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Original Research Article

## Postpartum intrauterine contraceptive device: knowledge and factors affecting acceptance among postpartum women at tertiary care hospital in North-Western Rajasthan

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### ABSTRACT

**Background:** Intra-uterine contraceptive device (IUCD) insertion recommended within 10 min of placental delivery or within 48 hours of delivery is called postpartum IUCD according to WHO. Aim of the study was to evaluate the factors affecting knowledge and the likely acceptance of the postpartum intrauterine contraceptive device (PPIUCD).

**Methods:** The present descriptive cross-sectional study was carried out in the Department of Obstetrics and Gynaecology at S. P. Medical College and associated group of hospitals, Bikaner, Rajasthan, India from May 2020 to July 2020. Total 500 post-partum women were studied with the help of predesigned and pretested questionnaire. Knowledge of the women was summarized as proportion. Chi-square test was used to compare proportions and univariate analysis for the factors affecting knowledge and likely adoption of PPIUCD.

**Results:** The 210 (42%) women out of 500 women had knowledge regarding PPIUCD. Multiparity ( $p=0.003$ ), education above secondary level {OR=11.66 (95% CI=7.13-19.06),  $p=0.00$ }, upper middle and middle socioeconomic status {OR=6.77 (95% CI=4.44-10.16),  $p=0.00$ } and health worker counselling {OR=13.61(95% CI=8.78-21.10),  $p=0.00$ } were significantly associated with knowledge. Multiparous women ( $p=0.004$ ), women who had discussed PPIUCD with their husband ( $p<0.0001$ ), women with family support for their decision ( $p<0.00001$ ), women without religious beliefs ( $p<0.0001$ ) were more significantly associated with adoption of PPIUCD.

**Conclusions:** The level of knowledge of our study population regarding PPIUCD is 42%. Our study has reported education and regular health care worker counselling as most important modifiable predictors to improve the knowledge regarding PPIUCD.

**Keywords:** Knowledge, PPIUCD, Education, Health care worker counselling

### INTRODUCTION

In 2010, the government of India has introduced the PPIUCD service in 19 states of India.<sup>1</sup> When an intra-uterine contraceptive device (IUCD) insertion occurs within 10 min of placental delivery or within 48 h of delivery is called postpartum IUCD.<sup>2</sup> Despite making contraception extensively available, there is low acceptance of PPIUCD either due to ignorance or fear of

complications. Deficient knowledge about contraceptive methods and incomplete or spurious information about their use or where to procure them are the main reasons for not accepting family planning.<sup>3</sup>

Various studies assessed the acceptability and safety of PPIUCD but there are only a few studies in which awareness level regarding PPIUCD have been determined. Therefore, this study was conducted to determine the level

of awareness and factors affecting awareness and acceptance of PPIUCD.

## METHODS

The present descriptive cross-sectional study was carried out in the department of obstetrics and gynaecology at S.P. medical college and associated group of hospitals, Bikaner, Rajasthan, India over a period of 3 months from

May 2019 to July 2019, after approval from institutional ethics committee. Total 500 post-partum women of age group 18-40 years old after a term delivery were recruited in the study. Women with a known medical disorder, with uterine anomaly, hemoglobin <8 g/dl were excluded from the study.

### Methods of data collection

After obtaining a detailed clinical history, the patient went through a predesigned and pretested questionnaire. It included questions regarding awareness and source of information and noted in the case sheet. Subsequently, counseling was done by health care personnel with information, education and counselling (IEC) material regarding PPIUCD insertion and its benefits, associated complications and required follow up during antenatal clinic and early postpartum period.

### Outcome measures

Primary outcome measure of our study was to evaluate factors associated with awareness regarding PPIUCD. Factors evaluated in this study was parity, education, socioeconomic status, health worker counselling received.

Awareness was defined as having heard about the method. Whereas, those who knew more details about the method regarding what IUCD, possible timing of insertion, and follow-up were considered to have correct knowledge.

### Data analysis

Statistical analysis done by Medcalc statistical software. Knowledge of the women was summarized as proportion. Association of parity, education, socioeconomic status and exposure to health worker counselling with knowledge on PPIUCD was assessed using chi-square test, and univariate logistic regression analysis was done to calculate unadjusted odds ratio. To assess the factors associated with likelihood of PPIUCD adoption, we used chi-square test and univariate logistic regression analysis.  $P < 0.05$  was considered statistically significant.

## RESULTS

A total of 500 women with post-partum vaginal delivery were included in this study.

In our study, knowledge regarding PPIUCD as a method of contraception were present in 210 women out of 500 women (42%). However, only 92 (18.4%) of 210 women had in depth knowledge of the method.

In our study, majority of knowledgeable women belongs to 25-35-year age group (45.21%), multiparous (49.12%), education graduation and above (92%) and upper middle class (94.54%) as depicted in Table 1-4.

**Table 1: Knowledge according to age.**

Age (years)	No. of women, (n=500) (%)	No. of women having knowledge of PPIUCD, (n=210) (%)
18-25	201 (40.2)	80 (39.8)
25-35	188 (37.6)	85 (45.21)
>35	111 (22.2)	45 (40.54)

**Table 2: Knowledge according to parity.**

Parity	No. of women, (n=500) (%)	No. of women having knowledge of PPIUCD, (n=210) (%)
Primiparous	272 (54.4)	98 (36)
Multiparous	228 (45.6)	112 (49.12)

**Table 3: Knowledge according to education status.**

Category	No. of women, (n=500) (%)	No. of women having knowledge of PPIUCD, (n=210) (%)
Illiterate	220 (44)	25 (11.36)
Up to secondary	145 (29)	75 (51.72)
Higher secondary	85 (17)	64 (75.29)
Graduate and above	50 (10)	46 (92)

About 68% of women had knowledge of barrier methods of contraception but only 26% were using it. The 53.6% of women had knowledge of OCPs but only 29% of them practiced in the past. The 57.6% women had knowledge regarding IUCD but only 26.8% of women used it at least once in her life. Asking specifically about PPIUCD only 42% of women had previous knowledge about PPIUCD however only 3.6% of women used it in the past. All women were given the knowledge regarding PPIUCD. They were told regarding the benefits of PPIUCD as a contraceptive. After appropriate counselling 6.8% of women agreed for insertion of PPIUCD after this delivery. The knowledge regarding female sterilization, male sterilization, emergency contraception, cent chroman were 59.6%, 54.4%, 28.8% and 24.2% respectively. Percentage was more than 100% as there multiple responses (Table 5).

**Table 4: Knowledge according to socioeconomic status.**

Socioeconomic status	No. of women, (n=500) (%)	No. of women having knowledge of PPIUCD, (n=210) (%)
Upper middle class	55 (11)	52 (94.54)
Middle class	113 (22.6)	68 (60.17)
Upper lower class	92 (18.4)	44 (47.82)
Lower class	240 (48)	46 (19.16)

**Table 5: Knowledge and previous practices of contraceptive methods.**

Family planning method	Knowledge (%)	Practices (%)
Barrier methods	340 (68)	130 (26)
OCPs	268 (53.6)	145 (29)
IUCD	288 (57.6)	134 (26.8)
Inj. DMPA	154 (30.8)	41 (8.2)
Emergency contraception	144 (28.8)	52 (10.4)
Centchroman	121 (24.2)	37 (7.4)
Female sterilization	298 (59.6)	0
Male sterilization	269 (54.4)	0
PPIUCD	210 (42)	18 (3.6)

**Table 6: Univariate logistic regression showing association of various factors with knowledge regarding PPIUCD.**

Factors	Knowledge		OR (95% CI)	P value
	Yes, (n=210)	No, (n=290)		
<b>Parity</b>				
Primipara	98	174	0.58 (0.40-0.83)	0.003
Multipara	112	116		
<b>Education</b>				
Above secondary	110	25	11.66 (7.13-19.06)	0.00
Up to secondary	100	265		
<b>Socioeconomic status</b>				
Upper middle and middle	120	48	6.77 (4.44-10.16)	0.00
Upper lower and lower	90	242		
<b>Health worker counselling received</b>				
Yes	170	69	13.61 (8.78-21.10)	0.00
No	40	221		
<b>Age (Years)</b>				
<25	80	121	0.86 (0.6-1.2)	0.41
>25	130	169		

OR=Odds ratio, CI=Confidence interval.

On univariate analysis (Table 6), multiparity (p=0.003), education above secondary level {OR=11.66 (95% CI=7.13-19.06), p=0.00}, upper middle and middle socioeconomic status {OR=6.77 (95% CI=4.44-10.16), p=0.00} and health worker counselling {OR=13.61 (95% CI=8.78-21.10), p=0.00} were significantly associated with knowledge. We did not find any significant association between age of the individual and the level of the knowledge (p=0.41).

**Table 7: Univariate logistic regression showing the association of factors with the likelihood of adoption of PPIUCD.**

Factors	Likely to adopt PPIUCD		$\chi^2$	P value
	Yes, (n=34)	No, (n=129)		
<b>Parity</b>				
Primipara	12	81	8.303	0.004
Multipara	22	48		
<b>Family support</b>				
Yes	32	13	95.10	<0.00001
No	2	116		
<b>Shared information with husband</b>				
Yes	34	23	79.40	<0.0001
No	0	106		
<b>Religious beliefs or myths</b>				
Yes	0	52	20.12	<0.0001
No	34	77		
<b>Age (Years)</b>				
<25	15	78	2.93	0.08
>25	19	51		
<b>Education</b>				
Above secondary level	21	77	0.05	0.83
Below secondary level	13	52		
<b>Health worker counselling received</b>				
Yes	26	107	0.75	0.38
No	8	22		

Of the 210 knowledgeable women of PPIUCD, 42 preferred permanent method of sterilization. Only 34 accepted PPIUCD, whereas 129 refused. On univariate analysis, we found that multiparous women (p=0.004), women who had discussed PPIUCD with their husband (p<0.0001), women with family support for their decision (p<0.00001), women without religious beliefs (p<0.0001) were more significantly associated with adoption of PPIUCD. The age (p=0.08), education (p=0.83), health worker counselling (p=0.38) was not significantly associated with adoption of PPIUCD. Although age above 25 years, education above secondary level and health worker counselling group had more PPIUCD insertion rates.

## DISCUSSION

Our study focussed on the level of knowledge regarding PPIUCD and also the factors affecting the knowledge and the likely adoption of the PPIUCD.

In our study, majority (40.2%) of individuals belonged to the age group of 18-25 years. In the study by Valliappan et al majority (43.4%) of study population belongs to 20-24 years' age group.<sup>4</sup> Katheit et al reported majority (50.8%) of individuals belongs to the age group of 20-25 years.<sup>5</sup> So, the age distribution of our study subjects is similar to other studies.<sup>4,5</sup>

In the present study, most (56%) of the women were literate and at least received primary level of education. In the study by Nath et al reported 65% of study population were literate.<sup>6</sup> Asnani et al showed literacy rate of 56.29%.<sup>7</sup> In the study by Katheit et al 65% of the study population was literate.<sup>5</sup> Thus, our study population have almost similar literacy rate in comparison to these studies.<sup>5-7</sup>

In our study, majority (54.4%) of women were primiparous. In the study by Valliappan et al 54.6% of women were primiparous while 55.1% and 63.5% of study population were multiparous in the study by Gautam et al and Asnani et al.<sup>6-8</sup>

In the present study, 42% of women had knowledge regarding PPIUCD. The level of knowledge is comparable with the study by Valliappan et al and Asnani et al which were 44.8% and 36% respectively.<sup>4,7</sup>

However, low level of knowledge in comparison to our study is observed in the study by Katheit et al, Gautam et al and Nath et al which were 5.79%, 21.77% and 20% respectively.<sup>5,6,8</sup> Comparison of level of knowledge regarding PPIUCD among various studies depicted in Table 8.

**Table 8: Comparison of level of knowledge regarding PPIUCD.**

Authors	No. of women studied	Level of knowledge (%)
Katheit <sup>5</sup>	397	5.79
Gautam <sup>8</sup>	1941	21.77
Valliappan <sup>4</sup>	339	44.8
Nath <sup>6</sup>	100	20
Asnani <sup>7</sup>	350	36
Present study	500	42

In our study, knowledge regarding PPIUCD was highest among 25-35 years of age group, in upper middle class, in multiparity and in women whose education was graduation and above. Our study results were comparable to study by Asnani et al which reported highest awareness level in the age group of 25-35 year, in upper middle class and in women who were educated postgraduation and above.

However, they showed more awareness level in primiparous women.<sup>7</sup>

In the present study, multiparity, education above secondary level, upper middle and middle socioeconomic status and health worker counselling were found to be significant predictor of knowledge. We did not find any significant association between age of the individual and the level of the knowledge (p=0.41).

While Valliappan et al reported that multiparity (p=0.0045) and formal health counselling classes (p<0.001) were significant predictors of knowledge about PPIUCD.<sup>4</sup> Katheit et al reported that multiparity and education of women were predictors of knowledge.<sup>5</sup>

In our study acceptance was only 6.8%. we found that multiparous women (p=0.004), women who had discussed PPIUCD with their husband (p<0.0001), women with family support for their decision (p<0.00001), women without religious beliefs (p<0.00) were more significantly associated with adoption of PPIUCD. The age (p=0.08), education (p=0.83), health worker counselling (p=0.38) was not significantly associated with adoption of PPIUCD.

Valliappan et al observed that skilled occupation of the husband (p=0.04), prior discussion with spouse (p=0.001), family support for the decision (p=0.001), and primiparity (p=0.0001) were strongly associated with a willingness to adopt the method.<sup>4</sup> Singh et al found significant association between contraceptive use with religion and education status (p=0.00, p=0.042 respectively).<sup>9</sup> In the study by Mishra et al noted that partner and family refusal and need to discuss with the partner besides lack of knowledge regarding PPIUCD were the leading causes for refusal of PPIUCD.<sup>10</sup>

The strength of our study is that it is a prospective study and to our knowledge there were limited studies available in which predictive factors affecting knowledge regarding PPIUCD were evaluated. The limitation of our study was that most of the women were interviewed in the postpartum period first time. Among the postnatal women who counselled for the first time by health care worker none were willing to immediately accept the method. Even though we gave handouts and explained the method to all the women in the study group. Most of these women wanted more time to think and discuss. Thus, we recommend that there should be continued health counselling to the pregnant women, especially in the last trimester and in every visit to encourage regarding PPIUCD. It would not only raise their knowledge but also give them ample probability to clear their doubts regarding the method and discuss and decide well before the delivery.

## CONCLUSION

The level of knowledge of our study population regarding PPIUCD is 42%. Our study has reported education and

regular health care worker counselling as most important modifiable predictors to improve the knowledge regarding PPIUCD. While multiparity and socioeconomic status as other predictors of knowledge regarding PPIUCD.

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