

# Determinants for Utilization of Post-Partum Intra-Uterine Contraceptive Device: A Cross-Sectional Study

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## Abstract:

**Background:** India ranks second in terms of population in the world. Sehore district of Madhya Pradesh has total fertility rate more than or equal to 3.0 and is a Mission ParivarVikas district.

**Objectives:** This study assesses the level of satisfaction amongst the acceptors of Post-Partum Intra Uterine Contraceptive Device (PPIUCD), identify the reasons for removal of PPIUCD, assesses the quality of PPIUCD related counselling given to Antenatal women.

**Methods:** A cross-sectional study was conducted between February to July 2018. The sample included 255 beneficiaries of PPIUCD. Only those women who got PPIUCD inserted before six months were part of the study. In addition, 30 counselling sessions were assessed to evaluate the quality of counselling.

**Results:** Higher acceptance for PPIUCD was seen among primiparous, expulsion was reported in 10.98% of the cases, abdominal pain was a complaint in 12.94% and bleeding in 21.96% of the women. Majority stated bleeding issues as the reason for removal. Gaps observed during counselling were failure to offer basket of choices, non-involvement of partner or family member emphasizing the advantages and failure to inform about the limitations and side effects of PPIUCD.

**Conclusion:** Government is taking many efforts in bringing down the TFR. With such low expulsion rates, PPIUCD can be the solution for the countries facing population crises. It can help bring down the high maternal and neonatal mortality. Acceptance for PPIUCD can be improved by counselling the women during antenatal period through dedicated family planning counsellors.

**Keywords:** Beneficiary Perspective, Family Planning, Patient Satisfaction, PPIUCD

## Introduction:

India is facing population explosion with current growth rate of 1.19% (2016)<sup>[1]</sup>, the second most populated country in the world. Rising population and limited resources makes it important for India to take necessary steps to control the population growth of the country. As a result, India was the first country to start Family Planning programme in 1952<sup>[2]</sup>.

With rising number of institutional deliveries, Government of India (GoI) implemented a program to strengthen its post-partum family planning (PPFP) services. The first training for PPIUCD was given in 2009. The provision of PPIUCDs is being

rapidly scaled up in India, with facilities in at least nineteen states offering the method in 2013.<sup>[3]</sup>

The Total Fertility Rate (TFR) of India is 2.2 as per NFHS 4 and the unmet need is 12.9%.<sup>[4]</sup> There are around 25 districts in the state of Madhya Pradesh, which have high Total Fertility Rate. Sehore district of Madhya Pradesh is one of the 145 identified districts under "Mission ParivarVikas" as the TFR of Sehore is more than or equal to 3.0. These 145 districts spanning over seven high focus states, constitute around 28% of India's population, around 30% of maternal deaths and approximately 50% of infant deaths of the country.<sup>[5]</sup>

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Postpartum period is a critical time when women are vulnerable to unintended pregnancy. Pregnancies taking place within 24 months of a previous birth have a higher risk of adverse outcomes like abortions, premature labour, postpartum haemorrhage, low birth weight babies, foetal loss and maternal death.

Demographic and Health Survey show that 40 percent of women in the first year postpartum intend to use a family planning (FP) method but are not doing so. Institutional deliveries have increased significantly all across the country, thereby creating opportunities for providing quality postpartum family planning services.

It is important to know about the satisfaction of beneficiaries with the service provision. Whether positive or negative their experiences and feedbacks are valuable. As India is striving to achieve replacement level fertility, it is crucial to focus on the quality of family planning services delivered.

Incorporating women's perspectives into contraceptive introduction strategies can help local family planning programmes to increase user satisfaction, improve continuation rates, and expand method use.

The purpose of the study was to assess the level of satisfaction amongst the acceptors of PPIUCD, identify the reasons for removal of PPIUCD amongst the beneficiaries, and to assess the quality of PPIUCD related counselling given to Antenatal women.

## Methodology:

### a. Methods to assess the service provision and beneficiaries' perspective

The study was conducted in four public health facilities of Sehore district of Madhya Pradesh from February to July 2018. The study population constituted of the beneficiaries of PPIUCD who undergone PPIUCD insertion at least before 6 months after delivery.

Structured questionnaire was used to interview the sample population to assess the quality of counselling they received, the proportion of beneficiaries who have attended each follow-up post PPIUCD insertion and beneficiary satisfaction for PPIUCD. For the purpose of assessing the beneficiary satisfaction, parameters such as time of counselling, factors leading to removal of PPIUCD were included in the tool.

Telephonic interviews of beneficiaries willing to participate were conducted to know their perspective regarding PPIUCD. Considering the acceptance rate of PPIUCD in Madhya Pradesh to be 21% (based on MOHFW report) at 95% Confidence Interval and 5% level of significance, the sample size came out to be 255 using EPI Info 7 software. Thus, 255 PPIUCD beneficiaries were interviewed.

Majority of the PPIUCD insertions took place at Community Health Centre and District Hospital. Thus, based on the

quarterly reports of Family Welfare Department of Madhya Pradesh, the facilities with higher PPIUCD insertion were selected to be the study site. The sample from each facility was selected based on the proportion of PPIUCD insertion.

The data was collected on the demographic profile, parity, education level, continuation time, the follow up visits undergone and the reason for removal if applicable.

### Statistical Analysis

The data were analysed using SPSS, Version 20 (Chicago, IL, USA). Two statistical tests were performed viz. Chi Square Test and Binary Logistic Regression. In order to determine the variables contributing to removal of PPIUCD, 'PPIUCD removal' was the dependent variable and Parity, Education level, Decision maker, Counselling, Experience of complication, Satisfaction Level were selected as Independent variables.

### b. Method adopted to assess the Quality of Counselling

Another objective of the study was to assess the quality of counselling to know if quality of counselling has a role to play in acceptance of PPIUCD. To control for the Hawthorne effect, few of the counselling sessions were observed while in rest of the cases the women were interviewed regarding the quality of counselling at the exit point to minimize the bias.

For observing the quality of counselling, a mix of exit interviews and direct observation of counselling was done in order to control for the Hawthorne effect. A total of 30 counselling were assessed across the selected public health facilities.

The quality of counselling was observed with the help of structured checklist. Counselling was assessed to know if GATHER approach for family planning counselling was used. The GATHER stands for G- Greet the client, A- Ask the client about themselves, T- Telling them about the entire basket of family planning services, Help- Help the client to choose one of the available methods suitable to them, Evaluate and Explain- Evaluating their medical eligibility criteria for the chosen method and explaining them how to use the method and, lastly R – appointment for the Return visit if the client cannot decide for a method in the current visit.

Ethical permission for the study was sought from Institutional Ethics Committee.

### Results:

Results of PPIUCD service provision and beneficiaries' perspective:

The Mean age of beneficiaries included in the study was 23.69 years with the range of 18 to 40 years. Around 70% of the beneficiaries had education of secondary level and above, only 15.3% of the total acceptors of PPIUCD were uneducated. Moreover, higher acceptance was seen among the primiparous women as compared to multiparous.

**Table :1 Distribution of study population according to Fertility Intentions and Counselling for PPIUCD**

Indicators	Frequency	Percentage
<b>Fertility Intentions (Willingness to have another Child) (n=255)</b>		
Yes	79	30.9%
No	80	31.4%
Not Sure	96	37.7%
<b>Counselling Received (n=255)</b>		
Yes	181	70.9%
No	74	29%
<b>Timing of Counselling (n=181)</b>		
Before Pregnancy	2	1.1%
During Ante-natal Check-up	51	28.2%
Early Labour	10	5.5%
After Delivery	118	65.2%
Post-Partum Period	0	0.0%
<b>Source of information Regarding PPIUCD (n=181)</b>		
Staff Nurse	121	66.9%
ASHA	45	24.9%
Anganwadi Worker	9	4.9%
ANM	4	2.2%
Doctor	1	0.6%
Relative	1	0.6%
Any other	0	0%
<b>Basket of Service Offered (n=255)</b>		
Yes	52	20.4%
No	203	79.6%

shows the results for fertility intentions, counselling for family planning services, timing of counselling and its source and whether women were offered the basket of choices available to them. Our study result shows that contradictory to the ethics of offering the entire basket of family planning methods to the women, 79.6% of the were not informed about all the available methods for family planning.

Table 2 shows the details related to the decision maker for acceptance of PPIUCD, timing of decision making, adverse events experienced and its type, medical help sought for the adverse events, satisfaction with PPIUCD and reason of removal in case of the removal of PPIUCD. 45.1% of the beneficiaries were not asked of their willingness to get PPIUCD inserted.

The results in the study show that around 51.4% faced some or the other adverse effects like abdominal pain, irregular

menstruation (including heavy menstrual flow or longer than normal duration of menstruation) and expulsion.

Table 3 shows the results of Chi Square test run between Level of Satisfaction amongst women who accepted PPIUCD and Education Level, Removal of PPIUCD, Women who experienced complication post PPIUCD insertion, the Decision Maker for acceptance and women who received counselling. We found statistically significant association between level of satisfaction and all the independent variables except level of education of the women.

Table 4 shows the results of Chi Square test between women who underwent removal of PPIUCD and dependent variables such as Parity, Women who experienced complication post PPIUCD insertion, the Decision Maker for acceptance and women who received counselling, Education Level and found a statistically significant association of PPIUCD Removal with

**Table 2: Factors related decision making, adverse events and satisfaction of the study subjects**

Indicators	Frequency	Percentage
<b>Decision Maker for PPIUCD (n=255)</b>		
Not asked before insertion	115	45.1%
Self	94	36.9%
Self, in consultation with Family	21	8.2%
Husband	11	4.3%
Mother-in- Law	10	3.9%
Mother	2	0.8%
Sister	2	0.8%
<b>Timing of decision-making (n=255)</b>		
Never	118	46.3%
Ante-Natal Care	35	13.7%
Before Delivery	12	4.7%
After Delivery	90	35.3%
<b>Adverse events following PPIUCD insertion (n=255)</b>		
Yes	131	51.4%
No	124	48.6%
<b>Type of Adverse Event (n=131)</b>		
Irregular Menstruation	56	21.9%
Abdominal Pain	33	12.9%
Expulsion	28	10.9%
Other, specify(Discomfort)	14	5.5%
<b>Sought medical help for adverse events (n=131)</b>		
Yes	120	91.6%
No	11	8.4%
<b>Follow-Ups Attended (n=255)</b>		
None	137	53.7%
One	43	16.9%
Two	43	16.9%
Three	32	12.6%
<b>Satisfaction with PPIUCD (3 point Likert scale) (n=255)</b>		
Dissatisfied	96	37.7%
Neither Satisfied nor Dissatisfied	80	31.4%
Satisfied	79	30.9%
<b>Reason for Removal (n=151)</b>		
Irregular Menstruation	50	33.1%
Abdominal Pain	29	19.2%
Wanted to use another method	25	16.6%
Other (Discomfort)	15	9.9%
Family pressure	12	7.9%
Wanted to conceive	12	7.9%
Don't want to continue	6	3.9%
Missing thread	2	1.3%

Women who experienced complication post PPIUCD insertion, the Decision Maker for acceptance and women who received counselling.

As per the test results of Binary Logistic Regression with 'PPIUCD removal' being the dependent variable and Parity,

Education level, Decision maker, Counselling, Experience of complication as Independent variables, it was found that the women who have experienced complication have 4.002 times higher odds of getting PPIUCD removed as compared to those who have not experienced any complications, keeping parity,

**Table : Factors associated with Level of Satisfaction of the study subjects**

Independent Variables		Level of Satisfaction (frequency (%))			Pearson chi square	p- value
		Dissatisfied	Indifferent	Satisfied		
Education Level	Uneducated	13(33.3%)	14(35.9%)	12(30.8%)	7.881	0.445
	Primary Education	18(48.6%)	5(13.5%)	14(37.8%)		
	Secondary Education	60(36.6%)	56(34.1%)	48(29.3%)		
	Graduation	4(30.8%)	5(38.4%)	4(30.8%)		
	Post-Graduation	1(50%)	0(0%)	1(50%)		
PPIUCD Removal	No	14(13.5%)	24(23.1%)	66(63.4%)	90.951	<0.001*
	Yes	82(54.4%)	56(37%)	13(8.6%)		
Complication Experienced	No	16(12.9%)	38(30.6%)	70(56.5%)	89.843	<0.001*
	Yes	80(61.1%)	42(32.1%)	9(6.8%)		
Decision Maker	Self	20(17.4%)	34(29.6%)	61(53%)	80.037	<0.001*
	Other Family Members	4(16%)	9(36%)	12(48%)		
	Not asked before insertion	72(62.6%)	37(32.2%)	6(52.2%)		
Received Counselling	No	49(66.2%)	22(29.7%)	3(4.1%)	47.091	<0.001*
	Yes	47(26%)	58(32%)	76(42%)		

Note: \* p- value < 0.05

decision making, education level, and counselling to be constant ( $p = <0.001$ ,  $OR = 4.002$ ). Also, the women who received counselling were 69.9% less likely to get PPIUCD removed as compared to those who did not receive counselling, keeping parity, decision making, education level, and experience of complication to be constant. ( $p = 0.003$ ,  $OR = 0.301$ )

However, the results of binary logistic equation after adding Satisfaction level along with Parity, Education level, Decision maker, Counselling, Experience of complication as Independent variables, found that women with indifferent level of satisfaction are 62.3% less likely to get PPIUCD removed as compared to women who were dissatisfied after PPIUCD insertion, keeping Parity, Education level, Decision maker, Counselling and Experience of complication to be

constant. ( $p = 0.020$ ,  $OR = 0.377$ ) Also, women who were satisfied with PPIUCD insertion are 97.4% less likely to get PPIUCD removed as compared to women who were dissatisfied after PPIUCD insertion, keeping Parity, Education level, Decision maker, Counselling and Experience of complication to be constant. ( $p = <0.001$ ,  $OR = 0.026$ )

The classification table showed that there is almost 80% of correct classification of the data. The  $R^2$  showed that the model's fitness is good.

### **Results of 'Quality of Counselling' assessment: (Counselling for PPIUCD)**

The common gaps observed during counselling were failure to encourage the women to explain her needs and concerns, lack of involvement of husband or family member during counselling session failed to explore the partner or family's

Table : Factors associated with PPIUCD Removal among the study subjects

Independent Variables		PPIUCD Removed(frequency (%))		Pearson chi square	p- value
		No	Yes		
Parity	Primiparous	57(41%)	82(59%)	0.006	0.937
	Multiparous	47(40.5%)	69(59.5%)		
Experienced Complication	No	71(57.3%)	53(42.7%)	27.123	<0.001*
	Yes	33(25.2%)	98(74.8%)		
Received counselling	No	14(18.9%)	60(81.1%)	20.638	<0.001*
	Yes	90(49.7%)	91(50.3%)		
Decision maker	Self	62(53.9%)	53(46.1%)	23.468	<0.001*
	Other Family Member	14(56%)	11(44%)		
	Not asked before insertion	28(24.3%)	87(75.7%)		
Education Level	Uneducated	19(48.7%)	20(51.3%)	1.339	0.855
	Primary Education	14(37.8%)	23(62.2%)		
	Secondary Education	65(39.6%)	99(60.4%)		
	Graduation	5(38.5%)	8(61.5%)		
	Post-Graduation	1(50%)	1(50%)		

Note: \* p- value < 0.05

knowledge regarding the return of fertility or benefits of spacing birth and their attitude regarding the use of family planning method.

Out of the entire set of information that the counsellor has to provide, the staff nurses disseminated the information partially. The women were informed about the benefits of spacing birth, the risk of pregnancy after the return of fertility. However, they were not offered the basket of family planning methods.

It was noticed that in all the counselling, the counsellor helped the women to arrive at a choice and gave her additional information if needed to arrive at a choice and supported her choice.

With the focus on counselling regarding PPIUCD, all the staff nurses evaluated the women's health if she can use the method safely, discussed the key information about PPIUCD

such as its effectiveness and reversibility. But, not all the information regarding the advantages and specially the limitations and warning signs were disseminated.

### Discussion:

The study findings show that the mean age of PPIUCD acceptors was 23.69 years; this was almost similar to the study done by Somesh Kumar et al where the mean age of the study participants was 24 years.<sup>[3]</sup>

Ranjana et al in their study found that majority of the women accepting PPIUCD were literate.<sup>[6]</sup> In addition, Ashutosh Sharma and Vinita Gupta in their study found higher acceptance of PPIUCD amongst women having secondary level of education.<sup>[7]</sup> This is similar to the results found in our study, where only 15.3% of the women were uneducated. Others had gained some level of education with 70.2% of them having at least secondary education or above.

The study results show that more than half of the women who accepted PPIUCD were primiparous which is similar to the study done by RajniGautam et al where primiparous women showed highest percentage of acceptance.<sup>[8]</sup>

All the women visiting the facility either for antenatal care or for institutional delivery should receive the counselling. Contradictory to this 29% of the beneficiaries reportedly received no counselling regarding family planning methods and specially regarding PPIUCD.

One of the purpose of the study was to know about the decision maker for accepting PPIUCD. However, 45.1% of the women responded that they were not asked about their willingness to adopt PPIUCD. They said that the insertion of PPIUCD was done without their knowledge and they were informed later about the insertion during their stay in the hospital. Few of the beneficiaries complained that insertion was done against their wish and the hospital staff informed that insertion of PPIUCD was compulsory for all the women coming for institutional delivery under the government scheme. The probable reason behind this could be to achieve the established goal of family planning and for earning the incentives. Moreover, even after the insertion, women were not given any information about the advantages adopting PPIUCD, its limitations regarding the protection from STIs and its adverse effects. While amongst the rest, majorly it was either the women alone or women with her family members who decided about the family planning method to choose. However, few women said it was their husband, mother-in-law, mother or sister made the decision. Another study also stated the higher acceptance of PPIUCD among the women who received support from family and husband for the same.<sup>[9]</sup> While assessing the quality of counselling, in only 33% cases staff nurse involved the partner or family member in the counselling and explored their attitude towards family planning.

In spite of multiple contacts of the women with the health care providers during her pregnancy, very few of them gained the information about family planning methods during ANC visits. The majority of the respondents in our study reported to have received counselling on the labour table after the delivery. For better acceptance of PPIUCD, the counselling should begin during the ANC visits to the facility. In the study done by R. Chauhan et al, 53% of the counselling were imparted during the antenatal period while only 9.8% of them were counselled after the delivery.<sup>[10]</sup> Scenario in this study was found to be very different, where 65.2% of the women received counselling after the delivery.

In 66.9% of the women responded that the source of information regarding PPIUCD were the staff nurses. This shows that staff nurses are the ones who play an important role in counselling the women for PPIUCD. However, we

cannot ignore the role of front line workers (FLWs) as almost one-fourth of the beneficiaries reported to have received the information through ASHAs.

Although guidelines suggest that all women must ideally be informed about all the methods available for family planning. However, the study results show that 79.6% of the women were not made aware regarding the entire basket of family planning methods.

Kelly O' Hanley and Douglas H. Huber in their study mentioned that expulsion rates of 7-15% at six months can be expected.<sup>[11]</sup> The current study shows the expulsion rate of 10.9%, which is almost similar to the study done by Manju Shukla et al where they reported expulsion rate of 10.7%.<sup>[12]</sup> Another study reported higher expulsion rate of almost 18%.<sup>[13]</sup>

The 12.9% of the women complained of abdominal pain and 21.9% of them experienced bleeding issues (either longer duration of menstruation or irregular menstruation) following PPIUCD insertion. This was dissimilar to the study done by Sudha C.P. et al where adverse effects such as abdominal pain and bleeding were reported by 8.3% and 6.7% of the women respectively.<sup>[14]</sup>

The study findings show that 53.7% of the women never visited the facility for any of the three scheduled follow-ups after adopting PPIUCD for family planning. Many studies emphasize the importance of regular visits and early follow-ups to manage high expulsion rates by timely insertion of new IUCD or offering another method of family planning.<sup>[15,16]</sup>

3 point Likert scale was used to measure the level of satisfaction amongst the beneficiaries of PPIUCD. 37.7% of the beneficiaries were dissatisfied with PPIUCD, 31.4% reported neither satisfaction or dissatisfaction while 30.9% of the women were satisfied by adopting PPIUCD. However, AashikaJanwadkar and Gulab Singh Shekhawat, in their study showed higher rate of satisfaction among the acceptors of PPIUCD.<sup>[17]</sup>

One of the major reason observed for removal of PPIUCD was bleeding. There are many studies which also reported bleeding to be the main reason for removal.<sup>[10,18,19]</sup>

While the other reasons of removal found in the study were abdominal pain in 19.2%, opting for another method of contraceptive in 16.6%, discomfort in 9.93%, family pressure in 7.9%, willingness to conceive in 7.9%. A Study by T.K. ShaanthyGunasing, mentioned that it was the partner or family member who played important role in making decisions regarding the method for family planning. [20] Thus as we found in the study, when the decision about PPIUCD insertion was made on the labour table without consulting the partner could result in early removal in case of partner's disagreement with the choice of method. Also, there are various misconceptions regarding PPIUCD such as it interferes

with coitus. Thus, it is important to have partner's involvement during counselling.<sup>[21]</sup>

Findings of quality of counselling assessment suggests that partner's involvement was missing during the counselling which is very crucial to improve the acceptance of PPIUCD in the community. In addition, not much information about the limitation and side effects of PPIUCD was given. This partial knowledge can be the cause for higher cases of removal seen in the study and could influence the level of satisfaction.

A dedicated cadre of family planning counsellors must be appointed at facilities having high delivery load (at least at CHC and District Hospital) so that we do not lose any opportunity to spread the word. Also, it is substantially important to focus on the timing of counselling. Efforts must be made to counsel all the women during their ANC visit and involve the partner or family member, this will give time to the women and her family to make informed choice. Refresher training must be imparted on regular basis to the staff nurses and others who undertake the job of counselling to adopt GATHER approach for family planning counselling. With proper counselling, higher level of satisfaction amongst the beneficiaries can be achieved. A proper counselling can give miraculous results and can improve the continuation rates by eliminating unnecessary cases of removal such as removal due to abdominal pain, bleeding and others which are curable.

### Conclusion:

Government of Madhya Pradesh is making extreme efforts to reach the desired goal of replacement level fertility. With such low expulsion rates and an average level of satisfaction, we can conclude that PPIUCD can be the solution for developing countries like India that are facing population crises. The acceptance of PPIUCD can be improved by improving the quality of counselling. Higher acceptance of family planning methods specially during postpartum period can bring down the high maternal and neonatal mortality occurring due to great number of births within short intervals.

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