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Magnitude of Long-acting and permanent family planning practice and its factors among contraceptive users: a cross-sectional study

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Abstract

Background

Poor contraceptive use increases the risk of unintended pregnancies that likely end up with mortality and morbidities among women and children. To circumvent this and further adverse health outcomes, long-acting and permanent contraceptive methods are the most effective method. However, studies done so far on long-acting and permanent family planning methods in Ethiopia reflected the urban settings while this study explored the prevalence and associated factors of long-acting and permanent family planning methods use among current family planning users largely on the rural women of Ethiopia.

Methods

The study was a facility-based cross-sectional design. The respondents were randomly selectedThe binary regression model was used to analyse the association.

Results

The total number of respondents was 356 with 93% responding rate. The prevalence of long-acting and permanent family planning methods among current family planning users was 32.3%. The multivariable regression model showed that the odds of long-acting and permanent family planning methods use were statistically significant among women aged 25-34 years was 5.10 [AOR=5.10; 95% CI: (1.48, 17.59)] compared with 15-24 years age group; women completed secondary education were 4.16 [AOR=4.16; 95% CI: (1.32, 13.10)] against women who had no formal education; women who had a positive attitude were 3.05 [AOR=3.05; 95% CI: (1.45, 6.43)] compared to women who had a negative attitude; and women satisfied with facility care were 2.08 [AOR=2.08; 95% CI: (1.01, 4.31)] compared to its counterparts. Besides, preference to short-acting contraceptives, fear of contraceptive side effects and method misconception are reported as common reasons for non-preference of the long-acting and permanent family planning methods.

Conclusion

The long-acting and permanent family planning method utilization was low. The study indicated significant factors and common reasons for low use of long-acting and permanent family planning methods among women who are current family planning users. Therefore, we suggest the need to provide continuous education and awareness creation about long-acting and permanent family planning methods. Unequivocally, enabling work environments and staffs service delivery towards client service satisfaction is paramount important.

Key words: prevalence, determinant factors, family planning use, reproductive age group women, Yilmanadensa Woreda, West Gojam zone, Ethiopia.

Background

Family planning enables people to space or limit the desired number of children. It serves preventmaternal morbidity and mortality, fetal death, low birth weight, prematurity, and child death [1]. For example, higher numbers of unintended pregnancies occur due to lack of family planning use. This may result unsafe abortion and its consquences on the lives of women and the baby [2]. To circumbvent this and further adverse health outcomes among women and chidren, long-acting and permanent contraceptive methods (LAPMs) are the most effective method [3].

LAPMs include intrauterine contraceptive devices (IUDs), implants, female sterilization, and vasectomy. The first two meth-

ods are long-acting reversible while the latter two are permanent [4].

Despite the highest total fertility rate in Ethipia [6], LAPMs coverage is considerably low and results high unintended pregnancy-related complication including death [7]. Unequivocally, LAPMs evidenced most effective interventions to end complications and Mortality coupled with reduced facility visit and contraceptive misuse [9]. Therefore, understanding the current magnitude and important factors relevant to women's use of LAPMs is significantly essential. Most importantly, the study indicated the rural context of Ethiopia which was barely reported so far. The study's relevance to design strategies improve LAPMs will be pivotal.

Methods and materials

Study design and setting

We conducted a facility-based cross-sectional study from September 2018 to June 2019. The study area was in Yilmanadensa Woreda, West Gojam Zone, Amhara Region, Ethiopia. The study area covers a rural population where primary health care services are the largest of all.

Sample size and sampling procedure

All reproductive age group women who had a current family planninghealth facility visits were included in the study.. The sample size was 383 determined by the single population proportion formula. We assumed 34.7% coverage of LAPMs [10], 95% confidence level, 5% margin of error, and a 10% non-response rate.In the district, there were 11 health centers and 4 of them were selected by simple random sampling method. Women who had a family planning visit in these selected four health centers were randomly chosen for an interview.

Data collection procedures

We used a pre-tested structured questionnaire to collect the data. The data was collected by a trainedfemale diploma nurses and supervised by a degree holder nurse. The data collection took place for 40 days from 21 February to 31 March 2019. The supervisor edited and cleaned the data on a daily base.

Study variables

Dependent variable: Long-acting and permanent family planning methods use

Independent variables: age, education, religion, ethnicity, marital status, residence area, occupation, income, number of children and future birth intention, awareness about LAPMs, knowledge of the duration of LAPMs to prevent pregnancy, knowledge about the advantage of LAPMs, knowledge about the disadvantage of LAPMs, knowledge about types of LAPMs, fear of side effect, perceptions about LAPMs, fear of infection, fear of infertility, perception about the privacy issue, perception about services procedure, perception about waiting time, LAPMs misconception

Operational definitions

Utilization of LAPMs: reproductive age women using family planning and who answered "YES" for the question that asked whether they were currently using LAPMs [10].

Reproductive age women: women who were in the age group of 15- 49 years and sexually active as well as in union or married women [11].

Family planning user women: reproductive age-women who were using any contraceptive methods including both modern and natural family planning methods during the study period [6].

Knowledge of LAPMs: assessed using 20 key questions like the knowledge of respondents on the type of LAPMs, sources of information about LAPMs, advantage, and disadvantage of LAPMs use, source of LAPMs, duration of IUCD and implant to prevent pregnancy, aware of the return of fertility after removal of long-acting reversible contraceptives, and the knowledge on whether it can permanent or reversible methods. Then 20 questions were computed and labeled to good and poor knowledge based on the mean. The mean score is determined after computing 20 knowledge assessing questions [10].

Good knowledge: Women who scored above the mean of the correct answers for questions prepared to assess the knowledge of respondents on LAPMs [12].

Poor knowledge: Women who scored below or equal to the mean score of the correct answers from knowledge assessing questions of LAPMs [12].

Attitude towards LAPMs: assessed using 20 licker scale questions like acceptance of LAPMs by respondents, by religious institutions and by the community, husband and family opinion, consequences of LAPMs; infertility, uterus cancer, ectopic pregnancy, irregular bleeding of menses, decrease of sexual desire, infection. IUCDs move out of the womb, interfere during sexual intercourse, prevent doing heavy works, nulliparous women have to use IUCDs, insertion of IUCD loses privacy. Female sterilization and vasectomy decrease sexual desire were additional points addressed to assess attitude to LAPMs. Then 20 questions were computed and categorized into a positive attitude and negative attitude based on the mean. The mean score is determined after computing 20 attitude assessing questions [10].

Favorable Attitude: Women who scored above the mean of the correct answers for questions prepared to measure the attitude of respondents towards LAPMs(12).

Unfavorable Attitude: Women who scored less than or equal to the mean score from attitude measuring LAPMs questions [12].

Service satisfaction: assessed using 8 service satisfaction questions. Questions were how were clients treated during their visit for family planning, how long clients did stay in health facilities, what did clients feel about waiting time, whether health providers ask them if they had faced problems and they wanted to discuss the problems, did the health providers try to understand the problem and give suggestions what clients should do. In addition to these, whether clients were satisfied with the treatments and advice during health facility visits for family planning service

was the other question. Then 8 questions were computed and categorized to service satisfaction and service dissatisfaction based on the mean. The mean score was determined after computing 8 service quality satisfaction assessing questions [10].

Satisfaction: Women who scored above the mean of the correct answers for questions prepared to measure service satisfaction of respondents [12].

Dissatisfaction: Women who scored less than or equal to the mean score from service satisfaction measuring questions [12].

Data processing and analysis

Data were entered into EPI INFO version 7.0 and cleaned and analyzed in SPSS version 24. Descriptive statistics, frequency, percentage, means, and standard deviations were done. Bivariate and multivariable logistic regression model was used to identify the factors associated with utilization of LAPMs. Factors with a p-value of less than 0.25 in bivariate analysis were included in the multivariable logistic regressions to control confounders. The level of association was detected through adjusted odds ratios with a 95% confidence interval and a p-value of less than 0.05.

Results

Socio-demographic and economic characteristics

A total of 356 respondents participated in the study with a response rate of 93%. The study participants mean age was 30.1±7.67 (SD) years. Almost all participants (94.4%) were Orthodox Christian followers, and most (91.0%) were married. Nearly half (45.2%) were illiterate and (55.3%) housewives. (Table 1).

Table 1: Socio-demographic characteristics of respondents, West Gojam Zone, Amhara Region, Ethiopia, 2019

Variables	Frequency	Percentage (%)
Age		
15—24	93	26.1
25—34	152	42.7
35—49	111	31.2
Religion		
Orthodox	336	94.4
Muslim	20	5.6
Marital status		
Married	324	91.0
Separated	22	6.2
Divorced	10	2.8
Educational status of respondents		
No formal education	161	45.2
Primary	61	17.1
Secondary	66	18.6
College and above	68	19.1
Husband educational status		
No formal education	106	32.7
Primary	60	18.5
Secondary	68	21.0
College and above	90	27.8
Occupational status of respondents		
Housewife	197	55.3
Self employee	112	31.5
Government employee	47	13.2
Husband occupational status		
Farmer	135	41.7
Self employee	111	34.2
Government employee	78	24.1
Monthly income of respondents		
≤ 500	195	54.8

501-1000	53	14.9
>1000	108	30.3
Husband monthly income		
≤ 500	57	17.6
501-1000	60	18.5
>1000	207	63.9
Total monthly income of the family		
≤ 500	38	10.7
501-1000	54	15.2
>1000	264	74.1
Number of family size		
< 5	241	67.7
≥ 5	115	32.3
Residence environment		
Rural	241	67.7
Urban	115	32.3

Respondents obstetric characteristics

More than three-fourth (77.5%) of the respondents had ever been pregnant. Of these, (95.3%) had given birth. Ages at first marriage arnged 4 to 27 years and mean age of the first marriage was 16.29± 4.49 (SD) years. The mean age of first pregnancy was 20.06±3.02 (SD) years and ranged between 14 and 30 years. Ages at first delivery ranged from 14 and 31 years old and the mean age was 20.87±3.01 (SD) years. (Table 2).

Table 2: Obstetric characteristics among women who were using family planning, West Gojam Zone, Amhara Region, Ethiopia, 2019

Variables	Frequency	Percentage (%)
Age at the time of first marriage		
≤14	106	31.0
15-19	144	42.1
20-24	82	24.0
≥ 25	10	2.9
Age at the time of first pregnancy		
≤ 19	118	42.8
20-24	135	48.9
≥ 25	23	8.3
Age at the time of first birth		
≤ 19	82	31.2
20-24	150	57.0
≥ 25	31	11.8
Number of live children		
< 3	97	37.5
≥ 3	162	62.5
Future birth intention		
Yes	292	82.0
No	64	18.0

Knowledge on LAPMs

Majority (84%) of the study participants heard LAPMs and three-fourth (75%) of them knew at least one of the LAPMs. Implant took the commonest (98.9%) known one. Among women who knew LAPMs, 68.2% understood LAPMs uses for child spacing. Greater than half of the respondents (57.7%) knew that LAPMs had bad health effects. Almost all (91.8%) of them knew that LAPMs were adequately available in their area and 92.1% knew that LAPMs were free of charge. Most of the respondents (91.4%) knew that implant is reversible while o33% of them knew that IUCD is also reversible one.

Table 3: Knowledge on LAPMs among women who were using family planning in YilmanadensaWoreda, WestGojam Zone, Amhara Region, Ethiopia, 2019

Variable	Frequency	Percentage (%)
Ever heard about LAPMs	299	84.0
Source of information		
Health extension	217	72.6
Health service provider	155	51.8
Friend	112	37.5
Neighbor	102	34.1
Media	98	32.8
Types of LAPMs the respondents know		
IUCD	103	38.6
Implant	264	98.9
Female sterilization	29	10.9
Vasectomy	22	8.2
Advantage of LAPMs		
Child spacing	182	68.2
Prevent unwanted pregnancy	157	58.8
Limit family size	129	48.3
Prevent maternal and child death	52	19.5
Prevent abortion	49	18.4
Disadvantage of LAPMs		
Health side effect	154	57.7
Infertility	49	18.4
Infection	66	24.7
Cancer	21	7.9
Source of LAPMs		
Government health center	207	84.5
Health post	140	57.1
Government hospital	119	48.6
Private pharmacy	43	17.6
Private clinics	26	10.6
Duration of IUCD to prevent pregnancy		
< 3 years	28	10.5
3-5 years	38	14.2
5 -10 years	102	38.2
10- 12 years	68	25.5
> 12 years	31	11.6
Variables	**Frequency**	**Percentage (%)**
Duration of an implant to prevent pregnancy		
< 1year	28	10.5
1- 3 years	51	19.1
3- 5 years	179	67.0
> 5 years	9	3.4
Knowledge of LAPMs		
Good	106	43.4
Poor	138	56.6

*** = variables with multiple responses**

The study revealed that all respondents had ever heard at least one family planning method (Figure 1).

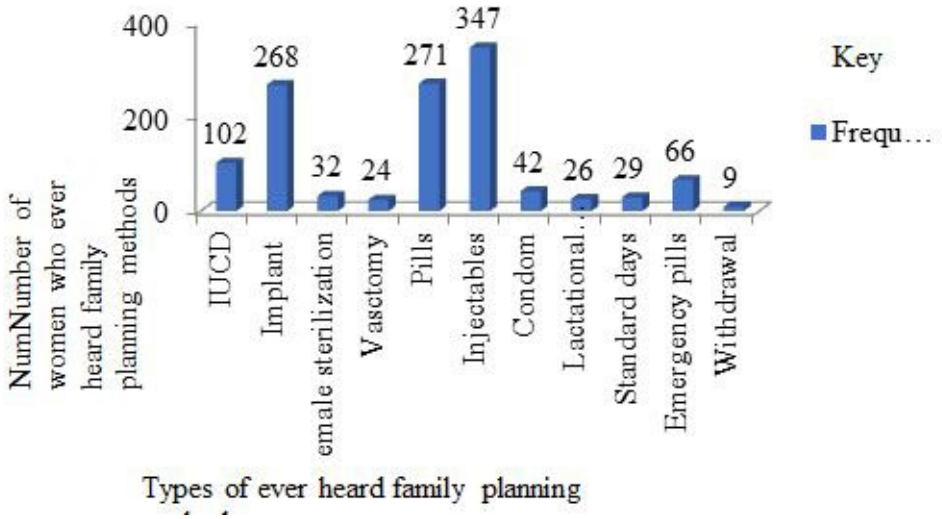

Figure 1: Ever heard FP methods among women who were using FP in YilmanadensaWoreda, West Gojam Zone, Amhara Region, Ethiopia, 2019

Attitude and service quality perception towards LAPMs

The study showed that-244 (68.5%) of respondentsaccepted-LAPMsand 33 (9.3%) were not sure to accept it. One-quarter of the respondents (22.2%) did not accept LAPMs. About one-fourth (23.3%) of respondents believed that LAPMs decrease the sexual desire of users and more than half (54.8%) of respondents perceived that the insertion of IUCD loses privacy. Nearly a quarter (22.5%) of respondents believed that female sterilization decreases the sexual desire of users. Among the total respondents (18.3%) women faced poor treatment in health facilities during FP service. One-fifth (19.1%) of respondents was exposed for too long waiting time (Table 4).

Table 4: Respondent's attitude and service quality perception towards LAPMs among women who were using family planning in Yilmanadensa Woreda, West Gojam Zone, Amhara Region, Ethiopia, 2019

Variables	Frequency	Percentage (%)
Attitude about LAPMs (356)		
Positive attitude	181	50.8
Negative attitude	175	49.2
Satisfaction of treatment		
Satisfied	195	54.8
Unsatisfied	161	45.2
LAPMS are acceptable by religious institutions		
Strongly agree	9	2.5
Agree	22	6.2
Not sure	38	10.7
Disagree	133	37.3
Strongly disagree	154	43.3
Husbands had a positive attitude to LAPMS		
Strongly agree	45	12.7
Agree	120	33.7
Not sure	63	17.7
Disagree	83	23.3
Strongly disagree	45	12.6

Variables	Frequency	Percentage (%)
Families had a positive attitude towards LAPMS		
Strongly agree	50	14.0
Agree	106	29.8
Not sure	51	14.3
Disagree	108	30.4
Strongly disagree	41	11.5
LARCs does not cause infertility		
Strongly agree	33	9.3
Agree	117	32.9
Not sure	146	41.1
Disagree	40	11.2
Strongly disagree	20	5.6
LAPMs does not cause uterus cancer		
Strongly agree	42	11.8
Agree	115	32.3
Not sure	131	36.8
Disagree	48	13.8
Strongly disagree	20	5.6
LAPMs does not cause ectopic pregnancy		
Strongly agree	37	10.4
Agree	78	21.9
Not sure	180	50.6
Disagree	46	12.9
Strongly disagree	15	4.2
LAPMs does not cause irregular bleeding		
Strongly agree	16	4.5
Agree	54	15.2
Not sure	55	15.4
Disagree	141	39.6
Strongly disagree	90	25.3
LAPMs does not decrease sexual desire		
Strongly agree	34	9.6
Agree	98	27.5
Not sure	141	39.6
Disagree	63	17.7
Strongly disagree	20	5.6
Variables	**Frequency**	**Percentage (%)**
LAPMs does not cause infection		
Strongly agree	33	9.0
Agree	73	20.2
Not sure	146	41.0
Disagree	72	20.5
Strongly disagree	32	9.3
IUCD do not move out of the womb		
Strongly agree	33	9.3
Agree	85	23.9

Not sure	184	51.7
Disagree	34	9.6
Strongly disagree	20	5.6
IUCD insertion do not lose privacy		
Strongly agree	44	12.4
Agree	51	14.3
Not sure	66	18.5
Disagree	89	25.0
Strongly disagree	106	29.8
Female sterilization does not decrease sexual desire		
Strongly agree	35	9.8
Agree	90	25.3
Not sure	151	42.4
Disagree	54	15.2
Strongly disagree	26	7.3
Vasectomy does not make the penis to be impotence		
Strongly agree	33	9.3
Agree	76	21.3
Not sure	189	53.1
Disagree	44	12.4
Strongly disagree	14	3.9

Utilization of long-acting and permanent contraceptive methods

Among the respondents (43.3%) had ever used LAPMs. Almost all (94.8%) of them had ever used an implant. On the other hand, a small number of respondents (7.1%) and (2%) had ever used IUCD and female sterilization respectively. When respondents started the use of LAPMs, their mean age was 24.99±5.44 years.

The prevalence of LAPMs in this study was 32.3%, 95% CI; (27.5, 37.1) which showed that almost one-third of respondents were currently using LAPMs. Most (90.4%) of them were using the implant. Some (7%) of them were using IUCD and only (2.6%) women were using female sterilization (Figure 2).

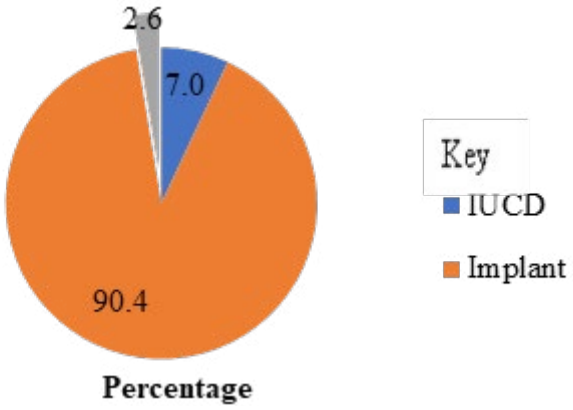

Figure 2: currently used LAPMs among women who were using FP in YilmanadensaWoreda, West Gojam Zone, Amhara Region, Ethiopia, 2019

The benefit of LAPMs over other contraceptives, child spacing, and advice from health professionals were the main reasons to use LAPMs. Preferring short-acting, fear of side effects and method misconception were the most barriers to use LAPMs.

Among respondents whoever used LAPMs-57 (37%), women had faced health problems due to the utilization of LAPMs (Figure 3).

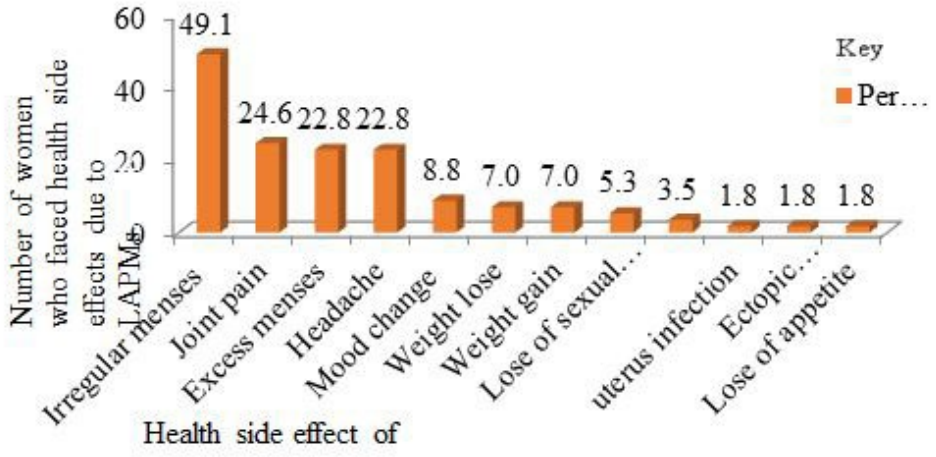

Figure 3: Health side effects of LAPMs among respondents who were using LAPMs in YilmanadensaWoreda, West Gojam Zone, Amhara Region, Ethiopia, 2019

Factors associated with utilization of LAPMs

Age, education, attitude, and service satisfaction had a significant association with LAPMs utilization. The odds of LAPMs utilization among women in the age group of 25-34 years were 5.10 [AOR=5.10; 95% CI: (1.48, 17.59)] times higher than women with the age group of 15-24 years. The odds of LAPMs utilization among women who completed secondary education were 4.16 [AOR=4.16; 95% CI: (1.32, 13.10)] times higher than women who had no formal education. The odds of LAPMs utilization among women who had a positive attitude were 3.05 [AOR=3.05; 95% CI: (1.45, 6.43)] times higher than women who had a negative attitude.

The odds of LAPMs utilization among women who were satisfied were 2.08 [AOR=2.08; 95% CI: (1.01, 4.3)] times higher than unsatisfied women (Table 5).

Table: 5 Factors associated with utilization of LAPMs among women who were using family planning in Yilmanadensa-Woreda West Gojam Zone Amhara Region Ethiopia, 2019

Determinant variables	LAPMs utilization		COR (95% CI)	AOR (95% CI)
	Yes	No		
Age				
15-24	16	77	1	1
25-34	62	90	3.32 (1.77, 6.21)*	5.10 (1.48, 17.59)**
35-49	37	74	2.41 (1.23, 4.69)*	2.82 (0.74, 10.77)
Education				
No formal education	34	127	1	1
Primary	17	44	1.44 (0.73, 2.84)	1.97 (0.69, 5.63)
Secondary	33	33	3.74 (2.02, 6.90) *	4.16 (1.32, 13.10)**
College and above	31	37	3.13 (1.70, 5.75) *	1.17 (0.35, 3.88)
Attitude of LAPMs				
Positive	90	91	5.93 (3.55, 9.92) *	3.05 (1.45, 6.43)**
Negative	25	150	1	1
Service satisfaction				
Satisfied	75	120	1.89 (1.19, 2.99)*	2.08 (1.01, 4.31)**
Dissatisfied	40	121	1	1
Number of live children				
≥ 3	61	101	1.57 (0.91, 2.70)	1.92 (0.80, 4.62)
< 3	27	70	1	1
Knowledge of LAPMs				
Good	53	53	1.38 (0.83, 2.3)	1.49 (0.71, 3.11)
Poor	58	80	1	1

Residence				
Urban	47	68	1.76 (1.10, 2.80) *	0.86 (0.37, 2.01)
Rural	68	173	1	1
Monthly income				
≤ 500 ETB	58	137	1	1
501- 1000 ETB	13	40	0.77 (0.38, 1.54)	0.88 (0.31, 2.52)
> 1000 ETB	44	64	1.62 (0.99, 2.66)	1.11 (0.41, 3.01
Future birth intention				
No	16	48	0.65 (0.35, 1.20)	1.03 (0.40, 2.66)
Yes	99	193	1	1

****Age group of 25-34 (p = 0.01), secondary education (p = 0.015), positive attitude (p = 0.003) and satisfied with the service (p= 0.049)**

Discussion

The study found low coverage (32.3%) of LAPMs. The finding is concurrent with other studies in Ethiopia (6, 10, 13, 14). On the other hand, other studies in Ethiopia (4 9 16 17 18) showed lower coverage compared with this study time and setting contributed for the major difference. Also, sample size and sampling methods matters to this end. However, it was significantly lower than the finding from Gambia [15]. The study conducted inGambiawas in a single facility and accounted small sample. Also, unlike, Depo-Provera was considered as a long-acting contraceptive method in Gambia's study. Majority of the respondents had awareness about LAPMs unlike studies reported in Mekelle town [19], Debre-Markos town [20], Arbaminch town and Goba town of Ethiopia [9,21]. we anticipated that source of information varied in the study settings. Government health facilities were the main LAMPs providers in this study similar to other studies (1819, 4) in Ethiopia.

Implant was commonly used contarcteptive followed by intrauterine contraceptive devices and female sterilization in this study Concurrently, other studies also showed the same 14 [6,10,13,18,19]. The odds of LAPMs utilization among women in the age group of 25-34 years were higher as compared to women in the age group of 15-24 years (AOR, 95% CI…write it here). A similar finding reported inJinka town [4]. But, other study in Addis Ababa reported the opposite [22]. Younger women who lives in Addis Ababa could have more information than their counterpart in a rural community.

The odds of LAPMs utilization among women who completed secondary education were 4.16 times higher than women who had no formal education. This finding was in line with studies conducted in Gondar city [10], Bati town [13], and Nekemte town [23]. The finding in this study was inconsistent with the studies conducted in Jinka town and Adigrat town[4,13]. The discrepancy could be due to the study time, the study settings, and the sampling technique. This study was also different from the study done in Addis Ababa [22]. The discrepancy could be due to the difference in the study settings. The odds of LAPMs utilization among women who had a positive attitude to LAPMs were 3.05 times higher than women who had a negative attitude. This was consistent with studies conducted in Debre-Berhan district and Bati town [12,13]. The odds of LAPMs utilization among women who were satisfied with treatment during their visit to health facilities were 2.08 times higher than dissatisfied women. This was similar to the study done in Debre-Berhan district [12]. This study was a facility-based which could limit representing the general population.

Conclusion

Common barriers to the utilization of LAPMs were preference to short-acting family planning methods, fear of side effects, and method misconception. Problems attributed to LAPMs use were irregularity of menses, excessive bleeding during menses, headache, and joint pain.

Long-acting and permanent contractive methods use found low. Age, educational status, attitude towards LAPMs, and service satisfaction were statistically significantly associated with LAPMs utilization. Also, common barriers reported for LAPMS use were contraceptive preference, fear of contraceptive side effects, and method misconception.

Abbreviations

EDHS: Ethiopian Demographic and Health Survey, FP: Family Planning, HC: Health Center, IUCD: Intrauterine Contraceptive Device, LAPMs: Long-acting and Permanent Contraceptive Methods

Declarations

Ethics approval and consent to participate

Ethical clearance was obtained from the Ethical Review Board of the School of Public Health, Addis Ababa University. Permission letters were obtained from each administrative body and health facility. Study participants were informed about the study objective and the right to not participate or withdraw participation before the interview started or at any time during the interview. For all respondents, written consent was secured and the respondent's information was completely confidential.

Consent for publication

Not applicable

Availability of data and materials

The dataset used for this study are available from the corresponding author and can be provided on a reasonable request.

Competing interests

The authors declare that they have no competing interests.

Funding
No financial support from any organization.

Authors' contributions
AAW conceived the study, designed the study, developed the tool, coordinated data collection, performed the statistical analysis, interpreted the findings, and drafted the manuscript. NAK designed the study, developed the tool, performed the statistical analysis, interpreted the findings, guided the project, and drafted the manuscript. All authors read and approved the final manuscript.

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