Utilization of modern contraceptive methods and associated factors among postpartum women in Ambo rural district, Ethiopia, 2021: A cross-sectional study

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Abstract

Background

The first year after a woman has given birth is crucial for use of contraceptives even though many women do not realize that they are at a risk for pregnancy and contraceptive use is low during this period. This study was conducted to assess the utilization of modern contraceptives and associated factors among postpartum women in Ambo rural district, central Ethiopia.

Methods

A community-based cross-sectional study involving randomly selected 394 postpartum women was conducted from May 20, 2021 to June 10, 2021. Data were collected through interview, entered into EPI Data version 3.1, and analyzed by SPSS version 25.0. Adjusted odds ratios with 95% confidence intervals were computed using multivariable binary logistic regression and $p < 0.05$ was used to declare statistical significance.

Results

The prevalence of postpartum modern family planning was 72.5% (95% CI: 68%, 77%). It was significantly associated with women's self-decision making (AOR = 6.43, 95% CI: 1.98, 20.90), counseling on family planning during antenatal (AOR = 9.71, 95% CI: 3.83, 24.61), visiting health facility after delivery (AOR = 5.24, 95% CI: 2.32, 11.84), ever heard modern contraceptives (AOR = 5.17, 95% CI: 1.88, 14.23), perceived partner approval (AOR = 4.31, 95% CI: 1.62, 11.47), and the lowest income (AOR = 0.12, 95% CI: 0.02, 0.68).

Conclusions

The utilization of modern postpartum family planning in Ambo rural was promising. Therefore, family planning providers should strengthen making awareness of the women and counseling of their partners integrated with other services at a continuum of points of contact.

1. Introduction

Family planning (FP) is important throughout an individual’s and couple’s reproductive life. It is a key life-saving intervention for mothers and their children[1]. Modern contraceptive methods are defined as technological products or medical procedures that affect natural reproduction. The intrauterine contraceptive device (IUD), contraceptive pills, condoms (male and female), sterilization (male and female), injectables, diaphragms, spermicidal agents (foam/jelly), and emergency contraception are among the modern contraceptives[2, 3].

Initiation of modern family planning use during the postpartum period is most critical to improving maternal and child health. Postpartum family planning (PPFP) is defined as the prevention of unintended pregnancy and closely spaced pregnancies through the first 12 months following childbirth[4]. The World Health Organization (WHO) recommends PPFP counseling during antenatal, immediate postpartum, and postnatal services as a critical component of health care that has the potential to meet women's desire for contraception and save millions of maternal and infant lives in low and middle-income countries[1, 4].

The postpartum period is an important intervention for improving access to family planning services. Postpartum women are among those with the greatest unmet need for family planning. Yet they often do not receive the services they need to support longer birth intervals or reduce unintended pregnancy and its consequences. PPFP helps to addresses the needs of those women who have an unmet need to space and limit future pregnancies while helping to lower rates of maternal and child death[4, 5].

During the postpartum period, family planning can prevent about 30% of maternal mortality and 10% of child mortality if couples space their pregnancies more than 2 years apart. On the contrary, closely spaced pregnancies within the first year postpartum increase the risks of preterm birth, low birth weight, and small-for-gestational-age babies. Short inter-pregnancy intervals can result in negative health outcomes for mother and child. The timing of the return of fertility after childbirth is variable and unpredictable. Women can get pregnant before the return of menstruation[4].

According to an analysis of Demographic and Health Survey data from 27 countries, 65% of women who are 0–12 months postpartum want to avoid pregnancy in the next 12 months but are not using contraception[6]. The uptake of PPFP remains low in Sub-Saharan Africa[7]. Significant factors influencing the uptake of family planning are likely to be: level of education, antenatal and postnatal family planning counseling, menses return, breastfeeding status, and return of sexual activity[6–8].

During this extended postpartum period, 95% of women in low and middle-income countries want to avoid pregnancy within the next 2 years, but 70% are not using contraception [9–11]. Pregnancies occurring closely spaced are associated with higher risks of abortions, bleedings, anemia, and poor pregnancy outcomes like preterm babies, small for gestational age babies. Despite this fact, the first 12 months after giving birth concerning family planning use is the time which is often given less attention by health care managers, health service providers, and users. Even, most women do not realize that they are at risk for subsequent pregnancy. Due to this, there is an increased substantial risk of unwanted conception and an often-frustrated desire for contraceptive protection[12].

Ethiopia is currently striving to become one of the fastest-growing economies in Africa. This trend will however not continue if measures are not put in place to control the fertility rate. Postpartum family planning is an effective way of dealing with this situation as it offers women in the reproductive age group (15–49 years) a means of effectively spacing or limiting their births and consequently avoiding complications of unwanted pregnancies. This will lead to an improvement in the health of women and their children, families will be more productive, save more and have better prospects for their children. The economy will grow and the pressure on natural resources and infrastructure will reduce[12].

Modern contraceptive use by currently married Ethiopian women has steadily increased over the last 20 years. In 2019, 41% of married Ethiopian women were using contraception, compared to just 29% in 2011 and 36% in 2016. However, this proportion is far below the targets for 2020 (55% for contraceptive prevalence rate)[13, 14]. In the capital city of Ethiopia, Addis Ababa, 80.3% of childbearing women adopted modern PPFP[15]. About 86% of the women in Ethiopia have an unmet need during their first year postpartum, but only 8% are using any method of family planning. Only 5% of women during the 12-month postpartum period desire another birth within two years. Though the WHO and the Ethiopian national family planning guideline recommends that pregnancies be spaced by at least 24 months to reduce adverse fetomaternal and neonatal complications, nearly half (47%) of postpartum women have short (< 23 months) birth-to-pregnancy intervals in Ethiopia [8, 16].

In Ethiopia, the risk of pregnancy among mothers who are sexually active in 12–23 months of the postnatal period is 72%, but it decreases to 64% and 37% for mothers in 6–11 and first 6 months of the postnatal period, respectively. Although the preponderance of postpartum mothers points out the need to utilize contraceptives, contraceptive uptakes are often not obtainable or in use by the first year of the postpartum period[17]. In Ethiopia, a lot of fragmented studies have been conducted to assess the prevalence and determinants of postpartum contraceptive use. These separated studies revealed that the prevalence of postpartum contraceptive use in Ethiopia ranged from 15–80.3% [12, 15, 18–21]. From the reports of these studies, there was a great variation and inconsistency related to the prevalence of postpartum contraceptive use throughout the country. In addition to prevalence, socio-demographic (mother educational level), and other determinants like antenatal care (ANC), resumed sexual activities, postnatal care (PNC), menses return, and duration after delivery were the most common determinants reported by the Ethiopian studies [22].

Despite studies conducted on postpartum family planning in certain towns of Ethiopia, there has been limited locally available evidence in the rural part of the country and hence this study provides locally available evidence on the magnitude of postpartum family planning and associated factors from a rural district in the central part of the country which helps health service providers and program managers to focus on appropriate interventions to mitigate the problem locally; moreover, it provided evidence for other rural districts in a similar situation especially for developing countries.

2. Materials And Methods

2.1 Study setting and participants

Ambo rural district is one of the districts in West Shewa Zone of Oromia Regional State, Ethiopia. The district is 114 km away from the capital city of Ethiopia, Addis Ababa, to the western direction on the main route of the country’s corridor which connects Addis Ababa with the western part of Ethiopia. The district consists of 33 kebeles (the lowest administrative units) out of which 32 are rural and one is town. It has 142,740 total populations, with the male to female ratio almost equal. There are five public health centers, 32 health posts, and 10 private small clinics in the district. The data were collected from May 20,

2021 to June 10, 2021. The study participants were postpartum reproductive-age women who gave birth in the last 12 months and lived in randomly selected kebeles in the district. Critically ill women and those who didn't consent for participation were not included in the study.

2.2 Study design

A community-based cross-sectional design was employed using the quantitative method with structured questionnaires.

2.3 Sample size and sampling techniques

The sample size was determined using the single population proportion formula considering 95% confidence level, the proportion of postpartum women using FP of 45.8% in Gida Ayana district Oromia region, Ethiopia[23], and marginal error of 5%. Since the size of the source population was 4953, we used the population correction formula. By adding 10% for non-response rate, the final sample size was calculated to be 389 postpartum women. Out of 33 kebeles in Ambo rural district, nine kebeles (eight rural and one urban) were selected by simple random sampling technique (lottery method). The total sample size for respective kebeles was allocated proportionally based on the number of postpartum women in each kebele. The list of mothers who gave live birth within one year in each selected kebele was obtained from the registrations in the health post in each kebeles and served as a sampling frame. Finally, the study participants were selected randomly using the lottery method.

2.4 Study Variables

2.4.1 Dependent variable: Utilization of modern postpartum family planning (Yes/No)

2.4.2 Independent variables:

Socio-demographic factors: Age, marital status, educational status, occupation, place of residence, family income

Fertility & reproductive factors: Duration after delivery, parity, breast feeding status, condition of menses, visiting HF after delivery, ever used modern FP methods, currently using modern FP

Partner/Husband support for FP: Decision of FP use, husband approval on FP use, discussion with a partner about FP

2.5 Data collection

Data were collected on socio-demographic; reproductive history, maternal health care, and current practice regarding postpartum contraception; knowledge on PPFP; past experiences with modern contraception service and sexuality-related variables using a face-to-face interviewer-administered structured questionnaire adapted from previous tools (36, 40). Data were collected by nine trained data collectors and supervised by two BSc nurses.

2.6 Data quality control

The questionnaire was pre-tested on 5% of the sample size out of the selected kebeles to avoid any confusion. One-day training was given on the aim of the research, the content of the questionnaire, and field ethics by the principal investigator. The collected data were checked for completeness and consistency daily by the supervisors and principal investigator.

2.7 Data processing and analysis

The collected data were checked manually for their completeness and consistency. Then, it was cleaned, coded, and entered into Epi-data 3.1 and exported to statistical package for social science (SPSS) version 25.0 for analysis. Descriptive statistics were conducted and presented in the form of tables, figures and texts. Bivariate and multivariate analyses were used to determine the association of independent variables with the outcome variable. Those variables with $p < 0.25$ at bivariate logistic regression were taken into the multivariable logistic regression model. Odds ratio with their 95% confidence intervals were calculated and statistical significance was declared if $p < 0.05$.

2.8 Operational definitions

Postpartum period: The period from live birth to 12-month interval.

Postpartum contraceptive use: When a postpartum woman currently uses any modern contraception methods (pills, IUD, injectable, implants, male or female condom, male or female sterilization) during the 12 months following her most recent childbirth.

3. Results

3.1 Socio-demographic characteristics

In this study, 385 postpartum women participated with a response rate of 98.9%. The mean age of the respondents was 29.4 years with a standard deviation (SD) of ± 6.2. The respondent's age ranges from 18–47 years. The majority 351 (91.2%) were Oromo by ethnicity and 190 (49.4%) were Orthodox Christians in religion. The median monthly family income was 1900 Ethiopian Birr (ETB) per month (Table 1).

Table 1
Socio-demographic characteristics of postpartum women in Ambo rural district, central Ethiopia, 2021.

Characteristics	Category	Use of modern PPFP		Total (%)
		Yes (%)	**No** (%)	
Age of women	≤ 24	71 (18.40)	22 (5.70)	93 (24.20)
	25–34	143 (37.10)	58 (15.10)	201 (52.20)
	≥ 35	65 (16.90)	26 (6.80)	91 (23.60)
Ethnicity	Oromo	253 (65.70)	98 (25.50)	351 (91.20)
	Amhara	25 (6.50)	5 (1.30)	30 (7.80)
	Other[1]	1 (0.30)	3 (0.80)	4 (1.00)
Religion	Orthodox	122 (31.70)	68 (17.70)	190 (49.40)
	Protestant	128 (33.20)	29 (7.50)	157 (40.80)
	Wakefata	28 (7.30)	5 (1.30)	33 (8.60)
	Other[2]	1 (0.30)	4 (1.00)	5 (1.30)
Marital status	Single	14 (3.60)	10 (2.60)	24 (6.20)
	Married	245 (63.60)	83 (21.60)	328 (85.20)
	Widowed	8 (2.10)	11 (2.90)	19 (4.90)
	Divorced	12 (3.10)	2 (0.50)	14 (3.60)
Occupational status of women	Housewife	206 (53.50)	68 (17.70)	274 (71.20)
	Merchant	30 (7.80)	12 (3.10)	42 (10.90)
	Daily laborer	26 (6.80)	17 (4.40)	43 (11.20)

Keys: [1]Other= Gurage 2, Tigre 1, and Silte 1; [2]Other= Catholic = 3 and Muslim 2; [3]ETB=Ethiopian Birr (1ETB = 0.02159USD)

	Government/private employer	17 (4.40)	9 (2.30)	26 (6.80)
Occupational status of husband (n = 328)	Merchant	26 (7.90)	11 (3.40)	37 (11.30)
	Daily laborer	7 (2.10)	8 (2.40)	15 (4.60)
	Government/private	15 (4.60)	5 (1.50)	20 (6.10)
	Farmer	170 (51.80)	48 (14.60)	218 (66.50)
	Other	27 (8.20)	11 (3.40)	38 (11.60)
Place of residence	Urban	40 (10.40)	11 (2.90)	51 (13.20)
	Rural	239 (62.10)	95 (24.70)	334 (86.80)
Educational status of women	No formal education	68 (17.70)	42 (10.90)	110 (28.60)
	Primary	147 (38.20)	42 (10.90)	189 (49.10)
	Secondary	55 (14.30)	18 (4.70)	73 (19.00)
	Above secondary	9 (2.30)	4 (1.00)	13 (3.40)
Educational status of husband (n = 328)	No formal education	28 (8.50)	30 (9.10)	58 (17.70)
	Primary	105 (32.00)	31 (9.50)	136 (41.50)
	Secondary	86 (26.20)	12 (3.70)	98 (29.90)
	Above secondary	26 (7.90)	10 (3.00)	36 (11.00)
Monthly family income (ETB[3])	≤ 2000	133 (34.50)	92 (23.90)	225 (58.40)
	2001–3500	110 (28.60)	10 (2.60)	120 (31.20)
	≥ 3501	36 (9.40)	4 (1.00)	40 (10.40)

Keys: [1]Other= Gurage 2, Tigre 1, and Silte 1; [2]Other= Catholic = 3 and Muslim 2; [3]ETB=Ethiopian Birr (1ETB = 0.02159USD)

3.2 Reproductive characteristics

The mean parity of the study participants was 3 with an SD of + 1.82. About 204 (53%) of the respondents were above six months of the postpartum period. Three hundred one (78.2%) respondents had received prenatal family planning counseling during their recent pregnancy and 205 (53.2%) of the respondents had histories of family planning use before their last pregnancies (Table 2).

Table 2
Fertility and reproductive characteristics of women in the first year of postpartum period in Ambo rural district, central Ethiopia, 2021.

Characteristics	Category	Use of modern PPFP		Total (%)
		Yes (%)	**No (%)**	
Parity	1–2	126 (32.7)	51 (13.2)	177 (46.0)
	2–4	91 (23.6)	36 (9.4)	127 (33.0)
	≥ 5	62 (16.1)	19 (4.9)	81 (21.0)
Age of current child (months)	≤ 6	134 (34.8)	47 (12.2)	181 (47.0)
	> 6	145 (37.7)	59 (15.3)	204 (53.0)
Planned birth	Yes	221 (57.4)	40 (10.4)	261 (67.8)
	No	58 (15.1)	66 (17.1)	124 (32.2)
Counseling on FP during ANC	Yes	261 (67.8)	41 (10.6)	302 (78.4)
	No	18 (21.6)	65 (16.9)	83 (21.6)
Condition of menses	Regular	195 (50.6)	43 (11.2)	238 (61.8)
	Irregular	84 (38.2)	63 (16.4)	147 (38.2)
Menses were seen after delivery	Yes	194 (50.4)	52 (13.5)	246 (63.9)
	No	85 (22.1)	54 (14.0)	139 (36.1)
Visit health facility after delivery	Yes	202 (52.5)	28 (7.3)	230 (59.7)
	No	77 (20.0)	78 (20.3)	155 (40.3)
Ever used family planning before pregnancy	Yes	180 (46.8)	25 (6.5)	205 (53.2)
	No	99	81	180

		(25.7)	(21.0)	(46.8)
Women's discussion about FP with partner	Yes	148 (38.4)	13 (3.4)	161 (41.8)
	No	131 (34.0)	93 (24.2)	224 (58.2)
Partner willingness assist women to obtain contraceptives	Yes	164 (42.6)	14 (3.6)	178 (46.2)
	No	115 (29.9)	92 (23.9)	207 (53.8)
A person who decides to use family planning	Women herself	98 (25.5)	17 (4.4)	115 (29.9)
	Partner/Other/Both	181 (47.0)	89 (23.1)	270 (70.1)

3.3 Postpartum utilization of modern contraceptives

Two hundred seventy-nine (72.5%) (95% CI: 68%, 77%) of participants were using modern family planning methods with injectable (40.5%) the most widely used type (Fig. 1).

3.5 Major reasons for not using modern contraceptives

Among 106 women who didn't use family planning, lack of awareness about fertility return during postpartum was the most common reason, 24 (22.6%), mentioned for not using PPFP (Fig. 2).

3.6 Factors associated with postpartum modern contraceptive use

In the multivariable logistic regression analysis, the following six variables were identified as independently associated with postpartum modern contraceptive use. These were: family monthly income, visit health facility after delivery, counseling about FP during ANC, women's ever heard of family planning, decision making power of women, and perceived partner's willingness or approval for women to obtain contraceptives.

Mothers who counseled about FP during ANC in health facilities were 9.72 times more likely to use modern family planning methods than mothers who had no counseling before the recent pregnancy (AOR = 9.72; 95% CI: 3.83, 24.61). Women who had visited health facilities during the postpartum period for postnatal care or other services were 5.24 times more likely to use the PPFP method (AOR = 5.24; 95% CI: 2.32, 11.84).

Women who ever heard about postpartum family planning were 5.17 times more likely to utilize PPFP than those who had never heard of it (AOR = 5.17; 95% CI: 1.88, 14.23). Women who decided taking

family planning by themselves were 6.43 times more likely to use postpartum modern contraceptives than those who did not (AOR = 6.43; 95% CI: 1.98, 20.90).

Perceived partner's approval of contraceptive use was also found to be one of the predictors of contraceptive use in the postpartum period. Postpartum women whose husbands approved for contraceptives were 4.31 times use PPFP compared with those whose husbands did not approve contraceptive use (AOR = 4.31, 95% CI: 1.62, 11.47).

The increase of monthly income was also associated with the likelihood of family planning utilization among postpartum women. The odds of using family planning methods among those with a monthly income of less than or equal to 2000ETB were 88% less likely as compared to women with the highest category of monthly income of 3501 and more ETB (AOR = 0.12; 95% CI: 0.02, 0.68) (Table 3).

Table 3
Independent predictors of postpartum family planning use in Ambo rural district, central Ethiopia, 2021.

Characteristics	Category	PPFP[1] Use		Crude OR[2] (95% CI)	Adjusted OR (95% CI)	P-Value
		Yes	**No**			
Family monthly income (ETB)[3]	≤ 2000	133	92	**0.16 [0.06–0.47]** [4]	**0.12[0.02–0.68]** [5]	**0.170**
	2001–3500	110	10	1.22 [0.36–4.14]	0.37[0.06–2.36]	0.292
	≥ 3501	36	4	1	1	
Recent birth planned	Yes	221	40	6.29 [3.86–10.24] [4]	2.22[0.92–5.36]	0.077
	No	58	66	1	1	
Family planning counseling during antenatal care in health facilities	Yes	261	41	**22.99 [12.40-42.61]** [4]	**9.72[3.83–24.61]** [5]	**< 0.001**
	No	18	65	1	1	
Condition of menses	Regular	195	43	3.40 [2.14–5.41] [4]	1.53[0.68–3.44]	0.303
	Irregular	84	63	1	1	
Menses were seen after delivery	Yes	194	52	2.37 [1.50–3.75] [4]	0.92[0.40–2.08]	0.834
	No	85	54	1	1	
Visit health facility after delivery	Yes	202	28	**7.31 [4.41–12.11]** [4]	**5.24[2.32–11.84]** [5]	**< 0.001**
	No	77	78	1	1	
Currently breast feeding	Yes	249	78	2.98 [1.68–5.29] [4]	1.02[0.33–3.14]	0.979

Keys: [1]PPFP=Postpartum family planning; [2]OR=Odds ratio; [3]ETB=Ethiopian Birr (1ETB = 0.02159USD); [4]P-Value < 0.25; [5]P-Value < 0.05

	No	30	28	1	1	
Ever heard of postpartum family planning	Yes	265	50	**21.20 [10.97–40.98]** [4]	**5.17[1.88–14.23]** [5]	**0.001**
	No	14	56	1	1	
Ever used family planning before pregnancy	Yes	180	25	5.89 [3.53–9.82] [4]	1.21[0.52–2.80]	0.659
	No	99	81	1	1	
Discussing family planning with partner	Yes	148	13	8.08 [4.32–15.12] [4]	2.21[0.86–5.67]	0.100
	No	131	93	1	1	
Perceived husband approve to take contraceptives	Yes	164	14	**9.37 [5.09–17.26]** [4]	**4.31[1.62–11.47]** [5]	**0.003**
	No	115	92	1	1	
Decision-maker to take PPFP	Women herself	98	17	**2.84 [1.60–5.03]** [4]	**6.43[1.98–20.90]** [5]	**0.002**
	Partner/Other/Both	181	89	1	1	

Keys: [1]PPFP=Postpartum family planning; [2]OR=Odds ratio; [3]ETB=Ethiopian Birr (1ETB = 0.02159USD); [4]P-Value < 0.25; [5]P-Value < 0.05

4. Discussion

The postpartum period is a critical time to provide modern contraceptives and prevent unintended pregnancies. This is a community-based cross-sectional study conducted in and provided evidence from a rural district in a central part of Ethiopia.

The prevalence of modern postpartum family planning methods in this study was 72.5% (95% CI: 68%, 77%). This is much higher than the national report (41%) [14], and other community-based studies in rural parts of Ethiopia which revealed 15% in Ledo Etosa, Arsi [21], 1.5% in Bale [24], 28.3% in Kiramu [25], 18.4% in Eastern Hararghe [26], and 20.7% in Burie, Northern Ethiopia [12] and Kailali, Nepal (32.8%) [27]. However, the prevalence in this study is lower than a community-based study conducted in Addis Ababa, Ethiopia 80.3%[15] and Kenya (86.3%) [28]. The differences might be due to community acceptance of the service, the contribution of the health extension workers in promoting behavioral change and

implementing FP service, the presence of socio-economic differences, cultural variations, and service accessibility.

The most commonly used modern contraceptive methods in this study were injectable (40.5%) There are differences in percent distribution by the method with studies conducted in Hosana town (87.7%) [29] and Goncha Siso Enesie district of East Gojjam Zone (60.6%) [18] in Ethiopia, but the finding in this study is above a community-based study in a district in Nepal (29.3%) [27]. In this study, nearly half (47%) of postpartum women were using reversible long-acting contraceptives (intrauterine device or implants) which is greater than national estimates by 2020, (36.2%) [30]. The discrepancy could be due to the time gap of studies, previous experiences with short-acting contraceptive methods, and differences in socio-demographic and reproductive characteristics among participants in different settings.

The findings of this study showed that mothers who had counseling about family planning during ANC visit(s) were nine times more likely to use PPFP compared to those who had no counseling during ANC follow-up. This may be because women who receive family planning counseling during the ANC might be highly motivated to use modern contraceptive methods after delivery. This finding is in line with studies done in Gida Ayana, Western Ethiopia[23] and Northwest Ethiopia[18]. The possible reason for this may be that counseling during ANC would create an opportunity for women to have more exposure to information and awareness regarding birth spacing by the use of contraceptives after giving each birth.

This study shows that postpartum women with lowest family income (< 2000ETB/month) category were less likely to use modern contraceptive methods as compared to the highest income category (3501 and more ETB). This finding is slightly similar to a study in Ethiopia that indicates family planning practice partly influenced by the level of income and income level of 1001 birr or more resulted in increased practice among the adult women[31, 32]. This might be due to that those postpartum women with relatively better income has better awareness towards family planning, and might practice it than their counterparts even though the service is free of charge.

This study revealed that women who visit health facilities after delivery were found more likely to start using postpartum FP. This finding is supported by reports from Addis Ababa[33], North, West Ethiopia[23] and Hosanna[29]. This finding is similar to the study done in Gondar which showed a nearly two-fold increase in the utilization of FP among women who had a postpartum visit in comparison to those who had no visit. This might be because of the increased opportunity of receiving counseling on FP at different service delivery points in the health facilities. Thus, the women who received post-partum FP counseling are more likely to practice modern contraceptives as it raises their awareness.

Partner willingness/approval of contraception was significantly associated with women's use of contraceptive methods during the postpartum period in this study. This finding is in line with other studies done in Ethiopia[22, 34], and Malawi[35]. This might be due to the fact that any factor that influences the partner's attitude towards contraceptives would also affect women's use of postpartum contraceptives.

This study also showed that those women who ever heard about postpartum family planning were five times more likely to use modern contraceptives during the postpartum period than their counterparts. This finding is similar to study carried out in Ethiopia[36, 37] and Liberia[38]. This is because women who ever heard about postpartum family planning are more likely to get the awareness of the available options since a decision about its relevance and use can be made.

5. Limitation Of The Study

The main limitation of this study might be the misclassification of postpartum women as modern family planning method users or non-users since the information was self-reported. In addition, it didn't test the influence of husbands on contraceptive use.

6. Conclusions

The prevalence of postpartum family planning utilization in Ambo rural district was found to be 72.5% (95% CI: 68%, 77%). Factors significantly associated with postpartum family planning utilization were partner approval to use contraceptives, attending health facility after delivery, counseling about FP during ANC, women's ever heard of family planning, and women's self-decision-making power to use contraceptives. But low monthly family income is a hindering factor for PPFP utilization.

Therefore, family planning service providers should strengthen making awareness of the women and counseling of their partners about the use of postpartum contraception at any point of contact integrated with other health services within the health facility or community. Women's affairs sector and concerned stakeholders should emphasize empowering women with low monthly income with income-generating activities and awareness should be raised to the husbands to help their wives in adopting postpartum family planning methods of their own will.

Abbreviations

ANC: Antenatal Care; AOR: Adjusted Odds Ratio; CI: Confidence Interval; COR: Crude Odds Ratio; ETB: Ethiopian Birr; EDHS: Ethiopian Demographic and Health Survey; FP: Family Planning; IRB: Institutional Review Board; IUD: Intra-Uterine Device; FP: Family Planning; PNC: Postnatal Care; PPFP: Postpartum Family Planning; SD: Standard Deviation; SPSS: Statistical Packages for Social Sciences; WHO: World Health Organization

Declarations

Institutional Review Board Statement: The study was conducted in accordance with the Declaration of Helsinki, and approved by the Ethical Review Committee of Rift Valley University of Ambo Campus.

Informed Consent Statement: Informed verbal consent was obtained from each participant considering participant's literacy status as waived by the review committee. The Ethics committee approved that the

finding of this study could publish since identifying images or clinical details of participants that compromise anonymity was not applicable.

Data Availability Statement: All data supporting our findings are already described and included in the manuscript.

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Figures

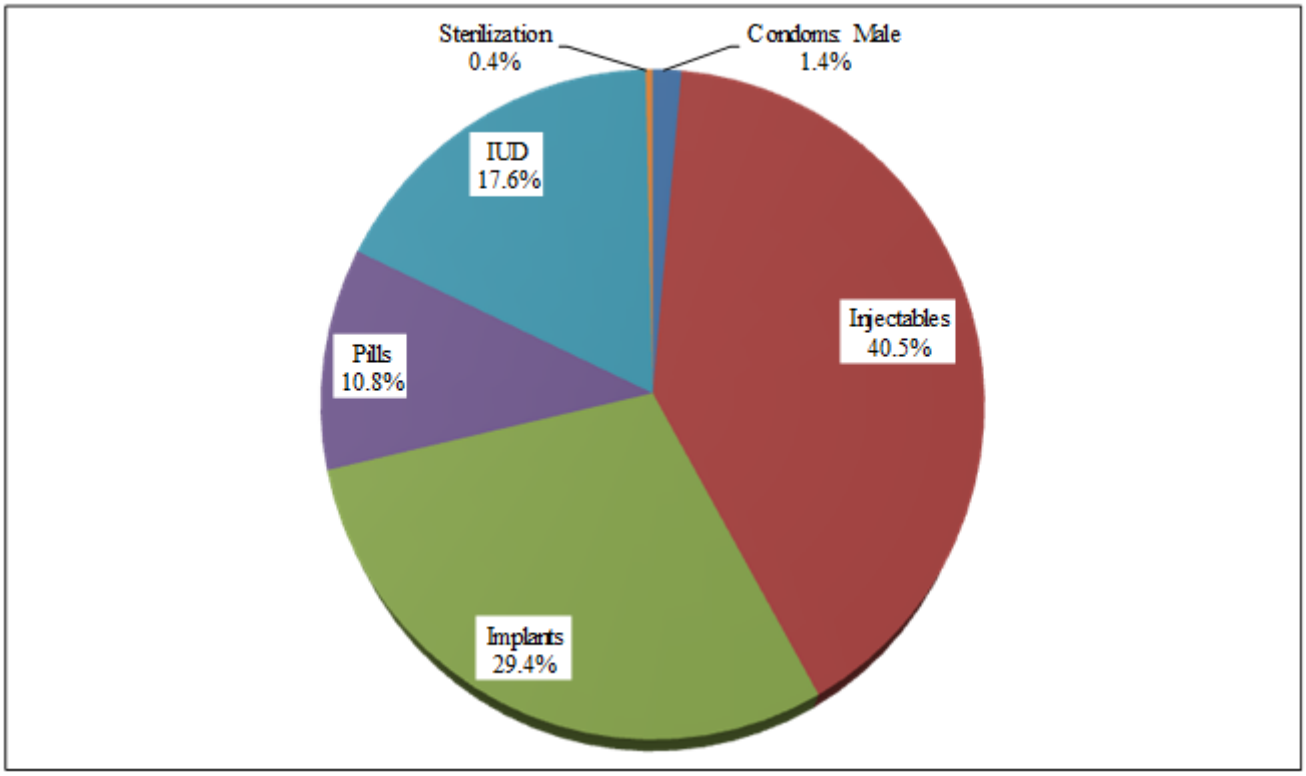

Figure 1

Proportion of modern contraceptive users by type among postpartum women in Ambo rural district, central Ethiopia, 2021

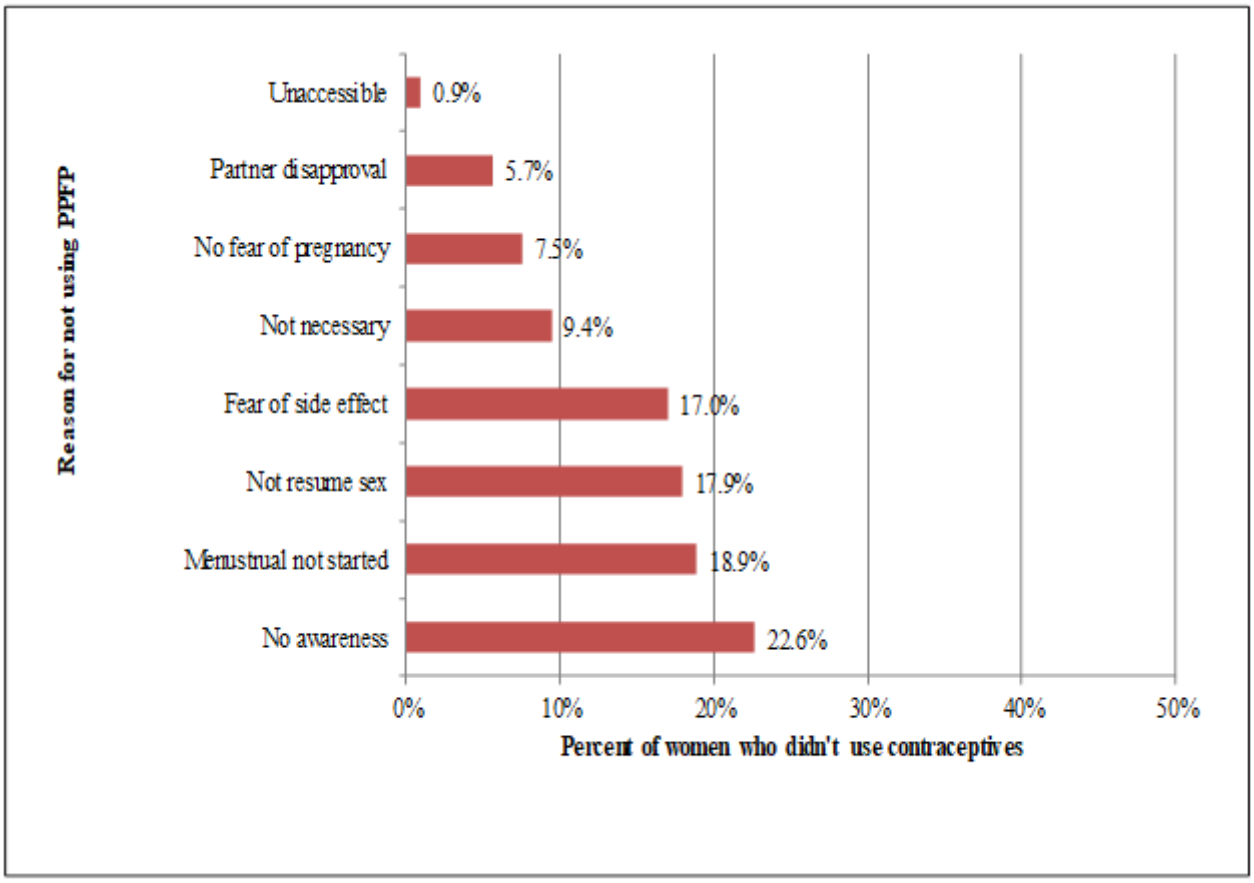

Figure 2

Major reasons for not using modern contraceptives during the postpartum period in Ambo rural district, central Ethiopia, 2021.