Clinical Case Reports and Studies
2025 Volume 10, Issue 6
DOI: 10.59657/2837-2565.brs.25.276

BioRes Scientia
Value your Research

Research Article

Open Access

Demand for Long-Acting Family Planning Methods and Associated Factors Among Family Planning Service Users in Public Health Centers, Debre Birhan, Ethiopia, 2025

Aweke Ayalew*, Melaku Derese, Teshome Ayalew, Berhanu Shetie

Debre Birhan University, Debre Berhan, Ethiopia.

**Corresponding author: Aweke Ayalew.*

Abstract

Background: Long-acting family planning methods are in high demand in order to improve reproductive health and lower the number of unwanted pregnancies. Even though long-acting family planning methods are quite effective, they are still not widely used, especially in low- and middle-income nations. Evidence indicates that the majority of women were dependent on short-acting contraceptive methods, despite the fact that long-acting methods are safer, more effective, and offer protection against unplanned pregnancy.

Objectives: The objectives of this study are to assess the demand of long-acting family planning methods and identify associated factors among family planning service users in Debre Birhane public health centers of Amhara region, Ethiopia 2025.

Methods: An institutional-based cross-sectional quantitative approach was conducted from February 1st to March 30th 2025. A sample size is 394 and systematic random sampling was employed for selecting study units. A pretested structured questionnaire was used to collected data from the study participants. For data entry KOBO tool box was used and transferred to SPSS version 27.0.1 for data process and analysis. Descriptive statistics used to describe study variables. Bivariate and multivariable regression analysis done with 95% confidence intervals and a p-value <0.05 considered to declare statistically significant associations lastly result presented using a text and table.

Result: The study included 390 respondents with 99% respondent rate. The demand for Long-acting family planning method was 100 (25.6%). Marital status, Multigravida, Information from mass media, good attitude on Long-acting family planning method, Age 35-49, education No formal education, age at marriage 25-35 and being student at high school and above and reproductive age group. Affect the demand for Long-acting family planning method in this study.

Conclusion: the demand for Long-acting family planning method according to this study was low and the unmet need for Long-acting family planning method also high. Marital status, Multigravida, Information from mass media, good attitude on Long-acting family planning method, Age 35-49, education No formal education, age at marriage 25-35 and being student at high school and above and reproductive age group. Affect the demand for Long-acting family planning method in this study.

Recommendation: Based on this study the demand for long-acting family planning method is low and unmet need for Long-acting family planning method was found high so it is better to utilize the opportunity to provide the service to meet.

Keywords: demand; long-acting family planning; reproductive age women; meet need; unmet need

Introduction: Background

A key element of reproductive health, family planning (FP) helps people and couples to plan for and achieve the number of children and spacing of births they wish [1]. It encompasses a range of practices and methods that allow people to make informed choices about their reproductive lives [2]. By giving people more control over their reproductive health, FP lowers the number of unwanted births, improves maternal and child health, and gives women the confidence to seek higher education and employment [3,4]. People utilize FP for numerous reasons, including the desire to limit family size, space births, and improve overall family well-being [5]. Effective family planning can lead to healthier pregnancies and births, as well as enhanced economic conditions for families by allowing parents to allocate resources more effectively [6]. Additionally, FP plays a crucial role in reducing maternal mortality rates, as it enables women to avoid high-risk pregnancies and childbirths [7]. The ability to plan and space pregnancies is particularly important in regions with high fertility rates, where access to FP services can significantly impact public health and socio-economic development [8].

The demand for effective FP methods is a critical aspect of reproductive health, particularly in low and middle-income countries (LMICs), where unintended

pregnancies can have significant socio-economic consequences [9]. Among the various contraceptive options available, long-acting contraceptive methods (LACMs) such as intrauterine devices (IUDs) and hormonal implants stand out due to their high efficacy and convenience. Unlike short-acting methods, LACMs require minimal user intervention once administered, making them an appealing choice for many women seeking to prevent unintended pregnancies [3].

The demand for the use of LAFPMs is related to various factors. Therefore, it's critical to evaluate the demand for LAFPMs among FP service users in order to pinpoint different socio demographic, cultural, and health system elements. In the end, better family planning alternatives for women can result from comprehending and addressing the issues that affect the demand for LAFPMs. This will assist to lower the rates of unwanted births and improve general reproductive health.

Statement of The Problem

Despite their advantages, the uptake of Long-Acting family planning Methods remains low in worldwide. Every year approximately 350,000 women die while pregnant or giving birth, and of which 99% of women die in developing countries [10]. An estimated 8 million more women suffer serious illnesses and lifelong disability as a result of complication during childbirth. According to the World Health Organization (WHO), less than 10% of women in many LMICs use LAFPMs, compared to significantly higher rates in high-income countries [11]. Sub Saharan Africa countries faces serious population and reproductive health challenges, which is indicated by higher maternal mortality, higher total fertility and population growth rate, and higher unmet need for FP [12]. For instance, the unmet need of FP in LMICs range from 20% up to 58% [9]. In Ethiopia, from 871 per 100,000 live births in 2000 to 412 per 100,000 live births in 2016, Ethiopia's maternal mortality ratio has decreased. Ethiopia's maternal mortality ratio, according to the UN Interagency Maternal Mortality Ratio projection for 2020, is 267 per 100,000 live births, indicating considerable progress in reducing maternal mortality, however it is still far behind the SDG target of 70 [13]. The total fertility rate of Ethiopia is 5.4 children per women, population growth rate is estimated at 2.7% per year, contraceptive prevalence rate is only 15% and an unmet need for FP is 34% [14]. Addressing the unmet need of FP in Ethiopia is expected to avert 12,800 maternal deaths and more than 1.1 million child deaths [15]. The demand for LAFPMs is a critical area of study, particularly in LMICs, like Ethiopia, where the rates of unintended pregnancies remain alarmingly high [16]. Despite providing long-term and efficient family planning options, LAFPMs are frequently underutilized because of a number of obstacles. Improving reproductive health outcomes and lowering mother and newborn morbidity and death linked to unwanted pregnancies require an understanding of the factors that affect demand for these techniques [17,18].

Enhancing access to LAFPMs can significantly decrease the incidence of unsafe abortions and related complications, thereby positively impacting public health [19]. Most of the studies have been conducted on met need of long-acting family planning methods in the general population; however, there was limited number of research on unmet need and demand for long-acting family planning methods among family planning users in Debre Birhane. Similarly, there was no published study conducted to assess the level of demand for long-acting family planning methods and associated factors in Debre Birhane.

Significance of The Study

The evidence-based identification of gaps and related factors for the demand for long-acting family planning and factors among Debre-Birhane family planning users is the main significance of this study. Therefore, based on the degree of influence that the study's findings may have, this study aims to explain the demand for long-acting family planning methods and the factors that influence the target clients' use of such family planning. It also suggests goal-oriented, responsive, and scientific interventions that may increase ownership and commitment among all the relevant bodies to strengthen service utilization.

The findings from this study will help policy makers and planners and other concerned organizations working in the area of family planning and maternal health to meet the demand of long-acting contraceptive methods.

Literature Review

Utilization of Long-Acting Family Planning

By 2020, based on the reproductive health program, the maternal mortality ratio and newborn mortality rate are predicted to decline to 199 maternal deaths per 100,000 live births and 10 deaths per 1,000 live births, respectively, demonstrating the importance of

family planning in preventing maternal mortality [20]. Survey in Indonesia show that only slightly over 10% used LAFPMs (implant, IUD) [21]. Study done in Sudan utilization of long-acting family planning are intrauterine devices [10.2%] and Implanon 14% [22]. Utilization family planning Injectable are the most widely used contemporary family planning method among Ethiopian women who are currently married (27%), followed by implants (9%), and the pill and IUD (2% each). Patterns: Over the past 15 years, the percentage of currently married women using modern contraceptives has significantly climbed, rising from 14% in 2005 to 41% in 2019. The use of implants has increased from less than 1% in 2005 to 9% in 2019, while injectable has increased from 10% in 2005 to 27% in 2019. From 27% of women in the lowest wealth quintile to 51% of those in the richest quintile, the usage of modern contraceptives typically rises as household wealth rises. Nowadays, married women with one or two living children are more likely to use modern contraceptives (53%), compared to 31% of women with five or more surviving children. Women in urban areas are more likely to use modern techniques (48%) than those in rural areas (38%). Women with a secondary education make up a larger percentage of those employing a modern method (56%), compared to those without any education (32%). The highest percentages of women adopting modern procedures are found in Amhara (50%) and Addis Ababa (48%), while the lowest rates are found in Somalia (3%) and Afar (13%) [20].

According to a study conducted in the Sidama region, 37.8% of study participants used reversible long-acting family planning (95% CI: 32.9-42.7). Of them, 36 (9.6%) used IUCD and 106 (28.0%) used implants [23]. Study done in Addis Ababa demand for LAFPM a study was high and the unmet need for LAFPM also high. Marital status, gravidity, information on LAFPM, knowledge on LAFPM, attitude on LAFPM and perceived quality of health facility service affect the demand for LAFPM in this study. The demand for LAFPM was 650 (76.7%). Among demanded LAFPM, 305 (36%) meet need and 345 (40.7%) unmet need [24]. Although the national reproductive health strategy document includes policy priorities, stated directive goals, design strategies to attain these goals, and precise targets, central Ethiopia has by far the lowest rate of long-acting family planning technology use. The researcher can now investigate the level of service use and the factors that motivate or deter women from pursuing those recommended therapy thanks to this significant finding [25].

Demand for Long-Acting Contraceptive Methods

A survey study from Iran shows that the demand of LAFPMs is 71.35%, and only 27.7% of women use LAFPMs [26]. Study in south Africa show that women have limited autonomy to choose or to use contraception or the method that they might prefer [27]. A study in Kenya shows that only 18% of women utilize LAFPMs [28]. A study done in Uganda show that 4% of mothers never heard about the FP services [29]. Another study in Nigeria shows that 38.7% of women utilize LAFPMs [30].

Ethiopia is part of Sub-Saharan Africa, which has serious demographic and reproductive health problems, including greater rates of maternal death, higher rates of overall fertility and population increase, and more unmet family planning requirements. In many Sub-Saharan countries, unmet family planning needs are more common, especially for long-acting methods. This problem often disproportionately affects women in rural areas. Despite initiatives to encourage the use of long-acting contraceptive methods, a significant portion of women in the region still utilize short-term family planning strategies [31].

A study from Nepal shows that 11% reproductive age women uptake LACMs [32]. Studies from Northwest Ethiopia show that the demand of LAFPMs is 17% (10), and 14.3% [33]. A study from Oromia region of Ethiopia shows that 28.4 of reproductive women utilize LACMS [34]. Various studies in the Amhara region of Ethiopia show that 51.1% of reproductive-age women receive LACMs in West Gojam shows [7], 16.3% in Bonbe District [35], 34.7% in Gondar City [36], 17.6% in Dendi District [37], and 12.9% in Janamora District [38].

According to research conducted in North West Ethiopia, 9.2% of people in the town of Debre Tabor used long-acting contraceptives. Of these, 1% used an intrauterine contraceptive device (IUCD) and 8.2% used Implanon. The 30-34 age group had the highest percentage of users, while the extreme age categories had the lowest percentages. 7.8% of long-acting contraceptive methods were found to be unmet, with spacing accounting for 4.5% and limiting for 3.3%. Of the thirty-eight women with unfulfilled needs, 42.1% wanted to have fewer children and 57.9% wanted to postpone getting pregnant. Demand for long- acting contraceptive methods was 17% because moms aged 45-49 and those aged 20-24 had higher unmet needs for these methods. The total of the long-

acting contraceptive methods now in use (met need) and the technique that was sought but not utilized for any reason (unmet need) was this. 7.8% of participants did not prefer to utilize short-acting family planning methods, while 9.2% of people now use long-acting family planning (met need) and 7.8% have unmet need. Of these, 10.5% of respondents intended to utilize IUFPD, while 89.5% of respondents intended to use implants [39].

according to the findings of a survey carried out in South East Ethiopia.8.72% of women were using LAFPM contraception at the time, Of them, 6.5% used Norplant and 1.5% used IUFPD. 18.5 percent of those surveyed said they have ever used LAFPM. The methods that were ever used were 12.8% Norplant and 35.0% IUFPD. Of the 219 pregnant women, 29.8% were pregnant and 26.2% had five or more pregnancies. The use of LAFP contraception varies with the age group of the respondents. The highest frequency of use was observed among those aged 25 to 29. However, the use of LAFP declined as the women's ages rose from 30 to 49. A Mekelle survey indicates that the overall prevalence of use [14,40]. According to the findings of an Asosa town study, 62.9% of participants required LAFPM. The discovery Furthermore, a number of sociodemographic characteristics, such as age, marital status, socioeconomic status, and educational attainment, may affect the demand for LAFPMs [41]. Cultural beliefs and misconceptions about LACMs can also play a significant role additionally, health system factors such as availability, provider knowledge, and the quality of FP services can significantly impact women's choices regarding contraception [3]. Thus, it's critical to investigate LACM demand among FP service customers in order to ascertain LAFPM demand and pinpoint contributing elements. show that more effort is required to improve the limiting criteria for the use of LAFPM [42].

Additionally, several socio-demographic factors may influence the demand for LACMs, including age, education level, marital status, and socioeconomic status [41]. Cultural beliefs and misconceptions about LACMs can also play a significant role additionally, health system factors such as availability, provider knowledge, and the quality of FP services can significantly impact women's choices regarding contraception [3]. Therefore, researching the demand of LAFPMs among FP service users is important to determine the demand of LAFPM and identify associated factors.

Factors Affecting Long Affecting Family Planning

Socio Demographic Factors

The demand for LAFPMs is correlated with many socio demographic characteristics. According to a Gondar City study report, for example, women who have completed more than secondary school are 2.91 times more likely than their peers to use LAFPMs [36]. Young women who have induced abortion are 3.75 times more likely utilize LAFPMs than women who do not have induced abortion [32]. Women under the age of 20 are 1.78 times more likely to use LAFPMs than women over the age of 20, and women whose husbands work as day laborers are 4.4 times more likely to use them [43].

The women with a history of previous utilization are 3.02 times more likely to utilize LAFPMs, and these women who have information about LAFPM are 8.85 times more likely to utilize LAFPMs than their counterparts [36]. A study from Oromia shows that lack of proper counseling of women and lack of discussion with partners are 5.3 and 2.9 times more likely affect women to utilize LAFPMs respectively [34]. Past LAFP use is a strong predictor of present LAFP use, as evidenced by a study done in Goba town that found respondents who had previously used LAFP were more than seventeen times more likely to do so currently than those who had never used LAFP. [AOR = 17.43, 95% CI: 9.19, 33.03] LAFP use was also found to be predicted by the frequency of LAFP talks; those who discussed LAFP more frequently were more than four times as likely to use LAFP as those who discussed it just once or twice [AOR=4.6, 95% CI:1.72, 12.17]. Respondents' intention to use LAFP in the future was found to predict unmet demand for LAFP; those who intended to use LAFPM [40].

A Mekelle study found that women with moderate skill were six times more likely to use LAFP than women with low awareness (AOR = 5.9, 95% CI: 2.3, 14.9). Moms with high expertise were eight times more likely to use LAFP than moms with little knowledge (AOR = 7.8, 95% CI: 3.1, 18.3). Moms with two or more pregnancies were three times more likely to use LAFP than moms with only one pregnancy (AOR = 2.7, 95%: 1.4, 5.1). Age, the number of children born, the length of time intended to have children, awareness and use of current FP, and spousal conversations over the preceding six months were all included in another study [14].

The demand for long-acting Family planning was 17%, according to the Debre Tabor survey the

percentage of women utilizing long-acting contraceptive methods (meet need) was only 9.2%. Despite their unfulfilled desire to employ lengthy acting techniques, 7.8% of women were embracing short acting techniques. Having five or more children (AOR = 1.67, 95% CI = [1.58, 4.83]), choosing to use the methods with husbands (AOR = 2.73, 95% CI = [1.40, 5.32]), being a student (AOR = 2.64, 95% CI = [1.27, 5.47]), not planning to have children in the future (AOR = 2.17, 95% CI = [1.12, 4.23]), working a day job (AOR = 3.87, 95% CI = [1.06, 14.20]), being a student (AOR = 2.64, 95% CI = [1.27, 5.47]), and speaking with husbands frequently were all positively connected with the demand for LAFPMs. Medical staff not providing patients with adequate care [10].

Individual Factors

The women who have positive attitude, and women within poor wealth index are 2.74, and 3.39 times more likely have the demand of LAFPMs utilization [33]. High demand for LAFPM and low for unmet need are expected due to socio demographic, individual, predisposing factors and reproductive history of the mother, high service coverage and access and high information access, knowledge and positive attitude towards the method are also expected to affect the demand for LAFPM in Debre Birhan as compared to other part of the country. A study conducted in Ethiopia found that poor treatment by healthcare providers negatively affected the demand for LAFPMs, highlighting the importance of provider-client interactions [44]. For instance, in some communities, there may be fears regarding the safety and side effects of LAFPMs, or a lack of awareness about their benefits [1,2].

Conceptual Framework of the Demand for Long-Acting Family Planning and Factors Among Family Planning

Conceptual frame work has been developed or adapted from this paper after a rigorous review of the relevant literatures. As shown in the figure socio-demographic factors, individual behavioral factors, predisposing factors and reproductive history of the mother have a link with demand for long-acting family planning methods.

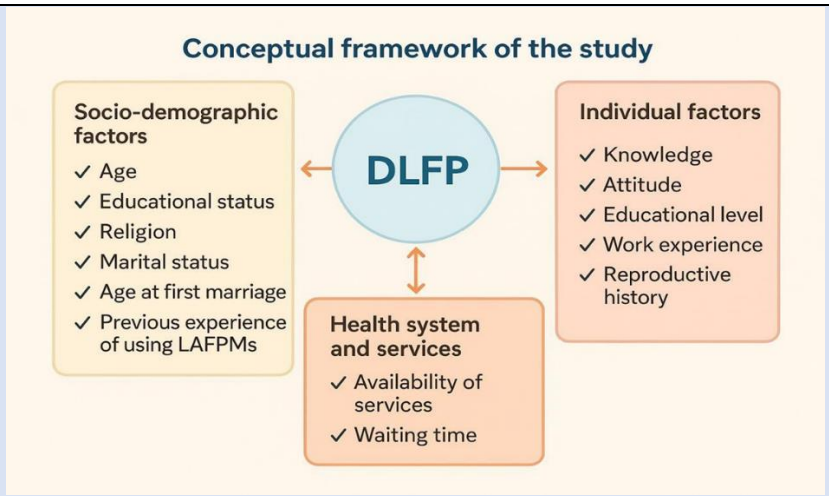

Figure 1: Conceptual framework or demand for long-acting family planning methods users in public health centers, Debre Birhane. Ethiopia, 202 [28,30,36].

Objectives

General Objectives

- To determine the demand for long-acting family planning methods and identify associated factors among family planning service users in Debre Birhan public health centres, Amhara region, Ethiopia 2025.

Specific Objectives

- To determine the demand for long-acting family planning methods among family planning service users in Debre Birhan public health centers.
- To identify associated factors for the demand of long-acting family planning methods among family planning service users in Debre Birhan public health centers.

Materials and Methods

Study Area and Period

The study was conducted in Debre Birhane public health centers of Amhara region of Ethiopia. Debre Birhane town is located in the northeast part of the Amhara region, and it is 130 km far from Addis Ababa, the capital city of Ethiopia and 695 km away East of Bahir Dar. According to 2022 administrative

report, a total population of Debre Birhane is 209, 011.and has five sub city 8 health center 2 public hospital and 1 private hospital and 13 clinics are in Debre Birhane city. The study was conducted from February 1 up to March 30, 2025.in Debre Birhane public health centers.

Study Designs an Institutional Based Cross-Sectional Study Design was Used

Populations

Source Population: All family planning service users reproductive age women of Debre Birhane are the source population from which the study population was drawn.

Study Population: Family planning service users who were selected with a systematic random sampling method from all family planning service users based on a calculated flow rate of service user's interval was the study population in Debre Birhane governmental health centers.

Study Unit: Family planning service users selected by simple random sampling techniques who was data collected during study period.

Eligibility Criteria

Inclusion Criteria: All women, who are active FP service users, and available in Debre Birhane public health centers during the study period was included.

Exclusion Criteria: Those who are seriously ill and enable to communicate in the study was excluded from the study.

Sample Size Determination

A single population proportion formula is used to determine the total required sample size. The sample is calculated using the assumption of a significance level CI of 95%, a 5% margin of error, and demand for long-acting family planning methods was used from a previous study done in Assosa Town shows that, 62.9% of the respondent had demand for LAFPM. a 62.9% population proportion [42].

A 10% from the total sample is considered or added for a non-response rate. At 95% confidence level (CI), p=0.629, and d= 0.05., N=[(Za/2)2*P (1-P)]/d2, N= [(1.96)2*0.629(1-0.629)]/(0.05)2=358.6 with 10% for non-response rate, then the total sample will be 358.6+ (358.6×10%) = 394.

Table 1: Sample size calculation for the second objective from similar study Utilization of long-acting contraceptive methods and associated factors among married women in Farta Woreda, Northwest Ethiopia.

Factors	Outcome in un ex	Outcome in ex	CI	Power %	Sample	A %	Total
Educational level	90%	69.8%	95%	80	142	14	156
Previous use of LAFPM	92.8%	76.1%	95%	80	14	1	15
Attitude	93.4%	77.6%	95%	80	178	17	195
Having numbers of children	97.2%	30.9%	95%	80	38	3	41

By considering both the first and second objectives the maximum sample size is 358 from the First objective, to get the final sample size with adding the 10% non-respondent rate 358+ (358*10%) =394.the sample size is 394. Since the output for objective one.

Sampling Technique and Procedure

A simple random sampling techniques was used to select the study participants in Debre Berhan public health centers. 5 health centers are randomly selected from 8 health centers in Debre Berhane town. Then, the study participants were selected randomly using a lottery method. The number of study participants was allocated proportionally for each public health centers. Then the respondent subject was selected from selected health centers by using systematic random sampling based on the family planning service client's flow three months average numbers. The overall sampling procedures and sample allocation techniques looks like in the following table.

Table 2: Sample size proportional allocation for demand for long-acting family planning e methods users in public health centers, Debre Birhane. Ethiopia, 2025.

Health Centers in Debre Berhane Town Randomly Selects	Average Numbers of Clients for Three Months	Number of Sample Proportional to All
04 Health Center	1550	163
Tebasse HC	650	68
Ayer Tena HC	715	75
Chacha HC	450	47
Minilic HC	385	41
Total	3750	394

Debre Birhane city has 8 Health Center Then 5 Health Centre's selected randomly proportional allocation of Sample drawing selected from health centers.

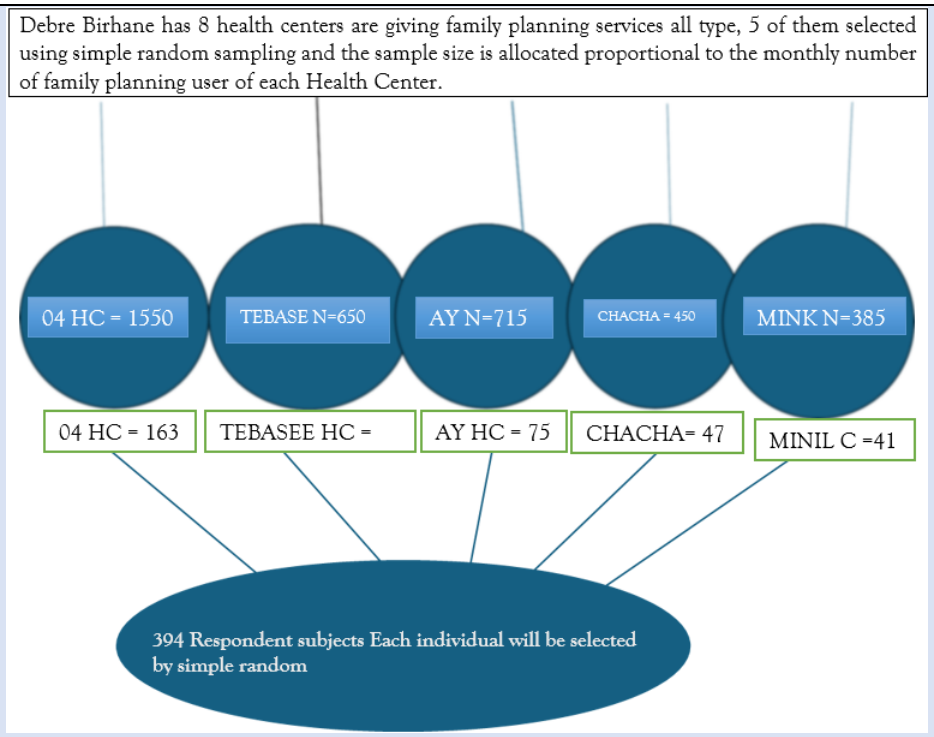

Figure 2: Proportional allocation of Sample drawing techniques for demand for long-acting family planning methods users in public health centers, Debre Birhane. Ethiopia, 2025.

Study Variables

Dependent Variable

Demand of long-acting family planning methods

Independent Variable

- Socio demographic characteristics of clients
- Knowledge of respondent about long-acting family planning method
- Attitude of respondent regarding family planning methods
- Reproductive history of respondent
- Source of information

These independent variables were selected because different previous studies show association with the dependent variable i.e., demand for long-acting family planning.

Operational Definition

LAFPMs: The reversible LAFPMs such as IUD and Implant are considered as LAFPMs.

Demand for LAFPMs: It is determined by adding both the proportion of women who are using long-acting family planning methods (met need) and proportion of women who are using any other short acting family planning methods but want to use LAFPMs (unmet need) [10].

Unmet Need for Long-Acting Family Planning Methods: Women who desired to use Implant or IUCD for spacing or limit pregnancy but did not use the methods due to any reason.

Met Need for Long-Acting Family Planning Methods: Women who use Implant or IUCD.

Attitude: The attitude of women towards LAFPM will be assessed using ten negatively stated attitude related questions, and maximum score was given when participants strongly disagree for the questions and lower points when they strongly agree. The attitude will be labeled as positive attitude for those participants who will be scored above the mean, and negative attitude for those participants who will be scored below or equal to the mean score [14,33)]

Knowledge of Long-Acting Contraceptive Methods: This study suggests that a woman is considered to be good knowledge about long-acting family planning techniques if she cites Mean and above. And poor knowledge is of them answer less than the mean [14].

Data Collection Method

A Structured interview questionnaire was developed from various studies. A clean, and unambiguous questionnaire was prepared in the English language. The questionnaire was translated into the Amharic version. The pretest was conducted 10% of total sample size = 40 at Debre Birhane referral hospital. For each health facility, two data collectors and was recruited and trained. The questionnaire was pre-

tested to ensure uniformity. The supervisors and data collectors received adequate training on the data gathering procedure. Supervisors evaluated and verified the completeness of the questionnaires daily throughout the data collecting period, and every other day by the lead investigator and all required input was give. After all the data is collected, the data was entered, labeled, and cleaned using SPSS software.

Data Quality Management

To ensure data quality, all data collectors and supervisors was receiving training and proper orientation before the actual starting of data collection. To maintain consistency, the English version of the questionnaire was translated into the Amharic language and then back into English. Two weeks before the data collection, the questionnaire was pre-tested on 10% of the study population in the Debre Birhane hospital FP unit with a similar population, and a few modifications was made. Furthermore, the accuracy, clarity, and completeness of data was reviewed daily by the principal investigators.

Data Processing and Analysis

The data was undergone verification for completeness, and the Kobo tool box used to data entry and subsequently exported to the SPSS Version 27 software for analysis. Descriptive statistics was calculated, including mean and standard deviation for continuous variables, as well as frequencies and percentages for categorical variables. Check the reliability of the questionnaire and the validity of the variable was tested using Cronbach alpha (0.63 for likert scale variable). Hosmer-lemeshow test is done for goodness of fit and calibration for logistic regression models. Each variable was be assessed for normality and the satisfaction of assumptions utilizing histograms, boxplots, and scatter plots before analysis. The binary logistic regression was used and its assumptions such as multicollinearity and model fitness will be assessed using variance inflation factors (VIF). The results were described using tables, charts, graphs. A variable in bivariate logistic regression with a p-value less than or equal to 0.25 was selected as a candidate for further multivariable analysis. Finally, the association between dependent variables and factors was presented using adjusted odd ratio, and its 95% confidence interval and a p-value of less than 0.05 in multivariable analysis will be consider statistically significant.

Ethical Considerations

Ethical clearance was obtained from the Institutional Review Board (IRB) and supporting latter from Debre Birhane University, Asrat Woldeyes Health Science Campus. A Verbal informed consent was obtained from the study participants. The data privacy and confidentiality were in secured form and used only to meet the objective of this research study. And the study was following the of Debre Birhane university Asrat Woldeyes health compass institutional review board ethical guidelines.

Result Dissemination Plan

The findings disseminated to Debre Birhane University Asrat Woldeyes Health Science Campus department of public health in partial fulfillment for Masters of public health. The findings and recommendations will be distributed to all public health centers, the Debre Birhane town health department and other organizations working on related areas to be used as a baseline for interventions.

Results

Socio-Demographic Characteristics of Respondent

A total of 390 family planning users has participated in this study with response rate of 99%. The mean age of the women was 28.79 and SD ± 5.85 years. Similarly, the majority of 173 (44.4%) of participants were also married. Regarding school enrolment; the majority 168 (43.1%) of the respondents had elementary education, followed by 128 (32.8) with no formal education and the other 69 (17.7%) had some diploma or higher education level. Regarding the occupation status of respondents about 108 (27.7%), were engaged in private business and the rest were government and non-government employees.

Table 3: Socio-demographic characteristics of respondent among women who attend family planning service at public health facilities in Debre Birhane City (2025) (n=390).

	Category	Frequency	Percent %
Age	15-24	145	37.2
	25-34	152	39
	35-49	93	23.8
Marital Status	Single	81	20.7
	Married	173	44.4

	Divorced	24	6.6
	Widowed	112	28.7
Educational Status	No Formal Education	128	32.8
	Primary/Elementary	168	43.1
	Secondary	25	6.4
	Diploma and above	69	17.7
Occupation	Daily Laborer	33	8.5
	Government Employee	86	22
	Non-Government Employee	28	7.2
	Housewife	74	19
	Private Business	108	27.7
	Student High School >S	19	4.9
	Unemployed	42	10.8
Religion	Catholic	16	4.1
	Muslim	63	16.2
	Orthodox	268	68.7
	Protestant	43	11
Husband/Partner Educational Status	No Formal Education	13	3.3
	Primary/Elementary	183	46.9
	Secondary	59	15.1
	Diploma and above	135	34.6

Demand and Utilization of LAFPM

The current utilization proportion of the demand for LAFPM was 100 (25.6%). Among demanded LAFPM, 35 (35%) met need and 65 (65%) unmet need LAFPM in the town Demand for LAFPM in the study was 100 (25.6%). This was the sum of current use of LAFPM (met need) and the method desired but not used due to any reason (unmet need). Current long-acting family planning users (met need) were 35 (35.0%) and unmet need were 65 (65%).

Table 4: Demand and utilization of LAFPM among women who attend family planning service at public Health facilities in Addis Ababa, 2017(n=390).

Variables	Options	Frequency	Percen
Utilization of LAFPM (Either Implant or IUCD) before	Utilize	192	56.4
	Not Utilize	179	43.6
Demanded LACM (Either IUCD or Implant) current	Demanded	100	25.6
	Not Demanded	290	74.4
Status of Demand Meet	Meet Need	35	35.0
	Unmet Need	65	65.0
	Not Demanded	290	74.4
Ever used implant	Yes	198	50.8
	No	192	49.2
Ever used IUCD	Yes	22	22.6
	No	368	77.4
Ever used any family planning	Yes	376	96.4
	No	14	3.6
Those get information about family planning method	Yes	270	69.2
	No	120	30.8
Current method used is by choice	Yes	274	70.25
	No	116	29.75
Waiting Time	Reasonable waiting time	290	74.4
	Too long waiting time	100	25.6

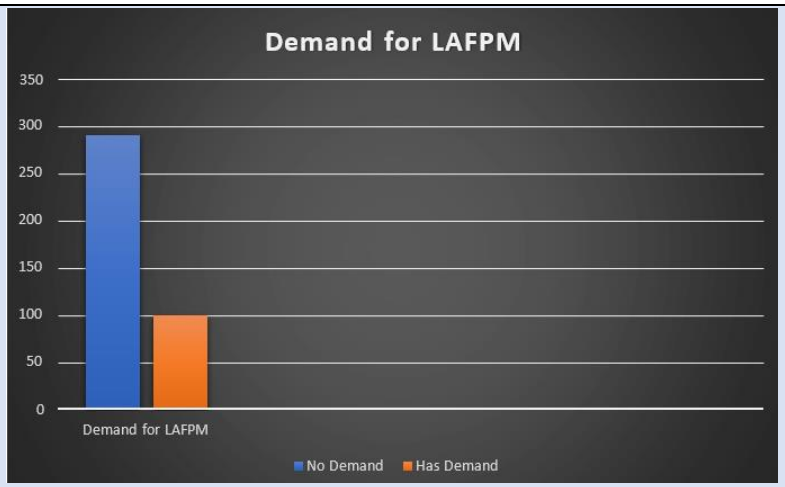

Figure 3: Bar chart show demand to long-acting family planning and has no demand for demand for long- acting family planning methods users in public health centers, Debre Birhane. Ethiopia, 2025.

Reproductive History of The Mother

Regarding the reproductive history of mother; the minimum age at first marriage was 17 years and maximum was 35 years. Similarly, the minimum age at first birth of mothers was 18 years and the maximum was 36 years. Among mothers interviewed, (279, 71.5%) ever gave birth.

Table 5: Reproductive histories of respondent among women who attend family planning service at public health facilities in Debre birhane, 2025 (n=390).

	Category	Frequency	Percent %
Ever gave birth	Yes	279	71.5
	No	111	28.5
Number of births	Nulliparous	138	35.4
	Primi (1 birth)	174	44.6
	Multiparty>2	78	20
Number of alive children	0-2	64	16
	3 or 4	38	9.7
	>4	170	43.6

Information & Source on Family Planning Methods

Regarding the information on contraceptive method majority (90.3%) of the respondent heard about LAFPM and (49%, 30.7%) mothers have heard about implant and IUCD respectively. Majority (41.4%) of the respondent heard information from health professionals.

Table 6: Health information exposure statues among women who attend family planning service at public health facilities in Debre Birhne (n=390).

Variable	Category	Frequency	Percent %
Ever heard about long-acting contraceptive method	Yes	352	90.3
	No	38	9.7
Source of information	Health professional	146	41.4
	Husband	78	22.2
	Mass media	73	20.7
	Relatives	55	14.1
If yes what type of LAFPM have you heard	Implant	173	49
	IUCD	108	30.7
	Implant and IUCD	71	20.2

Knowledge of Respondents on Family Planning

Regarding the knowledge of women on IUCD method knows that it prevents pregnancy, it does not prevent STI and it does not interfere sexual intercourse (56.9%, 50.5%, 57.7%) respectively. Similarly, knowledge of women on implant knows that it prevents pregnancy, it does not interfere sexual intercourse and pregnancy reverse quickly when implant removed (70%, 58.2% and 30.3%)

respectively. Composite score of Knowledge on LAFPM 312 (80%) has good knowledge, and 78 (20%) has Poor knowledge.

Table 7: Knowledge of respondents on family planning methods among women who attend family planning service at public health facilities in Debre birhane (n=390).

Knowledge Variable	Category	Frequency	Percent %
IUCD prevent pregnancy	True	222	56.9
	False	67	17.2
	Not sure	101	25.9
IUCD prevent STI	True	110	28.3
	False	197	50.5
	Not sure	83	21.3
IUCD interferes with sexual intercourse or desire	True	113	29
	False	225	57.7
	Not sure	51	13.1
Implant prevent pregnancy	True	273	70
	False	89	22.8
	Not sure	29	7.4
Implant interferes with sexual intercourse or desire	True	142	36.4
	False	227	58.2
	Not sure	21	53.8
Implant reverse pregnancy quickly when removed	True	118	30.3
	False	115	29.5
	Not sure	157	40.3
Composite score of Knowledge on LAFPM	Good knowledge	312	80
	Poor knowledge	78	20

Attitude of Respondent for LAFPM

In general, about (74.1%, 25.9%) of respondents have positive and negative attitude towards the methods respectively.

Table 8: Attitude of respondents on LAFPM among women who attend family planning service at public health facilities in Debre Birhane health centers (n=390).

Attitude Variable	Options	Frequency	Percent %
Implant cause irregular menses and painful	Agree	118	30.3
	Not sure	147	37.7
	Disagree	125	32.1
IUCD insertion cause loss of privacy	Agree	64	16.4
	Not sure	184	47.2
	Disagree	142	36.4
IUCD restrict normal activity	Agree	63	16.2
	Not sure	135	34.6
	Disagree	192	49.2
Long-acting method safer and more effective than short acting	Agree	190	58.7
	Not sure	141	36.2
	Disagree	59	15.1
Recommend long-acting method to others	Agree	229	58.7
	Not sure	112	28.7
	Disagree	49	12.6
Composite Attitude score of respondents on LAFPM	Positive attitude	289	74.1
	Negative attitude	101	25.9

Multivariable Analysis

After bivariate analysis variables those shows association at 0.25 level of significance was transferred in to multivariable analysis to control confounding variables and test the association of each variable with the dependent variable. The demand for LAFPM was 100 (25.6%). Among demanded LAFPM, 35 (35%) met need and 65 (65%) unmet need. Age group 35-49 [AOR 2.277(1.452,3.612)], Secondary educational status [AOR 3.638 (1.216,10.886)], No formal

education AOR 4.903[1.104,10.777], Unemployed participant [AOR 3.355(2.151,5.126)], Being student 4.885(2.385,6.024), Number of give birth 3 and 4 [AOR 1.795[(0.056,3.73)], Gravida having more than four 0.221(0.061,0.804)], LAFP Methods You heard? [AOR 2.498(1.178, 5.298)] and good attitude [AOR 2.327(1.114, 4.939)] were found predictors of the demand for LAFPM in this study.

Table 9: Multivariable analysis for factors associated with LAFPM among women who attend family planning service at public health facilities in Debre Birhane (n=390).

Variable	Options	Demand			AOR (95% CI)	
		Good Demand %	Poor Demand%	P-value		
Age	15-24	119	26	0.01	1.00	1.00
	25-34	113	39	0.049	1.579 (0.199, 2.658)	1.12 (0.076, 3.543)
	35-49	58	35	0.018*	2.762 (1.328, 4.997)	2.277 (1.452, 3.612)
Religion	Catholic	10	6	0.020	1.00	1.00
	Muslim	23	10	0.666	0.725 (0.259, 2.299)	0.000
	Orthodox	194	54	0.929	0.464 (0.196, 0.934)	1.093 (0.192, 6.218)
	Protestant	63	20	0.59	0.529 (0.484, 2.216)	1.502 (0.290, 7.773)
Education	Elementary	114	14	0.001	1.00	1.00
	Secondary	50	19	0.003*	3.094 (2.265, 8.140)	3.638 (1.216, 10.886)
	Diploma and above	110	58	0.004	4.294 (1.706, 12.295)	3.278 (0.715, 15.038)
	No formal education	16	9	0.001**	4.58 (1.438, 6.658)	4.903 (1.104, 10.777)
Occupation	Daily laborer	27	6	0.434	1.00	1.00
	Government Employee	43	10	0.003	1.046 (0.486, 5.371)	1.478 (0.129, 2.924)
	Non-government Employee	36	8	0.647	1.000 (1.753, 3.265)	2.103 (0.262, 4.889)
	House wife	61	13	0.047	0.959 (0.222, 1.729)	1.328 (0.268, 3.381)
	Private business	75	34	0.747*	2.04 (1.227, 3.894)	2.450 (1.149, 4.141)
	Student high school and above	34	16	0.002*	2.117 (1.015, 6.870)	4.885 (2.385, 6.024)
	Unemployed	14	13	0.688*	4.178 (2.129, 5.868)	3.355 (2.151, 5.126)
Age at first marriage	15-24	52	15	0.942	1.00	1.00
	25-35	90	57		2.195 (1.235, 3.884)	2.606 (1.221, 4.659)

How many births have you give?	0-2	160	35	0.260	1.00	1.00
	3 and 4	111	52		2.142 (1.309, 3.503)	8.976 (2.596, 13.671)
	>4	19	13		3.128 (1.413, 6.924)	4.286 (2.776, 9.685)
How many of them are alive?	0-2	149	28		1.00	1.00
	3 and 4	118	57	0.050	2.571 (1.539, 4.293)	1.795 (0.056, 3.73)
	>4	23	15	0.260*	3.470 (1.614, 7.462)	0.221 (0.061, 0.804)
Have you ever had exposure to long-acting contraceptive message through mass media within the last 12 months?	Yes	128	18	0.001	1.00	1.00
	No	162	82		3.599 (1.159, 5.487)	3.244 (1.294, 4.23)
If yes, please mention LAFP Methods You heard?	Implanon	144	26		1.00	1.00
	IUCD	116	66		3.151 (1.882, 5.277)	2.498 (1.178, 5.298)
Attitude	Poor attitude	85	16		1.00	1.00
	Good attitude	205	84	0.010*	2.177 (1.254, 4.830)	2.327 (1.114, 4.939)

Discussion

The study assessed the demand for long-acting family planning methods and associated factors among family planning service users in public health centers, Debre Birhan. Regarding the age, marital and educational statuses of the respondent majority were age between (25-34) (152)39%, Marriage (173)44.1%, and has primary level educational status (168)43.1%. In general, about (74.1%, 25.9%) of respondents have positive and negative attitude towards the methods respectively. According to this research finding in Debre birhane Selected health center family planning unit this study shows that, Demand for long-acting family planning 100(25.6%). Among demanded LAFPM, 35(35%) met need from the demand but it is 9% meet need from the total respondents and 65 (65%) unmet need from demand total or the un meet need is 16.6% out of total participant, of women were using short acting methods while they actually want to use long-acting methods (unmet need). And the rest are no demand to use LAFPM at all. Regarding the reproductive history of mother; the minimum age at first marriage was 17 years and maximum was 35 years. Similarly, the minimum age at first birth of mothers was 18 years and the maximum was 36 years. Among mothers interviewed, (279, 71.5%) ever gave birth. Regarding the information on contraceptive method majority (90.3%) of the respondent heard about LAFPM and (49%, 30.7%) mothers have heard about implant and IUCD respectively. Majority (41.4%) of the respondent heard information from health professionals. Regarding the knowledge of women on IUCD method knows that it prevents pregnancy, it does not prevent STI and it does not interfere sexual intercourse (56.9%, 50.5%, 57.7%) respectively. Similarly, knowledge of women on implant knows that it prevents pregnancy, it does not interfere sexual intercourse and pregnancy reverse quickly when implant removed (70%, 58.2% and 30.3%) respectively. Composite score of Knowledge on LAFPM 312(80%) has good knowledge, and 78(20%) has Poor knowledge.

This result show that lower than A survey study from Iran show that the demand of Modern family planning methods is 71.35%, and only 27.7% of women use LAFPMs [26], and it is higher result when compare with Study in south Africa show that women have limited autonomy to choose or to use contraception or the method that they might prefer [27]. This difference may due to the Ethiopian women has right to use any of the select family planning method.

This study has higher demand of Long-acting family planning demand when compare with A study in Kenya shows that only 18% of women utilize LAFPMs [28]. In this study 352(90.3%) respondent heard about FP service and better when compare with A study done in Uganda show that 4% of mothers never

heard about the FP services [29]. Another study in Nigeria shows that 38.7% of women utilize LAFPMs [30]. The difference is may be because of in south Africa show that women have limited autonomy to choose or to use contraception, population difference and time gap. This study is higher result long-acting family planning methods when compare with A study from Nepal show that 11% reproductive age women uptake LACMs [32]. There for this study is better result than study done Studies from Northwest Ethiopia show that the demand of LAFPMs is 17% [10], and 14.3% [33].

This study result is near to similar A study from Oromia region of Ethiopia show that 28.4% of reproductive women utilize LAFMS [34]. And Various studies in the Amhara region of Ethiopia show that this study lower result that of 51.1% of reproductive-age women receive LACMs in West Gojam shows [7], 16.3% in Bonbe District [35], 34.7% in Gondar City [37], 17.6% in Dendi District [37], and 12.9% in Janamora District [38]. May the difference make different factors population variation and time of study.

Study done in Debre Tabore show that the less thane this study result demand for long-acting contraceptive methods was 17%. This was the sum of current use of long-acting contraceptive methods (met need) and the method desired but not used due to any reason (unmet need). Current long-acting family planning users (met need) were 9.2% and unmet need were 7.8%, out of the total short acting contraceptive method users, 7.8% of the participants did not prefer to use short acting family planning methods [39]. Enhancing those elements is used to raise demand. Women who are in demand are those who are between the ages of 35 and 49, have several gravidas, and so providing information about long- acting family planning through the media can either increase the number of women utilizing long-acting techniques or boost demand. This study indicates a lower demand for LAFPM compared to a previous study in Assosa Town, which found that 62.9% of respondents expressed a need for it. Overall, there is a low demand for LAFPM and a significant unmet need.

The following factors were positively correlated with the demand for LAFPMs: marital status, multigravida, media information, attitude toward LAFPM, age 35-49, and education. No formal schooling, 25-35 years old when married, and a student. Impact the study's requirement for LAFPM. Debre Birhane research findings According to this study's selected health center family planning unit, the demand for long-acting family planning 100(25.6%) is less than According to a study conducted in the Sidama region, 37.8% of study participants (95% CI: 32.9-42.7) used reversible long-acting family planning. Of them, 36(9.6%) used IUCD and 106(28.0%) used implants [23]. It is May due to population and time difference. The result of this study is also lower than study done in Study done in Addis Ababa demand for LAFPM a study was high and the unmet need for LAFPM also high. Marital status, gravidity, information on LAFPM, knowledge on LAFPM, attitude on LAFPM is affect the demand for LAFPM

in this study. The demand for LAFPM was 650(76.7%). Among demanded LAFPM, 305(36%) meet need and 345(40.7%) unmet need [24]. Also, the variation may be due to different study, population and time difference. Age group 35-49 AOR 2.277(1.452,3.612), Those who have Secondary educational status [AOR 3.638[1.216,10.886], No formal education AOR 4.903[1.104,10.777], un Employed participant AOR 3.355[2.151,5.126], Being student at high school and above and reproductive age group 4.885[2.385,6.024], Number of give birth 3 and 4 [AOR 1.795[(0.056,3.73)], Gravida having more than four 2.22[0.061,0.804], heard about LAFP Methods [AOR 2.498[1.178, 5.298] and Good attitude [AOR 2.327[1.114, 4.939] were found predictors of the demand for LAFPM in this study. According to knowledge 312(80%) of respondent has good knowledge about long-acting family planning.

This result is higher than study done in Debre Tabor survey. Study done in Debre Tabore show that the less thane this study result demand for long-acting contraceptive methods was 17%. Just 9.2% of women were using long-acting contraceptive methods (meet need). 7.8% of women were adopting short acting skills, despite their wish (unmet) to use extended acting strategies. In this study those who are Secondary educational status has 3.64 times more has demand to use long-acting family planning this result is higher indicator when compare with a study report from Gondar City shows that women with above secondary education are 2.91 times more likely to utilize LAFPMs than their counterparts [36]. Differently to other studies at this study show that being student at high school and above and reproductive age group 4.8 time has demand to long-acting family planning method when compare with women has other occupation.

Study done in oromia the women under 20 years of age are 1.78 times more likely to use LAFPMs compared to women age above 20 years [43]. Unlikely on this study how that Age group 35-49 AOR 2.28 time has demand to use long-acting family planning method.

Study done in gonder women who have information about LAFPM are 8.85 times more likely to utilize LAFPMs than their counterparts [36]. Heard about LAFP Methods 2.5-time times more likely to utilize LAFPMs this result show that there is information and knowledge gap difference between two study areas. Multi Gravida having more than four pregnancies has 2.22 times demand to use long-acting family planning when compare with those has only one pregnancy. Lower when compare with study done in Mekelle study Compared to mothers who had only been pregnant once, those who had two or more pregnancies were three times more likely to utilize LAFP (AOR = 2.7, 95%: 1.4, 5.1). Another study included factors such as age, length of time desired to have children, number of children born knowledge about and use of modern FP, and spousal conversations during the previous six months [14]. The demand for LAFPM similarly with this study was positively correlated with having five or more children or multi gravida women (AOR = 1.67, 95% CI = [1.58, 4.83]), choosing to use the methods with husbands (AOR = 2.73, 95% CI = [1.40, 5.32]), being a student high school and above (AOR = 2.64, 95% CI = [1.27, 5.47]), not planning to have children in the future (AOR = 2.17, 95% CI = [1.12, 4.23]), being a daily worker (AOR = 3.87, 95% CI = [1.06, 14.20]), and frequently speaking with husbands. Patients not being treated well by medical personnel [10]. According to this study, people with a good attitude are 2.33 times more likely to have demand than people with a bad attitude. This finding is almost identical to a study conducted in Farta Woreda, Northwest Ethiopia: Women with an optimistic outlook and those with low wealth are 2.74 and 3.39 times more likely to seek the use of LAFPMs, respectively [33]. Study done in Asosa heard about LAFPM Methods higher significant 3.37 time has demand to LAFPM In this study heard about LAFP Methods [AOR 2.498[1.178, 5.298] [42]. The possible reason for the variation of the result might be due to different geographical location, increased globalization and may also due to different study period.

Strength and Limitation of Study

Strength of Study

- The questioner was pretested on similar setting and possessed high response rate and employed a straightforward random sample technique, the sampling strategy and process reduced selection bias.

Limitation of The Study

- The limitation of this study was cross-sectional nature of the data that temporal relationship between exposure and outcome variable could not be established
- This study was conducted among only family planning service users in the government facilities; it may not representative to general population.

Conclusion

Demand of LAFPM was found low 100 (25.6%) among women in Debre Birhane who attended family planning service in public health facilities. Factor which are associated with long-acting family planning method are Gravida status, Multigravida, Information from mass media, attitude on LAFPM, Age 35-49 education No formal education age at marriage 25-35 and being student. And No employment show association with demand for LACM by the bivariate analysis.

Recommendation to Debre Birhane Health Department

- Having positive attitude for LAFPM show high demand for LAFPM compared to those who have negative attitude so it is better to address the attitude of community on birth control effect of LAFPM, as it has less side effect compared to others, and give information clearly to the community by using Information from mass media, Health centers.
- Expected to do more to Arrange time and place where short and brief health education related to family planning especially LAFPM can be given for those clients who come to the institution for family planning, ANC, safe abortion care service and postnatal mother come for vaccine.
- Assign and continuously follow those health care providers who were assigned to provide health education related to reproductive health mainly long-acting family planning to those who have 3 and more birth, No formal education, and age at marriage 25-35.

- To do more by assigning health care provider to provide the outreach health education program related to the role of Long-acting family planning and counselling's session to the community reproductive women's, husband and any concerned body who play role in the contraceptive utilization.

Community Leaders

Expected to do more to increase the involvement of husband or partners on shared decision making and give them education related to the role of family planning to maintain reproductive health at different setting like social meeting area in the community (Idir, conference and the like).

Research Institutes and Researchers

A more intense qualitative and quantitative studies especially in the community settings are needed to gain further insight on acceptance of Long-term family planning by reproductive women, their husband and community religious leaders.

References

1. WHO. (2025). Family Planning/Contraception Methods. *World health Organization*.
2. Cates Jr, W., Stanback, J., Maggwa, B. (2014). Global Family Planning Metrics-Time for New Definitions? *Contraception*, 90(5):472-475.
3. Cleland, J., Bernstein, S., Ezeh, A., Faundes, A., Glasier, A., et al. (2006). Family Planning: The Unfinished Agenda. *The Lancet*, 368(9549):1810-1827.
4. Phethi, C. (2021). A Qualitative Exploration on Use of Long-Acting Reversible Contraceptives Among Married Women at MZIMBA South District Hospital (Master's Thesis, Kamuzu University of Health Sciences (Malawi)).
5. Starbird, E., Norton, M., Marcus, R. (2016). Investing in Family Planning: Key to Achieving the Sustainable Development Goals. *Global Health: Science and Practice*, 4(2):191-210.
6. Islam, M. R. (2024). Family Planning and Sustainable Development Goals. *In Family Planning and Sustainable Development in Bangladesh: Empowering Marginalized Communities in Asian Contexts. Emerald Publishing Limited*. 155-175.
7. Zeleke, E. D., Assefa, D. G., Woldesenbet, T. T., Gido, R., Mengistu, N., et al. (2022). Utilization of Long Acting and Permanent Contraceptive Methods and Associated Factor Among Women of Reproductive Age in West Guji Zone, Southwest Ethiopia. *Reproductive Health*, 19(1):31.
8. Coulson, J., Sharma, V., Wen, H. (2023). Understanding the Global Dynamics of Continuing Unmet Need for Family Planning and Unintended Pregnancy. *China Population and Development Studies*, 7(1):1-14.
9. Wulifan, J. K., Brenner, S., Jahn, A., De Allegri, M. (2015). A Scoping Review on Determinants of Unmet Need for Family Planning Among Women of Reproductive Age in Low- and Middle-Income Countries. *BMC Women's Health*, 16(1):2.
10. Yalew, S. A., Zeleke, B. M., Teferra, A. S. (2015). Demand for Long-Acting Contraceptive Methods and Associated Factors Among Family Planning Service Users, Northwest Ethiopia: A Health Facility Based Cross Sectional Study. *BMC Research Notes*, 8(1):29.
11. Fekadu, G. A., Omigbodun, A. O., Roberts, O. A., Yalew, A. W. (2019). Factors Associated with Long Acting and Permanent Contraceptive Methods Use in Ethiopia. *Contraception and Reproductive Medicine*, 4(1):9.
12. Arimond, M., Ruel, M. T. (2002). Progress in Developing an Infant and A Child Feeding Index: An Example Using the Ethiopia Demographic and Health Survey 2000.
13. Ethiopia Fmoh. (2017). From MDGs to SDGs: Remaining Challenges to Implementation of Reproductive Health Programmes in Ethiopia.
14. Alemayehu, M., Belachew, T., Tilahun, T. (2012). Factors Associated with Utilization of Long Acting and Permanent Contraceptive Methods Among Married Women of Reproductive Age in Mekelle Town, Tigray Region, North Ethiopia. *BMC Pregnancy and Childbirth*, 12(1):6.
15. Initiative UHP. (2009). The Contribution of Family Planning, Achieving MDGs in Ethiopia.
16. Abubakar, H. Y. (2023). Determinants Impacting the Adoption of Long-Acting Contraception among Women in Fort Portal Regional Referral Hospital's MCH Clinic, *IAA Journal of Applied Sciences*. 10(1):122-129.
17. Malarcher, S., Olson, L. G., Hearst, N. (2010). Unintended Pregnancy and Pregnancy Outcome: Equity and Social Determinants. *Equity, Social Determinants and Public Health Programmes*, 2:177-197.
18. Khan, M. N., Harris, M. L., Shifti, D. M., Laar, A. S., Loxton, D. (2019). Effects of Unintended Pregnancy on Maternal Healthcare Services

Utilization in Low-and Lower-Middle-Income Countries: Systematic Review and Meta-Analysis. *International Journal of Public Health*, 64(5):743-754.
19. Mohamed SF. (2024). Enhancing Utilization of Long-Acting Contraceptive Methods among Women: A Study in Hoima Regional Referral Hospital, *IDOSR Journal of Biology, Chemistry and Pharmacy*, 9(1):11-20.
20. Titaley, C. R., Sallatalohy, N. (2020). Utilization of Family Planning Contraceptives Among Women in The Coastal Area of South Buru District, Maluku, 2017. *Kesmas: Jurnal Kesehatan Masyarakat Nasional (National Public Health Journal)*, 15(1):40-47.
21. Ibnouf, A. H., Van den Borne, H. W., Maarse, J. A. M. (2007). Utilization of Family Planning Services by Married Sudanese Women of Reproductive Age. *EMHJ-Eastern Mediterranean Health Journal*, 13(6):1372-1381.
22. Gujo, A. B., Kare, A. P. (2021). Utilization of Long-Acting Reversible Contraceptives and Associated Factors Among Reproductive Age Women Attending Governmental Health Institutions for Family Planning Services in Wondo Genet District, Sidama, National Regional State, Southern Ethiopia. *Health Services Research and Managerial Epidemiology*, 8:23333928211002401.
23. Debella.pdf B. (2017). Demand for Long-Acting Family Planing and Associated Factors Selected Public Health Centers Addis Ababa Ethiopia.
24. Wondie, K. Y., Badi, M. B., Tamiru, A. T. (2020). Rural-Urban Differentials of Long-Acting Contraceptive Method Utilization Among Reproductive-Age Women in Amhara Region, Ethiopia: Further Analysis of The 2016 EDHS. *Open Access Journal of Contraception*, 77-89.
25. Hosseini, H., Torabi, F., Bagi, B. (2014). Demand for Long-Acting and Permanent Contraceptive Methods Among Kurdish Women in Mahabad, Iran. *Journal of Biosocial Science*, 46(6):772-785.
26. Kriel, Y., Milford, C., Cordero, J. P., Suleman, F., Steyn, P. S., et al. (2021). Quality of Care in Public Sector Family Planning Services in KwaZulu-Natal, South Africa: A Qualitative Evaluation from Community and Health Care Provider Perspectives. *BMC Health Services Research*, 21(1):1246.
27. Kungu, W., Khasakhala, A., Agwanda, A. (2020). Use of Long-Acting Reversible Contraception Among Adolescents and Young Women in Kenya. *PLoS One*, 15(11):e0241506.
28. Idere, G. P. (2019). Factors Affecting Utilization of Family Planning Services Among Mothers Delivering at Fort Portal Regional Referral Hospital, Uganda.
29. Mohammed-Durosinlorun, A., Adze, J., Bature, S., Abubakar, A., Mohammed, C., et al. (2017). Uptake and Predictors of Long-Acting Reversible Contraceptives Among Women in A Tertiary Health Facility in Northern Nigeria. *Journal of Basic and Clinical Reproductive Sciences*, 6(2).
30. CSA-Ethiopia. (2012). Ethiopia Demographic and Health Survey 2011. *Central Statistical Agency of Ethiopia and ICF International Addis Ababa, Ethiopia and Calverton, Maryland, USA*.
31. Mehata, S., Bhattarai, N., Menzel, J., Shah, M., Khanal, P., et al. (2019). Prevalence and Correlates of Postabortion Long-Acting Reversible Contraceptive (LARC) Use Among Young Women (24 and below) in Nepal: Strategy in The Search for Improvements. *Reproductive Health*, 16(1):55.
32. Aychew, E. W., Bekele, Y. A., Ayele, A. D., Dessie, A. M., Dagnew, G. W. (2022). Utilization of Long-Acting Contraceptive Methods and Associated Factors Among Married Women in Farta Woreda, Northwest Ethiopia: A Community-Based Mixed Method Study. *BMC Women's Health*, 22(1):533.
33. Mota, K., Reddy, S., Getachew, B. (2015). Unmet Need of Long-Acting and Permanent Family Planning Methods Among Women in The Reproductive Age Group in Shashemene Town, Oromia Region, Ethiopia: A Cross Sectional Study. *BMC Women's Health*, 15(1):51.
34. Geta, W., Asseffa, N. A., Mekonnen, N. (2018). Utilization of Long Acting and Permanent Contraceptive Methods and Associated Factors Among Married Childbearing Age Women in Bombe District, Southern Ethiopia. *Reprod Syst Sex Disord*, 7(01):1-9.
35. Zenebe, C. B., Adefris, M., Yenit, M. K., Gelaw, Y. A. (2017). Factors Associated with Utilization of Long-Acting and Permanent Contraceptive Methods Among Women Who Have Decided Not to Have More Children in Gondar City. *BMC Women's Health*, 17(1):75.
36. Sahilemichael, A., Temesgen, K. Gemechukejela. (2015). Determinants of Long-Acting Reversible Contraceptives Use among Child Bearing Age

Women in Dendi District, Western Ethiopia. *J Women's Health Care*, 4(242):2167-0420.

37. Assemie, M. A., Muchie, K. F., Ayele, T. A. (2018). Incidence and Predictors of Loss to Follow Up Among HIV-Infected Adults at Pawi General Hospital, Northwest Ethiopia: Competing Risk Regression Model. *BMC Research Notes*, 11(1):287.
38. Yalew, S. A., Zeleke, B. M., Teferra, A. S. (2015). Demand for Long-Acting Contraceptive Methods and Associated Factors Among Family Planning Service Users, Northwest Ethiopia: A Health Facility Based Cross Sectional Study. *BMC Research Notes*, 8(1):29.
39. Takele, A., Degu, G., Yitayal, M. (2012). Demand for Long Acting and Permanent Methods of Contraceptives and Factors for Non-Use Among Married Women of Goba Town, Bale Zone, South East Ethiopia. *Reproductive Health*, 9(1):26.
40. Bolarinwa, O. A., Afaya, A., Ajayi, K. V., Ojo, A., Alawode, O. A. (2022). Prevalence and Factors Associated with The Use of Long-Acting Reversible and Permanent Contraceptive Methods Among Women Who Desire No More Children in High Fertility Countries in Sub-Saharan Africa. *BMC Public Health*, 22(1):2141.
41. Birku, Z., Berhe, S., Assefa, Y. (2021). Demand for Long Acting and Permanent Contraceptives Methods and Associated Factors Among Married Women Visiting Assosa Town Health Institution for Family Planning. *Journal of Family Medicine and Health Care*, 7(3):65-76.
42. Mekonnen, F. A., Mekonnen, W. N., Beshah, S. H. (2017). Predictors of Long Acting and Permanent Contraceptive Methods Utilization Among Women in Rural North Shoa, Ethiopia. *Contraception and Reproductive Medicine*, 2(1):22.
43. Gizaw, A., Regassa, N. (2011). Family Planning Service Utilization in Mojo Town, Ethiopia: A Population-Based Study. *Journal of Geography and Regional Planning*, 4(6):355.
44. Aychew, E. W., Bekele, Y. A., Ayele, A. D., Dessie, A. M., Dagnew, G. W. (2022). Utilization of Long-Acting Contraceptive Methods and Associated Factors Among Married Women in Farta Woreda, Northwest Ethiopia: A Community-Based Mixed Method Study. *BMC Women's Health*, 22(1):533.

Cite this article: Ayalew A, Derese M, Ayalew T, Shetie B. (2025). Demand for Long-Acting Family Planning Methods and Associated Factors Among Family Planning Service Users in Public Health Centers, Debre Birhan, Ethiopia, 2025, *Clinical Case Reports and Studies*, BioRes Scientia Publishers. 10(6):1-18. DOI: 10.59657/2837-2565.brs.25.276

Article History: **Received:** September 09, 2025 | **Accepted:** September 23, 2025 | **Published:** September 30, 2025