

Original Article

OUTCOME OF POSTPARTUM INTRAUTERINE CONTRACEPTIVE DEVICE INSERTION: FINDINGS OF AN INSTITUTION BASED CROSS-SECTIONAL STUDY

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ABSTRACT

Background: To foster family planning activities by postpartum IUCD insertion, side effects and complications of PPIUCD insertion need to be characterized. The study was conducted to find out the outcomes of postpartum intrauterine contraceptive device insertion among women attending a tertiary level hospital.

Methods: A cross sectional study was conducted among 130 women. Data were collected by face-to-face interview and reviewing medical records with semi- structured questionnaire and checklist. The subjects were purposively selected following specific selection criteria and maintaining ethical issues. The study was conducted during the period from October 2016- March 2017 in a tertiary hospital: Shaheed Suhrawardy Medical College Hospital (ShSMCH), Dhaka.

Results: The study revealed that majority (53.1%) of women were 25-30 years and the mean (\pm SD) age was 26.40 ± 4.273 years. Around 26.2% had secondary education and most of them i.e. 60.8% were housewife. Study revealed that average monthly family income was Tk. 20815.38 ± 9097.904 . Majority (90%) of women choose PPIUD because it is convenient. Most of the respondents were inserted immediately after delivery within 10 minutes. Intra-caesarean and manual insertion of PPIUCD was practiced in majority i.e. 79(60.8%) of the respondents. The study revealed that three fourth of the respondents had no side effect while common side effects of PPIUCD included vaginal discharge (12.3%), thread coming out (14.6%), missing thread (13.8%), lower abdominal pain (16.2%), expulsion (6.2%) and coital discomfort (10.8%). Only 18.5% respondents had abnormal uterine bleeding and 6.2% had PID. The results show expulsion rate was more in vaginal route (11.8%) than intra-caesarean route (2.5%) and this difference was statistically significant ($p < 0.05$). All complications like abnormal uterine bleeding (15.7%) and PID (20.3%) were seen more in vaginal insertions as compared to insertion during caesarean section and was statistically significant ($p < 0.05$).

Conclusion: To reduce the unwanted pregnancy in postpartum period and maternal and child mortality and morbidity, PPIUCD insertion along its continuation by overcoming side effects and complications is an earnest need in a densely populated country like Bangladesh.

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INTRODUCTION

Family planning can avert nearly one-third of maternal deaths and 10% of child mortality when couples space their pregnancies more than two years apart.¹ The provision of quality family planning services in the

postpartum period has the potentials in reduction of voluntary termination of unwanted pregnancies and both maternal and childhood mortality and morbidity.² It also contributes to reducing complications arising from unsafe abortions and inadequate spacing.^{3,4} In

India, 65% women in the first year postpartum have an unmet need for family planning. Hence, providing contraception in this sensitive period is important.²

Post-partum contraceptive options are limited to barrier method, progesterone only pills and lactational amenorrhea method, all of which have higher failure rates. Postpartum women often want a method that provides long term temporary contraception, but do not want permanent sterilization.^{5,6} Among the options available, the multi-year cost of the Copper T 380A IUCD makes it one of the most cost-effective contraceptive options available. The Copper T 380A intra-uterine contraceptive device (IUCD) is a highly effective, non-hormonal method that can be safely used by all women regardless of breastfeeding status during this interval.³

According to the World Health Organization Medical Eligibility Criteria, an IUCD can be inserted in the 48 hours postpartum.³ A 2010 Cochrane review concluded that post-partum intra-uterine contraceptive device (PPIUCDs) is a safe and effective contraceptive method. The public health benefits from PPIUCDs stemmed from the women's increased accessibility to PPIUCDs following institutional delivery, as it could be offered at health facilities after childbirth. It in turn decreases opportunity and other costs of clients who may otherwise have to return to facilities to access contraceptive services.⁴

Despite the advantages of postpartum intrauterine contraceptive device (PPIUCD), it may increase the risk of adverse events affecting safety (e.g., perforation, pain, bleeding) as well as effectiveness (i.e., expulsion). Whether PPIUCD insertion increases the risk of expulsion or perforation has been of particular concern to researchers and clinicians. According to WHO review reports, the evidence available concerning whether women who have insertion of an IUCD within 48 hours postpartum are at higher risk for complications, such as perforation, infection, pain and bleeding, or for IUCD expulsion than women who have interval insertion or insertion of an IUCD later in the postpartum period.^{7,8}

Recognizing the potential impact of improved family planning programming on maternal and child health, the Government of Bangladesh has committed to expanding access to family planning as part of achieving Sustainable Development Goals (SDGs) related to reduction of child and maternal mortality. With increasing numbers of women electing to give birth in health institutions, the Government has decided to strengthen PPF and to introduce PPIUCD services.

Study related to PPIUCD is very few in Bangladesh. It is important to generate evidences on the outcomes in respect of side effects and complications after the introduction of PPIUCD program. Additionally, information related to the demographic profile of women who accept PPIUCDs, the dynamics of their decision making process and their satisfaction with this method of contraception have to be characterized. The study findings will assist the policy makers and stakeholders to take necessary measures to overcome the complications and side effects of PPIUCD experienced by the clients. The study findings will contribute to achieve the goals of family planning program by reducing the unwanted pregnancy in postpartum period.

METHODS

A cross sectional study was explored among purposively selected women who attended Obstetrics and Gynaecology OPD of Shaheed Suhrawardy Medical College Hospital (ShSMCH), Dhaka for follow-up of PPIUCD. Out of 168 women who attended the hospital during data collection period, 14 were not eligible for participation due to illness and 24 refused to participate; finally, 130 women participated in the study. In the study, outcome of PPIUCD was determined in two wings. One was side effects that include lower abdominal pain, expulsion, missing thread, vaginal discharge, thread coming out, coital discomfort. The other one was complication in term of abnormal uterine bleeding and PID. After pretesting, the questionnaire was finalized and used for data collection. Informed written consent of each respondent was obtained before data collection. After explaining the purpose of the study, data were collected by face-to-face interview using a semi-structured questionnaire and checklist through reviewing medical records of the respective participants. Collected data was analysed with the help of Statistical Package of Social Science (SPSS) version 25. Data were presented in frequency tables and diagram to identify the distribution and clinical characteristics of the disease.

RESULTS

A total of 130 women who received a PPIUCD in selected health facility were interviewed during follow up. Table 1 shows the demographic characteristics of study participants and results showed that majority (53.1%) were 25-30 years old with a range of 18-35 years and the mean (\pm SD) age was 26.40 ± 4.273 years. Around 26.2% had secondary education and

most of them i.e. 60.8% were housewife. Study revealed that average monthly family income was Tk. 20815.38 ± 9097.904 (Table 1).

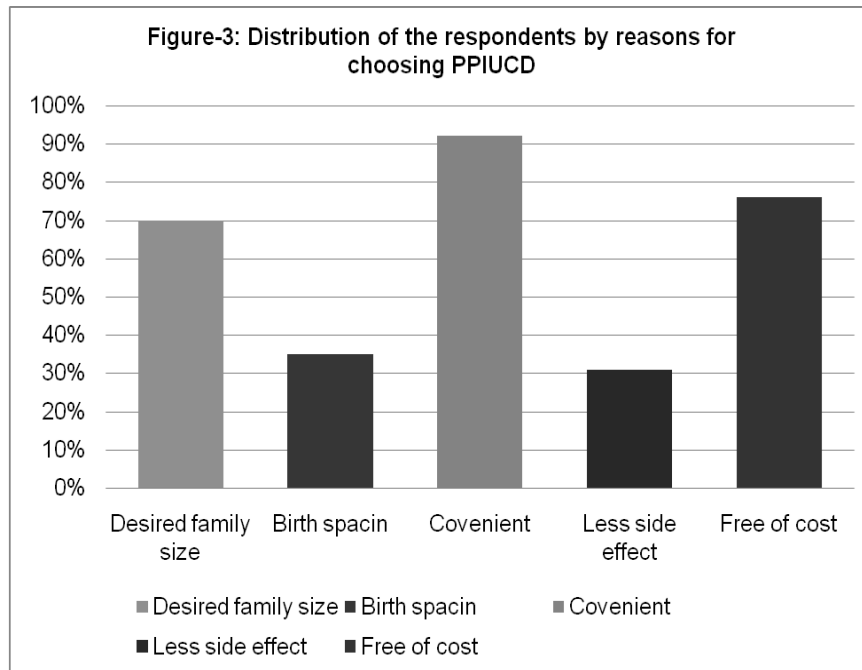
Table 1: Distribution of respondents by socio-demographic character (n=130)

Attributes	Findings
Age (years)	18-24: 43(33.1%), 25-30: 69(53.1%), 31-35(18%)
Education	Illiterate: 16(12.3%), Primary: 30(23.1%), Secondary: 34(26.2%), SSC: 16(12.3%), HSC: 18(13.8%), Graduate: 16(12.3%)
Occupation	Service: 25(19.2%), Business: 13(10%), Housewife: 79(60.8%), Student: 13(10%)
Monthly family income (Tk.)	Tk. 5000-10000: 19(14.6%), 10001-20000: 63(48.5%), 20001-30000: 28(21.5%), 30001-40000: 20(15.4%), Mean monthly family income: Tk. 20815.38 ± 9097.904

In this study, majority (90%) women choose PPIUCD because it is convenient and 30% women choose

because of its less side effect. Free of cost (70%) was one of factors for choosing PPIUCD (Figure 1).

Figure 1: Distribution of the respondents by reasons for choosing PPIUCD



Pattern of insertion of PPIUCD is shown in Table 2 and according to the study, 107(82.3%) of the respondents were inserted immediately after delivery

within 10 minutes. Regarding route and mode of insertion of PPIUCD, majority i.e. 79(60.8%) of the respondents had intra-caesarean and manual insertion of PPIUCD (Table 2).

Table 2: Distribution of the respondents by pattern of insertion of PPIUCD (n= 130)

Time of PPIUCD insertion	Frequency	Percentage
Within 10 minutes of delivery	107	82.3
After 10 minutes but within 48 hours of delivery	23	17.7
Total	130	100.0
Route of PPIUCD insertion	Frequency	Percentage
Vaginal	51	39.2
Intra-caesarean	79	60.8
Total	130	100.0
Mode of PPIUCD insertion	Frequency	Percentage
Instrumental (By Kelly's forceps)	51	39.2
Manual (By finger)	79	60.8
Total	130	100.0

The study revealed that 73.1% respondents had no side effect while common side effects of PPIUCD included vaginal discharge (12.3%), thread coming out (14.6%), missing thread (13.8%), lower abdominal pain (16.2%), expulsion (6.2%) and coital discomfort

(10.8%). In respect of complications of PPIUCD, 18.5% respondents had abnormal uterine bleeding and 6.2% had PID. Among them 4.6% respondents had both complications as shown in the Table 3.

Table 3: Distribution of the respondents by outcome of PPIUCD (n=130)

Side effects	Frequency	Percentage
Vaginal discharge	16	12.3
Thread coming out	19	14.6
Missing thread	18	13.8
Lower abdominal pain	21	16.2
Expulsion of PPIUCD	08	6.2
Coital discomfort	14	10.8
No side effects	96	73.1
Complications	Frequency	Percentage
Abnormal uterine bleeding	24	18.5
PID	08	06.2
Both	06	04.6

The results show expulsion rate of roughly 14.2% among the respondents and more in vaginal route than intra-caesarean route and this difference was statistically significant ($p < 0.05$). All complications

were seen more in vaginal insertions as compared to insertion during caesarean section and was statistically significant ($p < 0.05$).

Table: 5 Association between outcome and route of insertion of PPIUCD (n=130)

Outcome of PPIUCD		Route of insertion		Significance (χ^2 test)
		Vaginal f (%)	Intra-caesarean f (%)	
Expulsion of PPIUCD	Yes	06(11.8%)	02(2.5)	P= 0.04
	No	45(88.2%)	77(97.5)	
Abnormal Uterine Bleeding	Yes	08(15.7%)	16(20.3)	P=0.03
	No	43(84.3)	63(79.7)	
PID	Yes	06(11.8)	02(2.5)	P=0.04
	No	45(88.2)	77(97.5)	

DISCUSSION

The present study was undertaken to find out the outcome of postpartum intrauterine contraceptive device insertion among 130 women attending a tertiary level hospital during October 2016 to March, 2017. The mean (\pm SD) age of participants was 26.40 (\pm 4.273) years and the highest frequency 69(53.1%) was in between 25-30 years with a range of 18-35 years. A similar study conducted in India found mean (\pm SD) age 24.0 (\pm 4.0) years and majority (59.8%) of respondents were in 25-30 years.⁹ This variation may be due to variation of study places. Out of all the respondents, majority (26.2%) of the respondents had secondary level education and 12.3% were illiterate. Another similar study was conducted in India by Kumar S (2014) found majority of respondents were illiterate (23%).⁹ This variation may be due to variation of study places.

The mean (\pm SD) monthly family income of the respondents was Tk.20,815.38 (\pm 9097.904) with the range of Tk.5000-Tk.40000. Around half (48.5%) of the respondents had the family income Tk.10001-20000. Another study was conducted by Shukla M (2012) found similar finding where majority of respondents had monthly family income <USD75\$.¹⁰ A majority of women reported the acceptance of PPIUCD as a contraceptive method because of its convenience. Additionally, 30% of women accepting a PPIUCD cited the free-of-charge services as one reason for choosing the method.

In respect of insertion of PPIUCD, most (82.3%) of the respondents were inserted immediately after delivery within 10 minutes and 17.7% respondents were inserted delayed within 48 hours of delivery. Another study conducted in India by Sujnanendra M¹⁰ found similar findings. Regarding route of insertion of

PPIUCD, majority (60.8%) of the PPIUCDs was inserted per uterus route and the rest 39.2% were inserted per vaginal route.¹² The study conducted by Sujnanendra M found different findings where 5.17% PPIUCD were inserted per vagina.¹²

The study revealed that majority (73.1%) respondents had no side effect while the rest 26.9% had side effects of PPIUCD. The side effects of PPIUCD included vaginal discharge (12.3%), thread coming out (14.6%), missing thread (13.8%), lower abdominal pain (16.2%), expulsion (6.2%), removal desire (26.9%) and coital discomfort (10.8%). Another study conducted by Sharma A found that abnormal uterine bleeding was found in 16.66% women and lower abdominal pain in 13.5% women, expulsion 5.2% in women and IUD removal desire in 13.5% women.¹³

Regarding safety of PPIUCD, majority of our women did not have any complications. Only 18.5% respondents had abnormal uterine bleeding and 6.2% had PID. Study conducted by Kumar S et, al.,⁹ found close finding where 5.4% women experienced infection like PID. Another similar study conducted by Safwat A found that 19.5% respondents had abnormal uterine bleeding.¹⁴

Expulsion has always been a worrisome issue for PPIUCD insertion. Various determinants are timing of insertion, training and expertise of provider and vaginal versus caesarean section insertion. Our study showed expulsion rate 11.8% with vaginal insertion versus 2.5% with caesarean section that is statistically significant. Studies from India have also reported more expulsions associated with vaginal insertion probably because cervical os is widely open after vaginal delivery. Among the respondents having vaginal insertion, 15.7% had abnormal uterine bleeding while among the respondents having intra-

caesarean insertion, 20.3% had abnormal uterine bleeding and this difference by route of insertion was statistically significant ($p < 0.05$). This finding may be explained by the fact that in case of intra-caesarean insertion, abnormal uterine bleeding may be more due to post-caesarean pelvic congestion. About 11.8% and 2.5% of women in the present study reported PID after vaginal and intra-caesarean insertion respectively. This rate is higher than the rate of 1.3% of vaginal and 2.2% of intra-caesarean insertion reported among women in study conducted by Fathima et al.¹⁵

A limitation of the present study is that PID was based upon self-report and was not corroborated by medical records or microbiological confirmation. These findings suggest that there is room for strengthening PPIUCD counseling services, particularly regarding normal side effects and complications that arise from method use. Additionally, information related to the demographic profile of women who accept PPIUCDs, the dynamics of their decision making process and their satisfaction with this method of contraception have been characterized in this study.

The present study is limited that follow-up was only conducted with a small sample size in a tertiary hospital. Further studies could be conducted that involved a large sample of women to assess the outcome of PPIUCD on continuation and birth spacing in the future. Expansion of access to PPIUCDs in Bangladesh may provide an opportunity to address the high proportion of births with short intervals and improve maternal and child health outcomes, have potential impact on achieving Sustainable Development Goal (SDGs).

CONCLUSION

PPIUCD was found to be an effective, acceptable contraception with less side effects and complications for the patients. Impressive training of providers in insertions and counseling skills can go a long way towards increasing PPIUCDs by declining complications contribute in lessening the population burden of this country.

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