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Factors influencing post-abortion family planning uptake at Adama Hospital Medical College, Ethiopia, 2024

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Abstract
Introduction: Post-abortion contraceptive services are crucial for preventing repeat unintended pregnancies, unsafe abortions, and associated health risks. The immediate post-abortion period before discharge offers a critical window to provide family planning when client motivation is highest. In Ethiopia, where low contraceptive use contributes significantly to unintended pregnancies and induced abortion, this study aimed to assess the uptake of post-abortion family planning and its associated factors among women receiving abortion care at Adama Hospital Medical College, Adama, Ethiopia, in 2024.
Method: A cross-sectional study was conducted at Adama Hospital Medical College from August to October 2024, enrolling 162 women who received abortion care via convenience sampling. Structured questionnaires were used, with data analyzed in Epi Info 7 and SPSS 25. Logistic regression identified factors linked to post-abortion family planning uptake. Ethical clearance was granted by the hospital's research ethics committee.
Results: The uptake of post-abortion family planning among women receiving abortion care was 70.7% (95% CI: 64.1-77.2). Multivariable analysis revealed that higher gravidity (AOR = 2.31; 95% CI: 1.09-7.49), lack of intention to conceive within the next five years (AOR = 2.02; 95% CI: 1.37-8.68), previous use of family planning methods (AOR = 3.43; 95% CI: 2.51-10.78), and receiving counseling on post-abortion family planning (AOR = 2.84; 95% CI: 2.10-8.92) were significant predictors of post-abortion family planning uptake.
Conclusion: The uptake of post-abortion family planning in this study was lower compared to similar facilities offering equivalent care and services. Factors such as gravidity, previous use of family planning methods, and counseling on post-abortion family planning were identified as predictors of post-abortion family planning uptake. It is recommended that counseling and provision of post-abortion family planning services be conducted before the procedure.

Keywords: Adama Hospital Medical College, contraceptive use, counseling, post-abortion contraception, unintended pregnancy

Introduction

Abortion is defined by the Centers for Disease Control and Prevention (CDC) and the World Health Organization (WHO) as the termination of pregnancy—either spontaneous or induced—before 20 weeks of gestation or with a fetus weighing less than 500 grams [1]. Globally, unintended pregnancies remain a major public health concern. Between 2015 and 2019, an estimated 121 million unintended pregnancies occurred annually, representing 48% of all pregnancies and a rate of 64 per 1,000 women aged 15-49 years [2]. In developing countries, approximately 57 million unintended pregnancies occur each year, nearly half of which result in induced abortions [3].

Post-abortion contraception plays a critical role in preventing repeat abortions and reducing the morbidity and mortality associated with unsafe procedures. Maternal deaths in regions such as Africa, Eastern Europe, and Central Asia could decline by 25-35% if contraceptives were accessible and consistently used by women wishing to avoid pregnancy [4]. In Ethiopia, family planning coverage among married women remains low at 27%, with an unmet need of approximately 25% [5]. The immediate post-abortion period offers a sensitive and strategic opportunity to introduce family planning services, helping women and their partners recognize the value of contraception in preserving health, time, and resources [6].

Despite the availability of post-abortion contraceptive methods, utilization remains suboptimal. The first nationally representative study in Ethiopia, conducted in 2008, revealed that 42% of pregnancies were unintended, and an estimated 382,500 induced abortions occurred annually, translating to 23 abortions per 1,000 women of reproductive age [7]. In urban centers like Addis Ababa, this rate was significantly higher, reaching 49 per 1,000 [8]. These figures underscore the urgent need to strengthen post-abortion family planning services.

The WHO recommends a minimum six-month inter-pregnancy interval following abortion to optimize maternal health outcomes [9]. Given that ovulation may resume as early as 10 days post-abortion, timely counseling and provision of contraceptives before discharge from health facilities are essential [10]. Moreover, equitable access to post-abortion contraception—regardless of age, marital status, or ethnicity—is vital to addressing broader reproductive health concerns, including prevention of repeat abortions, management of reproductive tract infections, and support for infertility care [11].

In Ethiopia, 95% of unplanned pregnancies occur among women who do not practice contraception at al [11]. The 2011 National Demographic and Health Survey found that one in four married women had an unmet need for family planning, and nearly 29% of recent births and current pregnancies were reported as mistimed or unwanted [8]. For many post-abortion patients, the lack of family planning counseling and services quickly leads to another induced abortion, as fertility returns within two to three weeks after miscarriage

or abortion. The 2015/16 Ministry of Health report showed that 155,214 clients received comprehensive abortion services nationally, with 33,626 in Addis Ababa alone.

Despite these efforts, a significant gap persists between the availability and actual utilization of post-abortion contraceptives. This gap contributes to elevated risks of unintended pregnancies and repeat abortions, increasing maternal health burdens and straining the healthcare system. While various factors may influence uptake—including socio-demographic, cultural, and healthcare-related variables—the precise determinants remain underexplored in tertiary settings. Therefore, this study aims to assess the magnitude and associated factors of post-abortion family planning utilization among women receiving abortion services at Adama Hospital Medical College (AHMC), Ethiopia.

Methodology

Study population and sampling technique

This study was conducted at Adama Comprehensive Specialized Hospital Medical College (AHMC) in Adama town—the capital of East Shewa Zone, Oromia Region—situated roughly 99-100 km southeast of Addis Ababa. According to the 2007 national census, Adama had a population of approximately 220,212, with a nearly equal male-to-female distribution. AHMC serves as a referral center for an estimated catchment population of over five million people from surrounding zones and neighboring regions such as Afar and Amhara

A facility-based cross-sectional design was employed from April 1 to July 1, 2024. The source population included all women who visited the hospital seeking abortion services. The study population comprised women presenting during the data collection period who met the inclusion criteria—pregnant women seeking abortion services—and were enrolled until the required sample size was met. Pregnant women who were seriously ill and unable to respond were excluded.

The initial sample size calculation, based on a prior post-abortion contraceptive uptake of 70.1% [12], with 5% margin of error and a 95% confidence level, yielded a target of 323 participants. However, given a finite population of 268 women who had sought abortion care in the preceding three months, the adjusted sample size was 147. Allowing for a 10% non-response rate, the final sample size was set at 162.

Participants were recruited via convenience sampling, enrolling eligible women consecutively until the sample quota was reached. A structured questionnaire—initially developed in English, translated into Amharic and Afaan Oromo, and then back-translated for consistency—was administered by five trained data collectors after obtaining informed consent. Written informed consent was obtained from all participants before inclusion in the study. Ethical approval was granted by the Institutional Review Board of Adama Hospital Medical College. All procedures were conducted in accordance with Ethiopian national research ethics guidelines and the principles of the Declaration of Helsinki.

Outcome variables

In this study, post-abortion contraceptive uptake served as the dependent variable, measuring whether women-initiated contraception following abortion services

Independent variable

The independent variables were grouped into three types: socio-demographic factors (age, marital status, education, occupation, income); reproductive history (parity, fertility intentions, prior contraceptive use, previous abortions); and service-related factors (post-abortion family planning counseling, reason for abortion, and selected contraceptive method afterward).

Statistical analysis

For statistical analysis, data were first entered using Epi Info version 7 and then exported to SPSS version 25, where it underwent thorough cleaning, re-coding, transformation, and preparation. Descriptive statistics, including frequencies, means, and standard deviations, were calculated to characterize the study sample. Associations between each independent variable and the outcome (post-abortion contraceptive uptake) were evaluated using bivariate logistic regression, with variables showing $P < 0.25$ selected for inclusion in a multivariable logistic regression model. The multivariable analysis controlled for potential confounders and identified independent predictors, deeming $P < 0.05$ statistically significant. Adjusted odds ratios (AORs) with 95% confidence intervals were used to express the strength and precision of associations. This approach is standard in cross-sectional studies examining binary outcomes and identifying factors associated with an outcome.

Grammarly version 1.2.185.1726 (American English) was used to perform grammatical corrections.

Results

Socio-demographic

All 162 participants were included in the study, achieving a 100% response rate. The majority, 69 (41.3%), were aged between 20 and 30 years, with a mean age of 22.4 years. Regarding marital status, 111 (66.5%) were single, and 43 (25.7%) were married. In terms of religion, 64 (38.3%) were Orthodox Christians, 46 (27.5%) were Muslims, and 57 (34.1%) were Protestants. Educationally, 55 (32.9%) had completed college or higher education, 49 (29.3%) had secondary education, 41 (24.6%) were literate but without formal education, and 22 (13.2%) had primary education. Occupationally, 50 (29.9%) were merchants, 43 (25.7%) were housewives, 41 (24.6%) were students, 23 (13.8%) were employed, and 10 (6.0%) were farmers. Regarding monthly income, 101 (60.5%) earned less than 1000 Ethiopian Birr, while 66 (39.5%) earned 1000 Birr or more.

Table 1: Socio-Demographic Characteristics of Participants Assessing Post-Abortion Contraceptive Uptake at Adama Comprehensive Specialized Hospital, Adama, Central Ethiopia, 2024.

Obstetric and previous Family planning history

The study revealed that 50.3% of participants had two or fewer pregnancies, while 21% had a history of abortion; among these, 8.6% had undergone more than two abortions, and 54.3% of the abortions were induced. Regarding future fertility intentions, 68.3% of participants expressed a desire to have a child within the next five years, with 18.3% aiming for conception within the next year. In terms of family planning, 57.5% had never used contraceptives, with 20.8% citing opposition from partners or family as the primary reason for non-use.

Table 1: Socio-Demographic Characteristics of Participants Assessing Post-Abortion Contraceptive Uptake at Adama Comprehensive Specialized Hospital, Adama, Central Ethiopia, 2024

Variables	Categories	Number	Percent
Age	<19	8	4.8
	20-30	70	41.9
	31-40	69	41.3
	>=40	20	12.0
Marital Status	Married	43	25.7
	Single	111	66.5
	Divorced	11	6.6
	Widowed	2	1.2
Religion	Orthodox	64	38.3
	Muslim	46	27.5
	Prothestant	57	34.1
Education	Primary	22	13.2
	Secondary	49	29.3
	Collage and above	55	32.9
	Read and Write	41	24.6
Occupation	Student	41	24.6
	Housewife	43	25.7
	Merchant	50	29.9
	Employed	23	13.8
	Farmer	10	6.0
Monthly Income	<1000	101	60.5
	>=1000	66	39.5

Table 2: Obstetric and Previous Family Planning History of Participants at Adama Comprehensive Specialized Hospital, Adama, Central Ethiopia, 2024

Variables	Categories	Number	Percent
Gravida	<=2	84	50.3
	>2	83	49.7
Previous Abortion	Yes	35	21.0
	No	132	79.0
Number of Abortions	<=2	32	91.4
	>2	3	8.6
Type of Abortion	Induced	19	54.3
	Spontaneous	16	45.7
Interest in having the next pregnancy within 5 years	Yes	114	68.3
	No	53	31.7
When to have a child	<1yr	21	18.3
	1-2 yrs	46	40.0
	>=2 yrs	48	41.7
Ever used Family planning	Yes	71	42.5
	No	96	57.5
Type Used	Short Acting	39	54.9
	LARC	32	45.1
Reason for not using	Not Decided to have sex	11	11.5
	To get pregnant	19	19.8
	Lives Alone	13	13.5
	Do not know About FP	13	13.5
	Opposition	20	20.8
	Fear of Side Effect	15	15.6
	Other	3	3.1

Current Abortion and Family Planning Use

The predominant reason for the current pregnancy terminations was unintended pregnancy, accounting for 40.1% of cases. A majority of 55.1% were in the second trimester, with 68.3% of terminations performed through medical abortion. Nearly all participants (95.8%) received post-abortion family planning counseling, with 60.5% counseled before the procedure. Approximately 70.7% of participants initiated post-abortion family planning, predominantly using long-acting reversible contraceptives (LARCs) at 59.3%. Among those who did not use post-abortion contraception, 42.8% cited the need to discuss with their partner as the primary reason.

Table 3: Current Abortion and Family Planning Use Among Participants at Adama Hospital Medical College, 2024

Variables	Categories	Number	Percent
Gravida	<=2	84	50.3
	>2	83	49.7
Previous Abortion	Yes	35	21.0
	No	132	79.0
Number of Abortions	<=2	32	91.4
	>2	3	8.6
Type of Abortion	Induced	19	54.3
	Spontaneous	16	45.7
Interest in having the next pregnancy within 5 years	Yes	114	68.3
	No	53	31.7
When to have a child	<1yr	21	18.3
	1-2 yrs	46	40.0
	>=2 yrs	48	41.7
Ever used Family planning	Yes	71	42.5
	No	96	57.5
Type Used	Short Acting	39	54.9
	LARC	32	45.1
Reason for not using	Not Decided to have sex	11	11.5
	To get pregnant	19	19.8
	Lives Alone	13	13.5
	Do not know About FP	13	13.5
	Opposition	20	20.8
	Fear of Side Effect	15	15.6
	Other	3	3.1

Associated Factors

Among the independent variables examined, marital status, occupation, gravidity, desire to have a child within five years, previous family planning use, counseling on family planning, and timing of counseling showed significant associations with post-abortion family planning (PAFP) uptake in multivariable logistic regression ($p < 0.05$), after controlling for confounders and multicollinearity. Single women were about 52% less likely to use PAFP compared to married women (AOR=0.48; 95% CI: 0.12-0.85). Students had over three times higher odds of PAFP use compared to farmers (AOR=3.43; 95% CI: 1.61-8.96), while housewives were more than twice as likely as farmers to use PAFP (AOR=2.58; 95% CI: 1.73-11.62). Women with gravidity greater than two were twice as likely to use PAFP compared to those with two or fewer pregnancies (AOR=2.31; 95% CI: 1.09-7.49). Those not intending to have a child within five years had double the odds of using PAFP (AOR=2.02; 95% CI: 1.37-8.68). Prior family planning users had three times higher odds of uptake (AOR=3.43; 95% CI: 2.51-10.78). Women who received counseling on family planning were nearly three times more likely to use PAFP (AOR=2.84; 95% CI: 2.10-8.92), and those counseled before the abortion procedure had twice the odds of uptake compared to those counseled afterward (AOR=2.01; 95% CI: 1.05-6.89) (Table 4).

Table 4: Binary and multiple logistic regression analysis of factors associated with post-abortion contraceptive uptake among clients at ACSH, Adama, Central Ethiopia, 2024

Variables	Categories	PAFP Utilization		COR & AOR with 95% CI	
		Yes	No	COR	AOR
Marital Status	Married	25	18	Ref	Ref
	Single	84	27	0.446(0.212-0.94)	0.48(0.12-0.85)*
	Divorced	8	3	0.52(0.121-2.24)	0.68(0.27-0.91)*
	Widowed	1	1	1.38(0.081-23.707)	2.18(1.19-7.43)
Occupation	Student	34	7	3.175(1.148-8.786)	3.43(1.61-8.96)**
	House wife	26	17	2.732(1.008-7.409)	2.58(1.73-11.62)
	Marchant	32	18	0.728(0.169-3.14)	0.64(0.14-0.93)
	Employed	20	3	3.24(0.72-14.57)	2.86(1.97-8.39)*
	Farmer	6	4	Ref	Ref
Gravida	<=2	84	30	Ref	Ref
	>2	34	19	1.936(0.981-3.821)	2.31(1.09-7.49)
Interest to have next pregnancy with in 5 years	Yes	65	19	Ref	Ref
	No	53	30	1.564(0.778-3.149)	2.02(1.37-8.68)
Ever used Family planning	Yes	52	19	1.244(0.63-2.46)	3.43(2.51-10.78)
	No	66	30	Ref	Ref
PAFP Counseled	Yes	114	46	1.86(0.4-8.63)	2.84(2.10-8.92)
	No	4	3	Ref	Ref
Time of counseling	Before Procedure	73	28	1.169(0.53-2.56)	2.01(1.05-6.89)
	During Procedure	29	13	1.303(0.502-3.384)	1.98(1.01-5.69)
	After Procedure	16	8	Ref	Ref

P-Value:- *<0.05, **<0.01

[ref] Reference, [COR] Crude Odds Ratio, [AOR] Adjusted Odds Ratio, [CI] Confidence Interval.

Discussion

The magnitude of post-abortion family planning (PAFP) uptake in this study was 70.7% (95% CI: 64.1-77.2). This finding aligns closely with studies conducted in 10 Asian and African countries (77%), Tigray (70.9%), and Jimma (70.1%) [12-14]. However, it is lower than reported rates in Tanzania (89%) and St. Paul's Specialized Hospital (91%) [15-17], while it exceeds the uptake observed in Nepal (11%), India (29.6%), and Debre MarkSos (59.2%) [15-17]. These variations may be attributable to differences in sample sizes and sampling methods.

Marital status emerged as a significant predictor, with single women less likely to use PAFP compared to married women. This may reflect differing sexual activity patterns, as singles may have less frequent sexual intercourse. Similar associations have been reported in studies from Tigray and Jimma[12,14]. Additionally, students and housewives were more likely to use PAFP, possibly due to greater opportunities for sexual activity with partners, a pattern also noted in research from India [15].

Women with more than two children were more inclined to use PAFP, likely because they intend to delay further childbearing for at least a year. Likewise, women not planning to have children within five years had higher odds of PAFP uptake, consistent with findings from Nepal and Jimma [14,15]. Prior use of family planning methods was strongly associated with PAFP uptake, possibly due to prior experience with contraceptive side effects and better awareness, supporting findings from similar studies [12, 15, 17].

Receiving counseling on post-abortion family planning, particularly before the procedure, significantly increased uptake, which corroborates results from Nepal, Jimma, Tigray, and Debre Markos [12, 15, 17]. This emphasizes the critical role of timely counseling in enhancing contraceptive acceptance post-abortion.

Integrating effective counseling into abortion services significantly enhances post-abortion family planning (PAFP) uptake. A systematic review and meta-analysis found that interventions providing enhanced counseling and immediate contraceptive provision increased contraceptive use by 19% compared to usual care [18]. Furthermore, studies have highlighted the critical influence of socio-demographic factors, such as education, age, knowledge, and attitudes, in shaping family planning behaviors [19]. These findings underscore the importance of culturally sensitive strategies that consider individual and community-level determinants to improve PAFP utilization

Strengths and limitations

This study achieved a 100% response rate and utilized a structured questionnaire, enhancing internal validity and minimizing non-response bias. Its cross-sectional design allowed efficient data collection on multiple variables, supporting a broad analysis of post-abortion contraceptive uptake in a resource-limited setting. However, the design limits causal inference, and convenience sampling may have introduced selection bias. Reliance on self-reported data raises concerns about recall and social desirability bias, while the single tertiary hospital setting restricts generalizability to other facilities or regions with different socio-cultural contexts.

Conclusion

In this study, the post-abortion family planning (PAFP) uptake was 70.7%, aligning with findings from Tigray, Jimma, and multi-country studies, though lower than rates in Tanzania and St. Paul's Hospital. Key predictors included marital status, parity, prior contraceptive use, and counseling. Single women were less likely to use PAFP, while students, housewives, and women with more children or delayed fertility intentions showed higher uptake. Prior family planning experience and receiving counseling, especially before the procedures, significantly increased utilization. These findings underscore the importance of integrating timely, targeted counseling into abortion care to enhance contraceptive acceptance and reduce repeat unintended pregnancies.

Glossary
AHMC_ Adama Hospital Medical College
CIs_ Confidence Intervals
OR_ Odds Ratio
PAC_ Post abortion care
PAFP_ Post abortion family planning
PI_ Principal Investigator
SPSS_ Statistical Package for Social Sciences
WHO_ World Health Organization

Disclosure

Ethics Approval and Informed Consent
Ethical clearance was obtained from the Institutional Ethics Review Board of Adama Hospital Medical College. All concerned officials were communicated about the purpose of the study.
Confidentiality of the data was assured by using code as identification; name of a mother was not recorded. Since significant numbers of women in the study setting were unable to read and write, informed verbal consent was obtained from each study participant before data collection.
Participation in the study was voluntary

Consent for Publication
Not applicable

Data availability
The data for the current study were obtained from the study participants and can be accessed from the principal investigators with a formal request.

Funding
No funding was received for this study.

Competing Interests
The authors declare that they have no competing interests

Authors' contribution
Corresponding author (MB) was primarily contributed to the conception of the research question.
Then all authors (MB, TW, and TC) have made substantial contributions to the design of the study, the acquisition, analysis, and interpretation of data. All authors (MB, TW, and TC) were involved in the write-up and review of the manuscript and approved the submitted version of this manuscript to be published on your journal.

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