total population of 315,856 from which 49.99% females and 48.1% are reproductive age (15-49). There is one university hospital, eight health centers, and one district hospital under construction in Gondar town administration. A total of 614 mothers were interviewed about utilization of long acting Contraceptive methods.

### **Data collection procedures and Analysis**

In Gondar town, eligible reproductive age women were identified through available data from all governmental health facilities and interviewed while she had come for the service within the data collection period. All women of reproductive age who visited family planning service delivery points in governmental health institutions were included for interview. Data were collected by using a structured and pre-tested questionnaire using a face -to -face interview technique from women. The questionnaire was developed from existing literature in English and translated to local language Amharic by language experts and

retranslated back from Amharic to English to check consistency. Eight nurses profession working in health facilities collected data and supervised by two BSc holders' public health officer. Principal investigators and supervisors did spot-checking and reviewing the completed questionnaires on daily bases to ensure completeness and consistency of the information collected. Moreover, all complete responses were recorded or coded before entry. Finally, double data entry was made into EPI INFO version 7 statistical software by the principal investigators to keep accuracy of the data. Data were then exported to SPSS version 20.0 and cleaned, edited and recoded for further analysis. Descriptive statistics of the collected data was done for most variables using statistical measurements and displayed using tables, graphs, charts. Bivariate logistic regression model were fitted for all explanatory variables to identify which variables have significant association with outcome variable. Finally, those variables with p-value  $\leq 0.2$  in the Bivariate analysis were fitted to the multivariate logistic model. Odds ratios with 95% confidence intervals were calculated. P-values  $\leq 0.05$  were considered statistically significant and used to measure strength of association as cut off point in multivariate analysis.

### Ethical Considerations

The study was carried out after getting ethical clearance from the Institutional Review Board of Institute of Public Health, University of Gondar. Later on, a letter was sent to Gondar town Governmental health facilities. Permission letter was obtained from facility administrations. A verbal informed consent was obtained from each study participants. Those women who refused to participate in the study were not forced. Each respondent was informed about the objective of the study. Confidentiality was guaranteed for information to be collected by keeping the privacy of the respondents while filling the questionnaire.

## RESULTS

**Table-1:** Socio-demographic characteristics of reproductive age women attending family planning services at governmental health institutions in Gondar town northwest Ethiopia from march to June/2015(n=614)

Variable	Frequency	Percent (%)
<b>Age of women(n=614)</b>		
15-19	85	13.8
20-24	157	25.6
25-29	213	34.7
30-34	97	15.8
35-39	49	8.0
40 and above	13	2.1
<b>Residence</b>		
Urban	531	86.5
Rural	83	13.5
<b>Religion</b>		
Orthodox	536	87.3
Muslim	62	10.1
Protestant	16	2.6
<b>Marital status</b>		
Single	53	8.6
Married	541	88.1
Divorced	4	0.7
Widowed	1	0.2
Separated	15	2.4
<b>Ethnicity</b>		
Amhara	487	79.3
kimant	83	13.5
Tigre	38	6.2
Other*	6	1.0
<b>Occupational status of women</b>		
House wife	297	48.4
Student	88	14.3
Daily laborer	78	12.7
Government employee	73	11.9
Private employee	41	6.7
Merchant	28	4.6
Other**	9	1.47
<b>Occupational status of husband (n=558)</b>		
Daily laborer	187	30.5
Government employee	150	24.4
Private employee	98	16
Merchant	74	12.1
Student	26	4.2
Other***	23	3.7
<b>Educational status of women</b>		
Unable to read & write	161	26.2
Primary	143	23.3
Secondary	219	35.7
Diploma & above	91	14.8
<b>Educational status of husband (n=558)</b>		
Unable to read & write	117	19.1
Primary	130	21.2
Secondary	170	27.7
Diploma & above	141	23.0

\*Agaw, Oromo \*\* sweater \*\*\*farmer, priest, weaver, soldier

### Socio-demographic characteristics of reproductive age women

A total of 614 reproductive age woman were interviewed with a response rate 100%. Two-handed thirteen (34.7%) of them were in age group of 25 to 29 with a mean age of 25.9 (SD $\pm$ 5.75). Four hundred eighty seven (79.3%) were Amhara by Ethnicity and 536(87.3%) of them were

orthodox Christian religion followers. Ninety one (14.8%) of women had attended diploma and above, and 48.4% were house wife (**Table-1**)

**Prevalence of long acting contraceptive use**

The overall Utilization of LACM among the study population was 207(33.7%) [95%CI: 29.9 -37.5], the proportion of IUD utilization was 11.4% [95%CI: 8.8 -13.9], and Implant utilization was 22.3% [95% CI (19.0-25.6)] (**figure-3**)

**Associated Factors of long acting reversible contraceptive utilization**

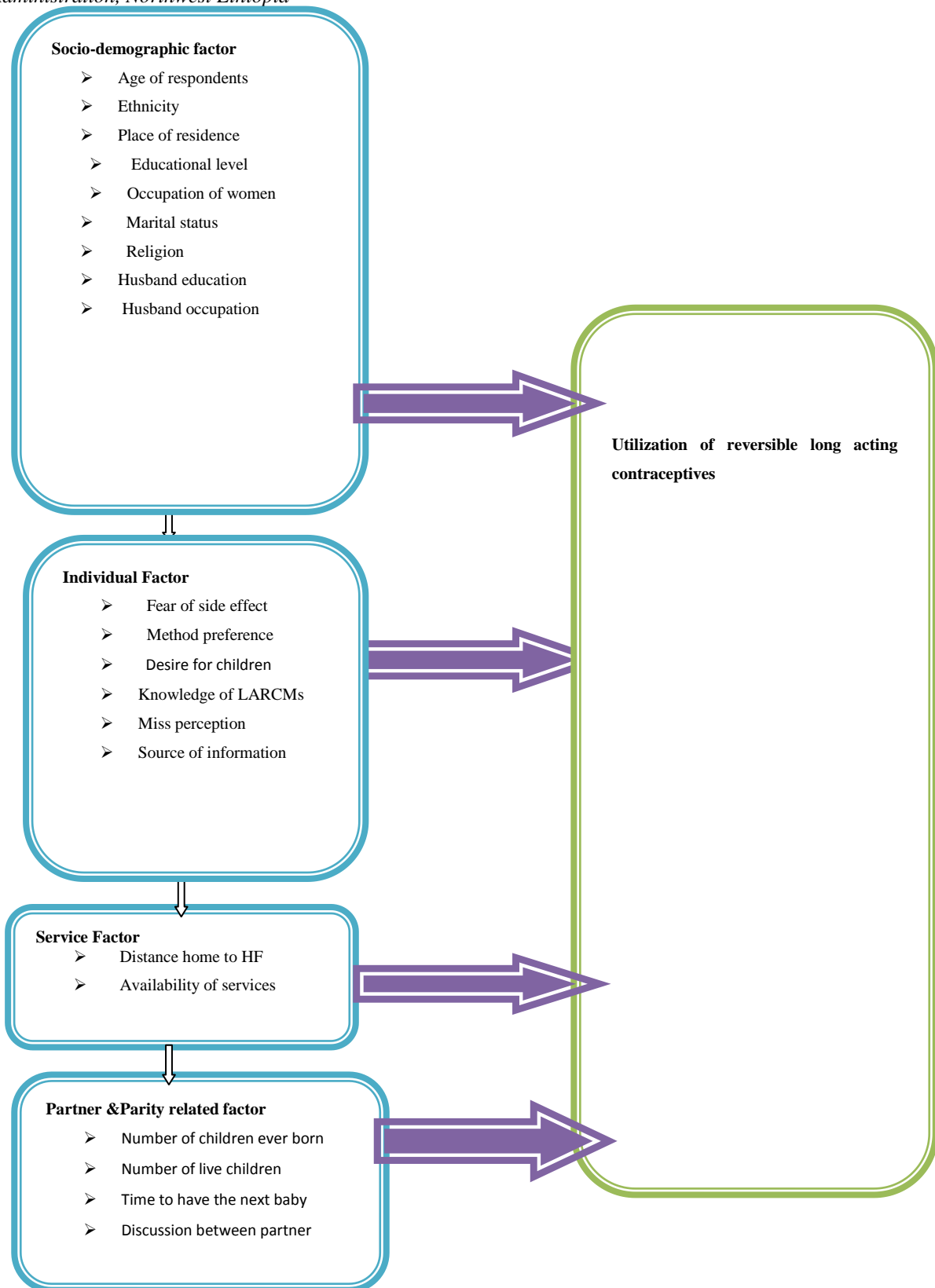
Factors such as educational status of women, overall knowledge of contraceptive

use had significant association for long acting contraceptive utilization. As the education level of women increases the likelihood of utilizing LACMs also increase. In the multivariate logistic regression the odds of LACM use were 26.9 times higher among highly educated mother than illiterate (AOR = 26.9; 95% CI8.31, 87.08). Similarly women having Knowledge about LACM were more likely to use LACMs than low knowledge. The odds of LACM use were 3.5 times higher among respondents who had higher knowledge than those who had low knowledge (AOR= 3.5; 95%CI: (1.79, 6.91) (**Table-2**)

**Table-2:** Bivariate and multivariate logistic regression model of factors associated with of long acting reversible contraceptive method use among reproductive age women getting family planning services in Gondar city, northwest Ethiopia from March to June, 2015.(n=614)

Variables	LARCM		OR (95% CI)	
	Yes	No	COR	AOR
<b>Ethnicity</b>				
Amhara	170	317	2.68 [0.31,23.13]	0.83 [0.07,9.34]
Tigre	20	18	5.56 [0.59,52.16]	1.11 [0.09,14.55]
Kimant	16	67	1.19 [0.13,10.94]	0.31 [0.02,3.76]
Others	1	5	1.00	1.00
<b>Educational level of woman</b>				
Un able to read &write	38	123	1.00	1.00
Primary	13	130	0.324 [0.17,0.64]	<b>0.25 [0.103,0.61]</b>
Secondary	74	145	1.65 [1.04,2.614]	1.77 [0.82,3.83]
Diploma & above	82	9	29.5 [13.5,64.24]	<b>26.9 [8.31,87.08]**</b>
<b>Educational level of husband</b>				
Un able to read &write	25	92	1.00	1.00
Primary	30	100	1.10 [0.61,2.02]	1.10 [0.51,2.37]
Secondary	49	121	1.49 [0.86,2.59]	0.97 [0.38,2.51]
Diploma &above	83	58	5.27 [3.02,9.17]	1.17 [0.37,3.71]
<b>Occupation of women</b>				
House wife	71	226	1.00	1.00
Government employee	60	13	14.7(7.62,28.32)*	1.8 [0.64,5.05]
Private employee	16	25	2.04(1.03,4.03)*	1.62 [0.69,3.86]
daily laborer	17	61	.89(.49,1.62)	0.84 [0.399,1.84]
Merchant	9	19	1.51(.65,3.48)	0.83 [0.296,2.37]
Student	30	58	1.65(.98,2.76)	0.73 [0.31,1.77]
Other	4	5	2.55(.67,9.74)	2.22 [0.38,13.05]
<b>Occupation of husband</b>				
Government employee	75	75	1.00	1.00
Private employee	32	66	0.49(0.29,0.82)*	1.25[0.56,2.78]
Daily laborer	39	148	0.26(0.16,0.42)*	1.17[0.5,2.74]
Merchant	25	49	0.51(0.29,0.91)*	1.61[0.67,3.84]
Student	6	20	0.3(0.11,0.79)*	1.10[0.28,4.38]
Others	10	13	0.77(0.32,1.86)	3.40[0.95,12.17]
<b>Knowledge of LACM</b>				
Poor	135	331	1.00	1.00
Moderate	33	43	1.88 [1.146,3.08]	<b>2.31 [1.195,4.47]**</b>
High knowledge	39	33	2.98 [1.749,4.801]	<b>3.51 [1.786,6.91]**</b>
<b>Source information</b>				
Mass media	27	32	1.00	1.00
Friends	32	90	0.42(0.22,0.81)*	0.42 [0.163,1.06]
Health institution	148	285	0.62(0.36,1.1)	0.63 [0.298,1.37]

\*\*Statistically significant at P<0.05,\*statistically significant at P<0.01; OR=Odds Ratio, AOR=Adjusted Odds Ratio; COR=Crude Odds Ratio.



**Figure-1:- conceptual frame work of utilization of reversible long acting contraceptive and association factors (Adapted from different literatures and designed by investigator)**

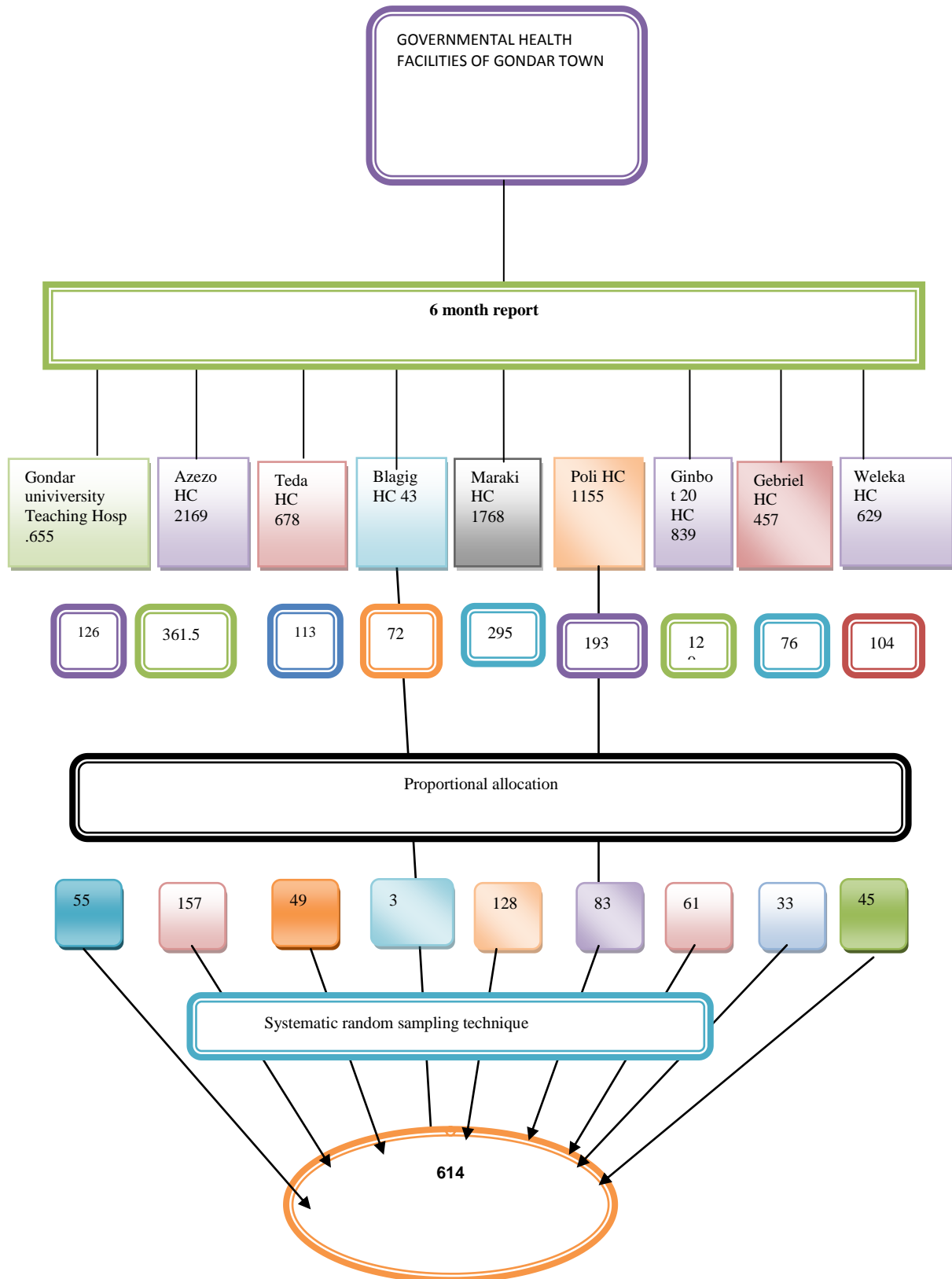
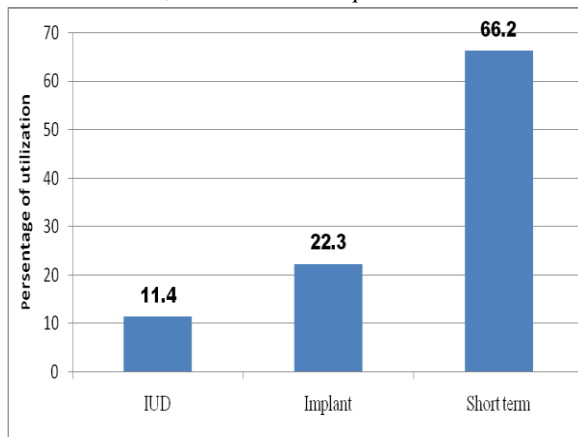


Figure-2: Schematic presentation of sampling procedure for utilization of LARCMs in Gondar city





**Figure-3:-** percentage of current use of contraceptives among women gets family planning service in governmental health facilities of Gondar city, northwest Ethiopia

## DISCUSSION

The overall utilization of LARCM among the study population was (33.7%) [95% CI: (29.9 -37.5)]. The proportion of IUD utilization was 11.4% [95%CI: (8.80 - 13.90)], while Implant utilization was 22.3% [95%CI (19.00-25.60)]. The prevalence of LACM utilization was increased with increasing knowledge (28.9% in low knowledge, 43.4% moderate and 54.2% high knowledge). The result of the study was higher than study conducted in Goba Town, Southeast Ethiopia 8.7%,<sup>(9)</sup> in Mekelle Town, northern Ethiopia 12.3%,<sup>(7)</sup> 16.4%,<sup>(13)</sup> North Showa zone, Ethiopia 21.1%.<sup>(14)</sup> The difference might be due to increased awareness about LARCMs and difference in study area and population.

The result of this study showed that there was strong relationship between women's educational status and use of long acting reversible contraception methods.

The result of the study revealed that the odds of using LARCMs among women attending diploma and above was 26.9 times higher than among women who were not educated [AOR= 26.9 (95%CI(8.31,87.08)]. The finding was higher than the studies done in Mojo town, Ethiopia [AOR=1.9],<sup>(3)</sup> Mekelle Town, Ethiopia[AOR=1.32],<sup>(7)</sup> Wolaita Zone, Southern Ethiopia [AOR=1.99].<sup>(15)</sup> This discrepancy may be the result of culture and social value that the individual practice in the place where they live, increase level of awareness about LARCMs.

The result of this study showed that there was a strong relationship between women's all over knowledge about long acting reversible contraceptive method and use of long acting reversible contraception methods. The odds of using LARCMs among women with moderate knowledge was 2.3 times higher than as compared with a women with low knowledge [AOR=2.3 (95%CI (1.19,4.46)]. The odds of using LARCMs among women with high knowledge was 3.5 times higher as compared with women with low knowledge [AOR=(1.786,6.91)]. The study was lower than study done in Mekelle [AOR=7.9].<sup>(7)</sup> The reason might be due to expanded health education program about LARCMs and integrated service on LARCMs practicing by health extension worker. As knowledge increases the probability to use long acting contraceptive methods also increases, even though contraceptive choice may be influenced by several factors, the possible reason for this may be the need that the women to limit the number of children and fertility so, they prefer to use the long acting reversible contraceptive method than short acting contraceptive.

## CONCLUSIONS

In conclusion, the current study showed high prevalence of utilization of LARCMs among reproductive age women. Among several factors that affect utilization of long acting reversible contraceptive methods, women's education, overall knowledge of women about long acting reversible contraceptive methods found to be factors associated of long acting reversible contraceptive method utilization. Giving intensive promotion focused on long acting reversible contraceptive methods is crucial for improving women quality of life. It is advisable giving Continuous information education communication focusing on LARCMs at each level from top to bottom holistically.

### Authors' contributions

Both of the Authors were participated and designed the study from title selection to final

report writing. Data collection, data entry, statistical data analysis, drafted and wrote the manuscript and approved final manuscript.

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**Conflicts of interest:**-The authors declare that there was free from any conflicts of interests.

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