





BMJ Open Utilisation of immediate postpartum family planning among postpartum women at public hospitals of North Shoa Zone, Ethiopia: a cross-sectional study

Mulualem Silesh ¹, Tesfanesh Lemma ¹, Samuel Abdu,² Belete Fenta,³ Mesfin Tadese ¹, Birhan Tsegaw Taye ¹

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¹School of Nursing and Midwifery, Asrat Woldeyes Health Science Campus, Debre Berhan University, Debre Berhan, Ethiopia

²School of Nursing, Institute of health, Jimma University, Jimma, Ethiopia

³School of Midwifery, Institute of health, Jimma University, Jimma, Ethiopia

Correspondence to

Mr Mulualem Silesh;
sileshmulualem22@gmail.com

ABSTRACT

Objective This study aimed to assess the prevalence of immediate postpartum family planning utilisation and the associated factors among postpartum women at public hospitals of North Shoa Zone, Ethiopia.

Design and methods A facility-based cross-sectional study was conducted in 1–30 May 2020. Systematic random sampling technique was used to select the participants. Data were collected through a face-to-face interview using a structured and pretested questionnaire. Univariate and multivariable logistic regression analyses were employed. In multivariable logistic regression analysis, $p < 0.05$ and adjusted OR (AOR) with 95% CI were used to declare statistically significant factors.

Setting and participants The study was conducted at public hospitals of North Shoa Zone, Ethiopia. A total of 394 postpartum women within 48 hours after giving birth before discharge from the selected hospitals were enrolled in the study.

Outcome Immediate postpartum family planning utilisation (used or not used).

Results Of the total 394 participants, 84 (21.3%) used immediate postpartum family planning. The factors associated with immediate postpartum family planning utilisation were women's age (30–34 years) (AOR: 0.118; 95% CI 0.023 to 0.616), planning status of pregnancy (AOR: 3.175; 95% CI 1.063 to 9.484), reproductive intention (AOR: 5.046; 95% CI 1.545 to 16.479), partner support (AOR: 4.293; 95% CI 1.181 to 15.61), attitude towards family planning (AOR: 2.908; 95% CI 1.081 to 7.824) and maternal satisfaction with intrapartum care (AOR: 6.243; 95% CI 2.166 to 17.994).

Conclusion In the study area, only less than a quarter of postpartum women used immediate postpartum family planning. Therefore, enhancing immediate postpartum family planning utilisation, strengthening community awareness to develop a favourable attitude towards family planning, promoting partner involvement in family planning and ensuring maternal satisfaction during intrapartum care are essential.

INTRODUCTION

Access to contraceptive services through the integration of postpartum family planning

Strengths and limitations of this study

- To our knowledge, this is the first study to determine the utilisation of immediate postpartum family planning and the associated factors in northeast Ethiopia.
- All immediate postpartum family planning options were addressed according to the 2015 medical eligibility criteria for contraceptives.
- The study assessed maternal satisfaction with intrapartum care as a predictor of immediate postpartum family planning utilisation.
- As a cross-sectional design was used, the study does not establish a causal relationship between the outcome variable and the predictors.
- This study did not address service provider-related and healthcare system-related factors.

(PPFP) at times when women have frequent health-care visits, such as antenatal care (ANC), labor and delivery (L&D), postnatal care (PNC), immunization, and child care, helps to reduce maternal and newborn mortality, as well as improve social and economic well-being.^{1–3}

The postpartum period is a critical time to address the high unmet need for FP and reduce the risk of short interpregnancies.² Immediate postpartum family planning (IPFP) refers to the provision of FP counseling and services as part of care to postpartum women within 48 hours after childbirth before discharge from the health facility.^{4,5} Increasing the accessibility of contraception methods among postpartum women is an important strategy because women may initiate sexual activity before obtaining FP methods at their 6-week postpartum visit.^{6,7}

According to the WHO 2015 medical eligibility criteria (MEC) for contraceptive



use (fifth edition), postpartum women have a variety of options for FP during the immediate postpartum period. They can safely use contraceptives such as progesterone-only pills (category 2), injectables (for non-breastfeeding women only; category 1), implants (category 2), postpartum intrauterine contraceptive devices (PPIUCD; category 1) and permanent FP (bilateral tubal ligation; category: accept).⁸

Globally, approximately 810 deaths associated with pregnancy and childbirth are recorded daily and about 94% of these maternal deaths occur in low-income and middle-income countries.⁹ As the WHO recommended for better maternal and child health outcomes, postpartum women should wait for an interval of at least 2 years following a live birth before getting pregnant again.¹⁰ Among couples who spaced their pregnancies for at least 2 years apart from the previous birth, the risk of morbidity and mortality for both the mother and the baby is reduced.¹¹ For instance, infant and under-5 child mortalities decrease by 10% and 21%, respectively.¹² The 2016 Ethiopia Demographic and Health Survey report stated that under-5 child mortality is dramatically higher among children born less than 2 years after a previous birth (114 deaths per 1000 live births) compared with children born 3 years after a previous birth (44 deaths per 1000 live births).¹³

The time of return of fertility after childbirth is variable and unpredictable; postpartum women can get pregnant before the return of their menstruation.¹⁴ Therefore, postpartum women have a high unmet need for FP compared with other women, which is the primary cause of unintended pregnancies and maternal mortality.^{15 16} The prevalence of unintended pregnancies is the most challenging issue within maternal and child health and women's reproductive health.^{17 18}

The Ethiopian government planned to increase the rate of use of contraceptives among married women of reproductive age to 55% and reduce the unmet need to 10% by 2020.¹⁹ However, among postpartum women who did not intend to have children soon, only 23.7% use modern FP²⁰ and 22% of children were born less than 2 years after their siblings.¹³ The 2019 Ethiopia Mini Demographic and Health Survey also showed that only 41% of currently married women use modern FP methods.²¹ Furthermore, IPPFP services are not yet widely used in Ethiopia²² and only 9% of postpartum women use IPPFP.²³

Due to FP services being commonly provided during postnatal follow-up visits,²⁴ along with other combination factors such as shorter periods of exclusive breastfeeding (EBF), early return of menstruation and early resumption of sexual intercourse,²⁵ postpartum women often end up with a closely spaced and unplanned pregnancy.²⁶ This implies that it is difficult to rely on EBF as an FP method and to address FP by waiting until 6 weeks of the postpartum period. The provision of IPPFP after childbirth before women are discharged from the health facility is an excellent opportunity for postpartum mothers.

Furthermore, most of the studies conducted on postpartum FP focused on the extended postpartum period. To the best of our knowledge, studies on IPPFP utilisation, including in Ethiopia, are limited. In addition, studies have not investigated the role of satisfaction with intrapartum care and its immediate impact on service utilisation. Therefore, this study aimed to assess the prevalence of IPPFP utilisation and the associated factors among postpartum women at public hospitals of North Shoa Zone, Ethiopia.

Research questions

- ▶ What is the prevalence of IPPFP utilisation?
- ▶ What are the factors associated with IPPFP utilisation?

METHODS AND MATERIALS

Study design, period and setting

A facility-based cross-sectional study was conducted at public hospitals of North Shoa Zone, Amhara Region in 1–30 May 2020. North Shoa Zone is one of 10 zones in Amhara Region of Ethiopia. North Shoa Zone is bordered on the south and the west by Oromia Region, on the north by South Wollo Zone, on the northeast by Oromia Zone and on the east by Afar Region. This zone is equipped with 10 public hospitals and 97 health centres, and on average 3200 mothers give birth at these health facilities, of whom 1200 deliver at public hospitals per month. The study was conducted at five public hospitals of North Shoa Zone: Debre Berhan Referral Hospital, Alem Ketema Enat Hospital, Ataye Hospital, Debre Sina Hospital and Shoa Robit Hospital. Delivery and FP services are provided free of charge at all public hospitals. Postpartum women who give birth via spontaneous vaginal delivery and caesarean section are discharged after 24 hours and 3–5 days of birth, respectively.

Study population

The study population included all postpartum women who gave birth (via vaginal or caesarean section) at the selected public hospitals of North Shoa Zone and fulfil the inclusion criteria.

Eligibility criteria

- ▶ Inclusion criteria: all postpartum women within 48 hours of delivery before discharge from the health facility and who were eligible for at least one IPPFP method according to 2015 MEC.
- ▶ Exclusion criteria: postpartum women who were critically ill and developed emergency cases and were prepared for referral to other health facilities.

Sample size determination and sampling technique

The sample size was determined using single population proportion formula considering the following assumptions: the proportion of women who used long-acting reversible contraceptives among immediate postpartum mothers was 53.2% ($p=0.532$), taken from a study conducted in Jimma Medical Center, with 95% CI at 1.96 and with margin of error of 5%.⁵

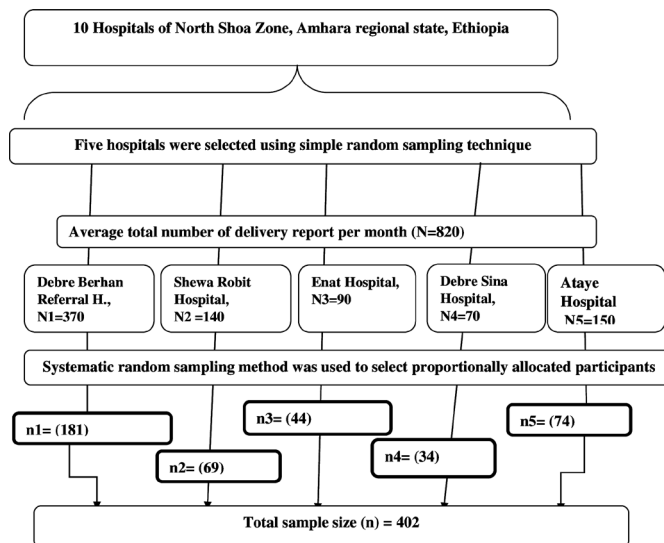


Figure 1 Schematic presentation of the sampling procedure to assess utilisation of immediate postpartum family planning among postpartum women at public hospitals of North Shoa Zone, Ethiopia, 2020.

$$n = \frac{(Z\alpha/2)^2 p(1-p)}{d^2}$$

After adding a 5% non-response rate, the final sample size was 402.

The calculated sample size was proportionally allocated to each public hospital based on the average number of institutional deliveries per month after observing two quarterly institutional delivery reports at the selected hospitals. A systematic random sampling technique was used to select an allocated sample of postpartum women from each selected public hospital. The calculated sampling interval ($K=N/n$) was 2. Therefore, the first woman was selected using a simple random sampling method and consecutive women were selected at a regular interval of the second postpartum women from the list of delivery registration books at selected public hospitals until the required sample size was obtained (figure 1).

Data collection and data quality control

Data were collected through face-to-face interviews at selected public hospitals using a structured and pretested questionnaire. The questionnaire was first prepared in English, then translated into the local language (Amharic) for data collection and back to English to ensure clarity and consistency during translation. To ensure clarity, to confirm the logical sequence and to check the reliability of the questionnaire, a pretest was done on 5% (20) of the total sample size at Deneba Primary Hospital. Necessary corrections were made based on the pretest results, and the Cronbach's alpha values for questions on knowledge, attitude and satisfaction with intrapartum care were 0.76, 0.75 and 0.83, respectively. When the providers decided to discharge the women, an exit interview was conducted for 20–25 min to collect data from each participant.

Five midwives who were diploma holders and three who were Bachelor of Science holders were involved in

data collection and supervision, respectively. Data collectors and supervisors were trained for 1 day on the study's objective, eligibility criteria, data collection processes and ethical issues. In addition, all filled questionnaires were supervised daily for completeness and consistency.

Study variables

Dependent variable

- ▶ IPPFP utilisation.

Independent variables

- ▶ Sociodemographic characteristics: age, residence, marital status, women's educational status, husband's educational status, women's occupational status and family monthly income.
- ▶ FP-related characteristics: ever heard about IPPFP, source of information, ever counselled on IPPFP, counselled during ANC and PNC, ever used FP, discussion with husband, partner support to use FP, knowledge on FP and attitude towards FP.
- ▶ Obstetric and maternal health service-related characteristics: number of pregnancies, number of children alive, history of abortion, mode of delivery, current birth outcome, planning status of pregnancy, reproductive intention, plan when to have the next child, history of ANC for current pregnancy, number of ANC visits and maternal satisfaction with intrapartum care.

Operational definitions and measurements of the study

Utilisation of IPPFP

Utilisation of IPPFP was defined as a postpartum woman using any one of modern postpartum FP methods (progesterone-only pills, intrauterine contraceptive device, injectables, dual method, sterilisation (permanent FP method) or implants) immediately within 48 hours of delivery before being discharged from the health facility.^{5 27}

Knowledge of FP

Knowledge of FP was measured using 17 questions, with participants asked to answer either 'yes' or 'no'. A value of 1 or 0 was given for each 'correct' or 'incorrect' response, respectively. The total score ranged from 0 to 17 and the mean was used as a cut-off point, which was adopted from the study conducted in Aroressa.²⁸ The calculated total mean score for this study was 8. Women who scored ≥ 8 were categorised as having good knowledge and those who scored < 8 were classified as having poor knowledge.

Attitude towards FP

Attitude towards FP was measured using 14 attitudinal questions. Participants were asked to rate their level of agreement towards FP using a 5-point Likert scale of 1 (strongly disagree) to 5 (strongly agree). The total score ranged from 14 to 60 and the mean was used as a cut-off point, which was adopted from the study conducted in Aroressa.²⁸ The calculated total mean score for this study was 51. Women who scored ≥ 51 were considered to have a

positive attitude and those who scored <51 were supposed to have a negative attitude towards FP.

Maternal satisfaction with intrapartum care

Maternal satisfaction was measured using 14 items. Participants were asked to rate their level of satisfaction using a 5-point Likert scale of 1 (strongly disagree) to 5 (strongly agree). The total score ranged from 14 to 60 and the cut-off score was calculated using the total mean score plus 1 SD, which was adopted from the Jordanian study.²⁹ The total mean satisfaction score was 60 (overall mean 55.06 and SD 4.94). Women who scored ≥ 60 and <60 were considered to be satisfied and dissatisfied with intrapartum care, respectively.

Planning status of pregnancy

Planning status of pregnancy indicates a woman's reproductive intention before she became pregnant, that is, whether the pregnancy was planned or unplanned.

Dual method use

Dual method use means using condoms plus other FP methods.³⁰

Statistical analysis

Data were entered using EpiData V.4.6 and then exported to SPSS V.25 for further analysis. Descriptive analysis was summarised using proportion, mean and SD. Bivariate and multivariable logistic regression analysis methods were employed. In the univariate analysis, variables with $p < 0.25$ were candidates for multivariable logistic regression analysis. Multicollinearity among variables was checked using variance inflation factor (VIF >10). The VIF value of each explanatory variable was less than 2.7 (VIF <10); no multicollinearity was found within variables. The goodness of fit of the model was also checked using the Hosmer-Lemeshow goodness of fit test ($p = 0.29$). Statistical significance was declared at $p < 0.05$, along with adjusted OR (AOR) and 95% CI.

Informed written consent was obtained from each study participant after explaining the study's objective. The information obtained from the participants was kept confidential.

Patient and public involvement

Neither the public nor the patients were involved in the design or conduct of this study. Participants also had no contribution to the writing or editing of this manuscript. However, informed written consent was taken from each participant before the interview.

RESULTS

Socioeconomic and demographic characteristics

Three hundred and ninety-four postpartum women participated in the study, resulting in a response rate of 98%. The mean age of the participants was 29.08 years (SD ± 4.28), and majority (172, 43.7%) were between the age of 25 and 29 years. Majority (359, 91.1%) of the study

participants were married, 293 (74.4%) were Orthodox Christians and 284 (72.1%) were of Amhara ethnicity. Of the study participants, 141 (35.8%) were housewives, and 156 (39.6%) women and 125 (34.8%) of their partners had attended primary school (table 1).

Obstetric and maternal health service-related characteristics

Among the study participants, the mean number of pregnancies and living children was 2.46 (SD ± 1.43) and 2.25 (SD ± 1.3) per woman, respectively. The current pregnancy of majority (287, 72.8%) of the participants was planned, 319 (81%) gave birth vaginally and 239 (60.65%) wanted to delay having the next child in the future. Furthermore, majority (200, 50.3%) of the study participants had ≥ 4 focused ANC visits during the current pregnancy. With regard to maternal satisfaction, 111 (28.2%) respondents were satisfied with intrapartum care (table 2).

FP-related characteristics

Of the study participants, 190 (48.2%) had ever heard about IPPFP and for 149 (78.4%) of them health facilities were the primary source of information. Of the women, 163 (41.4%) have received counselling on IPPFP, of whom 70 (42.9%) received counselling integrated with both ANC and PNC services. Majority (302, 84.1%) of the participants discussed FP with their husband and 179 (59.3%) had partner support to use FP. Accordingly, 211 (53.6%) and 181 (45.9%) postpartum women had good knowledge of FP and a positive attitude towards FP, respectively (table 3).

Utilisation of IPPFP

Of the 394 participants, 84 (21.3%) used IPPFP before discharge from the health facilities (figure 2), of which implant (68, 81%) was the most widely used IPPFP method, followed by PPIUCD (11, 13.1%) and dual method (5, 6.0%).

Postpartum abstinence (231, 74.5%), lack of awareness (165, 53.2%), fear of side effects (102, 32.9%) and husband prohibition (102, 32.9%) are the major reasons stated by the participants for not currently using IPPFP (figure 3).

Factors associated with IPPFP utilisation

In the multivariable logistic regression analysis, maternal age (30–34), planning status of pregnancy, reproductive intention, partner support to use FP, attitude towards FP and maternal satisfaction with intrapartum care were statistically significantly associated with utilisation of IPPFP.

Women aged 30–34 years were 88% less likely to use IPPFP than women aged ≥ 35 years (AOR: 0.118; 95% CI 0.023 to 0.616). Mothers who reported their current pregnancy was planned were three times more likely to use IPPFP than mothers whose current pregnancy was unplanned (AOR: 3.175; 95% CI 1.063 to 9.484). Postpartum women who were undecided about having the next child were five times more likely to use IPPFP than mothers who had a plan to have the next child (AOR:

Table 1 Sociodemographic characteristics of postpartum women at public hospitals of North Shoa Zone, Ethiopia (N=394)

Characteristics	Category	Frequency (n)	%
Age (in years)	≤24	51	12.9
	25–29	172	43.7
	30–34	118	29.9
	≥35	53	13.5
Residence	Urban	196	49.7
	Rural	198	50.3
Religion	Orthodox	293	74.4
	Muslim	59	15
	Protestant	36	9.1
	Catholic	6	1.5
Current marital status	Married	359	91.1
	Not married	35	8.9
Ethnicity	Amhara	284	72.1
	Oromo	73	18.5
	Tigray	21	5.3
	Others*	16	4.1
Educational status of women	No formal education	60	15.2
	Primary	156	39.6
	Secondary	122	31.0
	College and above	56	14.2
Occupational status of women	Daily labourer	25	6.35
	Student	25	6.35
	Employee	64	16.2
	Housewife	141	35.8
	Farmer	63	16.0
	Merchant	76	19.3
Husband's educational status (n=359)	No formal education	34	9.5
	Primary	125	34.8
	Secondary	99	27.6
	College and above	101	28.1
Family monthly income (in US\$)	≤44.3	123	31.2
	44.32–66.45	129	32.7
	66.47–88.6	59	15.0
	≥88.62	83	21.1

*Gurage and Argoba.

5.046; 95% CI 1.545 to 16.479). The odds of using IPPFP were almost four times more likely among postpartum women who had partner support to use FP than women who had no partner support (AOR: 4.293; 95% CI 1.181 to 15.61). Women who had a positive attitude towards FP were almost three times more likely to use IPPFP than their counterparts (AOR: 2.908; 95% CI 1.081 to 7.824). Similarly, the likelihood of using IPPFP was 6.2 times higher among mothers who were satisfied with intrapartum care than mothers who were dissatisfied (AOR: 6.243; 95% CI 2.166 to 17.994) (table 4).

DISCUSSION

For women who rarely contact the healthcare system, the provision of FP during the immediate postpartum period expands the opportunities for reaching couples with FP. This study mainly assessed the prevalence of IPPFP utilisation and the associated factors among postpartum women at public hospitals of North Shoa Zone, Ethiopia. Overall, the prevalence of IPPFP utilisation was 21.3% and factors such as maternal age, planning status of pregnancy, reproductive intention, partner support to use FP, attitude towards FP and satisfaction with intrapartum care were found to be significantly associated with utilisation.

Table 2 Obstetrics and maternal health service-related characteristics of postpartum women at public hospitals of North Shoa Zone, Ethiopia (N=394)

Characteristics	Category	Frequency (n)	%
Number of pregnancy	<2	106	26.9
	≥2	288	73.1
History of abortion (n=288)	No	232	80.6
	Yes	56	19.4
Birth to birth interval (in months)	<24	110	39.1
	24–35	106	37.7
	≥36	65	23.1
Number of children alive	1	124	31.5
	2–4	242	61.4
	≥5	28	7.1
Planning status of pregnancy	Unplanned	107	27.2
	Planned	287	72.8
History of ANC for current pregnancy	No	25	6.3
	Yes	369	93.7
Number of ANC visits	Never visit	25	6.3
	<4	169	42.9
	≥4	200	50.8
Mode of delivery	Vaginally	319	81.0
	Caesarean section	75	19.0
Current birth outcome	Alive	360	91.4
	Dead	34	8.6
Reproductive intention	Want to delay	239	60.65
	Want to limit	42	10.65
	Undecided	113	28.7
Plan on when to have the next child (n=239) (in months)	<24	39	16.3
	≥24	200	83.7
Maternal satisfaction with intrapartum care	Dissatisfied	283	71.8
	Satisfied	111	28.2

ANC, antenatal care.

This study revealed that 21.3% (95% CI 17.8 to 25.1) of postpartum women used IPPFP, consistent with studies done in Ethiopia (19.1%–21.6%).^{31–33} However, the current finding was lower than the studies conducted in Georgia (49%),³⁴ Kenya (50.3%),³⁵ Jimma (53.2%)⁵ and Addis Ababa (45.5%),³⁶ and higher than the studies conducted in Pakistan (4%)³⁷ and Ethiopia (12.7%–13.6%).^{38–39} These variations might possibly be due to differences in sociocultural and demographic characteristics, study setting, data collection period and inclusion criteria. For instance, the inclusion criteria for the studies done in Jimma and Addis Ababa were postpartum women who received counselling on IPPFP within 48 hours and

Table 3 Family planning-related characteristics of postpartum women at public hospitals of North Shoa Zone, Ethiopia (N=394)

Characteristics	Category	Frequency (n)	%
Ever heard about IPPFP	No	204	51.8
	Yes	190	48.2
Source of information on IPPFP (n=190)	Health facility	149	78.4
	Mass media	32	16.8
	Others*	9	4.8
Ever counselled on IPPFP in the current pregnancy	No	231	58.6
	Yes	163	41.4
Counselled on IPPFP during ANC and PNC (n=163)	No	93	57.1
	Yes	70	42.9
Ever used FP method	No	108	27.4
	Yes	286	72.6
Discussion with husband about FP (n=359)	No	57	15.9
	Yes	302	84.1
Support from husband (n=302)	No	123	40.7
	Yes	179	59.3
Knowledge on FP	Poor knowledge	183	46.4
	Good knowledge	211	53.6
Attitude towards FP	Negative attitude	213	54.1
	Positive attitude	181	45.9

*Friends and relatives.

ANC, antenatal care; FP, family planning; IPPFP, immediate postpartum family planning; PNC, postnatal care.

women who gave birth at the health facility within 7 days, respectively.

This finding also confirmed that postpartum abstinence, lack of awareness, fear of side effects and husband prohibition were barriers to using IPPFP as stated by the participants. Postpartum abstinence was the major reason stated by 231 (74.5%) respondents for not using IPPFP. This finding was consistent with the studies conducted in Liberia⁴⁰ and Addis Ababa, Ethiopia.³⁶ The possible reason might be due to the religious perspectives of participants; postpartum women who were Orthodox Christians are usually separated from their husband and

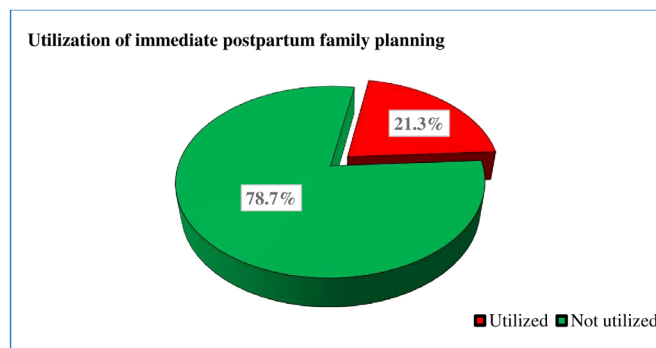


Figure 2 Immediate postpartum family planning utilisation among postpartum women at public hospitals of North Shoa, Ethiopia (N=394).

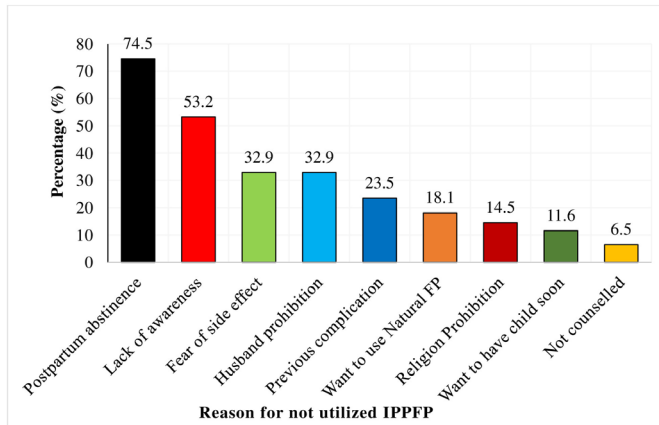


Figure 3 Reasons for not using IPPFP among postpartum women at public hospitals of North Shoa, Ethiopia (n=310). FP, family planning; IPPFP, immediate postpartum family planning.

are sexually inactive until a priest blesses their child with holy water at 40 days and 80 days of birth of male and female infants, respectively.⁴¹

Women's age had a significant impact on IPPFP utilisation. Women aged 30–34 years were 88% less likely to use IPPFP than women aged 35 years and above. This is supported by the study conducted in Malawi; the use of postpartum FP increased as maternal age and parity increased.⁴² However, studies done in Gondar and Debre Tabor revealed that women aged <24 years and 25–29 years were more likely to use postpartum FP than women who were 35 years and above respectively.^{43 44} A possible reason for the discrepancy could be the differences in sample size and study design. Also, women may have realised that getting pregnant when they become older can be difficult, encouraging them to plan for their next child sooner, which potentially has led to low FP utilisation. Moreover, women in younger and older age groups were more likely to be exposed to FP information and to achieve their desired number of children, respectively, which led them to use FP methods.

The odds of using IPPFP were higher among women who reported their current pregnancy was planned compared with mothers with unplanned pregnancy. This could be due to the healthcare-seeking status of the participants. Women who had unplanned pregnancy were found to less likely initiate and seek ANC early than women with planned pregnancy,^{45 46} and as a result these women are less likely to be exposed to and receive postpartum FP-related information.

Postpartum women who were undecided about having the next child in the future were more likely to use IPPFP than mothers who had a plan to have another child in the future. However, this finding contradicts the study conducted in Sidama Zone; mothers who were undecided about having another child were less likely to use postpartum intrauterine device (PPIUD) than mothers who had a plan to have another child.³¹ The possible reason for the discrepancy might be the difference in the FP options

included in the study. The availability of a wide range of FP options at health facilities allows women to choose and use an FP method that best suits their needs.⁴⁷ The time when the studies were conducted might also contribute to the variation; strategies to create FP-related community awareness improved from time to time.

Postpartum women who had partner support to use FP were more likely to use IPPFP than women who had no partner support. A similar finding was also reported by the study conducted in Addis Ababa, Ethiopia; IPPFP uptake improved by partner support.³⁶ Studies done in Kenya and Gondar also showed that husband approval for contraceptive use was a significant factor for postpartum FP utilisation.^{35 48} This suggests that male involvement has a significant role in the use of reproductive and maternal health services.^{36 49}

Mothers with a positive attitude towards FP were more likely to use IPPFP than their counterparts. This finding is in agreement with the study conducted in Kebribeyah; postpartum women who had a favourable attitude towards postpartum FP were more likely to use postpartum contraceptives than their counterparts.⁵⁰ This could be due to attitude towards certain activity being an essential factor for the actual implementation of something being done in real situations.⁵¹ Furthermore, maternal satisfaction with intrapartum care was significantly associated with IPPFP utilisation. Satisfied women were more likely to use IPPFP than mothers who were dissatisfied with intrapartum care. This could be because women who were satisfied with the healthcare services they have received were more likely to enhance health-seeking behaviour and adhere to healthcare providers' counselling and recommendations, resulting in increased subsequent service utilisation.^{52 53}

Limitations of the study

The findings of this study could help and serve as input for local programmers, policymakers, healthcare providers and other interested bodies looking to assess the implementation, barriers and utilisation of IPPFP. However, due to the cross-sectional nature of the study, the cause and effect relationship was not shown. Similarly, because this study was limited to public hospitals, the findings may not be generalisable to other settings. Potential response bias due to social desirability and the dichotomisation done for variables using Likert scale, such as attitude and satisfaction measurement items, were other limitations of this study. The findings of this study should be interpreted while considering these limitations.

CONCLUSION AND RECOMMENDATION

According to the findings of this study, only less than a quarter of postpartum women used IPPFP within 48 hours after giving birth before discharge from the hospital. Factors associated with utilisation of IPPFP were maternal age, planning status of pregnancy, partner support to use FP, reproductive intention, attitude towards FP and satisfaction with intrapartum care. Therefore, strengthening

Table 4 Factors associated with IPPFP utilisation among postpartum women at public hospitals of North Shoa Zone, Ethiopia (N=394)

Variable	IPPFP		P value	COR (95% CI)	AOR (95% CI)
	Not used n (%)	Used n (%)			
Age of the mother					
≤24	39 (76.5)	12 (23.5)	0.547	0.779 (0.323 to 1.881)	0.415 (0.024 to 7.303)
25–29	132 (76.7)	40 (23.3)	0.142	0.768 (0.383 to 1.537)	0.282 (0.052 to 1.525)
30–34	101 (85.6)	17 (14.4)	0.011	0.426 (0.194 to 0.938)	0.118 (0.023 to 0.616)*
≥35	38 (71.7)	15 (28.3)		1	1
Residence					
Urban	142 (72.4)	54 (27.6)	0.502	2.13 (1.293 to 3.508)	0.659 (0.195 to 2.229)
Rural	168 (84.8)	30 (15.2)		1	1
Educational status of women					
No formal education	53 (88.3)	7 (11.7)		1	1
Primary	128 (82.1)	28 (17.9)	0.097	1.656 (0.682 to 4.025)	0.195 (0.028 to 1.343)
Secondary	92 (75.4)	30 (24.6)	0.432	2.465 (1.014 to 6.009)	0.457 (0.065 to 3.22)
College and above	37 (66.1)	19 (33.9)	0.569	3.888 (1.484 to 10.184)	0.536 (0.063 to 4.577)
Husband's education					
No formal education	29 (85.3)	5 (14.7)		1	1
Primary	94 (75.2)	31 (24.8)	0.092	1.914 (0.681 to 5.370)	0.116 (0.01 to 1.425)
Secondary	80 (80.8)	19 (19.2)	0.065	1.377 (0.471 to 4.027)	0.089 (0.007 to 1.167)
College and above	75 (74.3)	26 (25.7)	0.089	2.011 (0.705 to 5.738)	0.09 (0.006 to 1.446)
History of abortion					
No	191 (82.3)	41 (17.7)		1	1
Yes	38 (69.1)	17 (30.9)	0.392	2.207 (1.147 to 4.246)	0.556 (0.145 to 2.129)
Planning status of pregnancy					
Unplanned	92 (86)	15 (14)		1	1
Planned	218 (76)	69 (24)	0.039	1.941 (1.056 to 3.57)	3.175 (1.063 to 9.484)*
Mode of delivery					
Vaginally	244 (76.5)	75 (23.5)	0.159	2.254 (1.072 to 4.738)	2.691 (0.678 to 10.691)
Caesarean section	66 (88)	9 (12)		1	1
Current birth outcome					
Alive	279 (77.5)	81 (22.5)	0.268	3.00 (0.894 to 10.067)	2.86 (0.445 to 18.363)
Dead	31 (91.2)	3 (8.8)		1	1
Reproductive intention					
Want to delay	197 (82.4)	42 (17.6)		1	1
Want to limit	33 (78.6)	9 (21.4)	0.289	1.279 (0.570 to 2.872)	0.416 (0.082 to 2.108)
Undecided	80 (70.8)	33 (29.2)	0.007	1.935 (1.145 to 3.270)	5.046 (1.545 to 16.479)*
Ever counselled on IPPFP					
No	223 (96.5)	8 (3.5)		1	1
Yes	87 (53.4)	76 (46.6)	0.399	24.35 (11.28 to 52.565)	1.944 (0.415 to 9.099)
Ever used FP methods					
No	93 (86.1)	15 (13.9)		1	1
Yes	217 (75.9)	69 (24.1)	0.618	1.972 (1.072 to 3.624)	0.57 (0.063 to 5.191)
Support from husband					
No	113 (91.9)	10 (8.1)		1	1
Yes	113 (63.1)	66 (36.9)	0.027	6.6 (3.231 to 13.483)	4.293 (1.181 to 15.61)*
Knowledge on FP					
Poor knowledge	175 (95.6)	8 (4.4)		1	1

Continued

Table 4 Continued

Variable	IPFPF		P value	COR (95% CI)	AOR (95% CI)
	Not used n (%)	Used n (%)			
Good knowledge	135 (64)	76 (36)	0.542	12.315 (5.746 to 26.39)	0.431 (0.029 to 6.451)
Attitude towards FP					
Negative attitude	193 (90.6)	20 (9.4)		1	1
Positive attitude	117 (64.6)	64 (35.4)	0.035	5.279 (3.039 to 9.169)	2.908 (1.081 to 7.824)*
Maternal satisfaction with intrapartum care					
Dissatisfied	241 (85.2)	42 (14.8)		1	1
Satisfied	69 (62.2)	42 (37.8)	0.001	3.493 (2.109 to 5.785)	6.243 (2.166 to 17.994)*

1=reference category.

*Variables statistically significant at $p < 0.05$.

AOR, adjusted OR; COR, crude OR; FP, family planning; IPFPF, immediate postpartum family planning.

community awareness about FP to develop positive attitude towards FP, encouraging partner involvement in FP and ensuring maternal satisfaction are crucial to enhance the utilisation of IPFPF. Finally, the authors suggest a larger multicentre study that includes healthcare system-related and service provider-related factors.

Twitter Samuel Abdu @SamuelAbdu2

Contributors MS has been conceived and designed the study, carried out the statistical analysis, and writing and editing of the original draft. TL, SA and BTT has contributed in the data collection process, supervised the overall steps of the study and reviewed the final draft. BF and MT critically supervised, reviewed and revised the final draft paper. MS has accepted full responsibility for the work and/or the conduct of the study, had access to the data, and controlled the decision to publish. All authors made critical review, read, and approved the final manuscript.

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ORCID iDs

Mulualem Silesh <http://orcid.org/0000-0002-1943-041X>

Tesfanesh Lemma <http://orcid.org/0000-0003-3038-5821>

Mesfin Tadesse <http://orcid.org/0000-0001-6288-9771>

Birhan Tsegaw Taye <http://orcid.org/0000-0003-2174-3797>

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