

ORIGINAL RESEARCH ARTICLE

Determinants of immediate family planning utilization among postpartum women in Northwestern Ethiopia

DOI: 10.29063/ajrh2026/v30i13.8

Solomon A. Adete^{1,2 *} and RM Mmusi-Phetoe²

Ethiopian Public Health Association, Addis Ababa, Ethiopia¹ ; UNISA, Pretoria, South Africa²

***For Correspondence:** Email: abtewsolomon5@yahoo.com; Phone: +251913343713

Abstract

Immediate postpartum family planning is the initiation of contraception within 48 hours after delivery and is a critical intervention for preventing unintended pregnancies and reducing short inter-birth intervals. Despite its importance, utilization remains low in many parts of Ethiopia. This study aimed to determine the magnitude of immediate postpartum family planning and identify its determinants among postpartum women in public health facilities of Assosa Zone, Northwestern Ethiopia. An institutional-based cross-sectional study was conducted from January to March 2022 among 564 postpartum women who gave birth in the nine months preceding the survey in selected public health facilities. Data were collected through face-to-face interviews using a structured questionnaire. Logistic regression was used to identify factors associated with immediate postpartum family planning utilization. Only 142(25.2%) postpartum women used immediate postpartum family planning services. Rural residence, being merchants, students, and daily laborers, having partner support, attending four or more antenatal care visits, receiving postnatal care services at the hospital or health centers, and receiving postpartum family planning counselling were significantly associated with higher utilization of immediate postpartum family planning services. The strongest predictors were partner support and receiving postnatal care at a health facility. The utilization of immediate postpartum family planning was low in the study area. Strengthening high quality, client-centered counselling during critical maternal care continuum periods, along with active partner involvement is essential to improve uptake and contribute to better maternal and child health outcomes. (*Afr J Reprod Health* 2026; 30 [13]:74-85).

Keywords: Immediate postpartum family planning, postpartum women, determinant factors

Résumé

La planification familiale immédiate du post-partum consiste à initier une contraception dans les 48 heures suivant l'accouchement ; il s'agit d'une intervention cruciale pour prévenir les grossesses non désirées et réduire les intervalles intergénéraliques courts. Malgré son importance, le taux d'utilisation reste faible dans de nombreuses régions d'Éthiopie. Cette étude visait à évaluer l'ampleur du recours à la planification familiale immédiate du post-partum et à en identifier les déterminants chez les femmes en période de post-partum, au sein des établissements de santé publics de la zone d'Assosa, dans le nord-ouest de l'Éthiopie. Une étude transversale en milieu hospitalier a été menée de janvier à mars 2022 auprès de 564 femmes ayant accouché au cours des neuf mois précédant l'enquête dans des établissements de santé publics sélectionnés. Les données ont été recueillies par le biais d'entrevues en face à face à l'aide d'un questionnaire structuré. Une régression logistique a été utilisée pour identifier les facteurs associés à l'utilisation de la planification familiale immédiate du post-partum. Seules 142 femmes (25,2 %) ont eu recours aux services de planification familiale immédiate du post-partum. Le fait de résider en zone rurale, d'exercer une activité de commerçante, d'étudiante ou de travailleuse journalière, de bénéficier du soutien du partenaire, d'avoir effectué au moins quatre visites prénatales, de recevoir des soins postnataux à l'hôpital ou dans des centres de santé et de bénéficier de conseils en planification familiale post-partum étaient des facteurs significativement associés à un taux d'utilisation plus élevé de ces services. Les facteurs prédictifs les plus marquants étaient le soutien du partenaire et la réception de soins postnataux dans un établissement de santé. Le recours à la planification familiale immédiate du post-partum s'est avéré faible dans la zone d'étude. Il est essentiel de renforcer la qualité des conseils centrés sur la patiente lors des périodes clés du continuum de soins maternels, tout en favorisant une implication active du partenaire, afin d'améliorer l'adoption de ces services et de contribuer à de meilleurs résultats en matière de santé maternelle et infantile. (*Afr J Reprod Health* 2026; 30 [13]: 74-85).

Mots-clés: Planification familiale immédiate du post-partum, femmes en post-partum, facteurs déterminants

Introduction

Globally, family planning (FP) is recognized as a key life-saving intervention for women and their children.¹ Postpartum family planning (PPFP) is an important strategy to reduce the unmet need for FP among women.¹ It addresses the needs of women who wish to space their children and limit or avoid pregnancies.¹ Access to contraception services through the integration of PPFP into the existing continuum of maternal and neonatal health services helps to reduce maternal and neonatal mortality.^{2,3} Postpartum family planning helps women achieve the desired interval between consecutive pregnancies to improve both mother and child health.⁴ According to World Health Organization (WHO) recommendations, the minimum interval between live birth and the next pregnancy is at least 24 months. This is because short birth intervals are associated with an increased risk of perinatal, newborn, and infant mortality, small size for gestational age (a condition in which the newborn's weight is below the 10th percentile for gestational age, indicating intrauterine growth restriction), low birth weight, and preterm delivery.⁵ However, demographic and health surveys (DHS) in 27 countries indicate that 95% of women who were 0–12 months postpartum wanted to avoid pregnancy, but 70% of them had not used contraception.¹ The DHS of 17 developing countries shows that about 25% of women who wanted to space or limit their children did not use any form of modern contraception at the right time after delivery.⁶

The PPFP timing is defined as post-placental (10 minutes after placental removal), immediate postpartum (within 48 hours after delivery) and extended postpartum (6 weeks to a period of one year).¹ Evidence indicates that the time to return to menses after childbirth is unpredictable, and women can get pregnant before the return of their menses if they resume sexual intercourse in the early periods^{7,8} because postpartum women have a high unmet need for FP, which is the primary cause of unintended pregnancies among women.⁹ Therefore, effective immediate postpartum family planning (IPFP) methods must be available to help women reach recommended inter-pregnancy intervals.⁴ The IPFP refers to the counselling and provision of FP methods as part of the continuum of care for postpartum women within 48 hours after

childbirth¹⁰ because women may initiate sexual activity before obtaining FP methods.¹¹ However, the utilization of IPFP is very low, and only 21.6% of women used it after birth.¹²

Ethiopia planned to increase the rate of FP services from 36% to 55% among married women of reproductive age and reduce the unmet need from 22% to 10% by 2020.¹³ However, the use of PPFP was low and only 23.7% of women who wanted to delay their pregnancy used modern contraception methods, and 22% of women had short birth intervals of less than 2 years.¹⁴ The Ethiopian mini-DHS for 2019 indicates that Ethiopia did not achieve its planned goal and only 41% of currently married women used modern FP methods. However, IPFP services are not yet widely used¹⁵, and only a small proportion of postpartum women use IPFP methods.¹²

Following low utilization of IPFP services, postpartum women often have short birth intrapartum intervals and unwanted pregnancies¹⁶ because of a short period of exclusive breastfeeding practice, the early return of menstruation and the early continuation of sexual intercourse after delivery.¹⁷ Most studies focused on extended periods of PPFP, even very limited studies on IPFP service utilization were investigated in Ethiopia, and still studies recommend further investigation on the factors that affect IPFP utilization among women. Additionally, there have been no previous studies conducted in the study area. Therefore, this study aimed to assess the magnitude of IPFP service utilization and associated factors among postpartum women in public health facilities in the Assosa zone, Northwestern Ethiopia.

Methods

Study setting

The study was undertaken in public health facilities within the Assosa Zone, including Bambasi, Mender 46, Jematsa, Nebarkomeshiga, Kushmengel, Abrehamo, Ura and Selga 22 Health Centers.

The Assosa Zone is one of the three administrative zones found in Benishangul Gumuz Regional State, located in the northwest part of Ethiopia. The zone has nine administrative districts, 19 public health centers, and one primary hospital. All public health facilities in the zone provide curative and community health services, including

the FP program. According to the administrative report for 2021, the total population of the zone based on the Census projection of the Central Statistics Agency in 2007 was 441,551 and approximately 15,057 women were expected to give birth per year.¹⁸

Study design and period

Institutions-based cross-sectional study design was employed from January to March 2022 among postpartum women in the Assosa Zone public health facilities.

Population and eligibility criteria

The study was conducted in Assosa Zone, Benishangul Gumuz Region, Ethiopia. The source population comprised all women who had given birth in the nine months preceding the study in the Assosa Zone. The target populations consisted of all women who had given birth in the past nine months preceding the study and were residing in three randomly selected districts of Bambasi, Abrehamo, and Ura (Figure 1). The study unit consisted of all women who had given birth in the past nine months preceding the study and were selected by sampling procedures from all health facilities (Bambasi, Mender 46, Jematsa, Nebarkomeshiga, Kushmengel, Abrehamo, Ura and Selga 22 Health Centers) in the three selected districts of the Assosa zone. Women who had given birth after the past nine months or within less than nine months of study in the Zone or any other place were excluded.

Sample size determination and procedures

The sample size for this study was determined using the single population proportion formula with the assumptions of 95% confidence interval, 5% error margin, and 21.6% as a proportion of the use of IPPFP services in the north Shewa zone that was used to estimate the characteristics of the target population¹², the design effect two and with the addition of a 10% nonresponse rate, the total sample size became 572.

Sampling procedure and data collecting process

Firstly, the lottery method was used to select three districts out of nine districts in the Zone. Second, of

the three selected districts, all public health facilities found in the selected districts were included in the study, and the sample size of each public health facility was allocated proportionally to the population size (Figure 1). Third, the sampling frame was obtained from the list of Expanded Program on Immunization Registration Books, under five clinics and FP clinics for all women in each health facility after leaving services. After obtaining the sample frame, simple random sampling was used and a following systematic random sampling method was used to select the respondents. Finally, every other woman was interviewed until the planned sample size was achieved after the exit of services.

Data collection tool and quality control

The structured questionnaire was prepared in simple words after reviewing different kinds of literature and guidelines. The questionnaire included sections on sociodemographic characteristics (age, residence, occupation, education, income), obstetric history (number of children, ANC visits, delivery place, PNC), knowledge and awareness of family planning methods, utilization of IPPFP services, reasons for non-utilization, and partner support. Initially, the questionnaire was prepared in English and translated into Amharic. Pre-testing was performed on 5% of the sample size to check the consistency and clarity of the instrument, and amendments were made accordingly. The data were collected through a structured and pretested questionnaire via face-to-face interview by trained collectors.

Data management and analysis

The data were coded and entered into a computer through SPSS 27 version software and analysis was performed using it. Descriptive, bivariate, and multivariate analyses were performed in their respective orders. A bivariate logistic regression analysis was carried out to examine the association between each independent and dependent variable after the chi-square test was performed. Furthermore, crude/ adjusted odds ratios and 95% confidence intervals were calculated to test the strength of the association and the level of significance. All variables that have a significant association at $P < 0.2$ were transported to a multivariate binary logistic regression analysis to identify the independent predictors of the dependent

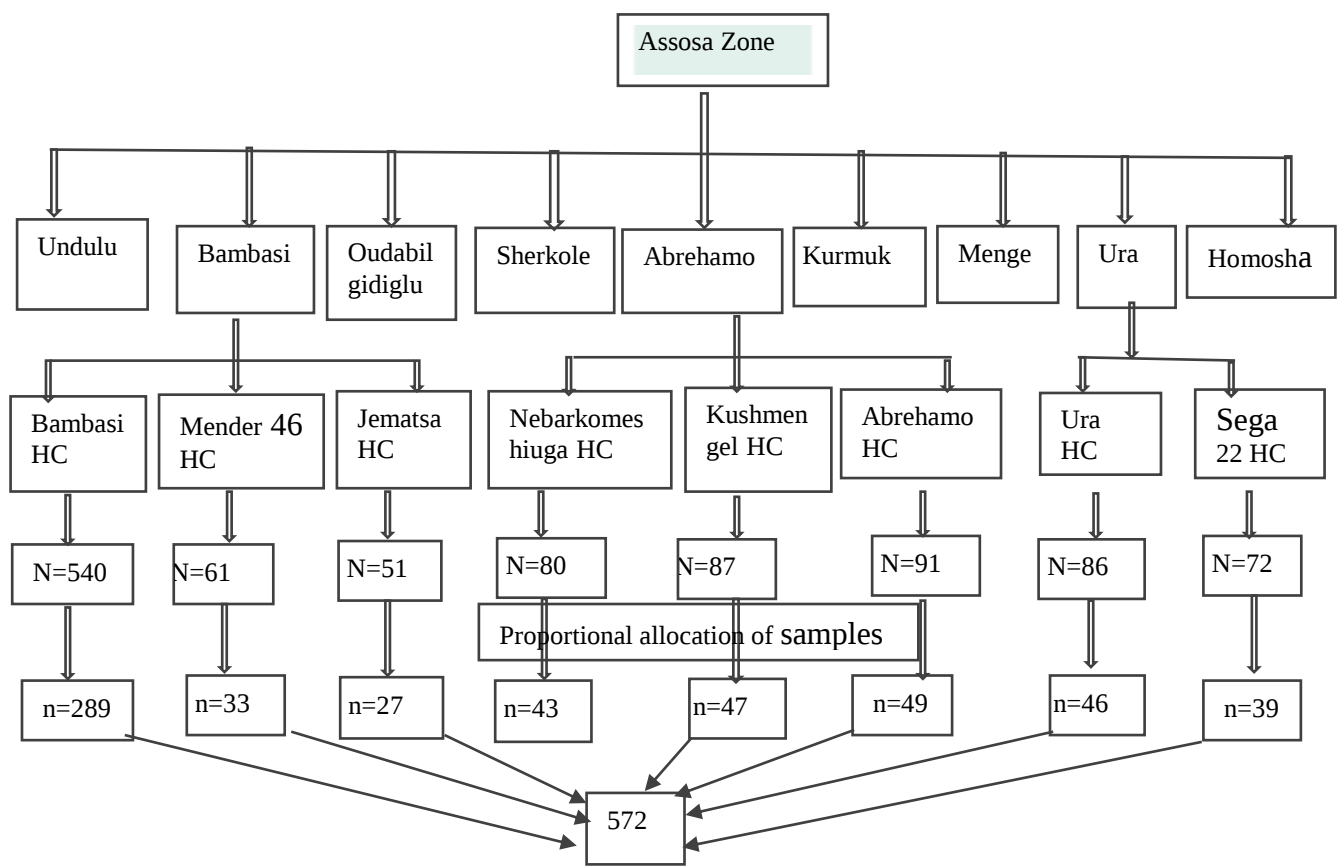


Figure 1: Proportional allocation of samples to health facilities in Assosa Zone public health facilities, Northwestern Ethiopia

variable using the backward stepwise method. The model was checked using the Hosmer-Lemeshow fitness test. Text, percentage, Adjusted Odds Ratio (AOR), Crude Odds Ratio (COR), 95% Confidence Interval (CI), P-value and tables were used to present the results.

Operational definition

IPFP utilization: In this study, the utilization of modern FP methods within 48 hours after delivery was considered IPFP utilization. For this purpose, women who had given birth nine months before the survey were interviewed.

Ethics approval and consent to participate

Ethical clearance was obtained from the UNISA School of Human Sciences Research Ethics Review Committee with NHREC registration number Rec-

240816-05, CREC reference number 13112112_CRECHS_2021. During data collection, oral consent was obtained from each participant after the purpose of the study was clearly explained. Participants were informed of their right to withdraw at any time if they faced any discomfort during data collection. The confidentiality of the information was also ensured to each study respondent.

Results

Of 572 postpartum women recruited, 564 (96.6%) participated in the study, and 62.4% and 37.6% of postpartum women were rural and urban residents, respectively. Fifty percent (50.0%) of the women were aged 25 to 34 years with a mean age of 27.17 years. Furthermore, 67.2%, 27.3%, and 5.5% of women were Muslim, Orthodox Tewahedo, and Protestant faiths, respectively. As shown in Table 1,

Table 1: Sociodemographic characteristics of postpartum women in the Assosa zone, northwest Ethiopia (N=564).

Variables	Category	Frequency	Percent		
Age category (years)	15-24	194	34.4	Mean age= 27.17 SD =5.88	
	25-34	282	50.0		
	≥ 35	88	15.6		
Religion	Orthodox Tewahedo	154	27.3		
	Muslim	379	67.2		
	Protestant	31	5.5		
Ethnicity	Benishangul	226	40.1		
	Amhara	237	42.0		
	Others*	101	17.9		
Residence	Urban	212	37.6		
	Rural	352	62.4		
Marital status	Married	542	96.1		
	Others**	22	3.9		
Educational status	No formal education	121	21.5		
	Primary education	243	43.1		
	Secondary	111	19.7		
	College and above	89	15.8		
Occupational status	Farmer	149	26.4		
	Housewife	295	52.3		
	Employee	61	10.8		
	Merchant	16	2.8		
	Others ***	43	7.6		
Household monthly income (ETB)	< 3,500	370	65.6		
	3,500-9000	162	18.7		
	≥ 10,000	32	5.7		

* Oromo=95, Tigre=3, Gurage=1 and Shinasha=2, ** Cohabiting, divorced, widowed, and single *** students and daily laborers

almost all postpartum women were married (Table 1). A review of the educational status of the women showed that 43.1%, 19.7%, and 15.8% of postpartum women had primary, secondary, college, and above levels of education respectively. However, 21.5% of postpartum women did not have formal education. More than half (52.3%) of the women were housewives; 26.4% were farmers; 10.8% were employed; and 10.4% had other employment statuses. The status of household income showed that about two-thirds of the women had <3,500 Ethiopian birr (ETB) household income per month and the rest had <3,000 ETB income per month (Table 1).

Obstetric characteristics of the participants

The study revealed that 42.9% of the postpartum women had three or more live children, 24.8% had two live children, and 32.2% had one live child. The interval between siblings of two consecutive children was less than 24 months for 17.6% of postpartum women and equal to or greater than 24

months for 52.8% of postpartum women. About 52.1% of postpartum women wanted to have five or more children, 37.8% wanted one to four children, and 10.1% of them did not want additional children (Table 2). Almost two-thirds of postpartum women received four or more antenatal care (ANC) visits, while 32.4% of women received one to four ANC visits during their recent birth. However, 5.0% of postpartum women did not receive antenatal care for their recent birth. Approximately 87.2% of postpartum women received their recent ANC services from hospitals and health centers. About 94.5% of postpartum women delivered their recent children in hospitals and health centers, but the rest delivered at health posts (2.0%) and their homes (3.5%). After delivery, 87.9% of postpartum women received postnatal follow-up (Table 2).

IPFP service utilisation

This study showed that 83.5% of the postpartum women knew about modern FP methods to delay or prevent unwanted pregnancy. After delivery,

Table 2: Obstetric characteristics of postpartum women who had delivered in the last nine months in the Assosa Zone (N=564)

Variables	Category	Frequency	Percent
Number of children	One	182	32.3
	Two	140	24.8
	Three and more	242	42.9
The interval between the birth of the last child and his/her immediate elder child	Not applicable*	167	29.6
	< 24 months	99	17.6
	24-35 months	91	16.1
	≥36 months	207	36.7
No of children the woman wants to have	No child	57	10.1
	1-4 children	213	37.8
	≥5 children	294	52.1
ANC service utilization	Four or more visits	353	62.6
	One to four visits	183	32.4
	No visits at all	28	5.0
Places of ANC services	Hospital	86	15.2
	Health centre	406	72.0
	Health posts	38	6.7
	Private clinic	6	1.1
	Not received at all	28	5.0
Places of delivery	Hospital	120	21.3
	Health centre	413	73.2
	Health post	11	2.0
	Home	20	3.5
Received PNC check-up for last delivery	Yes	496	87.9
	No	68	12.1
PNC checks time (N=496) **	≤24 hours	341	54.0
	Within 25-48 hours	83	13.1
	≥49 hours	208	32.9
Place of PNC (496)	Home	55	9.8
	Health posts	90	16.0
	Health centres	294	52.1
	Hospital	57	10.1

Note: *the women have only one child, ** analysis was done using multiple responses

approximately 83.5% of postpartum women were counseled about IPPFP before leaving the health facilities. Of these, 25.2% used female sterilization, intrauterine contraceptive device (IUCD), implants, injectables (for non-feeding postpartum women) and pills (progesterone only pills).

The reasons for avoiding IPPFP among postpartum women included lack of awareness, desire to have more children, partner opposition, reliance on breastfeeding as contraception, distance from health facilities to their homes, and misperceptions (such as immediate postpartum family planning causing breast milk to dry up, menstruation not having resumed, recent obstetric surgery for delivery, and perceived low risk of pregnancy after delivery) (Table 3). This study

indicated that 79.8% of postpartum women had partner support to use IPPFP services. Partners assisted postpartum women by taking FP themselves, supported by transportation provision, recalling appointment dates, and using condoms. The study also showed that after delivery, 12(2.1%) of postpartum women became pregnant at the time of the survey within nine months after their previous delivery (Table 3).

Factors associated with the utilization of IPPFP services

Results from logistic regression showed that rural postpartum women were three times (AOR = 3.25, 95% CI = 1.91 to 5.54) more likely to use IPPFP

Table 3: IPPFP service utilization among postpartum women who had given birth in the last nine months in the Assosa Zone (N=564)

Variables	Category	Frequency	Percent
Knew modern methods of FP to delay pregnancy	Yes	471	83.5
	No	93	16.5
Counselled to take IPPFP	Yes	471	83.5
	No	93	16.5
Received modern IPPFP	Yes	142	25.2
	No	422	74.8
Type of IPPFP methods used (N=142)	Female sterilisation	1	0.7
	IUCD	3	2.1
	Implants	93	65.5
	Injectables	38	26.8
	Pills	7	4.9
The reasons for not using IPPFP (422)	Desire to have more children	34	8.1
	Not started sexual intercourse	3	0.7
	Lack of awareness	3	0.7
	Due to breastfeeding	3	0.7
	Think low risk of pregnancy	143	33.9
	Menstruation not resumed	152	36.0
	Husband is not around	49	11.6
	Opposition from partner	25	5.9
	Due to obstetric surgery	4	0.9
	Think will dry up breast milk	4	0.9
	Not comfortable	1	0.2
	Due to far distance	1	0.2
Husband supported or assisted to take IPPFP	Yes	450	79.8
	No	114	20.2
Got assistance to take IPPFP (N=450) *	Taking FP himself	31	5.6
	Supporting by provision of transport	182	32.7
	Reminding dates of appointment	332	59.7
	Use of condoms	11	2.0
Current pregnancy status	Not pregnant	535	94.9
	Pregnant	12	2.1
	Not known	17	3.0

*Multiple analysis done

services than urban residents. The odds of using IPPFP services among merchants, students, and daily workers were 3.73 times (AOR=3.73; 95%CI=1.62–8.58) higher than among housewives. However, there were no statistical differences in the utilization of IPPFP services between farmers, employed women, and housewives.

The results revealed that household income status was not significantly associated with the utilization of IPPFP services in bivariate analysis. However, after adjusting for other variables, those women who had 3,500–4,999 Birr household income per month were 78% less likely (AOR=0.22; 95%CI=0.07–0.72) to use IPPFP services than

women who had $\geq 10,000$ Birr per month. The difference in the use of IPPFP services among postpartum women who had <3500 Birr per month in household income was not statistically significant compared to women who had $\geq 10,000$ Birr household income per month.

Partner support during the postpartum period was a strong predictor of the utilization of IPPFP services among women. Postpartum women supported by their partner were approximately 10 times (AOR=9.57; 95%CI=3.94–23.25) more likely to use IPPFP services than those who were not supported. Four or more ANC visits during pregnancy contributed to increased utilization of

Table 4: Determinants of the use of IPPFP services among postpartum women who had given birth in the last nine months in public health facilities in the Assosa zone, Northwestern Ethiopia (N=564)

Variables	Utilization of IPPFP		COR	AOR	P-value
	Yes	No			
Residence					
Rural	108	244	2.32(1.51-3.57)	3.25(1.91-5.54)	<0.001
Urban	34	178	1.00	1.00	
Occupation					
Employee	17	44	1.45(0.78-2.72)	1.08(0.47-2.47)	0.013
Merchant, student and daily labor	22	21	3.94(2.03-7.62)	3.73(1.62-8.58)	0.864
Farmers	41	124	1.24(0.79-1.95)	0.92(0.53-1.62)	0.002
Housewives	62	233	1.00	1.00	
Household income					
<3,500	94	276	0.65(0.30-1.40)	0.55(0.21-1.45)	0.076
3,500-4,999	12	48	0.48(0.18-1.25)	0.22(0.07-0.72)	0.225
5,000-9,999	25	77	0.62(0.26-1.46)	0.54(0.19-1.54)	0.013
≥10,000	11	21	1.00	1.00	0.246
Partner support to use IPPFP					
Yes	135	315	6.55(2.97-14.15)	9.57(3.94-23.25)	< 0.001
No	7	107	1.00	1.00	
4th and more ANC visits					
Yes	108	245	2.30(1.49-3.53)	1.72(1.03-2.88)	0.039
No	34	177	1.00	1.00	
Place PNC					
Hospital	17	40	4.25(1.44-12.52)	6.55(1.99-21.56)	< 0.001
Health center	93	201	4.63(1.79-11.98)	6.88(2.48-19.17)	0.002
Health post	18	72	2.50(0.87-7.18)	2.98(0.97-9.12)	< 0.001
Home	5	50	1.00	1.00	0.056
Counselled IPPFP					
Yes	136	335	5.89(2.51-13.79)	5.67(1.93-16.70)	0.002
No	6	87	1.00	1.00	

N.B. The assumptions for the application of multivariate logistic regression analysis were fulfilled using the Hosmer and Lemeshow test and the model was adequately fitted ($P = 0.431$). Statistically significant at $P < 0.05$

IPPFP services. Postpartum women who had four or more ANC visits during their pregnancy were 1.7 times (AOR= 1.72, 95%CI=1.03-2.88) more likely to utilize IPPFP services than those who did not. This study also showed that the place of PNC determines the utilization of IPPFP services. Women who received PNC services in hospitals and health centers were 6.6 times (AOR=6.55; 95%CI=1.99–21.56) and 6.9 times (AOR=6.88; 95%CI=2.48–19.17) more likely to use IPPFP services than women who received at home, respectively. The odds of IPPFP utilization were 5.6 times (AOR=5.67; 95%CI=1.93–16.70) higher among women counseled about IPPFP services than among those not counseled (Table 4).

Discussion

In Ethiopia, almost half (47%) of pregnancies occur within a short birth interval of less than two years after recent birth linked to elevated health problems that result in a high number of maternal and neonatal deaths.¹⁹ The period after birth is a unique opportunity to meet postpartum women for FP services.²⁰ The present study indicated that 25.2% of postpartum women used IPPFP before leaving the health facilities after delivery. The use of IPPFP in this study was higher than studies conducted in Pakistan (4.0%), the North Shoa Zone (21.3%), Addis Ababa (13.0%), the Sidama Zone (21.6%), and South East Ethiopia (12.7%).^{12, 21-24} However,

the use of IPPFP was lower than in studies conducted in Georgia (49.0%), Kenya (50.4%), Addis Ababa (45.5%), and Jimma (53.3%).^{10, 25-27} The differences might be due to differences in demographic and sociocultural characteristics, study settings, and time of study.

Lack of awareness, desire to have more children, partner opposition, breastfeeding, distances from health facilities from home, misperceptions (IPPFP causes breast milk to dry up, menstruation has not resumed, obstetric surgery was performed for the recent delivery, and perceived low risk of pregnancy after delivery) were the hindering reasons against using IPPFP among postpartum women. Consistent with these reasons, the findings of the studies conducted in Liberia and Ethiopia identified fear of side effects, partner opposition, presence of religious restrictions, lack of knowledge about IPPFP, and postpartum abstinence as the main barriers that hinder women from utilizing PPF services.^{12, 28} These hindering factors might be directly related to male influences following the religious perspective of the participants.¹² This belief can be particularly prevalent in regions where a larger family size is associated with perceived community, religious, or intrafamilial respect.²⁹ The other probable reasons for not using contraception in our study might be due to the presence of myths, cultural beliefs, or social norms about childbearing or the feared health consequences of contraception. The probable reasons supported by the study conducted in Kenya show that the main barriers to their use are linked to individual and community concerns that modern contraceptives may result in infertility.³⁰

Rural residents were more likely to utilize IPPFP services than urban residents. On the contrary, studies in Ethiopia show that there were no differences in the utilization of IPPFP services between urban and rural residents.^{12, 23, 24} The increased utilization in rural areas could be due to the fact that, in recent periods, health facilities, especially rural health centres, started quality improvement projects to improve the uptake of services through quality counselling services after each skilled delivery as a flagship program.

The occupation status of women positively influences the utilization of IPPFP services after delivery. Merchants, students, and daily laborers were more likely to utilize IPPFP services than

housewives during the postpartum period. This finding was contradicted with a study conducted in Addis Ababa where there was no difference in the utilization of IPPFP services between housewives, merchants, students, and daily laborers, but compared to housewives, employees had higher odds of utilization.²⁷ The higher utilization among merchants, students, and daily laborer postpartum women might be due to the desire to prevent unwanted pregnancies or the fear of a short birth because a short birth or an unplanned pregnancy may result in difficulties performing their occupational activities. The other possible reason could be that students and daily laborers do not want to carry the burden of bearing many children until they have a stable carrier.

The low monthly household income was found to significantly influence the use of IPPFP services among postpartum women. This was consistent with previous studies conducted in Ethiopia, where postpartum women with low family income were less likely to use modern contraceptive methods than women with a higher monthly household income.³¹ A higher monthly income could empower women and create confidence to exercise their reproductive rights to use immediate FP methods after delivery.

The odds of postpartum women being supported by their partners were around 10 times higher than those not supported. Similar findings were obtained from studies conducted in Ethiopia where partner-supported women had higher odds of utilization of IPPFP services after childbirth.^{12, 27} A similar study conducted in Kenya shows that husband approval for modern contraceptive use was a significant predictor of PPF service utilization among women.²⁶ This could be due to the involvement of partners' significant contribution of partners to the use of recommended maternal health services. The other reason could be a free discussion between postpartum women and their husbands to increase the use of IPPFP services and to avoid short birth intervals between consecutive siblings.

Four or more ANC visits during pregnancy were a predictor of the use of IPPFP services among postpartum women. A similar study supported this finding such that postpartum women who received ANC services were more likely to use PPF services.³² In contrast to the present study, the use of ANC was not statistically significant with the use of

PPFP in the North Gondar study.³³ The possible explanation for the increased use of IPPFP among four or more ANC followers could be to get more information related to birth spacing and complications of short birth intervals for both mothers and newborns. The other explanation could be that women could receive FP counseling services when their pregnancy approaches childbirth because FP is one of the services integrated with ANC follow-ups during pregnancy.

Counseled postpartum women were 5.6 times more likely to use IPPFP services than their counterparts. A similar study conducted in Ethiopia revealed that counselling was statistically significant for the use of the IPPFP service.¹² Other studies also supported the present finding in which PPFP counseling resulted in increased utilization of IPPFP services among postpartum women.^{34,35} This could be due to the increased awareness, knowledge, and improved decision of counselling services for women to use the IPPFP service immediately after birth. Therefore, strengthening PPFP counseling after skilled delivery is an important and critical strategy to promote utilization of FP services for space births, as well as prevention of unwanted pregnancies.

Strengths and limitations

This study used an institutional-based design covering multiple facilities, providing robust data on actual service utilization. It identified reasons and factors that affect the utilization of IPPFP services among women. These findings will also serve as an input to healthcare providers and health managers to improve service provision, as well as further input for research. However, recall and information bias may exist as women were interviewed after nine months postpartum during data collection, and the cross-sectional design limits causal inference.

Implications for policy and practice

The findings highlight the need to strengthen IPPFP services within the existing maternal health continuum. High-quality, client-centred IPPFP counselling should be systematically integrated into antenatal care, labour and delivery, and postnatal care services — particularly in health centres and hospitals — to capitalize on every contact point with postpartum women. Health care providers require

regular training and supportive supervision to deliver accurate, non-judgmental counselling that addresses common misconceptions (effects on breast milk, infertility, and perceived low fertility immediately after delivery).

Partner involvement emerges as the strongest predictor of IPPFP uptake. Facility- and community-based programmes should actively engage husbands and male partners through couple counselling, male-friendly services, and community awareness campaigns to shift norms around shared reproductive decision-making.

The higher utilization observed in rural areas, likely driven by recent quality-improvement initiatives, suggests that successful rural models can be scaled to urban facilities to reduce the current rural–urban disparity. Simultaneously, outreach strategies and mobile health teams are needed to overcome geographical barriers and bring services closer to remote communities.

Finally, sustained investment in health system strengthening — including contraceptive commodity security, provider training, and monitoring of IPPFP indicators — is essential to meet Ethiopia's national family planning targets, prevent unintended pregnancies, reduce short inter-birth intervals, and ultimately lower maternal and child morbidity and mortality.

Conclusion

The utilization of IPPFP among postpartum women was low. Residence, occupation, utilization of the fourth or more ANC, PNC services sites, IPPFP service counselling, and partner support were independent factors for the utilization of IPPFP services among women. The provision of quality PPFP counselling during critical periods of the maternal and neonatal continuum of care should be done by healthcare providers to improve the acceptance of IPPFP services among women. Partner support should be taken as an important support approach by healthcare providers to reduce the challenges postpartum women face in using IPPFP services during the postpartum period. Further qualitative studies to assess sociodemographic factors such as household monthly income, residence, and occupation in relation to the utilization of IPPFP services recommended by this study.

Conflict of interests

The authors declare that they have no competing of interests.

Authors' contributions

SA contributed to proposal development, data cleaning, data analysis, and manuscript preparation. RM MP contributed for approval of the proposal, data analysis, manuscript preparation. Both authors read and approved the final manuscript.

References

- World Health Organization. Programming strategies for postpartum family planning. 2013. From https://apps.who.int/iris/bitstream/handle/10665/93680/9789241506496_eng.pdf (Accessed May 13, 2023)
- Gaffield ME, Egan S and Temmerman M. It's about time: WHO and partners release programming strategies for postpartum family planning. *Global Health: Science and Practice*. 2014;2(1):4-9.
- Darroch JE, Sully E and Biddlecom A. Adding it up: investing in contraception and maternal and newborn health, 2017—supplementary tables. New York, NY: The Guttmacher Institute. 2017.
- Sridhar A and Salcedo J. Optimizing maternal and neonatal outcomes with postpartum contraception: impact on breastfeeding and birth spacing. *Maternal health, neonatology and perinatology*. 2017; 3:1-0.
- World Health Organization. Report of a WHO technical consultation on birth spacing: Geneva, Switzerland 13-15 June 2005. World Health Organization; 2007.
- Seiber EE, Bertrand JT and Sullivan TM. Changes in contraceptive method mix in developing countries. *International family planning perspectives*. 2007; 117-23.
- Ross JA and Winfrey WL. Contraceptive use, intention to use and unmet need during the extended postpartum period. *International family planning perspectives*. 2001; 20-7.
- Royal College of Obstetricians and Gynaecologists. Best practice in postpartum family planning. London, UK: Royal College of Obstetricians and Gynaecologists. 2015; 2-7.
- Chethan R, Anitha GS and Savitha C. Study on postpartum intrauterine contraceptive device practices and causes for discontinuation of PPIUCD at follow up in a tertiary hospital. *International Journal of Reproduction, Contraception, Obstetrics and Gynecology*. 2018; 7(6):2299-304.
- Arero W, Teka W and Jarso H. Prevalence, and pattern of LAFD use in immediate postpartum period at Jimma University Medical Center, Ethiopia [18f]. *Obstetrics and Gynecology*. 2018; 131:68S.
- Thompson EL, Vamos CA, Logan RG, Bronson EA, Detman LA, Piepenbrink R, Daley EM and Sappenfield WM. Patients and providers' knowledge, attitudes, and beliefs regarding immediate postpartum long-acting reversible contraception: a systematic review. *Women and Health*. 2020; 60(2):179-96.
- Silesh M, Lemma T, Abdu S, Fenta B, Tadese M and Taye BT. Utilisation of immediate postpartum family planning among postpartum women at public hospitals of North Shoa Zone, Ethiopia: a cross-sectional study. *BMJ open*. 2022;12(2):e051152.
- Federal Democratic Republic of Ethiopia Ministry of Health. National guideline for family planning services in Ethiopia. Third edition. Addis Ababa. 2020.
- Central Statistical Agency (CSA) [Ethiopia] and ICF. 2016 Ethiopia demographic and health survey key findings. CSA and ICF. 2017.
- EPHI and ICF. Ethiopia mini demographic and health survey 2019: Key indicators. Rockville, Maryland, USA: EPHI and ICF. 2019.
- Rossier C and Hellen J. Traditional birth spacing practices and uptake of family planning during the postpartum period in Ouagadougou: qualitative results. *International perspectives on sexual and reproductive health*. 2014; 40(2):87-94.
- Borda MR, Winfrey W and McKaig C. Return to sexual activity and modern family planning use in the extended postpartum period: an analysis of findings from seventeen countries. *African journal of reproductive health*. 2010; 14(4).
- Benishangul Gumuz Regional Health Bureau. Woreda base plan. Asosa, Ethiopia: BG RHB. In press 2020.
- Abraha TH, Teferra AS and Gelagay AA. Postpartum modern contraceptive use in northern Ethiopia: prevalence and associated factors. *Epidemiology and health*. 2017; 39.
- Pasha O, Goudar SS, Patel A, Garces A, Esamai F, Chomba E, Moore JL, Kodkany BS, Saleem S, Derman RJ and Liechty EA. Postpartum contraceptive use and unmet need for family planning in five low-income countries. *Reproductive health*. 2015; 12(2):1-7.
- Abbasi Y, Shaikh SR and Memon KN. Barriers and missed opportunities towards immediate and early postpartum family planning methods in Pakistan. *The Professional Medical Journal*. 2020; 27(07):1448-53.
- Demissie DB and Dadi HW. Immediate postpartum modern family planning utilization and associated factors among women gave birth public health facilities, Addis Ababa. *Res. Sq*. 2021.
- Tefera LB, Abera M, Fikru C and Tesfaye DJ. Utilization of immediate post-partum intra uterine contraceptive device and associated factors: a facility based cross sectional study among mothers delivered at public health facilities of Sidama Zone, South Ethiopia. *J Preg Child Health*. 2017; 4(3):1000326.
- Jima GH and Garbaba WB. Postpartum family planning utilization and associated factors among women who gave birth in the last 12 months prior to the study in lode Hetosa district, South East Ethiopia. *J Women's Heal Care*. 2020; 9(3).
- DeSisto CL, Handler A, Haider S, Caskey R, Peacock N, Kottke M and Rankin K. Women's informed choice and satisfaction with immediate postpartum long-acting reversible contraception in Georgia.

- Contraception and reproductive medicine. 2018; 3:1-0.
26. Shabiby MM, Karanja JG, Odawa F, Kosgei R, Kibore MW, Kiarie JN and Kinuthia J. Factors influencing uptake of contraceptive implants in the immediate postpartum period among HIV infected and uninfected women at two Kenyan District Hospitals. *BMC women's health*. 2015; 15:1-8.
 27. Belay L and Birara M. Factors affecting long-term and permanent contraceptive uptake among immediate post-partum mothers at Saint Paul's Hospital millennium medical college, Addis Ababa, Ethiopia: a cross-sectional study. *Ethiopian Journal of Reproductive Health*. 2018; 10(2):11-.
 28. Kaydor VK, Adeoye IA, Olowolafe TA and Adekunle AO. Barriers to acceptance of post-partum family planning among women in Montserrado County, Liberia. *Nigerian Postgraduate Medical Journal*. 2018; 25(3):143-8.
 29. Bekele D, Surur F, Nigatu B, Teklu A, Getinet T, Kassa M, Gebremedhin M, Gebremichael B and Abesha Y. Knowledge and attitude towards family planning among women of reproductive age in emerging regions of Ethiopia. *Journal of Multidisciplinary Healthcare*. 2020; 1463-74.
 30. Sedlander E, Bingenheimer JB, Thiongo M, Gichangi P, Rimal RN, Edberg M and Munar W. "They destroy the reproductive system": exploring the belief that modern contraceptive use causes infertility. *Studies in family planning*. 2018; 49(4):345-65.
 31. Nugussa B, Solomon T and Tadelu H. Modern Postpartum Family Planning and Associated Factors Among Postpartum Women in a Rural District of Ethiopia, 2021: A Cross-Sectional Study. *INQUIRY: The Journal of Health Care Organization, Provision, and Financing*. 2023; 60:00469580231153268.
 32. Yemane TT, Bogale GG, Egata G and Tefera TK. Postpartum family planning use and its determinants among women of the reproductive age group in low-income countries of Sub-Saharan Africa: a systematic review and meta-analysis. *International Journal of Reproductive Medicine*. 2021; 2021.
 33. Mengesha ZB, Worku AG and Feleke SA. Contraceptive adoption in the extended postpartum period is low in Northwest Ethiopia. *BMC pregnancy and childbirth*. 2015; 15:1-6.
 34. Tilahun T, Bekuma TT, Getachew M, Oljira R and Seme A. Barriers and determinants of postpartum family planning uptake among postpartum women in Western Ethiopia: a facility-based cross-sectional study. *Archives of Public Health*. 2022; 80(1):1-1.
 35. Zimmerman LA, Yi Y, Yihdego M, Abrha S, Shiferaw S, Seme A and Ahmed S. Effect of integrating maternal health services and family planning services on postpartum family planning behavior in Ethiopia: results from a longitudinal survey. *BMC Public Health*. 2019; 19(1):1-9.