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Original Article

Patterns of Contraceptive Use Following Abortion and Delivery - An Observational Study

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ABSTRACT

Background: *Contraceptive use is a crucial aspect of reproductive health, especially for women recovering from abortion or delivery. Understanding the patterns of contraceptive adoption in these groups can help inform healthcare strategies and improve family planning services. This study aims to explore the contraceptive choices made by women who have recently undergone abortion or delivery.* ***Methods & Materials:*** *The retrospective observational study was conducted at Palash Upazila Health Complex, Narsingdi, Bangladesh from July, 2022 to June, 2023. Data were collected from medical records and structured interviews at selected healthcare facilities. The study population consisted of 110 women of reproductive age who had recently undergone abortion or delivery within the past six months, selected through purposive sampling to ensure a representative distribution from both groups. Data analysis was conducted using statistical software SPSS version 26.0.* ***Result:*** *The results of this study show that post-abortion women were more likely not to use contraception (27.3%) compared to post-delivery women (9.1%) (p=0.019). Permanent contraception was chosen by 9.1% of post-abortion women and 12.7% of post-delivery women (p=0.512). Age, parity, education level, and timing of initiation did not show significant differences in method choice (p>0.05 for all categories), with immediate initiation being most common for permanent methods (58.3%) (p<0.001). Effectiveness was the primary reason for method selection, while cost and side effects influenced non-users decisions (p=0.047 and p=0.032, respectively).* ***Conclusion:*** *This study reveals that contraceptive use patterns vary significantly between post-abortion and post-delivery women, with a higher proportion of post-abortion women not using contraception. Factors such as age, parity, education level, and timing of initiation did not significantly affect contraceptive choices, although immediate initiation was most common for permanent methods. Effectiveness was the leading reason for method selection, while cost and side effects influenced non-users decisions.*

Keywords: *Contraceptives, Effectiveness, Abortion, Delivery*

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INTRODUCTION

Contraceptive use plays a crucial role in reproductive health by preventing unintended pregnancies and ensuring birth spacing, particularly after events such as abortion and delivery. The patterns of contraceptive adoption following these reproductive events vary widely, influenced by multiple factors, including sociocultural norms, healthcare accessibility, personal preferences, and policy interventions[1]. Understanding these patterns is essential for optimizing post-abortion and postpartum family planning (PAFP) services to reduce the risks associated with unintended pregnancies and short interpregnancy intervals[2]. Women who experience abortion—whether spontaneous or induced—often have an unmet need for contraception, increasing their risk of repeated unintended pregnancies. Studies indicate that the return of fertility can be rapid after abortion, with ovulation resuming within two weeks in some cases[3]. After delivery, effective contraception is vital to achieving optimal birth spacing, which is associated with reduced maternal and neonatal morbidity and mortality[4]. The World Health Organization (WHO) recommends an interpregnancy interval of at least 24 months to decrease the risks of adverse maternal and perinatal outcomes[5]. Despite the clear benefits of contraceptive use, gaps remain in its adoption following abortion and delivery. While some women initiate contraception immediately after these events, others experience delays due to multiple barriers, including lack of knowledge, provider bias, or systemic inefficiencies in healthcare delivery[6]. The immediate post-abortion period provides a critical opportunity for initiating contraception. Studies have shown that offering contraceptive counseling and services at the time of abortion increases the uptake of modern contraceptive methods and reduces repeat unintended pregnancies[7]. Long-acting reversible contraceptives (LARCs), such as intrauterine devices (IUDs) and implants, are particularly effective in post-abortion

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contraception due to their high efficacy and low reliance on user adherence[8]. Short-acting methods, including oral contraceptive pills (OCPs), injectables, and barrier methods, are also commonly used post-abortion. However, their continuation rates tend to be lower compared to LARCs due to issues such as inconsistent use, side effects, and access barriers[9]. The postpartum period represents another window of opportunity for contraceptive counseling and method provision. Postpartum women have unique contraceptive needs, as breastfeeding, hormonal changes, and cultural practices influence their choices. The lactational amenorrhea method (LAM) is widely used in the early postpartum months, but its effectiveness declines after six months, necessitating a transition to other contraceptive methods (13). Postpartum intrauterine device (PPIUD) insertion has gained attention as a highly effective method, with studies indicating high acceptance and continuation rates when offered immediately after delivery[10]. Additionally, progestin-only contraceptives, including implants and injectables, are considered safe during breastfeeding and are preferred by many postpartum women[11]. However, misconceptions about hormonal contraceptives affecting lactation remain a barrier to their use[12]. A significant proportion of postpartum women delay or avoid contraceptive initiation due to concerns about side effects, opposition from partners or family members, or inadequate counseling by healthcare providers[13]. Integrating contraceptive services into routine maternal and child healthcare can help address these barriers and ensure sustained contraceptive use among postpartum women[14]. Women with higher education levels are more likely to use modern contraceptives compared to those with limited education, reflecting the role of awareness and autonomy in reproductive health decision-making[15]. Understanding the patterns of contraceptive use following abortion and delivery is essential for designing effective reproductive health interventions. This study aimed to assess patterns of contraceptive use following abortion and delivery.

METHODS & MATERIALS

The retrospective observational study was conducted at Palash Upazila Health Complex, Narsingdi, Bangladesh from July, 2022 to June, 2023. Data were collected from medical records and structured interviews conducted at selected healthcare facilities. The study population included women of reproductive age who had recently undergone either an abortion or delivery within the past six months. A total of 110 patients were selected as study subjects. A purposive sampling method was used to ensure a representative distribution of participants from both groups. Demographic characteristics, reproductive history, and contraceptive choices were recorded using a standardized questionnaire. Descriptive statistics were used to summarize the frequency and percentage of contraceptive use across different subgroups. Chi-square tests were performed to determine associations between contraceptive choices and demographic factors, with a significance level set at $p<0.05$. Logistic regression models were applied to assess factors influencing contraceptive choices, including age, parity, education level, and prior contraceptive use. Data analysis was conducted using statistical software SPSS version 26.0. Ethical approval was obtained from the institutional review board, and informed consent was secured from all participants before data collection. Confidentiality and anonymity were strictly maintained throughout the study.

RESULTS

Table – I: Distribution of patients according to basic characteristics of the study population (*n*=110)

Characteristic	Frequency (n)	Percentage (%)
Age Group		
<20 years	18	16.4%
20–30 years	40	36.4%
31–40 years	35	31.8%
>40 years	17	15.4%
Parity		
0	17	15.4%
1–2	42	38.2%
3–4	30	27.3%
>4	21	19.1%
Education Level		
No education	14	12.7%
Primary	26	23.6%
Secondary	45	40.9%
Higher	25	22.7%
Previous Contraceptive Use		
Yes	68	61.8%
No	42	38.2%
Event Type (Study Group)		
Post-Abortion	55	50.0%
Post-Delivery	55	50.0%

Table I presents the distribution of the study population (n=110) based on basic characteristics. The majority of participants were aged 20–30 years (36.4%), followed by 31–40 years (31.8%). Regarding parity, most women had 1–2 children (38.2%), while 15.4% were nulliparous. Education levels varied, with the highest proportion having secondary education (40.9%). Previous contraceptive use was reported by 61.8% of participants. The study population was evenly divided into post-abortion (50.0%) and post-delivery (50.0%) groups.

Table – II: Distribution of patients according to contraceptive use after abortion vs. delivery (*n*=110)

Contraceptive Method	After Abortion (n=55)	After Delivery (n=55)	p-value
Short-acting	20 (36.4%)	25 (45.5%)	0.312
Long-acting	15 (27.3%)	18 (32.7%)	0.528
Permanent	5 (9.1%)	7 (12.7%)	0.512
None	15 (27.3%)	5 (9.1%)	0.019*

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Table II compares contraceptive use between post-abortion and post-delivery groups. Short-acting contraceptives were more commonly used after delivery (45.5%) than after abortion (36.4%), though the difference was not statistically significant (p=0.312). Long-acting methods were also slightly more prevalent post-delivery (32.7%) than post-abortion (27.3%) (p=0.528). Permanent contraception was chosen by 12.7% of post-delivery women and 9.1% of post-abortion women (p=0.512). Notably, a significantly higher proportion of post-abortion women (27.3%) did not adopt any contraception compared to post-delivery women (9.1%) (p=0.019).

Table – III: Distribution of patients according to contraceptive use by age group (*n*=110)

Age Group	Short-acting (n=45)	Long-acting (n=33)	Permanent (n=12)	None (n=20)	p-value
<20	10 (22.2%)	5 (15.2%)	2 (16.7%)	3 (15.0%)	0.723
20–30	15 (33.3%)	12 (36.4%)	5 (41.7%)	5 (25.0%)	0.621
31–40	12 (26.7%)	10 (30.3%)	3 (25.0%)	7 (35.0%)	0.835
>40	8 (17.8%)	6 (18.2%)	2 (16.7%)	5 (25.0%)	0.912

Table III presents the distribution of contraceptive use across different age groups. Short-acting methods were most commonly used among women aged 20–30 years (33.3%), followed by those aged 31–40 years (26.7%). Long-acting methods were similarly more frequent in the 20–30 age group (36.4%), with lower usage in other age groups. Permanent contraception was highest among women aged 20–30 years (41.7%). A higher proportion of women aged >40 years (25.0%) and 31–40 years (35.0%) did not use any contraception. However, the differences across age groups were not statistically significant (p>0.05 for all categories).

Table – IV: Distribution of patients according to contraceptive use by parity (*n*=110)

Parity	Short-acting (n=45)	Long-acting (n=33)	Permanent (n=12)	None (n=20)	p-value
0	8 (17.8%)	3 (9.1%)	1 (8.3%)	5 (25.0%)	0.489
1–2	15 (33.3%)	12 (36.4%)	4 (33.3%)	7 (35.0%)	0.814
3–4	12 (26.7%)	10 (30.3%)	4 (33.3%)	5 (25.0%)	0.930
>4	10 (22.2%)	8 (24.2%)	3 (25.0%)	3 (15.0%)	0.745

Table IV illustrates contraceptive use distribution based on parity. Short-acting methods were most commonly used among women with 1–2 children (33.3%), followed by those with 3–4 children (26.7%). Long-acting methods were also highest in the 1–2 parity group (36.4%). Permanent contraception was primarily chosen by women with 1–2 and 3–4 children (33.3% each), while contraceptive non-use was most frequent among nulliparous women (25.0%) and those with 1–2 children (35.0%). However, the differences in contraceptive use across parity groups were not statistically significant (p>0.05).

Table – V: Distribution of patients according to contraceptive use by education level (*n*=110)

Education Level	Short-acting (n=45)	Long-acting (n=33)	Permanent (n=12)	None (n=20)	p-value
No education	6 (13.3%)	4 (12.1%)	3 (25.0%)	5 (25.0%)	0.615
Primary	12 (26.7%)	8 (24.2%)	2 (16.7%)	6 (30.0%)	0.718
Secondary	18 (40.0%)	12 (36.4%)	5 (41.7%)	6 (30.0%)	0.841
Higher	9 (20.0%)	9 (27.3%)	2 (16.7%)	3 (15.0%)	0.693

Table V presents the distribution of contraceptive use according to education level. Short-acting methods were most commonly used among women with secondary education (40.0%), followed by those with primary education (26.7%). Long-acting contraceptives were also highest among women with secondary education (36.4%). Permanent contraception was more frequent in women with secondary education (41.7%), while non-use was most common among women with no education (25.0%) and primary education (30.0%). However, the differences in contraceptive use by education level were not statistically significant (p>0.05).

Table – VI: Distribution of patients according to timing of contraceptive initiation (*n*=110)

Timing of Initiation	Short-acting (n=45)	Long-acting (n=33)	Permanent (n=12)	None (n=20)	p-value
Immediate	20 (44.4%)	15 (45.5%)	7 (58.3%)	0 (0.0%)	<0.001*
Within 1 month	15 (33.3%)	12 (36.4%)	3 (25.0%)	5 (25.0%)	0.439
After 1 month	8 (17.8%)	5 (15.2%)	2 (16.7%)	8 (40.0%)	0.026*
None	2 (4.4%)	1 (3.0%)	0 (0.0%)	7 (35.0%)	<0.001*

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Table VI outlines the distribution of contraceptive use based on the timing of initiation. Immediate initiation was highest among users of permanent contraception (58.3%), followed by long-acting (45.5%) and short-acting methods (44.4%), with no non-users in this category (p<0.001). Within one month, 33.3% of short-acting, 36.4% of long-acting, and 25.0% of permanent contraceptive users initiated their methods, while 25.0% of non-users remained without contraception (p=0.439). A significant proportion of non-users (40.0%) delayed initiation beyond one month compared to 17.8% of short-acting, 15.2% of long-acting, and 16.7% of permanent contraceptive users (p=0.026). Notably, 35.0% of non-users did not adopt any contraception (p<0.001).

Table – VII: Distribution of patients according to reasons for choosing a contraceptive method (*n*=110)

Reason for Choice	Short-acting (n=45)	Long-acting (n=33)	Permanent (n=12)	None (n=20)	p-value
Effectiveness	15 (33.3%)	10 (30.3%)	5 (41.7%)	0 (0.0%)	<0.001*
Availability	10 (22.2%)	8 (24.2%)	3 (25.0%)	3 (15.0%)	0.829
Cost	8 (17.8%)	5 (15.2%)	2 (16.7%)	7 (35.0%)	0.047*
Side effects	12 (26.7%)	10 (30.3%)	2 (16.7%)	10 (50.0%)	0.032*

Table VII presents the distribution of patients based on reasons for choosing a contraceptive method. Effectiveness was a significant factor for users of permanent (41.7%), short-acting (33.3%), and long-acting (30.3%) methods, while no non-users cited this reason (p<0.001). Availability influenced contraceptive choice across all groups, with similar proportions (p=0.829). Cost was a significant factor for non-users (35.0%) compared to 17.8% of short-acting, 15.2% of long-acting, and 16.7% of permanent method users (p=0.047). Side effects were a major concern among non-users (50.0%) and influenced decisions for short-acting (26.7%) and long-acting (30.3%) users, with a statistically significant difference (p=0.032).

DISCUSSION

The study findings reveal that a significantly higher proportion of post-abortion women (27.3%) did not adopt any contraception compared to post-delivery women (9.1%) (p=0.019). This is consistent with previous studies, which have indicated that post-abortion women often have lower contraceptive uptake due to inadequate counseling, emotional distress, or misconceptions about fertility return (16),(17). The slightly higher adoption of short-acting (45.5% vs. 36.4%), long-acting (32.7% vs. 27.3%), and permanent methods (12.7% vs. 9.1%) among post-delivery women, though not statistically significant, suggests that postnatal family planning counseling is more effective than post-abortion counseling (18). Age-related variations in contraceptive choices were observed, though not statistically significant. Women aged 20–30 years were the highest users of short-acting (33.3%) and long-acting (36.4%) methods, while permanent methods were most frequently chosen by the same age group (41.7%). Studies suggest that younger women tend to prefer reversible contraception due to future fertility desires, whereas older women, particularly those with completed family sizes, consider permanent methods more appropriate (2),(19). Parity is a significant determinant of contraceptive preference, with short-acting and long-acting methods being most common among women with 1–2 children (33.3% and 36.4%, respectively). Permanent contraception was more frequently chosen by women with 1–2 (33.3%) and 3–4 children (33.3%). These findings align with previous studies that indicate increasing parity is associated with greater acceptance of permanent methods, as women with larger families may have met their desired family size (20). Education significantly influences contraceptive behavior, with the highest adoption of short-acting (40.0%) and long-acting (36.4%) methods among women with secondary education. Women with no education had the highest rates of non-use (25.0%), a finding supported by previous research suggesting that lower education levels are associated with poor contraceptive knowledge and lower uptake (21). Immediate initiation was most common among permanent method users (58.3%), followed by long-acting (45.5%) and short-acting (44.4%) users. Importantly, none of the non-users adopted contraception immediately, and 40.0% delayed beyond one month (p=0.026), with 35.0% never adopting any contraception (p<0.001). Delayed initiation is a known barrier to effective contraception and increases the risk of unintended pregnancies (22). Immediate post-abortion and postpartum contraception should be encouraged, as evidence suggests that structured counseling and provision of contraception before discharge significantly improve uptake and continuation rates (23). Effectiveness was the primary reason for choosing contraception among permanent (41.7%), short-acting (33.3%), and long-acting (30.3%) method users, with no non-users citing this reason (p<0.001). This aligns with studies showing that women prioritize efficacy when selecting contraception (24). Cost significantly influenced non-use (35.0%, p=0.047), underscoring the need for affordable and subsidized contraceptive programs (25). Side effects were a major concern for non-users (50.0%, p=0.032), indicating that fear of adverse effects remains a key barrier to contraceptive adoption (26).

Limitations of The Study

The study was conducted in a single hospital with a small sample size. So, the results may not represent the whole community.

CONCLUSION

This study reveals that contraceptive use patterns vary significantly between post-abortion and post-delivery women, with a higher proportion of post-abortion women not using

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contraception. Factors such as age, parity, education level, and timing of initiation did not significantly affect contraceptive choices, although immediate initiation was most common for permanent methods. Effectiveness was the leading reason for method selection, while cost and side effects influenced non-users decisions.

RECOMMENDATION

It is recommended that healthcare providers offer personalized contraceptive counseling, focusing on the effectiveness of various methods and addressing concerns about side effects and cost. Special attention should be given to post-abortion women, as a significant proportion did not adopt contraception. Additionally, promoting immediate contraceptive initiation, particularly for those opting for permanent methods, may help improve family planning outcomes. Further studies are needed to explore the long-term outcomes of different contraceptive methods post-abortion and post-delivery, particularly in terms of compliance, side effects, and overall reproductive health.

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