Postpartum Intrauterine Contraceptive Device (PPIUCD) Services in Rajasthan & Maharashtra

Assessment Report
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Executive summary

Background and objectives

In order to promote uptake of contraceptive services, Government of India has renewed its efforts to focus on postpartum contraceptive services, especially PPIUCD. Several steps were undertaken such as training of service providers, strengthening counseling services and creating awareness about PPIUCD method. These steps have resulted in rapid increase in number of PPIUCD insertions in the several states of India.

State governments in two states (Rajasthan and Maharashtra) requested UNFPA to undertake an assessment of quality of PPIUCD services. The study was conducted by School of Public Health, Post Graduate Institute of Medical Education and Research (PGIMER), Chandigarh.

Specific objectives of the study were:

- To understand client's experience with PPIUCD insertion with regard to: decision-making, consent, information received, satisfaction, perceived side effects and care seeking for them and continuation of method
- To understand service providers' perspectives, practice and experience with PPIUCD programme
- To assess the readiness of facilities to provide quality of care involved at the facility level in terms of counselling, quality of service, and follow up after PPIUCD insertion.

Methodology of the study

In each of the states, districts with at least six health facilities having institutional delivery load of 600 or more annually were eligible to participate in this study. Stratified random sampling technique was used to select districts among the eligible districts. Three districts from each state i.e. one high performing district with PPIUCD insertion rate of >25%, one mid performing with rate between 17 to 24%, and one low performing district with insertion rate of less than 17% were selected. Mixed methods study design, with both quantitative and qualitative study, was used to collect the data (using pretested tools), from randomly selected districts. The study included-

- Clients interviews (Structured quantitative and qualitative) with women having PPIUCD inside them as per hospital records
- Interviews with service providers (Structured quantitative and qualitative) with doctors and nurses involved with insertion of PPIUCD
- Health facility assessment
- Observation of PPIUCD insertion process
- Program managers interview at district level

A total of 651 clients were interviewed using structured schedule (quantitative assessment), and 122 using in-depth interviews (qualitative assessment) in three categories i.e., within 1-2 days of delivery (20%), within 1-2 months after delivery (40.4%) and in 4-6 months after delivery (39.6%). Total 79 service providers, including doctors (n=29), nurses (n=47) and LHVs (n=2) were interviewed in quantitative (N=36) and qualitative study (N=43). A total of 36 facilities were assessed, and 28 PPIUCD procedures were observed in both the states.

Salient findings

Nearly 80% of interviewed women lived in rural areas and nearly one third were illiterate.

Of 651 women, 35.8% were not aware that PPIUCD was inserted inside them after their delivery in the hospital. Counseling was mostly done after delivery (53%), only 24% women reported that any counseling was done during antenatal period. The proportion of women who were told about the advantages of PPIUCD (23%) was more than who were also told about its limitations (9.6%).

Of women who were aware that they had a PPIUCD inserted, 37.1% reported that no consent was sought from them or their family members before inserting PPIUCD, while for 8%, consent was obtained only from family members. Only 47.4% of these women reported that they had given a consent for PPIUCD.

Of women who were interviewed at 1-2 months delivery, 18.7% had got the PPIUCD removed, and 10.3% reported that it had been expelled. Of women who were interviewed at 4-6 months after delivery[1], 32.7% had got it removed, 9% reported expulsion, while 55% reported it was retained. Significantly higher proportion of those women (65.2%) had retained the PPIUCD, who were counselled as compared to those who were not (34.8%). (p=0.000). Common reasons for removal included lower abdominal pain (51%), bleeding (21%), needle prick sensation (28%) or string problems (12%). Out of those who had retained PPIUCD (62.6%), 21.5% women had complaints following PPIUCD insertion. The most common complaint was lower abdominal pain followed by needle pricking sensation, foul smelling discharge and string problem. The rates of dissatisfaction were higher among those who had IUD removed or it was expelled.

These quantitative findings were validated through qualitative interviews with women. Several women reported during qualitative interviews that they were asked about PPIUCD insertion *after* the birth of their baby, and in a few cases, it was inserted even when they had refused. In a few cases, they were told that a PPIUCD had been inserted when they were getting discharged from the facility or during a follow-up visit.

Of the service providers interviewed, 83% had received training in PPIUCD insertion, however, only 58% had received hands-on training. Seventy five percent of service providers felt that the best time for counseling on PPIUCD was during labour or after birth of baby -- the reasons for that were that it easier to insert copper-T because of dilated cervix, it did not cause extra pain to woman, it was easier to convince woman and her family at that time and that the chances of failure were lower. Most of the service providers said they inserted the PPIUCD using Kelly's forceps (80.6%), however a few inserted manually (13.9%) or with other methods (5.6%).

Although most of service providers perceived that PPIUCD programme was useful, most of them felt it was difficult to convince clients about accepting it. About 83% of providers said they had targets for PPIUCD insertion, and half of them said that targets were unreasonable. Many service providers reported they felt pressurized to achieve the targets, and that they received warning letters on failure to achieve the targets. Most providers said that they took consent after delivery, and didn't insert IUCD if the woman was not willing for insertion. Most providers called the women 1-2 months after delivery for a follow up visit, however, most felt that the follow-up rates were low. Service providers in Maharashtra reported that the clients preferred private hospitals especially for removal of PPIUCD during post insertion period.

The program managers reported that the main goal of the program was to promote family planning, and considered it a very good approach. According to them it was important to achieve the targets specified for PPIUCD insertion to meet the family planning goals. If targets were not achieved then they sent notice/warning letters, and took punitive actions (such as withholding increments) when

[11] In Maharashtra, a few women were interviewed after 6 months.

providers didn't achieve targets. Some of the program managers felt pressurized to achieve their targets. The service providers and program managers suggested that there should be more awareness regarding PPIUCD and that counseling should be provided during ANC visits. They also suggested that for better acceptance and retention of PPIUCD, follow up in the community through ASHAs/ANMs should be strengthened.

Assessment of facilities showed that eligibility checklist was not available in 92% facilities, and Kelly's forceps was available in 83% facilities. PPIUCD follow up register was found at 31% health facilities. On observation of actual PPIUCD insertions, it was found that a clean sheet was used in 71% cases, and the providers wore a fresh pair of gloves in 61% cases. Consent was sought from women in 86% cases, which could be higher than that reported by clients. Around 60% staff that was posted in labour room was trained.

Recommendations

Results of the study suggest that urgent attention is needed to proper counseling and consent for PPIUCD insertion. Focus needs to be given on antenatal counseling and reconfirming her willingness during labour. This is in line with the recommendations of government of India[2] that "…*due to the stress of labour, a woman should NOT be counselled for the first time about PPIUCD during active labour, since the intensity of labour does not make it a good time to make an informed choice about contraception*". PPIUCD should not be inserted if women has refused and not consented. Copies of eligibility check lists should be made available in the labor room and should be used before insertion, so that eligibility can be properly assessed. Additionally, it would be crucial that there are no targets for PPIUCD – this would ensure that provider do not feel pressurized to insert PPIUCD when the client is not willing. The focus should be shifted to retention rate than insertion rate of PPIUCD. Proper communication between hospital staff and community health workers should be there so that clients can be followed up and their concerns / side effects can be addressed.

[2] Ministry of Health and Family Welfare, Government of India. **Counseling for postpartum family planning and Postpartum IUCD: Reference Manual**. January 2012, pp45

Introduction

The International Conference on Population and Development held in Cairo in 1994 underscored the need for a comprehensive approach to reproductive health. Closely spaced pregnancies pose greater health risks for mothers and their infants, while unwanted pregnancies often result in unsafe abortions. Studies show that a large proportion of women interviewed in the postpartum period wish to regulate their fertility, either by spacing or preventing future pregnancies. IUCDs are among the most commonly used reversible method of contraception in women of reproductive age worldwide. IUCD may be inserted in post-partum period, post-abortion or in-interval period. Immediate PPIUCD insertion has distinct advantages for the clients and service providers in-terms of ease of insertion, availability of skilled personnel & appropriate facilities, and ensuring spacing between births.

In order to promote uptake of PPIUCD services, number of steps have been taken by the Government of India that included the training of service providers, strengthening counseling services and creating awareness about PPIUCD method. These steps have resulted in rapid increase in number of PPIUCD insertions in the several states of India. With rapid increase of PPIUCD insertion, it is also very important to understand the retention rate, quality of services and client perspective towards PPIUCD. Hence there was a pressing need to assess the quality of PPIUCD services, the client perspectives and to estimate the retention rates, so as to strengthen the implementation of PPIUCD programme as a reversible method of family planning, and support National and State Governments in improving coverage and quality of PPIUCD services. It will also aid in addressing challenges faced by clients in terms of access of services, lack of information or choice of contraceptive methods provided or post PPIUCD insertion issues.

Therefore, the present study was conducted in two states of India; Rajasthan and Maharashtra to assess the status of PPIUCD Program. The specific objectives included a review of the PPIUCD programme implementation in the state in terms of strategy, implementation and monitoring, to assess the quality of care involved at the facility level in terms of counselling, quality of service (including eligibility assessment and infection prevention), and follow up, to understand service providers' perspectives, practice and experience with PPIUCD service and to understand client's experience with PPIUCD insertion with regard to: decision-making about method choice, consent, information received, insertion experience, satisfaction, perceived side effects and care seeking for them, continuation of method, and any issues related to the use of PPIUCD.

Methodology

Study area

The study was conducted in Rajasthan and Maharashtra. The former is the largest state of India and has 6,86,21,012 people and sex ratio of 926 as per census 2011, birth rate of 25.0 as per SRS, 2014. It has 33 districts with overall population density of 201 people per sq. km. Maharashtra, the second most populous state in India with a population of 112,374,333 and sex ratio of 929 as per census 2011[1], birth rate of 16.5 as per Sample Registration System, 2014[2]. It has 36 districts with overall population density of 365 people per sq. km[1].

Study Design

The study was conducted in the state of Rajasthan between August to December 2016 and in Maharashtra between February to May 2017, using concurrent mixed method (quantitative and qualitative) study design to study the retention rate, quality of services and client perspective towards PPIUCD. Both quantitative and qualitative data were collected at the same time. Mixing was done at all levels i.e., data collection, data analysis and data interpretation level.

Study population

The study participants included the women (client) who have opted for PPIUCD, the service providers (medical officers, specialists, nurses) involved in insertion of PPIUCD and program managers involved in implementing the PPIUCD strategy in the two states. (Figure 1)

Sampling Technique

The districts which have the health facilities with a burden of at least 600 deliveries per year were selected. Out of 8 districts in Rajasthan, including Ajmer, Jaisalmer, Jalore, Jhunjhunu, Nagor, Sikar, Sirohi and Tonk were excluded from the sampling frame. The method used for selection of three study districts, i.e., one each from three categories of PPIUCD insertion rate (high with PPIUCD insertion rate of >25%, mid between 17-24%, and low less than 17%), from the remaining districts (n=25) was Probability Proportional to Size (PPS). As per PPS, total number of deliveries (either at district or at the CHCs level) is taken as the size. PPS has been used at the first and second stage. The data available from PCTS for each public health facility in the state was used to rank the districts based on the total PPIUCD inserted during the last year. The sampling procedure included arranging the districts as per PPIUCD insertion rate and from the list three districts were selected, in which stratification by high, medium or low levels are implicit. Hence district Jaipur II (high performing), Alwar (mid performing) and Partapgarh (low performing) were selected randomly in the first stage. (Figure1).

Similar technique was adopted for selection of districts in Maharashtra. The districts which were having at least 6 health facilities with delivery load of 600 per year, like Yeotmal (n=7), Palghar (n=7), Aurangabad (n=7) and Nanded (n=10),were eligible to be included in this study. Out of these districts, 3 districts were selected based upon the PPIUCD insertion rate (defined as number of PPIUCD insertion per 100 deliveries conducted in the district). Among these, three districts i.e., one with high PPIUCD insertion rate (above 25%), one with medium PPIUCD insertion rate (17- 24%), and one with low rate of PPIUCD insertion (below 17%) were selected. Hence, Nanded (PPIUCD rate: 28%), Aurangabad (PPIUCD rate: 15%) and Palghar (PPIUCD rate: 5%) were included in the study. (Source: MICS data, 2016-17).(Figure1). Yeotmal district had 0% PPIUCD rate, hence excluded. At the second stage, in each of the selected districts, six facilities were again selected based on the PPIUCD insertion rate. Thus, the final sample included 18 health facilities (SDHs, RHs and one PHC), where deliveries were conducted (minimum 600 deliveries per year) and PPIUCD services were provided. (Annexure 1,Table 1).

Figure1. Map of India showing the study states.

Same procedure was adopted to select five CHCs in each of the three districts. By selecting fixed number of clients / respondents at each facility at the third stage, made the sample self-weighting and we needed not to generate survey weights later. The district hospital was the sixth facility. Thus, the final sample included 18 facilities (district hospitals and CHCs) each district, making it a total of 36. [Annexure 1:Reference Table 1].

Study population

The study participants were the Program Managers involved in implementing the PPIUCD, strategy in the state, service providers involved in insertion of PPIUCD and women (client) who have opted for PPIUCD.

Sample size and sampling procedures

Sample size

Quantitative study

Sample size was calculated using the formula $4pq/l^2$, where p is prevalence of expulsion of IUCD after insertion of PPIUCD. Prevalence is assumed to be 9% as per study by Mishra (2014) in Orissa[1]; q is p-1; and l is precision and assumed to be 5%. Since stratified random sampling was used to select the districts as per the prevailing PPIUCD insertion rates, hence design effect of 2 is considered for calculating the sample size. After considering the non-response rate of 15%, the final sample size was, N = (132x2) + 40 = 304 from each state.

A total of 338women clients in Rajasthan and 313 in Maharashtra were finally enrolled in the quantitative study. Using proportionate sampling strategy, 118 clients from Jaipur II & 110 each from Partapgarh and Alwar district were enrolled from each category i.e., Clients who had a PPIUCD insertion within last 2 days in postpartum ward (40% clients), in last 1-2 months (30% clients), and in last 4- 6 months (30%). Similarly, 107 clients from Nanded, 102 from Aurangabad and 104 from Palghar district were enrolled with proportionate representation from three categories i.e., clients who had a PPIUCD insertion within last 2 days in postpartum ward (9.6% clients), in last 1-2 months (41.2% clients), and in last 4 months to 1year(49.2%) period.

The selection of clients was based on a serial number from the list of the clients who have received PPIUCD in that health facility in last 6 months (or up to 1 year in case sufficient sample size was not achieved in a particular health facility)and those who were also residing within radius of 8-12 kms from that health facility. The clients for interview were then chosen with a lottery method in three categories as given above. Two service providers per health facility were interviewed, and observational check list regarding the infrastructure, logistics and procedures of PPIUCD insertion was also filled in the selected health facilities.

Qualitative study
For qualitative study in-depth interviews were conducted with the respective program managers; at least 1 doctor per selected health facility; and with the clients who had a PPIUCD insertion within last 2 days in the postpartum ward (n=2); and in the last 1-2 months (n=2) and 4-6 months (n=1) or 4months- 1 year in their homes in each selected health facility and its catchment area. In-depth interviews continued till data saturation.

Data collection instruments

Quantitative study
Data was collected using pretested semi-structured interview schedules. These were prepared after reviewing Post-Partum IUCD reference manual, 2010 (Family Planning division, Ministry of health and Family Welfare, Government of India). The indicators of quality of PPIUCD care were measured by using different interview schedules for the clients and service providers; and check-lists as described below:

Interview schedule for interviewing clients in postpartum ward and at home who had utilized the PPIUCD Services (follow up interviews)

The client interview in the postpartum ward was conducted to obtain information about the client's experience at a given health facility. This instrument was important because it provided information about the quality of services received from the client's perspective (timing of consent, counselling received). Follow-up interviews with clients at home helped in understanding the perspective of clients,

acceptability, satisfaction, post-insertion complications, care-seeking for PPIUCD, expulsion and retention rates.

Interview schedule for the service providers
Interview with the service providers helped in understanding provider's perspective towards PPIUCD services, consent, counselling and follow-up services provided to the clients, and experience with PPIUCD.

Checklist for facility assessment, review of records and observations
The facility was assessed for its readiness to provide quality PPIUCD service using a checklist that assessed broad parameters of quality (infrastructure, human resource, equipment, supplies, protocols etc.).

Checklist for observation of PPIUCD procedure in the health facilities
PPIUCD procedure was observed mainly for consent taking procedures, cleanliness and aseptic procedures followed for PPIUCD insertion.

Qualitative Study
*I*n-depth interview with the clients, service providers and program managers were conducted using in-depth interview guides to explore their beliefs and perceptions about PPIUCD program.

Data collection and Data Quality

Four postgraduate level field investigators that included two social scientists for conducting in-depth interviews collected data. They were specially recruited and trained for this purpose in SPH, PGIMER. Their work was constantly supervised by a trained supervisor, a project officer and periodically by faculty from SPH, PGIMER in the field to ensure quality control. The field investigators administered the pretested and semi structured interview schedules after obtaining written informed consent from the participants. Twenty percent interviews conducted by the field investigators were validated by the supervisor and one percent was validated by the project officer and faculty. Similarly, for the in-depth interviews, audio visual recording was done after taking written informed consent. In-depth interview of the program managers were conducted by the faculty in the three study districts.

Data management and analysis

Quantitative data was entered into excel sheet and analysis of the data was carried out using Statistical package for social sciences (SPSS) for Windows version 17.0, Released 2008 (SPSS Inc., Chicago, IL). Differences between two proportions were analysed using chi square test, and considered significant at 95% confidence interval.
Qualitative data was first transcribed in Hindi using audio tapes, and later translated into English. Translated data was analysed manually by using grounded theory.

Ethical Considerations

The study was approved by the PGIMER's ethics committee. All interviews were conducted one to one and strict attention was paid to privacy and confidentiality. Informed written consent was obtained and study information sheet was provided to the participants, prior to starting the interview in the language understandable by them. All ethical procedures were followed during the course of the study. Before reaching any facility, it was ensured that all approvals from the authorities (such as state government and district level CMHOs etc.) were in place. UNFPA's assistance was sought for obtaining the necessary approvals from the state officials.

Results

Overall, 651 quantitative interviews with the clients and 36 with the service providers were conducted; and 122 qualitative interviews with the clients, 42 with the service providers and 6 with the program managers were conducted.

From the state of Rajasthan, 338 quantitative interviews and 86 qualitative in-depth interviews were conducted with the clients; 20 quantitative interviews (2 medical officers, 18 nurses) and 23 qualitative interviews (8 obstetricians, 5 medical officers and 10 nurses) with the service providers; and 3 with program managers in the three study districts were conducted. Similarly, in Maharashtra, 313 quantitative interviews and 36 qualitative in-depth interviews were conducted with the clients; 16 quantitative interviews (2 medical officers, 14 nurses) and 19 qualitative interviews (12 doctors including 7 Gynaecologists, 2 medical superintendents and 7staff nurses) with the service providers; and 3 with program managers in the three study districts were conducted.

Further, a total of 28 PPIUCD insertions were observed in the health facilities in the two states (Rajasthan 20, Maharashtra 8). Eighteen health facilities were assessed in each states regarding infrastructure availability for PPIUCD insertion. List of total interviews and observations done in selected health facilities in district Jaipur II, Alwar and Partapgarh in Rajasthan and district Nanded, Aurangabad and Palghar in Maharashtra is given in Annexure 2.

The results are described in the following sequence:

A. Clients' Perspective
- Quantitative results
- Qualitative results

B. Service providers' perspective
- Quantitative results
- Qualitative results

C. Program managers' perspective

D. Observations
- Health facility assessments
- Observation of PPIUCD insertion procedure
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A. Clients Perspective

A total of 651 clients (338 in Rajasthan and 313 in Maharashtra) were interviewed in the quantitative study; and 122 clients (86 in Rajasthan and 38 in Maharashtra) were interviewed in-depth qualitatively during the course of study in three study districts. Distribution of number of clients interviewed in three categories i.e., within 1-2 days, 1-2 months, 4-6 months following delivery in Rajasthan and 4 months to 1 year following delivery in Maharashtra in the quantitative and qualitative study is given in Table 1.

Table 1: Number of interviews conducted with the clients.

Categories	Quantitative Interviews			Qualitative in-depth interviews		
	Rajasthan n=338 (%)	Maharashtra n=313 (%)	Total N=651 (%)	Rajasthan n=86 (%)	Maharashtra n=36 (%)	Total N=122 (%)
Within 1-2 days of delivery	93 (27.5)	30 (9.6)	123 (18.9)	23 (26.7)	9 (25)	31 (25.4)

1-2 months following delivery	140 (41.4)	129 (41.2)	269 (41.3)	35 (40.7)	8 (22.2)	23 (18.8)
4-6 months following delivery*/ 4months to 1 year following delivery**	105 (31.1)	154 (49.2)	259 (39.8)	28 (32.6)	19 (52.8)	47 (38.5)

- *For Rajasthan; **for Maharashtra*

A.1 Quantitative study results for clients

A.1.1. Background characteristics

The socio-demographic profile of the clients in the quantitative study is given in Table 2. About 56.3% clients were between 21-25 years of age group followed by 26-30 years (19.3%). Majority of the clients were resided in the rural areas (79.7%). Also, most of the clients were illiterate (36%), worked as housewives (87.5%) and belonged to the weaker section of society [socio economic class IV and V (78 %)].

Table 2: Socio-demographic profile of the clients in the two states.

Characteristics	Rajasthan		Maharashtra		Total		p-value
	N=338	%	N=313	%	N=651	%	
Age group (years)							
15-20 years	52	15.4	78	24.9	130	19.9	0.013
21-25 years	192	56.8	175	55.9	367	56.3	
26-30 years	76	22.5	50	15.9	126	19.3	
31-35 years	15	4.4	8	2.6	23	3.5	
36-40 years	3	0.9	2	0.6	5	0.7	
Area							
Urban	61	18	71	22.8	132	20.3	0.142
Rural	277	82	242	77.3	519	79.7	
Education of the women							
Intermediate or higher	50	14.7	48	15.2	98	15.1	0.000
Up to High School certificate	86	25.4	133	42.4	219	33.6	
Up to Primary school Certificate	54	16	45	14.4	99	15.2	
Less than Primary or illiterate	148	44	87	27.8	235	36.1	
Occupation of the women							
Homemaker	295	87.3	275	87.9	570	87.5	0.551261
Job (government/private)	6	1.8	2	0.06	8	1.23	
Self-employed or farming	27	7.9	24	7.7	51	7.83	
others*	10	2.9	12	3.8	22	3.38	

Religion							
Hindu	293	86.7	261	83.4	554	85.1	0.000
Muslim	44	13	47	15	91	14	
Christian	0	0	1	0.03	1	6.91	
Others	01	0.3	4	1.3	5	0.77	
SES as per modified Prasad's classification(2016)[2]**							
Class I	3	1	14	4.5	17	2.61	0.000
Class II	13	3.8	19	6.1	32	4.92	
Class III	61	18.4	27	8.6	88	13.52	
Class IV	130	38	102	32.6	232	35.64	
Class V	127	38	149	47.5	276	42.40	
Did not disclose	4	1	2	0.6	6	0.92	

**others include teacher, anganwadi worker, maid, tailor and labourer*

***per capita income in INR per month in Class I=₹ 6277 & above, Class II= ₹ 3139-6276, Class III= ₹1883-3138, Class IV=₹942-1882, Class V=Less than ₹ 942*

When the clients were asked about their obstetric and family history (Table 3), about 36.1% of clients reported that they had 2 children. About 47.5% desired to have children after two years or more; and nearly equal number of women (47.9%) denied any future desire of children. Ninety-six percent clients delivered normally; and about 64% of the clients were aware of the fact that PPIUCD was inserted in their uterus after their last child birth. Only 19.3 % of the women used family planning method in the past and preferred condoms (10.6%) and oral contraceptive pills (8.7%) over other contraceptive methods.

Table 3: Obstetric and family planning history of clients

	Rajasthan		**Maharashtra**		**Total**		**p-value**
	N=338	**%**	**N=313**	**%**	**N=651**	**%**	
Number of living children							
0	1	0.2	4	1.3	5	0.77	0.000
1	91	27	126	40.3	217	33.3	
2	116	34	119	38	235	36.1	
3	85	25	49	15.7	134	20.4	
>4	45	13.3	15	4.7	60	9.2	
Future desire for children							
After one year	14	4.1	7	2.2	21	3.2	0.086
After two year or more	146	43.2	163	52.1	309	47.5	
Do not want	172	51	140	44.7	312	47.9	
Don't know	6	1.8	3	0.9	9	1.3	
Last Child Birth						0.0	
Within 48 hours	93	27.5	30	9.6	123	18.9	0.000
Within 1-2 months	140	41.4	129	41.2	269	41.3	
Within 4-6 months	105	31	154	49.2	259	39.8	
Mode of delivery							
Normal delivery	326	96	301	99	627	96.3	0.019

Caesarean delivery	12	4	5	1.6	17	2.6	
MTP cases			6	1.9	6	0.9	
Forceps delivery			1	0.3	1	0.1	
Past users of family planning methods	58	17.2	68	21.7	126	19.3	
Type of family planning method used in the past**							
LAM*	1	0.29	5	1.6	6	0.92	0.000
Condoms	46	13.6	23	7.3	69	10.6	
Oral Contraceptive pills	29	8.57	28	8.9	57	8.7	
DMPA (injections)	3	0.9	0	0	3	0.4	
PPIUCD	1	0.3	2	1.6	3	0.4	
IUCD	3	0.9	10	31.9	13	2.0	
Natural methods	3	0.9	18	5.8	21	3.2	
Non users	280	82.8	245	78.3	525	80.6	

LAM: Lactational amenorrhoea Multiple methods were used*

A.1.2. Awareness regarding PPIUCD insertion

It was observed that overall, about 35% (n=233) of the clients were not aware that PPIUCD was inserted inside them after the delivery of the baby (Table 4).The specific question that was asked was *'Are you aware that CuT was inserted inside you at the time of your delivery?'*And this proportion was higher in clients who were interviewed within 4-6 months of delivery (39.6%) as compared to the clients who were interviewed within 48 hours of delivery (30.1%).

Table 4: Clients' awareness about PPIUCD insertion at the time of delivery

Awareness regarding PPIUCD insertion in the post-natal period		**Clients interviewed Within 48 hours N (%)**	**Clients interviewed Within 1-2 months N (%)**	**Clients interviewed Within 4-6 months N (%)**	**Total N (%)**	**p-value**
Rajasthan	**Yes**	62 (67.0)	92 (65.7)	66(63.0)	220 (**65.0**)	0.871
	No	31 (33.0)	47 (34.3)	38 (37.0)	118 (**35.0**)	
	Total	93 (100)	139 (100)	105 (100)	338 (100)	
Maharashtra	**Yes**	24 (80)	84(65.1)	90 (58.4)	198(**63.3**)	0.069
	No	6 (20)	45 (34.9)	64 (41.6)	115 (**36.7**)	
	Total	30 (100)	129 (100)	154 (100)	313(100)	
Total	**Yes**	86 (69.9)	176 (65.7)	156 (60.4)	418 (**64.2**)	0.168
	No	37 (30.1)	92 (34.3)	102 (39.6)	233 (**35.8**)	
	Total	123 (100)	268 (100)	258 (100)	651 (100)	

Descriptive analysis in the succeeding tables will only focus on the clients 418 (64.2%) who were aware of PPIUCD insertion.

A.1.3. Consent for PPIUCD insertion

Consent related information for PPIUCD insertion is presented in table 5. Overall, consent was obtained from 41.2% cases for PPIUCD insertion from both the states. This proportion was higher in Maharashtra (44.1%) as compared to Rajasthan (38.5%). More than half of the clients (56.9%) who were aware of PPIUCD insertion had given a consent. About 41%(n= 173/418) of the clients gave the consent for PPIUCD themselves. The consent was obtained mostly in writing (34.2%).

Table 5: Client consent status for PPIUCD insertion.

Consent during delivery time	**Rajasthan**		**Maharashtra**		**Total**	
	Total N=338 (%)	**Clients aware of PPIUCD insertion N=220 (%)**	**Total N=313(%)**	**Clients aware of PPIUCD insertion N=198(%)**	**Total N=651 (%)**	**Who were aware of PPIUCD insertion N=418 (%)**
Not obtained	208 (61.5)	96 (43.6)	174 (55.6)	59 (29.8)	382 (58.7)	155(37.1)
Obtained	130 (38.5)	124 (56.4)	139 (44.4)	139 (70.2)	269(41.3)	263 (62.9)
p-value	**0.000**		**0.000**		**0.000**	
Consent obtained	**N=338**	**N=220**	**N=313**	**N=198**	**N=651**	**N=418**
Only client	83 (24.5)	81 (36.8)	117 (37.4)	117 (59.1)	200 (30.7)	198 (47.4)
Both client and other family members	19 (5.6)	19 (8.6)	14 (4.5)	14 (7.1)	33 (5.0)	33 (7.9)
Only husband	23 (6.8)	20 (9.1)	6 (1.9)	6 (3)	29 (4.5)	26 (6.2)
Only other member who was accompanying the client	5 (1.47)	4 (1.8)	2 (0.6)	2 (1)	7(1.1)	6 (1.4)
p-value	**0.461**		**9.954**		**0.980**	
Type of consent	**N=338**	**N=220**	**N=313**	**N=198**	**N=651**	**N=418**
Written	72 (21.3)	70 (31.7)	92 (29.4)	92 (46.5)	164 (25.2)	162 (38.8)
Verbal	47 (13.9)	43(19.5)	38 (11.8)	38 (18.7)	85 (13.1)	81 (19.4)
Both	10 (29.6)	10 (4.5)	8 (2.6)	8 (4.0)	18 (2.8)	18 (4.3)

Do not remember	1 (0.3)	1(0.5)	1 (0.3)	1 (0.5)	2 (0.3)	2 (0.5)
p-value	**0.996**		**1.000**		**0.998**	

About 80.6% of the total clients who were aware of having PPIUCD insertion (n=418), knew the service provider who had inserted the PPIUCD. (Table 6). Mostly the PPIUCD was inserted immediately after the birth of baby (76.5%), followed by after 1 hour to 48 hours (17.4%) of childbirth. (Table 6)

Table 6: Health personnel and timing of PPIUCD insertion

PPIUCD inserted by	**Rajasthan**		**Maharashtra**		**Total**		**p-value**
	N=220	**%**	**N=198**	**%**	**N=418**	**%**	
Doctor/ nurse	176	80	161	81.3	337	80.6	**0.735**
Do not know	44	20	37	18.7	81	19.3	
Timing of PPIUCD Insertion							
Immediately after birth of baby	190	86	130	65.7	320	76.5	**0.000**
During caesarean section	10	4.5	4	2	14	3.3	
After one hour but within 48 Hours	12	5.5	61	30.8	73	17.4	
Do not know	8	3.6	3	1.5	11	2.6	

Nearly, 155 (37.0%) of the clients were not asked for PPIUCD insertion in the labour room prior to insertion. 253 clients said ‘yes’ for PPIUCD insertion, and 17 (4.0%) clients said ‘no’ but inserted. (Annexure 1,Table 2).

The details regarding quality of counseling, procedures of PPIUCD in the labour room and follow up of PPIUCD, satisfaction levels post PPIUCD insertion is given below.

A.1.4. PPIUCD counseling

Overall, counseling rate for PPIUCD insertion was higher among clients who were aware about PPIUCD insertion inside them (34.0%), as compared to overall counseling rate (24.3%), during antenatal period (Table 7). Majority of them were counselled by Nurses (20.6% and 14.4%), followed by doctors (11.2%). Doctors were more involved in counseling sessions in Rajasthan (11.8%) as compared to Maharashtra (4.5%). ASHA workers played a strong role in counseling for PPIUCD (8.4%). [Table 5]. Maximum number of the counseling sessions were conducted in districts with high

PPIUCD insertion rates depicting the impact of counseling sessions on acceptance for PPIUCD amongst the clients. Sometimes the counseling was done by more than one person, so the multiple responses were there.

Table 7: Status of counseling of clients for PPIUCD insertion during antenatal period

Counseling for PPIUCD	Rajasthan		Maharashtra		Total	
	Total N=338 (%)	Clients who were aware of PPIUCD insertion N=220 (%)	Total N=313(%)	Clients who were aware of PPIUCD insertion N=198 (%)	Total N=651 (%)	Who were aware of PPIUCD insertion N=418 (%)
No	247(73)	143 (65)	246(78.5)	133 (67.2)	493 (75.7)	276 (66.0)
Yes	91 (27)	77 (35)	67 (21.4)	65 (32.8)	158 (24.3)	142 (34.0)
Counseling done by*						
Doctor	40 (11.8)	33 (15)	14 (4.5)	14 (7.1)	54 (8.3)	47 (11.2)
Nurse	37 (10.9)	31 (14.1)	57 (18.2)	55 (27.8)	94 (14.4)	86 (20.6)
ASHA	33 (9.8)	25 (11.4)	10 (3.2)	10 (5.1)	43 (6.6)	35 (8.4)
Family members	1 (0.3)	1 (0.5)	2 (0.6)	2 (1)	3 (0.5)	3 (0.7)
Total responses*	111* (32.8)	90 (40.9)*	83* (26.5)	81* (41)	194 (29.8)	171 (40.9)

**Multiple responses were there*

Among the clients who were aware of PPIUCD insertion (N= 418), one third (34.0%; n= 142) were asked for PPIUCD insertion in the antenatal period. About 29% of the total women in two states agreed to insertion to PPIUCD. "*Yes, it should be inserted*" was the most common response in Rajasthan (30.9%) as compared to Maharashtra (27.8%). Only a very small number of women (1.9%) refused PPIUCD. (Table 8)

Table 8: Response of the clients when asked for PPIUCD insertion during counseling sessions in the antenatal period.

Whether asked for PPIUCD insertion in the antenatal period	**Rajasthan**		**Maharashtra**		**Total**	
	Total N=338 (%)	**Clients who were aware of PPIUCD insertion N=220 (%)**	**Total N=313(%)**	**Clients who were aware of PPIUCD insertion N=198 (%)**	**Total N=651 (%)**	**who were aware of PPIUCD insertion N=418(%)**
No	247 (73.1)	143 (65)	246(78.5)	133 (67.2)	493 (75.7)	276 (66.0)
Yes	91 (26.9)	77 (35)	67 (21.4)	65 (32.8)	158 (24.3)	142 (34.0)
p-value	0.042		0.004		0.001	
Response of the clients who were asked for PPIUCD during antenatal period						
Yes, it should be inserted	71 (21)	68 (30.9)	56 (17.9)	55 (27.8)	127 (19.5)	123 (29.4)
No, I do not want it	15 (4.4)	6 (2.7)	3 (1)	2 (1)	18 (2.8)	8 (1.9)
I did not know what to say?	2 (0.6)	2 (0.9)	1 (0.3)	1 (0.5)	3 (0.5)	3 (0.7)
I will discuss with my family and friends	3 (0.9)	1 (0.5)	4 (1.3)	4 (2)	7 (1.1)	5 (1.2)
Didn't said anything	-	-	1 (0.3)	1 (0.5)	1 (0.2)	1 (0.2)
I said I have planned for operation	-	-	2 (0.6)	2 (1)	2 (0.3)	2 (0.5)
p-value	**0.286**		**0.999**		**0.017**	

More than half of the clients (58.9%) who were aware of PPIUCD insertion, responded that they were counselled for PPIUCD insertion immediately after the birth of their baby. This was more prominent in Rajasthan (65.5%) as compared to Maharashtra (51.5%). About one third of the total aware clients (34.0%) were counselled during the antenatal period (Table 9). About 31% clients denied participation in any counseling sessions before, during or after child birth.

Table 9: Time of PPIUCD counselling.

Timing of PPIUCD counseling*	Rajasthan		Maharashtra		Total	
	Total N=338 (%)	Who were aware of PPIUCD insertion N =220 (%)	Total N=651 (%)	who were aware of PPIUCD insertion N=418 (%)	Total N=651 (%)	who were aware of PPIUCD insertion N=418 (%)
During antenatal period of pregnancy	91 (26.9)	77 (35)	67 (21.4)	65 (32.8)	158 (24.7)	142(34.0)
During early labor	16 (4.7)	15 (6.8)	12 (3.8)	12 (6.1)	28 (4.3)	27 (6.5)
Immediately after birth of baby	160 (47.3)	144 (65.5)	106 (33.9)	102 (51.5)	266 (40.9)	246 (58.9)
After delivery in the postnatal ward within 48 hours	22 (6.5)	18 (8.2)	57 (18.2)	54 (27.3)	79 (12.1)	72 (17.2)
During caesarean section (Operation)	9 (2.6)	7 (3.2)	1 (0.3)	1 (0.5)	10 (1.5)	8 (1.9)
After insertion	1 (0.3)	1 (0.5)	21 (6.7)	21 (10.6)	22 (3.4)	22 (5.7)
Never/None	90 (27)	30 (13.6)	114 (36.4)	7 (3.5)	204 (31.3)	37 (8.9)
p-value	0.004		0.000		0.000	

**Multiple responses were there*

About (n=150/651)of the total clients reported that they were told about the advantages of using PPIUCD as a family planning method, but only 9.7% (n= 63) were able to recall any limitations of the PPIUCD that was told to them. (Annexure 1, Table 3). Around 38.8% of the clients were told about the removal process of the PPIUCD in case there was need be. The commonest source for providing the information of PPIUCD was the service provider (76.9%) followed by family members or neighbours (25.3%). Multimedia as source of information was also reported by 7.7% women. (Annexure 1, Table 4).

When the clients were asked that if they were aware about different family planning methods (Table 10), then nearly 80 % and 65% of them had heard about female sterilization (post-partum Tubectomy) and equal no. of them (52.4%) in both the states were able to name condoms, followed by OCPs (49.1% and 9.4%) and injections (DMPAs) [31.7% and 11.2%]. About 15.4% and 19.8% clients in Rajasthan and Maharashtra were not aware about any family planning methods.

Table 10: Awareness of clients about contraceptive methods

Awareness about family planning methods N=338 (100%)	Rajasthan (N=338)		Maharashtra (N=313)		Total (N=651)	
	n	%	n	%	n	%
Lactational amenorrhoea	17	5.02	17	5.4	34	5.2
Condoms	177	52.4	164	52.4	340	52.3
Oral Contraceptive pills	166	49.1	186	59.4	351	53.9
DMPA	107	31.7	35	11.2	141	21.7
IUCD	90	26.6	103	32.9	193	29.6
Non scalpel vasectomy	81	24	72	23	152	23.4
Postpartum Tubectomy	273	80.8	204	65.2	476	73.1
Not aware	52	15.4	62	19.8	113	17.4
Total responses	963	285.0*	843	269.3*	1803	276.9

p value <0.05 (significant); Multiple responses were there

A.1.5. Continuation rates, expulsion and removals of PPIUCD in the postnatal period

Of the total 332 clients who were interviewed within 1-12 months after their delivery to assess the Continuation rates, expulsion and removals of PPIUCD in the postnatal period, nearly 62% had retained them (Table 11), but the bigger proportion was amongst the clients who were interviewed within 1-2 months post-partum (69.3%) as compared to clients between 4 months-1 year of insertion (55.1%). About 10% clients reported expulsion of PPIUCD (more expulsion within 1st two months post-partum; 10.3%) and nearly one-fourth of clients (25.3%) have got it removed. The removal of PPIUCD was maximum amongst the clients in Maharashtra (38.9%) who were interviewed between 4 months -1 year after the last child birth.

Table 11: Status of PPIUCD insertion after 1 to 12 months of insertion among clients who were aware of its insertion

	Current status of PPIUCD	Period after PPIUCD insertion		Total	p-value
		Within 1-2 months	Within 4 months- 1 year		
Rajasthan	**Total number of clients**	**N=92 (%)**	**N=66 (%)**	**N=158 (%)**	
	Retained	60 (65.2)	42 (63.7)	102 (64.6)	**0.536**
	Expelled	13 (14.1)	8 (12)	21 (13.3)	
	Removed	17 (18)	16 (24.2)	33 (20.9)	

	Do not know retained/removed/expelled	2 (2.1)	0	2 (1.3)	
Maharashtra	**Total number of clients**	**N=84 (%)**	**N= 90 (%)**	**N=174 (%)**	
	Retained	62 (73.8)	44 (47.8)	106 (60.3)	**0.004**
	Expelled	5 (5.9)	6 (6.7)	11 (6.3)	
	Removed	16 (19)	35 (38.9)	51 (29.3)	
	Do not know retained/removed/expelled	1 (1.2)	6 (6.7)	7 (4)	
Total	**Total number of clients**	**N=176 (%)**	**N= 156 (%)**	**N= 332 (%)**	
	Retained	122 (69.3)	86 (55.1)	207 (62.6)	**0.015**
	Expelled	18 (10.3)	14 (9.0)	32 (10.0)	
	Removed	33 (18.7)	51 (32.7)	84 (25.3)	
	Do not know retained/removed/expelled	3 (1.7)	6 (3.2)	9 (2.1)	

p value <0.05 (significant);

When the clients who were aware of PPIUCD insertion, were interviewed between 1-12 months to compare the continuation rates, expulsion and removals of PPIUCD on the basis of their counselling status and consent taken, then it was observed that there was a significant difference between the final outcome and counselling status of the clients. As per the table 12, it was observed that a bigger proportion of the clients who were counselled, retained the PPIUCD as compared to those who were not counselled. However, no such association was observed on the basis of the consent taken for PPIUCD insertion.

Table 12: Continuation rates, expulsion and removals of PPIUCD among the clients who were aware about PPIUCD and interviewed between 1-12 months post-partum. (n= 332).

	Retained	**Expulsion**	**Removal**	**Do not Know**	**P value**
Counselling					
Counselled	135 (65.2)	16 (50%)	44 (52.3)	0 (0)	**0.000**
Not Counselled	72 (34.8)	16 (50%)	40 (47.7)	9 (100)	
Consent					
Consented	118 (57.0)	19 (59.3)	49 (58.3)	2 (22.2)	**0.208**
Not Consented	89 (43.0)	13 (40.7)	35 (41.7)	7 (77.8)	
Total	**207 (100)**	**32 (100)**	**84 (100)**	**9 (100)**	

p value <0.05 (significant);

A.1.5.2. Removal status of PPIUCD

Of the 95 women (Rajasthan: 33, and Maharashtra 62) who had removed the PPIUCD, 50 Women preferred the same health facility. This preference was more amongst the women of Rajasthan as compared to Maharashtra (as given in Annexure 1, table 5). The reasons for removal of PPIUCD is given in Annexure 1, table 6. About 13% women reported that they removed the PPIUCD by themselves and a small fraction of women who were interviewed with 4-12 months of PPIUCD insertion reported that PPIUCD expelled of its own while they were passing urine.

A.1.5.2. Complaints following PPIUCD insertion

About 21.5% clients reported complaints following PPIUCD insertion. Maximum complaints were observed within 1-2 months post-partum (28.2%) as compared to within 48 hours (14.5%) or 4-6 months period (2.7%). (Annexure 1, Table 7). Most common complaints reported from the two states were lower abdominal pain (63.5%), followed by bleeding (15.9%), foul smelling discharge (17.5%), needle pricking sensation (17.5%) and string problems (12.7%). It was observed that women who had retained PPIUCD has significantly lesser complaints than those who had removed this ($p<0.05$). (Table 13).

Table 13: Comparison of the complaints amongst the clients interviewed within 1-12 months and 4-12 months who either retained or removed the PPIUCD.

Status of PPIUCD	Retained			Removed		
	Within1-2 months N= 120 (%)	Within 4-12 months N=87 (%)	Total N=207 (%)	Within1-2 months N= 37(%)	Within 4-12 months N= 47(%)	Total N= 84(%)
Complaints present*	**35 (29.1)**	**17 (19.5)**	**52 (25.1)**	**37 (100)**	**47 (100)**	**84 (100)**
Lower abdominal pain	21	5	26	24	31	55
Bleeding	6	4	10	6	16	22
Fever	2	1	3	2	4	6
Discharge	7	3	10	-	6	6
Needle prick	7	1	8	10	10	20
String Problems	6	-	6	8	9	17
Problems during intercourse	2	-	2	-	-	0
Other	1	-	1	2	6	8
Urinary problems	0	1	1	-	-	0
Backache	0	2	2	-	-	0

*p-value: 0.009 (significant)

The treatment seeking behaviour of the clients, who were interviewed within 1-2 months and 4-6 months or 4 months- 1 year of PPIUCD insertion, regarding complaints due to its insertion as shown in Table 14. Overall, 52.9% women sought treatment for their problems; and majority of these women were within 1-2 months of post-partum period. More women sought treatment for their complaints that were associated due to PPIUCD insertion in Maharashtra (40.9%) as compared to Rajasthan (30%). While more women in Rajasthan sought treatment within 1-2 months post -partum, more women in Maharashtra went to doctor within 4-12 months post-partum as depicted in Table 14.

Table 14: Treatment seeking behaviour for managing complaints related to PPIUCD in the clients who received PPIUCD in the last 6 months.

	Within1-2 months N=35		**Within 4-12 months N=17**		**Total N= 52**	
Sought treatment for complaints	**Rajasthan**	**Maharashtra**	**Rajasthan**	**Maharashtra**	**Rajasthan**	**Maharashtra**
Yes	6 (30)	3(20)	3 (30)	6(85.7)	9 (30)	9 (40.9)
No	14 (70)	12 (80)	7 (70)	1(15.3)	21 (70)	13 (59.1)
Total	20	15	10	7	30 (100)	22 (100)
p-value	**0.503**		**0.024**		**0.414**	

p value <0.05 (significant);

A.1.5.3. Satisfaction level of the clients following PPIUCD insertion

The satisfaction level of the clients who had either removed the PPIUCD, had expulsions (N= 116) or who retained PPIUCD (N= 198) when they were rated on the Likert scale is given in table 15. Majority of the clients who had either removed the PPIUCD or had expulsion were dissatisfied (43%) and the bigger proportion was from Maharashtra clients who were interviewed within 1-2 months. Nearly 18.5% were satisfied and an equal proportion of them were ambivalent. On the contrary, about 73% of clients who had retained PPIUCD felt satisfied and largest proportion of them belonged to Maharashtra and who were interviewed within 4-12 months of PPIUCD insertion.

Table 15: Satisfaction level of the clients following PPIUCD insertion

	Rajasthan		Maharashtra		Total	
	Within 1-2 months N=30 (%)	**Within 4-6 months N=24 (%)**	**Within 1-2 months N=21 (%)**	**Within 4months - 1 year N=41 (%)**	**Within 1-2 months N=51 (%)**	**Within 4-6 months N=65 (%)**
Satisfaction level of clients who had either removed the PPIUCD or had expulsion						
Very dissatisfied	7 (23.33)	7 (29.16)	1 (4.8)	6 (14.6)	8 (15.7)	13 (20.0)
Dissatisfied	9 (30)	12 (50)	11 (52.4)	16 (39)	20 (39.2)	28 (43.1)
Neither satisfied nor dissatisfied	6 (20)	2 (8.33)	4 (19)	10 (24.4)	10 (19.6)	12 (18.5)
Satisfied	7 (23.33)	3 (12.5)	5 (23.8)	9 (21.9)	12 (23.5)	12 (18.5)
Very satisfied	1 (3.33)	0 (00)	0 (0)	0 (0)	1 (2.0)	0
P-value	**0.353**		**0.580**		**0.727**	
Satisfaction level of clients who have retained PPIUCD						
	Within 1-2 months N=60 (%)	**Within 4-6 months N=42 (%)**	**Within 1-2 months N=62 (%)**	**Within 4 months- 1 year N=44 (%)**	**Within 1-2 months N=112 (%)**	**Within 4-6 months N=86 (%)**
Very dissatisfied	2 (3.3)	0	2 (3.2)	2 (4.5)	4 (3.6)	2 (2.3)
Dissatisfied	7 (11.7)	2 (4.8)	2 (3.2)	3 (6.8)	9 (8.0)	5 (5.8)
Neither satisfied nor dissatisfied	5 (8.3)	4 (9.5)	13 (20.9)	3 (6.8)	18 (16.1)	7 (8.1)
Satisfied	39 (65)	31 (73.8)	43 (69.4)	33 (75)	82 (73.2)	64 (74.4)
Very satisfied	7 (11.7)	5 (11.9)	2 (3.2)	2 (4.5)	9 (8.0)	7 (8.1)
P-value	**0.549**		**0.346**		**0.629**	

A.1.6. Summary regarding awareness of PPIUCD insertion, counseling, consent and retention.

Out of 651 total clients from the two states, (338 and 313 from Rajasthan and Maharashtra),158 (24.3%) clients were counseled in the antenatal period regarding PPIUCD insertion. Nearly, 64.2% (n=418) clients in the two states were aware about the fact that PPIUCD was inserted in them following delivery in the hospital. (Figure 2). Consent for PPIUCD insertion was obtained from only 62.9% (n=

263) clients who were aware of PPIUCD insertion. Out of 418 women who were aware of PPIUCD inside them, 158 women were interviewed between 1-6 months in Rajasthan and 174 women were interviewed in Maharashtra between 1month to 1 year following PPIUCD insertion. Overall retention rates of PPIUCD observed were 62.3%, expulsion 9.9% whereas, removal rates was 25.3%. About 78.3% of the clients who had retained PPIUCD were satisfied with this method of contraception at the time of interview.

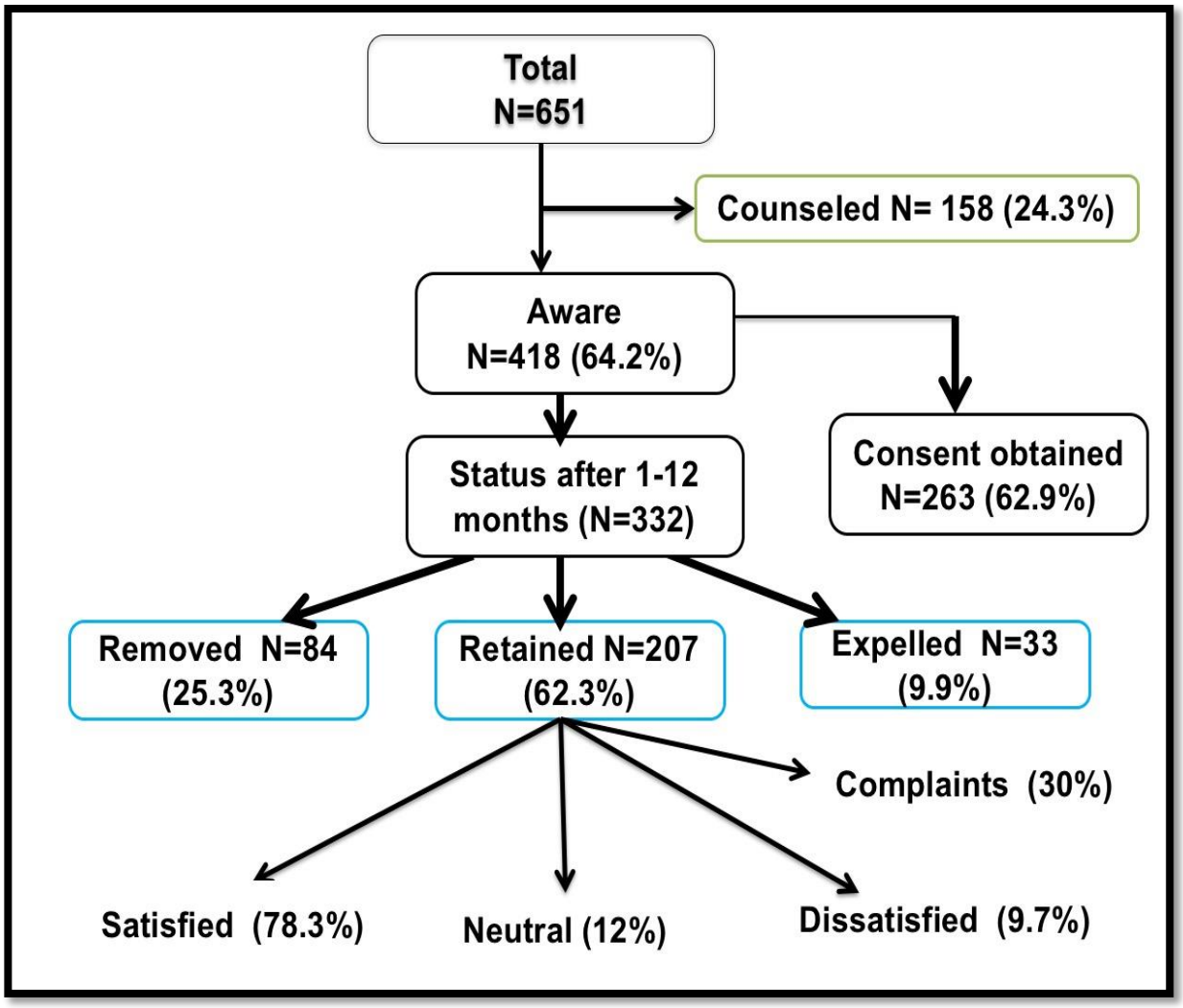

Figure 2. Status of awareness, counseling consent obtained and retention rate regarding PPIUCD insertion among the clients

Detailed break up of PPIUCD status among clients who were aware of it being inserted in them is given in figure 3. Around 39.2% of the clients were aware and counseled (n=255); and 23.5% (n=153) were aware, counseled and consent obtained for PPIUCD insertion. Another 15.7% clients (n=102) were aware and counseled, but consent for PPIUCD insertion was not obtained (and still it was inserted in them); and 11.8% clients were aware about PPIUCD insertion, but neither counseled nor consent was obtained in the two states. Thirty one percent clients (n=204) were unaware, neither counseled nor the consent was obtained. The retention of PPIUCD was also found good and in those clients who were aware of PPIUCD insertion as well as counseled regarding PPIUCD. The details are given in figure 3.

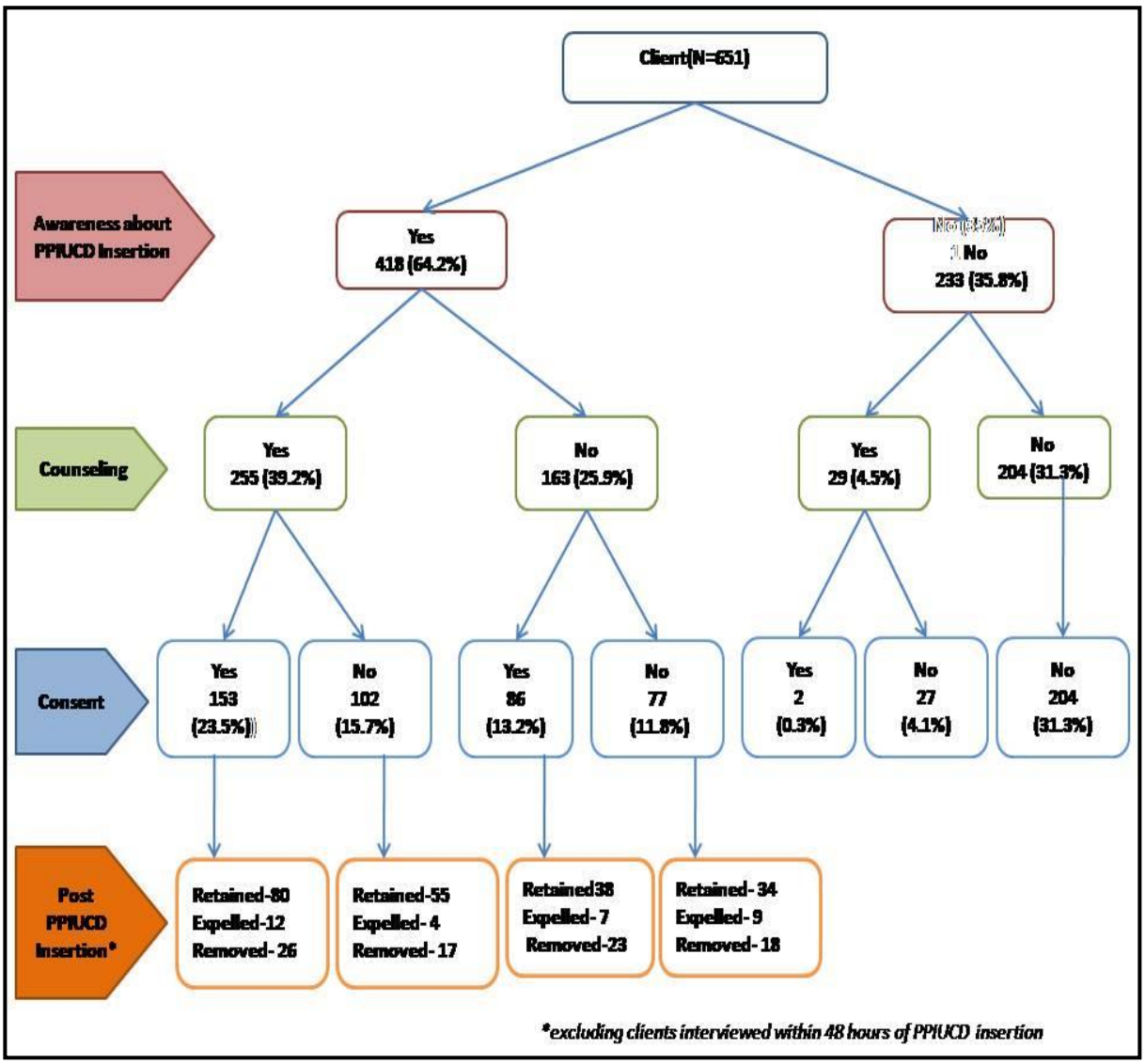

Figure 3. Detailed status of awareness, counseling and consent for PPIUCD among the clients

Status of clients having PPIUCD insertion within 48 hours of delivery

Out of total, 123 clients were interviewed within 48 hours of PPIUCD insertion in the two states. Around 69.9% (86/123) clients were aware about the PPIUCD insertion. The clients who were aware of PPIUCD insertion, counseled about PPIUCD and consent obtained were 28.5% in this category. (Figure 4). All those clients aware about PPIUCD insertion had retained the PPIUCD (n=86).

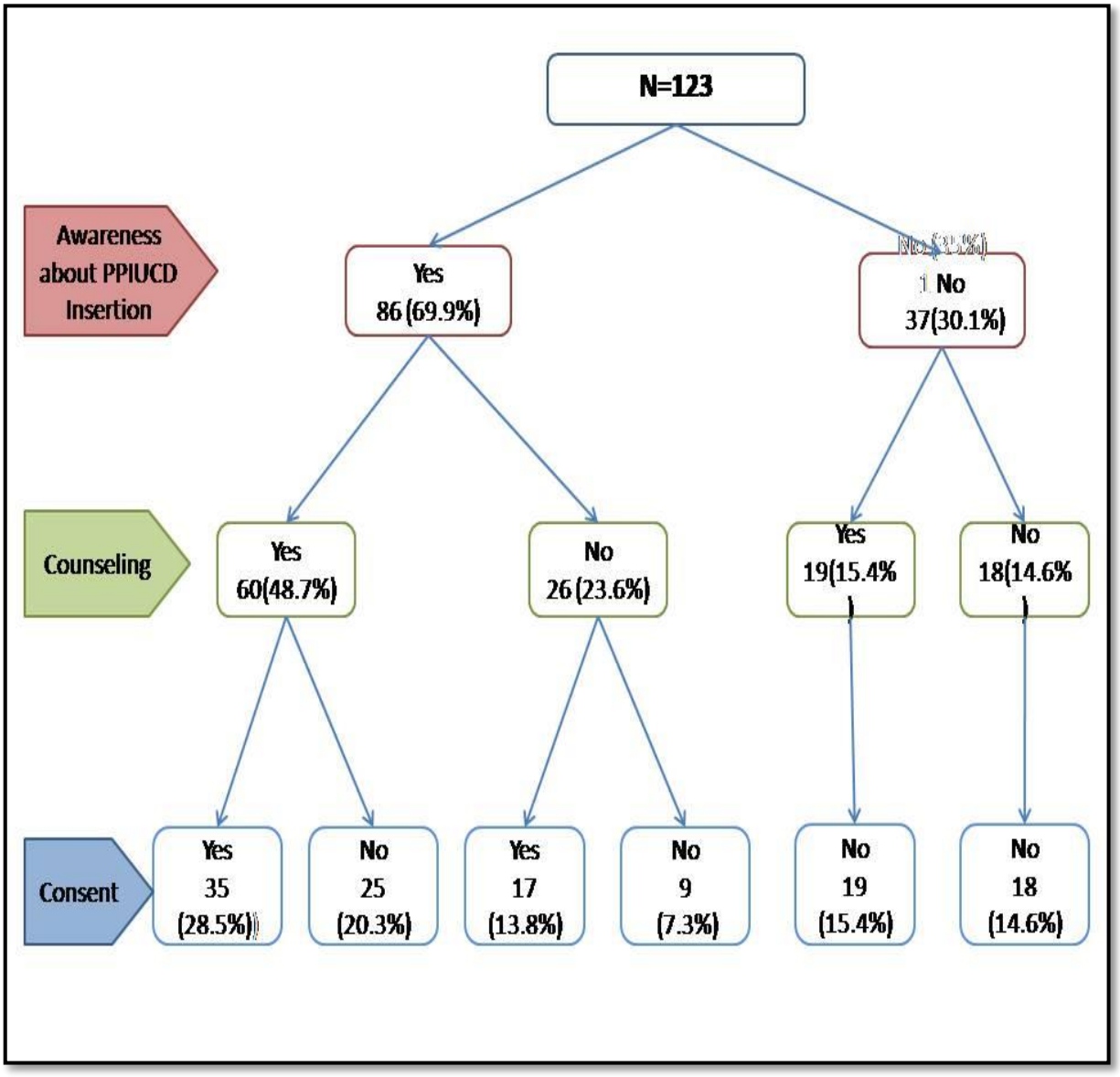

Figure 4. Status of clients interviewed within 48 hours of PPIUCD insertion

Status of clients having PPIUCD insertion 1-2 months ago

A total of 269 clients having PPIUCD insertion 1-2 months ago were interviewed in Rajasthan and Maharashtra. Around 65.4% clients were aware about the PPIUCD insertion in each state but 41.6% were counseled about PPIUCD. Around 29.7% clients of this category were unaware about PPIUCD insertion neither counseled about PPIUCD nor consent was obtained. (Figure 5).

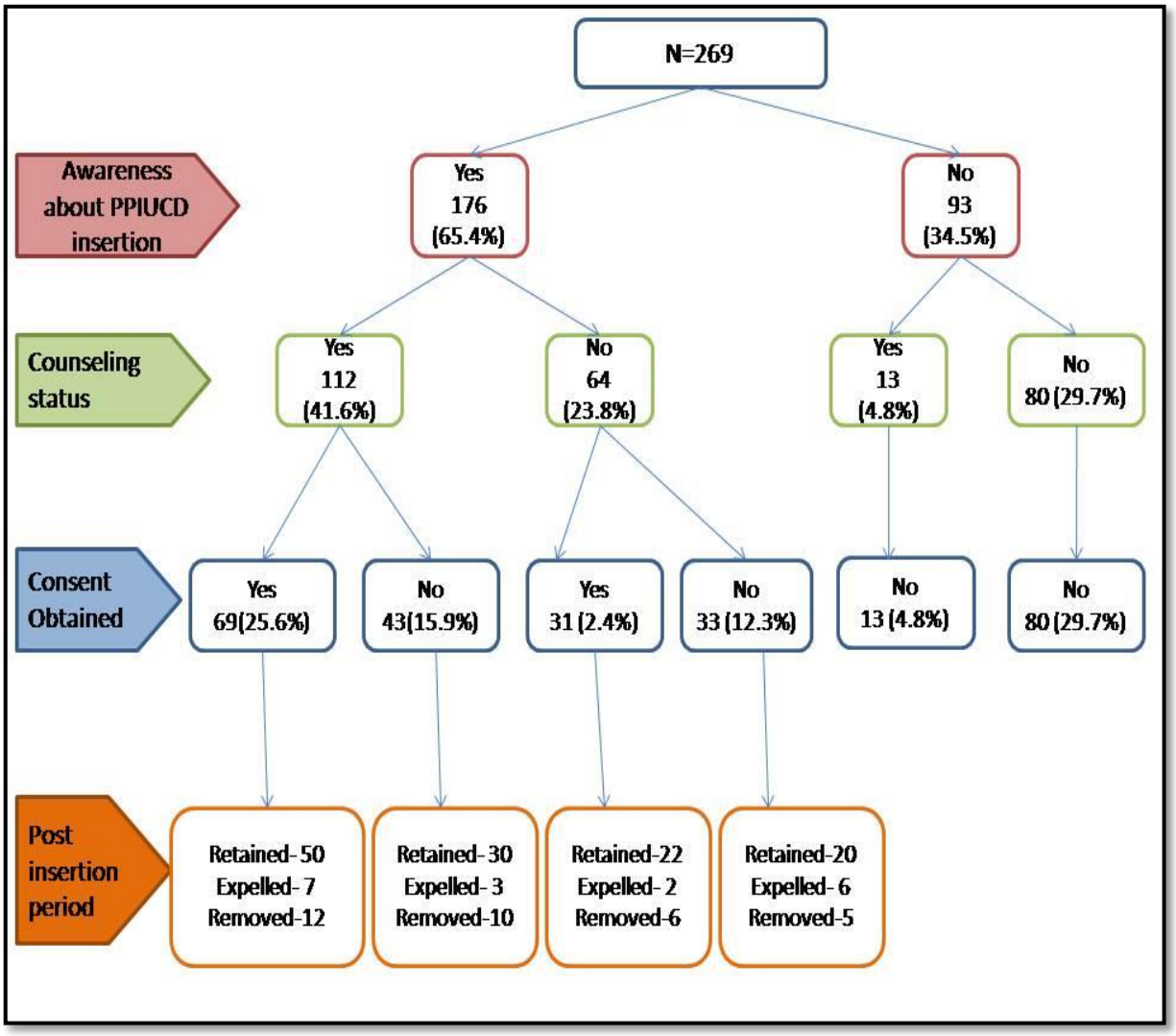

Figure 5.Status of clients interviewed within 1-2 months of PPIUCD insertion

Clients having PPIUCD insertion in 4-12 months back in the two states of India.

Figure 6 depicts the distribution of the 259 clients who had PPIUCD insertion within 4- 12 months were interviewed as per their post insertion status. It was observed that about 40% (n=105) of clients with PPIUCD inserted were not aware of it and 94 of them also denied giving any consent for PPIUCD insertion. Of the total aware patients (n=156), less than half (n=73) had never attended any counselling sessions.

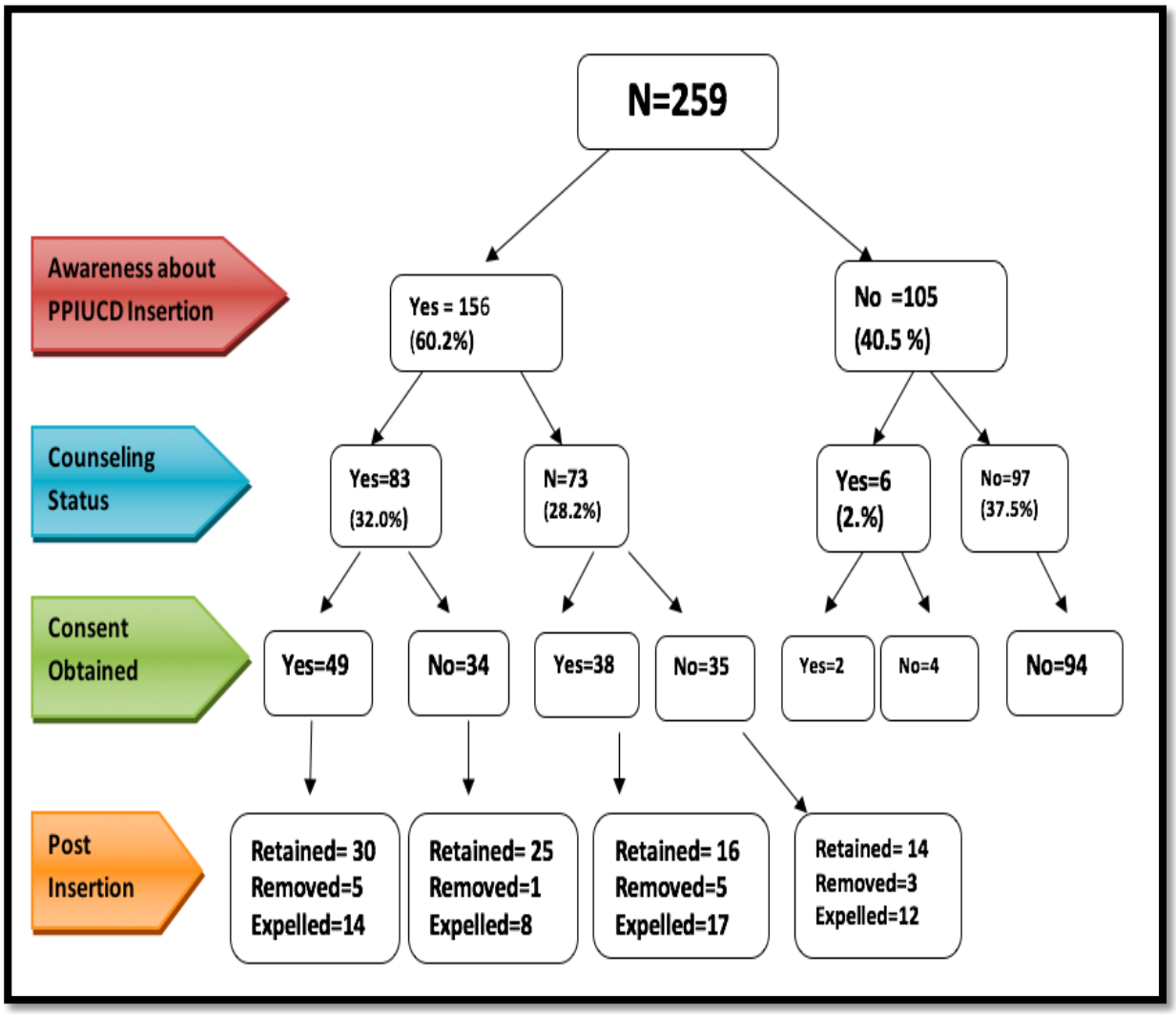

Figure 6. Status of clients interviewed in within 4-6 months (Rajasthan) and within 4 months- 1 year (Maharashtra) of PPIUCD insertion

A.2. Qualitative Study Findings of the Clients

A.2.1. Background characteristics of the clients for qualitative interviews

A total of 122 in depth interviews were conducted with clients who had with records of PPIUCD insertion in the study health facilities. Most of the clients were between 21 to 25 years. The women interviewed were more illiterate in Rajasthan than Maharashtra. Most of them were housewives and live in joint families. In Maharashtra, mostly the women had gone for PPUCD insertion after first child birth but after second child birth in Rajasthan state. (Table 16)

Table 16: Socioeconomic characteristics of clients in Qualitative component

Characteristics	Rajasthan (N=86)	Maharashtra (N=36)	Total (N=122)	p-value
Time period from the time of PPIUCD insertion				
Within 48 hours	19(22)	9(25)	28 (22.9)	0.103
1- 2 months	36(41.8	8(22.2)	44(36.0)	
4-6 months	31(36)	19(52.8)	50(41.0)	
Age in years				
15-20	10(11.6)	5(13.9)	15(12.3)	0.980
21-25	51(59.3)	21(58.3)	72(59.0)	
26-30	19(22.1)	8(22.2)	27(22.1)	
>30	6(6.9)	2(5.6)	8(6.5)	
Education				
Illiterate	31(36)	3(8.3)	**34(27.8)**	**0.000**
Up to 5th	14(16.3)	2(5.6)	16(13.1)	
5th-10th	28(32.3)	16(44.4)	44(35.9)	
>10th	13(15.1)	15(41.7)	28(22.9)	
Occupation				
Daily wager	5(5.8)	2(5.6)	7(5.7)	0.241
Farming	25(29.1)	5(13.9)	30(24.6)	
Housewife	51(59.3)	28(77.8)	79(64.8)	
Other	5(5.8)	1(2.8)	6(4.9)	
Type of family				
Joint	58(67.4)	30(83.3)	88(72.1)	
Nuclear	28(32.6)	6(16.7)	34(27.9)	
Number of family members				
≤5	21(24.4)	12(33.3)	33(27.0)	0.500
6-10	48(55.8)	18(48.7)	66(53.7)	
>10	17(19.8)	5(13.9)	22(18.1)	
Number of children				
1 child	20(23.2)	14(38.9)	34(27.8)	0.308
2 children	34(39.5)	12(33.3)	46(37.7)	
3 children	16(18.6)	6(16.7)	22(18)	
4 children	6(6.9)	3(8.3)	9(7.3)	
≥5 children	10(11.6)	1(2.8)	11(9.0)	

p value <0.05 (significant);

A.2.2. Awareness about the PPIUCD insertion

Most of the clients were aware about the PPIUCD insertion inside them. Few women were not sure about the

"*Yes it was put inside me…after my delivery."*
*(*A23 year old mother of two children, studied up-to primary level reported that PPIUCD was inserted inside her after the delivery- Maharashtra.*)*

"They show it (PPIUCD) to me. It was so much big (giving measurement on her fingers*) and after that they inserted it. They inserted it by some scissors like instrument."* (A 22 years old client interviewed after 4-6 months of delivery of her third child- Rajasthan*)*

"*I don't know anything about it. Doctor didn't tell me anything…* I *don't know whether it's inserted or not."*
*(*A 30 year old, illiterate woman, whose child was born with some head swelling and died after 15 days of birth, reported- Maharashtra*)*

"I don't know about it but they asked me whether I want to go for operation? I replied-not now. After that I don't know they inserted it or not."(A 30 years old, illiterate client having five children ever born during interview in postnatal ward- Rajasthan)

A.2.3. Counseling regarding PPIUCD

A.2.3.1. Timing of counseling

Most of the women reported that counseling for PPIUCD was done after the delivery, by the service providers. No counseling for PPIUCD insertion was done during antenatal period, even if the women went for ANC visits.

*"No, they told me about it after the delivery only."(*A senior secondary certificate, 19 years old mother of single child talked about the counseling session for PPIUCD- Maharashtra*)*

Similarly, a mother of three children from a village in Rajasthan said, *"No one told me earlier. I heard it first time during delivery."*

However, few of the women reported that counseling was done during ANC visit in hospital and / or at the community level.

"Yes. ANM in sub centre told about copper T. And also in hospital, before delivery, all discussions were done with my husband". (Client having one child interviewed at her home after 1-2 months of PPIUCD insertion- Rajasthan)

"From the ASHA and in the anganwadi I got to knew about it…Yes, they informed me and they also told me about it whenever I visited there for check-up." (A 26 years old mother of two children told in interview in Maharashtra)

It was also reported by the clients that the delivery time is very crucial for any woman. While she is bearing so much pain, and not in a position to understand the issue fully and not able to take a decision, hence counseling only at the time of delivery and before insertion is questionable, as she is not in her state of mind to give the consent as reported by a 35 year old illiterate woman having 5 children ever born; interviewed after 4-6 months of PPIUCD insertion in Rajasthan,

"*Madam was saying to me but I was not in my senses* (immediately after caesarean section) *but she told me that we have inserted copper T*"

A.2.3.2. Content of counseling

Regarding the content of information, most of the women reported that it was told to them or their family members that PPIUCD was for maintaining the gap between child births that could vary from 3 to 5 to 10 years; and also that it can be removed anytime when they want to have baby or if they have any problem due to it.

"They said that it is for 5 years and if you feel any problem we will remove it." (A 27 years old woman having 3 children- Rajasthan)

Women were also told about the problems, which might occur due to PPIUCD insertion including heavy bleeding, pain in abdomen, white colour discharge etc. They were also told to seek treatment immediately if such problems occurred.

"*They told me if I have heavy bleeding or heavy water discharge then visit immediately."* (A 21 years old mother of single child- Maharashtra)

However, the women were not told specifically about the problems which may occur after PPIUCD insertion.

"It can be removed if I want a child… but in-between if I have any problem then it can be removed." (A 26 years old post-graduate women after normal delivery of her second child in interview at her home- Maharashtra)

"*They told my husband that we have inserted copper T to your wife and if she will face any problem or you want child again then we will remove this"* (A mother of two children when interviewed after 1-2 months of PPIUCD insertion- Rajasthan)

But some women also reported that the service providers told no such advantages or disadvantages of PPIUCD or its time of removal.

Apart from the service providers and community health workers, ladies in the neighbourhood of the clients, were the main source of information regarding PPIUCD, especially before delivery, as reported by most of the women. The mother's meetings held at the *anganwadi centres* were also a reported as a useful source of information regarding PPIUCD, as women discussed about the contraceptive methods along with other things with each other more openly in these meetings.

*"Yes, I heard a lot (*about CuT*) from nearby people"* (A 26 year old mother of three children; having education up to 12th certificate told that she knew about PPIUCD before delivery- Maharashtra)

"*In anganwadies, we all ladies meet. There, they told me that it was better to insert copper T than operation."(* A 35 years old client from Rajasthan having six children ever born)

Most of the women knew at least one contraceptive method, mostly condoms followed by pills and female sterilization. Very few also knew about the injection and male sterilization.

"Yes, there are condoms, pills" (A 36 years old graduate woman having four children- Maharashtra)

*"I know condoms. I heard about injections, sterilization. But don't know in detail about these." (*A 22 years old housewife and mother of two children- Rajasthan)

Most of the women denied for any previous use of any contraceptive methods, but some women reported the usage of contraceptives that were mostly condoms. Some also used pills to prevent pregnancy.
"*We used condoms. Here in anganwadi they provide us pills. But pills are good for someone and for someone it is bad. So I never had pills." (*A 25 years old woman after her 5th delivery- Rajasthan)
"We used condoms but mostly I used pills. I used pills for almost 2-3 years." (A 36 year old mother after the delivery of her fourth child in interview at her home- Maharashtra)

A.2.4. Consent for PPIUCD insertion

Consent for PPIUCD insertion was not obtained from all the clients who were interviewed. Most of them did not even know about the PPIUCD insertion. Mostly the consent, when obtained, was obtained during the labour or after the delivery. Few women reported that they were informed about it after PPIUCD insertion, or at the time of discharge from the health facility.

A.2.4.1.Women who reported that either they or their family members were asked prior to inserting PPIUCD

It was reported that the permission regarding PPIUCD insertion was sought from the client herself or her family members for PPIUCD before insertion. Most of them agreed for PPIUCD but in few cases, the service provider inserted the PPIUCD even on refusal.

"*They asked me- whether to insert it (PPIUCD) or not and I replied 'YES'*." (A 25 years old Muslim lady having four children ever born, when interviewed during her follow up visit in hospital- Maharashtra)

"*They said that it's your wish to insert it or not. I said 'OK'. My family members agreed with it"(*A client having two children when interviewed in the postnatal ward- Rajasthan)

Permission for PPIUCD insertion was also sought from family members, sometimes in addition to asking woman themselves.

"T*hey asked me whether to insert it or not and I replied no but later I became ready to insert it… I* sought permission *from my in-laws also." (*a 25 years old client having education up to high school level, who delivered her third child normally- Maharashtra)

"Yes, They told me that my mother in law told them to insert it."(A 25 years old mother of three children after 4-6 months of vaginal delivery- Rajasthan)

However, few women in Rajasthan and 1-2 women in Maharashtra also reported that they were not able to understand when asked about permission for PPIUCD insertion and hence giving consent. In such cases, they had to either depend on the family members' decision or the health staff.
"No, I don't know. That's the time of delivery. I don't know what's going outside. They asked my family members and all said 'OK, go for it'."(A 22 years old client after 4-6 months of vaginal delivery of her first child- Rajasthan)
And the PPIUCD was inserted inside the women even on refusal from them.

"After delivery when they asked about that (PPIUCD) I refused and also told them to consult my mother in law as I don't know these things. But they didn't ask her and inserted that (PPIUCD) by their own" (A 26 years old mother of two children with secondary school level education during interview at her home- Rajasthan)

A.2.4.2. Women who reported that prior consent was not obtained for PPIUCD insertion

Few of the women reported that no permission was sought from them or their family members before inserting PPIUCD inside them. They came to know about PPIUCD insertion in them only at the time of or after the discharge.

"No (didn't tell about inserting PPIUCD)… they told me when I was getting discharge." (A 20 year old housewife having education up to 12th standard certificate; mother of single child- Maharashtra). Even her family members did not know that PPIUCD was inserted inside her after the delivery.

"*They inserted Copper T without telling me anything. When I visited again* (after 15 days of delivery) *then I told nurse that I saw a thread hanging out. Then she told me that they had inserted copper T." (*A 27 years old, illiterate client having three children- Rajasthan)

Thirty six years old mother of four children in Maharashtra used CuT before her previous delivery but got it removed because of problem of heavy bleeding. That's why she and her family especially husband were not ready to use this time, and, hence refused. But PPIUCD was inserted inside her and she came to know about it during her revisit to hospital after one and half months. She wanted to go for operation after 2-3 months.
"I went there after one and half months…… and got to know about PPIUCD."

Some women also reported that written consent was obtained from them and their family members for PPIUCD insertion. However, few of clients were not sure about the reason for obtaining signature or thumb impression on papers. This indicates they did not have any clue about the consent about PPIUCD insertion.

*"Yes, they informed me and they took my signatures also on a form regarding PPIUCD." (*A 26 years old working women having two children ever born- Maharashtra)

"They took signature of both of us, me and my husband" (A 27 years old client having two children interviewed after 4-6 months of PPIUCD insertion- Rajasthan)

"*After inserting it (CuT)… They told me nothing about it and just took my thumb impression."* (A 22 years old illiterate mother of two children- Maharashtra)

"*After the delivery they inserted that (*PPIUCD) *and asked for signature but didn't tell anything about copper T, then how anyone knew that why they were taking signature*."
(A 23 years old client having two children when interviewed after 4-6 months of PPIUCD insertion- Rajasthan)

A.2.5. Events related to PPIUCD insertion

A.2.5.1. Factors affecting the decision making regarding PPIUCD insertion

It was observed that family members had a vital role in decision-making regarding use of contraceptive methods, having more children or not, continuity or removal of CuT etc. In Rajasthan, most of the clients reported that they were not in the state to understand and decide about PPIUCD insertion during natal period i.e., at the time of labour/delivery/post delivery period, so they had asked the service providers to discuss about this issue with their family members.

"*They asked me to insert it (*in the labour room)*, but I denied for that. Later, they asked my husband and he said-YES. Then, they inserted it*." (A 19 years old, educated mother having one child- Rajasthan)

"*They asked me to insert it (*in the labour room)*, but I denied for that. Later, they asked my husband and he said-YES. Then, they inserted it*." (A 19 years old, educated mother having one child- Maharashtra)

In Rajasthan, it was observed that gender of new-born baby also determined the acceptance of PPIUCD as a method of contraception as compared to sterilization. If a male baby was born, the clients preferred sterilization especially if that's a second child or after a girl child, as it was believed that family was then complete. However, no such thing came out from the interviews in Maharashtra

"*I would have undergone operation* (Tubectomy*) if I would have delivered a boy, but now that it is a girl, so I agreed for copper T insertion*." (A 24 years old mother of two children from rural area interviewed in postnatal ward)

"*I refused for inserting it (*PPIUCD) *as I wanted operation because I have both boy and girl child. They told me that operation would be done after some time till then use it*." (A 24 years old woman who delivered her second child, was interviewed in postnatal ward)

A.2.5.2. Reasons for opting PPIUCD

Different reasons were reportedly the women to opt for PPIUCD. The most common reasons were for the wellness of their children, and having no desire of more children for few years.

"My family told that baby is small and what if she conceive again. So they insert it." (A 22 years old woman having two children- Rajasthan)

*"Pills are everyday problem and copper T used for once." (*A 21 years old woman after her first delivery- Rajasthan)

"I thought about my child. I heard that if we use pills that it has many side effects also and PPIUCD is a better method than pills."(A 26 years old mother of three children- Maharashtra)

A.2.6. PPIUCD Post-insertion period

A.2.6.1. Instructions at the discharge time

Almost all the women were told to revisit after 1-1.5 months after discharge for check-up or for thread cutting or whenever any problems like pain, heavy bleeding etc., occurred. However, few women were not asked to revisit and did not recall any instructions given at the discharge time.

"*They told to visit after 1and a half month after that they will cut down the excess thread."* (A 25 years old woman after normal delivery of her third child- Maharashtra)
*"They told me to visit them after 1.5 months if I have any problem then or after completing whole 3 years, then to visit them." (*A 20 years old illiterate mother of single child- Rajasthan)

The instructions were followed by most of the women as they revisited the health facility as per the instructions for re-check-up. However, few women could not revisit the hospital as per the instructions for check-up. After expulsion, woman did not visit hospital for check-up or informing the service provider about expulsion.

A.2.6.2. Complaints of the clients after PPIUCD insertion

Most of the women reported absence of any complication or problem after the PPIUCD insertion. However, some women reported problems like "pinching in abdomen", "white colour discharge", or "abdominal pain" etc.

"Sometimes it pinches and I also have problem in sitting and standing." (A 24 years old mother of single child in interview at her home- Maharashtra)

*"I had heavy bleeding.(*this problem was relieved after treatment)... *Now what happens I feel like a part was coming out*(current problem)….*if I am using western toilet then I am OK but in Indian toilet it creates problem."* (A 28 years old woman having two children, last child delivered vaginally- Rajasthan).

A.2.6.3. Retention of PPIUCD

Most of the women, who were aware that PPIUCD was inside them at the time of interview, had retained PPIUCD. However, two women got PPIUCD removed in very short time period i.e. within one to one and half months because of heavy bleeding and for sterilization.

"It (PPIUCD) was removed as I had heavy bleeding due to it…after 1 month." (A 22 years old mother of single child reported). This lady from Maharashtra had problem of spotting since birth of her child. She revisited the health facility 2-3 times for the same problem and sought treatment. But bleeding did not stop. So she planned to remove it. Otherwise, if no problem had occurred, she might have continued with this method.

A 22 years old woman from Maharashtra who had delivered her last child normally reported the expulsion of PPIUCD within a week after delivery. After that episode she was not ready to reuse the PPIUCD.

"I stayed there (in hospital*) for 3 days and on 4th day when I got back to my home I felt it (PPIUCD)down… when I went to the washroom then it fell down."*

"After few days it got expelled out of its own" (A 21 years old client who delivered her first child vaginally- Rajasthan)

"*After 3 days, I had lot of trouble and after 8-9 days my whole body started paining…. when I went for urinal then it got out on its own*." (A 30 years old woman who delivered her fourth child vaginally- Rajasthan)

A.2.6.4. Family members' reaction on PPIUCD insertion

Family members' decision contributed a lot for accepting PPIUCD as contraceptive. The women who were interviewed in this regard shared different experiences. In most of the cases, the family members supported the client for inserting PPIUCD, and were happy with the decision of PPIUCD insertion.

"When I told them about it (PPIUCD insertion) *then said it's fine. They didn't say anything*." (A 20 years old mother of single child- Maharashtra)

*"My mother and mother in law knows and they don't have any problem"(*A 23 years old illiterate mother of three children- Rajasthan)

However, some women also told about negative experiences with the family members regarding PPIUCD insertion.

*"They (*family members*) were angry and also told me that why I get ready for it… that's why my family members shouted on the nurse."(*A 25 years old woman after the delivery of her third child- Maharashtra)

*"My husband thought that I told them to insert it so he shouted on me. No one agreed for this method."(*A 23 years old mother of two children- Rajasthan. In this case, woman or her family members were not asked before inserting PPIUCD inside her. No consent was obtained. Only signature was obtained from woman herself but she was not told the reason of signature obtained.)

A.2.7. Health Service Utilization

It was reported by about 45% of the clients who had problems after PPIUCD insertion (31/86 women) in Rajasthan and (8/36 women) in Maharashtra that they sought treatment at the health facility or talked to community health worker regarding these problems. The problems were managed either by giving medications or removal of PPIUCD at the health facility. *"I went to hospital. They gave tablets as well as injection*." (A 30 years old, illiterate client from Rajasthan having two children ever born was interviewed after 1-2 months of delivery). This lady had complaint of heavy bleeding and lower back pain. Later on, she got the CuT removed from the same health facility where it was inserted.

"I had problems up to one and half month like swelling, back pain and then we again visited there (same health facility of PPIUCD insertion) *for treatment and got relief."* (A 25 years old women having four children ever born in interview- Maharashtra)

"I was happy with it but after I had heavy bleeding I removed it." (A 22 years old woman who delivered her first child vaginally- Maharashtra)

Some of them didn't seek care as they thought these problems remain so after the delivery.
"I never asked anyone as I thought it's the stitches" (A client from Rajasthan who delivered her third child vaginally). She had discomfort while sitting.

A.2.8. Recommendation of PPIUCD to other women

Most of the women reported that they would like to advise other women to opt for PPIUCD as a contraceptive method.

"If she wants a child after some time then I will suggest her PPIUCD and if she doesn't want more children then I will suggest her to go for operation." (A 20 years old mother of single child in interview at her home- Maharashtra)

"If it suits me then I will suggest her." (A 21 years old woman after delivery of her third child- Rajasthan)

A.2.9. Recommendations for improvement in PPIUCD program

Clients could not give much suggestions regarding PPIUCD program as they did not have much knowledge about it. Few women (3-4) said that it was a good program as it provided security and everyone should go for it. However, they suggested that counseling and informed consenting for PPIUCD should be done in a proper manner so that women are well aware what they are undergoing.

"*They should tell about copper T at the time of pregnancy then I would have been able to think what's good. I can also discuss it with my family members, but what they are doing, they are just telling it after delivery, and at that time you can't even think if it is good or not at that time."* (A 25 years old client with middle school level education and having third child- Rajasthan)

"It should be inserted after taking patient's consent only…it will be good then. They have to provide full information then do insert it."(A 28 years old woman, from whom consent for PPIUCD insertion was not obtained, recommended that service providers must seek permission from the women before PPIUCD insertion- Maharashtra)

B. Service Providers Perspective

B.1 Quantitative study results

B.1.1. Background characteristics of the Service Providers

The background characteristics of the service providers who were interviewed is given in table 17. Total 36 service providers (20 from Rajasthan and 16 from Maharashtra) were interviewed. In Maharashtra, no post for ANM was there at the study facilities. The average experience years in health sector and PPIUCD insertion were more among service providers of Rajasthan than Maharashtra.

Table 17: Background characteristics of service providers interviewed in the study districts

Background Characteristics	Rajasthan (N=20)	Maharashtra (N=16)	Total (N=36)	p-value
Number of service providers interviewed				
Doctor	2	2	5	0.008
GNM	9	14	23	
ANM	9	0	9	
Average years of experience in health sector				
Doctor	1 year 7 months	1 year 7 months	1 year 7 months	
GNM	29.88 years	13 years	21.44 years	
ANM	17.48 years	-	17.48 years	
Average year/months of experience in PPIUCD insertion				
Doctor	4.5 years	7.5 months	2.6 years	
GNM	2.13 years	9 months	1.45 years	
ANM	2.1 years	-		
Service providers trained in PPIUCD insertion				
Yes	17	13	30	0.764
No	3	3	6	
Hands on training				
Yes	9	12	21	0.064
No	8	1	9	
Not applicable	3	3	6	

B.1.2. Status of PPIUCD strategy as per service providers in Rajasthan

The perception of service providers regarding best time for PPIUCD insertion in study districts is given in annexure 1 table 8. Most of the service providers perceived that best time of PPIUCD insertion was immediately after birth of child i.e. 90% in Rajasthan and 87.5% in Maharashtra. The remaining service providers in Rajasthan and 12.5% in Maharashtra perceived that after delivery in post-natal ward within 48 hours is the best time.

The reasons for preferring immediate postpartum period or intra-caesarean section time for PPIUCD insertion as per service providers is presented. Majority of service providers (50% in Rajasthan and 68.8% in Maharashtra) said that cervix remains dilated at that time, so it is easy to insert PPIUCD and also patient did not have to bear extra pain. Another reason given by service providers in Rajasthan was that patient remained cooperative and motivated at this time (about 28%), ease of staff to convince client when on labor table (5.5%) and that once the patient was out from labour room/operation theatre they might get negatively influenced by other people and chances of refusal increased (16%). Less chances of failure of PPIUCD insertion was one of the reason given by 6% service providers of Maharashtra. (Annexure 1 Table 9)

The preferred time for counseling by service providers in study districts (Annexure 1 Table 10). In Rajasthan, about 50% service providers prefer to counsel the patient for PPIUCD during labour and about 35% immediately after the delivery. However, in Maharashtra, around half of service providers preferred counseling immediately after delivery followed by during pregnancy (37.5%) and early labor (25%).

The problems faced by service providers during counseling sessions are presented in table 18. Common problems reported were lack of understanding, fear of side effects and refusal by client herself. The proportion of the service providers reporting these problems were more in Rajasthan than Maharashtra except problem of hesitation of husband. In Rajasthan, religious beliefs were also reported to be a problem during counseling.

Table 18: Problems faced* by the service providers during counseling for PPIUCD

Problems faced during counseling	Rajasthan N=20 (%)	Maharashtra N=16 (%)	Total (N=36)
Refusal by client	9 (45)	7 (43.8)	16(44.4)
Lack of understanding	12 (60)	6 (37.5)	18(50)
Fear of side effects	13 (65)	8 (50)	21(58.3)
Hesitation of husband	3 (15)	3 (18.7)	6(16.7)
Mother in law refuses	3 (15)	1 (6.25)	4(11.1)
Religious beliefs	1 (5)	-	1(2.8)

**multiple responses.*

In each study state, half of them reported time for obtaining consent was immediately after delivery (Annexure 1 table 11). Most of the service providers reported the PPIUCD insertion during post placental period (Annexure 1 Table 12). Around 10 % in Rajasthan and 6.3% in Maharashtra , service providers reported PPIUCD insertion both during caesarean section and post placental.
Most of the service providers used Kelly's forceps for PPIUCD insertion followed by manually insertion (Table 19). However, PPIUCD insertion was also done by using Sponge holder and by plunger as reported in Rajasthan.

Table 19: Preferred method used for PPIUCD insertion by the service providers

Method of PPIUCD insertion	Rajasthan N=20 (%)	Maharashtra N=16 (%)	Total N=36 (%)
Manually (by hand)	**4 (20)**	**1 (6.25)**	**5 (13.9)**
By Kelly's forceps	**14 (70)**	**15 (93.75)**	**29 (80.5)**
By Sponge holder	**1 (5)**	**0 (0)**	**1 (2.7)**
By plunger/conventional method	**1 (5)**	**0 (0)**	**1 (2.7)**

p-value: 0.330 (non-significant)

Majority of the service providers called the women for follow up at 6 week after PPICD insertion. Some service providers also called women for follow up after one week of delivery. Very few reported that they call the women after one month for follow up. (Table 20).

Table 20: Follow up time after PPIUCD insertion as per service providers

Time period for follow up after PPIUCD insertion	Rajasthan N=20 (%)	Maharashtra N=16 (%)	Total N=36(%)
One week of delivery	8 (40)	5 (31.25)	13(36.1)
One month After delivery	1 (5)	1 (6.25)	2(5.6)
6 weeks of delivery	11 (55)	10 (62.5)	21(58.3)

p-value: 0.861 (non-significant)

Mostly the service providers reported lower abdominal pain and heavy bleeding as major complaint by the women and the proportion was more among the service providers of Rajasthan. However, other complaints like foul smelling discharge, Husband's complaint, pain during periods and thread related problems were more reported by service providers of Maharashtra than Rajasthan. (Table 21).

Table 21: Frequency distribution of the complaints after PPIUCD insertion reported by the service providers

Complaints related to PPIUCD	Rajasthan N=20 (%)	Maharashtra N=16 (%)	Total N=36(%)
Expulsion	2 (10)	2 (12.5)	4(11.1)
Lower abdominal pain	17 (85)	11 (68.8)	28(77.8)
Heavy Bleeding	17 (85)	7 (43.8)	24(66.7)
High fever	0 (0)	0 (0)	0(0)
Foul smelling discharge	2 (10)	4 (25)	6(16.7)
Husband's complaints	1 (5)	4 (25)	5(13.9)
Bleeding after intercourse	0 (0)	0 (0)	0(0)
Pain During Periods	2 (10)	4 (25)	616.7)
Backache	1 (5)	1(6.25)	2(5.6)
Thread problems	1 (5)	2 (12.5)	3(8.3)
Needle prick sensation	3 (15)	-	3(8.3)
Family pressure	-	2 (12.5)	2(5.6)

Most of the service providers (15/20 in Rajasthan and 10/16 in Maharashtra) knew about the targets for PPIUCD insertion given to them. The targets given were not reasonable according to most of the service providers in Rajasthan in contrast to Maharashtra where targets given were reasonable as per 6/10 service providers. (Annexure 1 Table 13)

In Maharashtra, about 75% of service providers said that they were maintaining only PPIUCD insertion records, while other 25% said that they were maintaining both PPIUCD insertion as well as PPIUCD follow up record. However, this proportion is equal in Rajasthan i.e. 50% reported only PPIUCD service register and 50% for both registers. (Annexure 1 Table 14).

B.2. Qualitative results of service providers

B.2.1. Background profile of the service providers

Total 43 service providers were interviewed i.e. 23 from Rajasthan (7 gynecologists, 6 medical officers, 4 staff nurse, 4 ANM, 2 LHV) and 19 from Maharashtra (7 gynecologists, 2 medical superintendents, 3 medical officers and7 nurses) were conducted.

The themes, subthemes and codes are extracted as per the applied thematic analysis of the textual data of in-depth interviews with service providers, and are described below.

B.2.2. Opinion about PPIUCD program

All the service providers unanimously appreciated the PPIUCD program, especially in tribal areas. Some of them also mentioned that PPIUCD is better contraceptive than interval IUCD, condoms or other contraceptive methods.
"It is a good method for maintaining gap between children. It's not so much popular yet but maybe in future it will be." (Service provider- Maharashtra)

"It is a very good program but this is a tribal area and mostly they don't want to use it. We try our best to convince them but they don't get agree for it. They don't understand what the benefits of it are." (Service provider- Maharashtra)

"Muslim people, they don't want to use any permanent method so only this method is left for them which is as good as permanent method" (Service provider- Rajasthan)

However, the service providers experienced difficulties in convincing the people to make them understand and accept this method of contraception.

"It is a very good program and it is for the people welfare only. In this area people are mostly illiterate and they don't know anything about family planning and they also have so many misconceptions in their mind. So we do their counselling and later inserts it so that there will be no pregnancy. So according to me it's a good method." (Service provider- Maharashtra)

B.2.3. PPIUCD program implementation

B.2.3.1 Training status

Most of the service providers were trained for PPIUCD insertion. The training was done either at district level in batches or health facility level i.e. in small groups by the trained service providers (mostly gynaecologist). The training was conducted from 3 to 5 days. Very few service providers got PPIUCD training during their study course.

"Yes, I had training for that (PPIUCD). *I completed that in 2013 and nowadays they do teach us everything in the residency….on the 5th day of the training we practiced on the patient….there were also demonstrations on the dummy and we had practiced on that dummy too."*(Service provider- Rajasthan)

"No, I don't have any training for it. My friends work in (government) hospital and once I saw him inserting it (PPIUCD). I don't have any formal government training to insert PPIUCD."(Service provider- Maharashtra)

As per the service providers, the content of PPIUCD training included the introduction, theoretical knowledge of PPIUCD insertion, and its practical hands on training on dummies or patients. However, they complained that time for the practice on patients during the training period was very less.

"First the introduction then they gave us demo how to insert it then they allow us to insert it and remove it."(Service provider- Maharashtra)
The service provider reported that the training for PPIUCD insertion was very useful as it covered components like role play for counseling or motivation, information on instruments and procedure for PPIUCD insertion, its indications, contraindications etc.

"First I saw it on TV that PPIUCD gets inserted after delivery, and then I thought it was wrong because after delivery a patient gets tired and also not willing to insert it. They thought that it will stuck inside the body and will causes problems later. But when I did it practically myself, then I felt that it was better than the interval IUCD, and it's also a very good method."(Service provider- Maharashtra)
"Very useful as after that (PPIUCD training) *we don't have any problem to insert it and to motivate people."* (Service Provider- Rajasthan)

However, a service provider from Maharashtra reported that if there would be more live demonstration or practice sessions on the patients (or women) eligible for PPIUCD insertion, then the trainees like staff nurses or others who are not gynaecologist or fresher, then it would be easier for them to understand the process of PPIUCD insertion.

"Yes, (training was useful) *but there are not so much cases* (patients for live demonstration*) as there are persons for training. As a gynaecologist, it's easy for me to catch this method and to practice but it's not possible for staff members and nurses. So for that if they assist in 3-4 cases themselves then it would be easy for them to catch this technique (*of PPIUCD insertion)." (Service provider- Maharashtra)

B.2.3.2. Counselling regarding PPIUCD

Most of the service providers in Rajasthan said that the counseling is started during antenatal period through ASHA or ANM. However, few service providers also reported it to be happening during delivery time only. Apart from MOs, '*yashoda'*(female health volunteer)in the labour room were also involved in the counseling of the patient regarding PPIUCD insertion. However, In Maharashtra, no ANMs were posted in the study health facilities, so the counseling was done by staff nurse or doctors.

"Yes, we do the counseling in 7th month also. Those who get ready we write on their card that she is willing to insert and after her delivery I ask them again and if she still wants it then I insert it and if she doesn't want to use it then I don't insert it."(Service provider- Maharashtra)

*"In antenatal period, patient does not agree for insertion but when a patient gets admitted for her delivery then we start her counseling. When she comes on to the table (labouring table) then we do full counseling and most often women agrees….." (*Service Providers- Rajasthan)

While counselling, the service providers faced many difficulties like people had many misconceptions about PPIUCD, little understanding, family pressure for not using PPIUCD etc. Therefore, more counselling needed to be done to convince the women.

"Most of the people here are illiterate, they don't easily understand about it. They get scared by just listening the name of PPIUCD. They start telling us that it will cause such problem and they all discuss about it with other ladies and so others will also get scared so we try our best to make them understand about it. We tell them that it will not cause any problem and if they have any then it can be removed."(Service provider- Maharashtra)

"Relatives of patients creates problem. Ladies thought that they are facing pains so this copper –Twill give them relief of 3-4 years but when we talk to their family members they denied that it is not safe. We do counseling but they refuse."(Service provider- Maharashtra)

"It's easy to insert it at that time because after that it's difficult to bring back the patient for insertion. After the delivery, patient gets easily convinced to get it inserted on the table. But when the patient goes to her ward then all the nearby ladies tell her that it's a bad thing and it should not be inserted. Then the patient gets demotivated." (Service provider- Rajasthan)

B.2.3.3. Consent for PPIUCD insertion

Service providers from both states reported that consent was obtained before insertion or before delivery and sometimes after delivery.

*"Before the delivery, when their labour pain starts then we ask them that are they ready to insert it and if they are ready then we take their consent." (*Service provider- Maharashtra)

"*When we do their counseling at that time we take the verbal consent and after the delivery we take their written consent."* (Service provider- Rajasthan)

The service provider from Maharashtra told the reason for taking consent after the delivery as the woman settled down after the delivery and not in much pain after the delivery. And also, consent from both husband and wife (eligible woman for PPIUCD insertion) was obtained as the husbands have complaints regarding PPIUCD insertion, and their consent was necessary for the success of PPIUCD insertion.

*"Before the delivery a patient is in heavy pain, she is not able to talk properly so we talk to her after the delivery and try to take the consent." (*Service provider- Maharashtra)

*"Both- husband and wife…because sometimes husband complaints that who permit to insert it and if his wife gives her consent then it's is very important to take his permission too." (*Service provider- Maharashtra)

Service providers also reported that sometimes clients refuse for PPIUCD insertion after giving the consent for it. More time devotion for counselling and convincing the women and her family members is needed as reported by the service providers. The refusal by the women after giving consent was mainly due to family pressure.

*"If she denied then patient is supreme, we try to convince her, counsel her." (*Service provider- Rajasthan)

*"We tell them because they also don't want their next baby so early. But in many cases they refused later to use it which is due to the pressure of their husband or family members." (*Service provider- Maharashtra)

*"We and medical officer too tries to convince them. We also call the local ANM and tell her to do their counseling. We don't insert it forcefully." (*Service provider- Maharashtra)

Few service providers in Maharashtra reported that they avoided the PPIUCD insertion in such cases of refusal even after giving the consent.

"*We don't insert in that cases (refusal after consent giving) because these types of patients have misconceptions or phobia and what they do, if they found any symptom then they disclose to other nearby ladies and discourage them for not to use it…We tell them it's not compulsory that you have to us it, if it suits you then use it and if it doesn't suits it then don't use it. Some ladies take trial and use it later and some after 15 days of usage visits again to remove it*." *(*Service provider- Maharashtra)

B.2.3.4. Assessment of eligibility criteria for PPIUCD insertion

Most of the service providers reported that the woman was assessed after the delivery whether she was eligible or not for PPIUCD insertion. No special investigations carried out before PPIUCD insertion. The conditions which service providers usually take into consideration include heavy bleeding, cervical tear, haemoglobin level etc. However, medical history, the investigations done during ANC check-ups were taken into consideration.

"We don't (do special investigation*) but at the time of history we see the labour record and if the patient have labour pain from more than 24 hours or the patient have obstructed labour from more than 18 hours then in those cases we don't insert this PPIUCD and if anyhow we have to insert it then firstly we will see that patient is purely on antibiotic, then only we do insert it. There are also some cases where patient is going through blood transfusion; in those cases also we don't insert it. if any patient have PPH, then first we will control her PPH then we will insert the PPIUCD but only in one condition that her Hb level is above 8gm." (*Service provider- Maharashtra)

"*If there is a case of stillbirth then we will insert it, as there will be no problem. In the case of birth asphyxia, if we settle the baby then her mother will also get settled. If the mother have any problem or have heavy bleeding then we will not insert it."* (Service provider- Rajasthan)

In case of Still birth or Birth Asphyxia, the service providers of Maharashtra reported they generally did not insert PPIUCD as the mental status of women after delivery of still birth or baby with birth asphyxia was not sound. Some of them tried to convince the woman for PPIUCD insertion and insert it only as per her will.

*"In those cases where there is low birth baby or the baby is very ill or have jaundice or in the case of pre mature baby we do tell them to use PPIUCD but their condition is very tensed at that time so they reject to use it. but I also saw some cases where a baby is admitted to ICU for 1 month but after that this patient herself came to me and tells me that she want to use CuT as she doesn't want another child for at least 3 years."(*Service provider- Maharashtra)

"We know if the case is of stillbirth, we do not insert it (PPIUCD), as it will cause problem or infection and it's same in the case of asphyxia." (Service provider- Rajasthan)

However, few service providers reported that they did not insert PPIUCD in such cases to avoid the infection.

*"We don't insert it in those cases as there are chances to get infection." (*Service provider- Maharashtra)

"I*f there is a case of stillbirth then we will insert it, as there will be no problem. In the case of birth asphyxia, if we settle the baby then her mother will also get settled. If the mother have any problem or have heavy bleeding then we will not insert it."* (Service provider- Rajasthan)

B.2.3.5. Logistics and supplies for PPIUCD insertion

The service providers reported that they had all the necessary equipment in the PPIUCD kit. The eligibility checklist however was not available in all the facilities. They just have the book provided to them during training for reference. Most of the facilities had the supply of CuT 380 and some has CuT 375 also. They also had the registers for record keeping. Most of them had kept the follow up records in same register of PPIUCD insertion but few of them did not keep the follow up records in register.

"We have all the PPIUCD kit." (Service provider- Rajasthan)
*"We use both 375,380 -A PPIUCD here. We have all the instruments here." (*Service provider- Maharashtra)

"We don't have any checklist but we have a book which is provided during the training, we read it and we go according to that." (Service provider- Rajasthan)
*"We have booklet for that and if someone falls in that criteria then we don't insert it in those cases…nothing is displayed but I read that during training." (*Service provider in Maharashtra has the manual but not in labour room, He just read the PPIUCD manual during training)

B.2.3.6. PPIUCD insertion procedure

Most of the service providers reported that they tried to insert the PPIUCD just after the delivery i.e. post placental period as it was easy for both service provider and the woman.
*"After delivery within 48 hours we mostly insert. If patient get ready within 10 min of placenta so we insert that within 10 min…because after placenta is out, uterus contracts within 10 min so we insert that within 10 min" (*Service provider- Maharashtra)

A service provider from Rajasthan reported, *"It's easy to insert it at that time because after that it's difficult to bring back the patient for insertion. After the delivery, patient gets easily convinced to get it inserted on the table. But when the patient goes to her ward then all the nearby ladies tell her that it's a bad thing and it should not be inserted. Then the patient gets demotivated.*"

However, a service provider (gynaecologist) in Maharashtra told that they inserted the PPIUCD after 24 hours of delivery.

"Usually we insert it after 24 hours of delivery because at that time mostly there is low bleeding and pain also comes to low point. Patient also starts taking diet properly and baby feeding also starts so everything settles down at that time."

B.2.4. Post insertion period

B.2.4.1. Care in Postnatal ward

No special care was being provided to the women who went for PPIUCD insertion except for check-up after 1-1.5 months.

"No , no special care is given. In postpartum both need care. We told about follow up only. If we do special care then they may feel that is there any conspiracy, as we opt PPIUCD." (Service provider- Rajasthan)

"No (special care), *we just give instructions to them that if they have pain then do revisit here, and we also tell them to revisit after 1.5 month for follow-up and in between that if they have any problem then also they can revisit immediately." (*Service provider- Maharashtra)

In Rajasthan, a discharge card or follow up card is given with instructions written on it to the women and sometimes instructions were given verbally as reported by the service providers.
"We give them a discharge card in which PPIUCD instructions are written and also about warning signs" (Service provider- Rajasthan)

However, in Maharashtra, no such discharge was given to the women. Only a wrapper of the CuT pack was given to the women with insertion and follow up date written on it.

*"Actually, we do not have card. We give the one which is inside the Copper T packing" (*Service provider, here the service provider talked about the paper pack of PPIUCD packing with Copper T information)

And the service providers usually gave the follow up instruction verbally at the time of discharge.

*"We tell them to tolerate this. If the thread is outside then do inform us and we also tell them to check the thread daily whether it's inside o not. We tell them that it will cause a little bit pain but don't worry its normal and still they have any problem then do visit here immediately." (*Service provider- Maharashtra)

B.2.4.2. Follow up visits

The service providers reported that not all the women re-visited the health facility for check-up. The women visited the hospital either for her problems or for removal of PPIUCD. The most common complaint reported was abdominal pain, white colour discharge, heavy bleeding, thread related problems. Most of them went to other nearby government health facilities as per their convenience but some went to private hospital for check-up. In Rajasthan, service providers reported that around 50-70% women did come for follow up visits.

*"Very few patients visited again for follow-up. We do insert in 2-3 cases daily and for follow-up only 1-2 patients visit again. i think only 30-40% visit for follow-up and 60% don't visit again…Here patients visits from nearby 30 kms area. Many patients visits their nearby primary health centre or civil hospital…Some of the patients also visit private hospitals as there are very less private hospitals here." (*Service provider- Maharashtra)

The reason for visiting private hospitals is mostly for follow up for PPIUCD, as per the service providers in Maharashtra were:-
"Because here we try to convince them to use it and they just want to remove it so they visit private hospitals." (Service provider- Maharashtra)
"Mostly goes to the private hospital as they know that family doctor very well. So they visit mostly to the private hospitals." (Service provider- Maharashtra)

The reasons for removal are complications after insertion and/or misconceptions about PPIUCD. Mostly removals are being done from the same facility of PPIUCD insertion.

"Some patients complained about thread visibility and some said that their partners have complaint with it so in those cases we cut down the thread and made it shorter in length…Many patients have abdomen pain also. Main problem we face is that a patient wants to remove it because her neighbour told her it's not good for her and it will cause problems in future. Then in those cases we try to convince them by saying its good method for their health. Some get convinced and some patients just want to remove it by saying it causes abdomen pain to them and when we checked them everything was fine. We tried again but they just want to remove it so we removed it." (Service provider- Maharashtra)

"Sometimes family members ask to remove it then we try to counsel them. If any relative come with her then we counsel the relative also, if still she do not agree and says to remove it, then we remove it. We do not argue with them unnecessarily, there are chances of program failure." (Service provider- Rajasthan)

B.2.4.3. Retention status of PPIUCD

The service providers reported that most of the women retain the PPIUCD for longer time. However, the proportion of women who came for removal of PPIUCD ranges from 2-20% as per the service providers. There were women who came for removal just after 2 days of insertion.

"Those who wanted to remove it visit within 2 months and gave us reason that it pains a lot and some said that if they use it further then their family members would not accept them. But I saw very few cases. Only 2 or 3% cases are there." (Service provider- Maharashtra)

*"4-5 out of 20 (*here service provider talks about how common the PPIUCD removals are). *It's in their mind that the pain they have is caused by it, and they also want to remove it because they thought it pinches inside but the reality is all that is just in their mind!"* (Service provider- Rajasthan)

The reasons for removal of PPIUCD as per the service providers included family pressure, problems after PPIUCD insertion like heavy bleeding, and sometimes women do fake complaints about the PPIUCD problems.

"Sometimes family members ask to remove it then we try to counsel them. If any relative come with her then we counsel the relative also, if still she do not agree and says to remove it, then we remove it. We do not argue with them unnecessarily, there are chances of program failure." (Service provider- Rajasthan)

"Till now only 4-5 patients visited again and they had abdomen pain but when we checked them they were all right. The reason they visited here was that their neighbours told them that it would cause problem and it would move to upward direction and they got scared after listening that and they visited here to remove it. They didn't have any other problem of bleeding or white discharge." (Service provider- Maharashtra)

The service providers also reported that the cases of expulsion of PPIUCD were very few. And usually the women removed the PPIUCD by pulling the visible thread herself. And sometimes, women did not report the expulsion of PPIUCD.

"Yes, 1 or 2%... they told us that it came out or sometimes they remove it by their hand." (Service provider in Maharashtra, on asking about the expulsion rate of PPIUCD)

"*Yes. It's very high here*." (Service provider- Rajasthan)

"*No, they (*women with PPIUCD expulsion*) don't come. We tell everyone to inform us if this* (expulsion) *happens but they don't tell anything"* (Service provider- Rajasthan)

B.2.5. Target approach for PPIUCD insertion

The service provider reported that there are targets given by the government for PPIUCD insertion. Most of the service providers in Rajasthan stated that the targets were easily achievable. But the remaining service providers including from Maharashtra reported that they felt pressurized when the targets were not achieved, as they get warning letters if they had failed to achieve the targets. The reasons for not achieving targets as reported by the service providers in Maharashtra were failure to convince the clients and her relatives (husband, mother in law), less popularity of this method, and backward community of the clients.

"It's not difficult job to achieve the targets." (Service provider- Rajasthan)

"*We have target to insert in 25% of total deliveries"*(Service provider- Maharashtra)

"*Yes we feel pressurized, then we do counseling. Some time when ladies do not accept PPIUCD then we remain short from achieving our targets….Government put pressure to complete the targets*." (Service provider- Rajasthan)

"We have full pressure of inserting (PPIUCD), because then it's review at district and after that on circle and later on the review is at state level and later if the performance is low then a warning letter also comes to us to improve regarding our performance."(Service provider- Maharashtra)

"Mostly patients here are of backward class, so it's difficult to achieve the target." (Service provider- Maharashtra)

*"I am trying (*to achieve target*). Yesterday I did counselling of 6 patients out of which only one agreed for it. So we took her to the delivery room where her husband came and told us not to insert it as she has to do work in fields. And after seeing her case all other patients also refused for using it."* (Service provider- Maharashtra)

The service providers in Maharashtra suggested to increase the target as PPIUCD program is very beneficial. However, most of the service providers in Rajasthan and very few service providers in Maharashtra reported that the targets should be less as it was difficult for them to achieve.

"*It (*Targets*) should be less. Only those who give their consent will be the target*." (Service provider- Rajasthan)

"It (target) *should be more…because it (*PPIUCD) *is a very good method for family planning."* (Service provider- Maharashtra)

B.2.6. Suggestions by service providers

Almost all the service providers stressed on mass level awareness and counseling regarding PPIUCD in the community through various methods like advertisement on TV, pamphlets, street plays, other IEC material etc. Rigorous counseling at community level through ASHA, ANM or *Anganwadi worker* should be done. In this regard, special training of community health worker on counseling should be done. Some service providers acknowledged that low level of education of women as main factor for understanding. Other suggestions included regular monitoring of PPIUCD program and supportive supervision by district officials during PPIUCD insertion. Also the appreciation certificate or incentives should be given to the better performing health facility as per the service providers of Rajasthan.

"There should be a proper counsellor for PPIUCD. People should get aware, for that ASHA and ANM have to work a lot in grass root level because if a lady is satisfied with it then only she will suggest another one to use it." (Service provider- Maharashtra)

"After finishing the training, no one come to us for checking that we are inserting it correctly or not. So there should be one day monitoring after one or two month. Secondly, if we insert it in front of district officer, who have more knowledge, they can help us in improving our skills. There should be certification for topper on district bases. When we talk about ***'CuT'*** *in the community to generate awareness, people run from it after listening this name* (CuT). *Also in TV advertisement and other government advertisement,* ***'Cut****' is printed on that, if it can be replaced by other names, then it can have great effect."* (Service provider- Rajasthan)

"There should be a discussion over it every month. There should be a regular check-up by a paramedic person because medical officers are not able to fully monitor this program, so there

should be regular check-up at least once in a month then only we can make this program better." (Service provider- Maharashtra)

C. Program Managers' Perspective

In-depth interview of the program managers posted in the study districts were conducted to explore their perception and beliefs about PPIUCD program. In Rajasthan, the program managers were of the level of deputy CMHO and in Maharashtra, were at the level of RCHO, additional DHO who were in-charge of implementation and monitoring of PPIUCD program in their respective districts. The themes, subthemes and codes of textual data as per applied thematic analysis is described below.

C.1. Qualitative Results

C.1.1. Opinion about PPIUCD program

Almost all the program managers appreciated the PPIUCD program. According to them, it is better than interval IUCD. They told that training of service providers and counseling of clients are the two essential prerequisites for the success of this program. Some of the poor performing districts with respect to PPIUCD had reportedly issue with training as well as counseling.

"It is good for Health services. Staff can easily insert it. Routine IUCD's procedure is little risky. They face problems when uterus is retrovert which is difficult to understand. Therefore, routine IUCD is not being inserted much. And in PPIUCD case, it can be inserted directly with forceps because uterus is wide open. For us, PPIUCD insertion is easy."(Program manager- Maharashtra)

"*It is a very good program for maintaining gap. After the delivery it gets inserted and after that there will be minimal complications and people here are also accepting this."* (Program manager- Rajasthan)

The service providers from both states reported that the best for Copper T insertion reported was within 48 hours of delivery as women generally did not come for interval PPIUCD. However, in Maharashtra, interval copper T was more popular than PPIUCD. Program managers of Rajasthan, understand that 10 minutes after delivery is very crucial for woman and her family for making any decision.

*"After patient's delivery we admit her for 48 hours in our hospital and during that time period we will insert it, because if that patient gets discharged then she will never come back for CuT insertion. Then we have to convince her again and after that she may get ready for IUCD" (*Program manager- Rajasthan)

"Most probably within 24 hours is the best time to implement it. It's the best time… Actually in this time period we don't face any kind of difficulty to insert it."(Program manager- Maharashtra)

"In that case (Interval IUCD) we have good percentage because PPIUCD is not that popular. Counseling is not proper." (Program manager- Maharashtra)

Program managers told about the reasons for either good or bad performance of any facility for PPIUCD insertion. Availability of the special staff and especially trained staff is one of the reasons as per the program managers of both states. The reason for better performing facilities is

availability of gynecologists. The program managers of Rajasthan also reported that the literacy level of the community also has impact on the PPIUCD performance. And, in Maharashtra, service providers reported counseling as one of the others factors.

"…Because medical officers are not permanent here, they just visit for some days and they also don't have any kind of target and they also don't have so much skill in counselling." (Here program manager talked about the bad performing facilities)
"*In between, earlier, it (*PPIUCD insertion rate*) get decreased because doctor there* (From a hospital) *got disturbed but now everything is fine. Gynecologists there has very good practice."*(Program Manager- Rajasthan)

"*In bad places there are community based differences…in those places it* (PPIUCD) *is inserted by MO or LHV and so people don't get satisfy. If there are intelligent, educated people then they get easily convinced....." (*Program manager- Rajasthan)

C.1.2. Program implementation

C.1.2.1. Training in PPIUCD insertion

Program managers reported that the training of service providers including medical officers and staff nurses was being done in batches on regular basis. As per the program managers of Maharashtra, earlier the training status was not good which affected the performance of the facility. But over time, the training status had improved and they mostly focus on counselling part. Counselling of the clients, especially during antenatal period, was specifically focussed, while training the service providers.

"We are focusing on counselling part. We train them (service providers)to start the counselling when a patient visits for antenatal check-ups. if we tell them about it when they visit for delivery then mostly they don't get agree. We should do their counselling at early stage; we have to focus in that part."(Program manager- Maharashtra)

"Most of them are trained. There is yearly target of 30 MOs to be trained per year. We are achieving every year target whatever it may be… Ayurvedic also but not homeopathic…10 was the target of MOs who are ayurvedic, last year."(Program manager- Maharashtra)

And program managers of Rajasthan reported that either training is organized in batches, or by posting the untrained staff with trained staff in the absence of adequate budget. The program performance also alters when trained staff gets transferred to other places.

"*We had organized a training last year. This year, only 3 batches came for IUCD because there is no budget for PPIUCD. Rajasthan government had issued a letter earlier if there is any untrained staff then to send them for training to trained staff and make a list of that and send it back to them so that we can empanel them further" (*Program manager- Rajasthan)

C.1.2.2. Targets

The program managers of Maharashtra reported that targets were given at state, district and facility level. The district level target was divided into DHO and CS office side. The factors for achieving the targets include availability of trained staff and logistics, proper counseling, place of delivery and family factors (as the clients did not get easily ready for PPIUCD insertion). However, program managers of both states reported that PPIUCD program is the all about achieving targets given to them.

"This year it's not possible as we have shortage of man power and also have some problem in logistics but next year surely we can achieve this target."(Program manager- Maharashtra)

Program managers of Rajasthan realized themselves that it is not the right way to do things like sometimes they have to insert the PPIUCD forcefully.

"*...government has given us targets so we also take those* (to achieve targets) *as a forceful activity but it's wrong..."(*Program Manager- Rajasthan)

They feel pressurized in achieving the targets. To complete the targets program managers issue warning letters to the health facilities and service providers, which include warning regarding cutting the increments of the service providers.

"*We feel it a lot* (pressure). *We also issue letters to field workers for explanation. We tell them to insert forcefully. We sit in AC room and make big plans but in reality nothing happen in field. No one listen to us politely. Sometimes we shout on them or show them some fear." (*Program manager- Rajasthan)

"Yes, surely there's a pressure but where there is a shortage of manpower, we do supervision there so that to achieve the target." (Program manager of Maharashtra on asking about not achieving the targets)

"We give them a warning that if they don't complete that target then their increments will be cut-off. They have to complete the target."(Program manager- Maharashtra)
There should be no targets for PPIUCD insertion as per the program managers of Rajasthan.

"*There should be no targets. It is not any forceful activity. It's a family planning method and it should only be inserted if anyone wants it. We should try hard to convince more people."* (Program manager- Rajasthan)

However, the program managers of Maharashtra reported that the future target for PPIUCD should remain same or higher as it is a very good program. However, a program manager reported that apart from PPIUCD insertion target, retention of PPIUCD should be considered for the success of the program. For better retention status of PPIUCD, communication between hospital staff and ASHA or ANM at community level should be there.

"It should be high because it's a family planning program to control population because if we just insert it after the delivery then no one faces any kind of problem. Patients here like laparoscopy or tubal ligation (TL) and when a patient comes here for TL then they conceive once again. So it's better to insert PPIUCD just after the delivery."(Program manager- Maharashtra)

"There is lot of people getting ICUD but the retention of one year about 45%. About 40% of those who take it they get it removed. The removal rate is higher; 75% acceptance. There are some places where our target is not meet up because those area are tribal rural areas. That is why main role is of the community level workers in the outreach (community level). People there are also not aware."(Program manager- Maharashtra)

C.1.2.3. Monitoring visits

The program managers of Maharashtra reported that they did go for monitoring visits to check the status of the program. They generally reviewed the work done at the health facility. The monitoring was done by the nodal officer and MOs. On the spot monitoring was not being done.

"Monitoring is done by local RC officers and we will arrange meetings regularly. We also arrange meetings block wise. Everyone attend that meeting and we monitor everyone's target."(Program manager- Maharashtra)

"We monitor like….what is the training status of staff like MOs. If MO is trained then does he insert the PPIUCD. Is LHV trained & what is her performance and same with the staff nurse? And whether they have proper inserter or not?"(Program manager- Maharashtra)

C.1.2.4. Incentives

All the program managers reported that the service providers including ASHAs got incentives for PPIUCD insertion.
"*Actually if 10 people will insert it then she (ASHA) receives Rs.2500 as incentive and that's a good amount for them. So that's why they work hard to convince more and more patients." (*Program manager- Rajasthan)

"*They receive Rs 150. From the time this incentive starts, people take more interest in this program." (*Program manager- Rajasthan)

"Yes Sure Because These Incentives Are For Those Who Promote This Program. If They Do The Counseling Before The Delivery Then A Patient Also Make's Her Mind To Use It So When That Patient Visit Here For Delivery Then All This Counselling Work We Don't Need To Repeat That So It's Also Easy For Us. It's Promoter Work To Convince The Patient." (Program manager- Maharashtra)

However, the incentives were not that important except for community level service providers as per few of the program managers of Maharashtra.
"No, It will not affect this program. if government stops this incentive then also this program runs smoothly. For ASHA, it's a good motivation." (Program manager- Maharashtra)

C.1.2.5. *Post insertion period*

The program managers reported that follow up was not properly done. The program managers of Maharashtra reported that if the follow up was there, it was only up to 1-2 months. Community health workers did not follow up for PPIUCD insertion for long. There was communication gap between hospital staff and community health workers (ASHA and ANM).

"We never received any report regarding that. If anyone had any problem then we surely got that report. We should focus on follow-up. Insertion rate in SDH is more as compared to here. We don't have proper mechanism for follow-up...we can't tell surely that whether they visit again for follow-up or not."(Program manager- Maharashtra)

And in Rajasthan, program manager reported that follow up is the responsibility of the health staff not clients and it is the weakest point. The top managers only concerned about the insertion rate. Also, the expulsion rate is very high. The forceful insertion to achieve target is just wastage, if it is being removed later on within few months.

"We achieve the target, we made a stand but what next, we inserted it to 1 lakh patients but does anyone see that they are still using it. Do anyone take their follow up? They put pressure and we insert it forcefully. If there are more patients then we also have to face trouble in their follow up." (Program manager- Rajasthan)

"*What if they* (service provider) *insert it* (CuT) *forcefully, And, if its removed after some time then that patient will never use it in her life? She surely is a loss to reduce TFR" (*Program manager- Rajasthan)

C.1.3. Factors affecting the implementation of PPIUCD program

The program managers think that the attitude of heath staff especially program in-charge for this program has a big role to playing the success of the program.
In Rajasthan, program managers reported that work on grass root level is necessary. Community health workers should work hard in this regard. Political support to health workers is also an issue for program managers to take work from them.

"*Centre in-charge doesn't take interest because if they do then they have a lot of work to do. They have 4-5 centres and 5-6 ANMs. Still they have small area to cover but we have very big area to cover. They can do work at the grass root level, and for that we organize meetings up to block level and if the insertion rate is low then we give them explanation letters that why is it so much low" (*Program manager- Rajasthan)

The other common problem was convincing the people because of misconceptions and cultural beliefs as per the program managers. Apart from this, the other difficulties were lack of understanding of the PPIUCD program, or untrained staff in the beginning.

"This program started smoothly earlier but we didn't receive proper response. Earlier we were also confused about this program that it cannot go on longer but when we completed the training then slowly all the problems got sorted out."(Program manager- Maharashtra)

"They (service providers) have positive attitude as they know it's a best method as no one later visit for inserting CuT (interval). So it's better to insert after the delivery by arranging counselling as compared to convince the patients later to use it."(Program manager- Maharashtra)

"...there is very less literacy rate. Ladies don't come out from their home so they don't know anything about PPIUCD. Literacy plays an important role and it's different in different areas that affect the PPIUCD insertion rate. There is different condition in Jaipur as compared to Alwar and it's also different in tribal areas."(Program Manager- Rajasthan)

However, a program manager from Rajasthan also reported,
"I don't think it (education) makes any difference because people in villages, always want to go for permanent solution while in urban cities people want to go for CuT but socio-economic status makes a difference. People from higher socio- economic class accept it while others don't. We also avoid religious barriers....we appoint ASHA from that area and now we get some success....there is no involvement of media here because local media believes in negative news"

C.1.4. Suggestions by programme managers

All the program managers stressed to improve the awareness and counseling regarding PPIUCD, especially during antenatal visits.
"There should be more awareness about PPIUCD in people, as it's not so much right now. We should take more help from ASHA and proper counselling should be provided."(Program manager- Maharashtra)

"We should concentrate more on counseling and there should be a counsellor in every delivery centre because staff is not available for 24X7 hours so there is a need of counsellor's help." (Program Manager- Rajasthan)

The program managers of Rajasthan suggested for special counsellor for PPIUCD, target free approach of PPIUCD insertion, strengthening of monitoring and follow up part of PPIUCD insertion and filling of vacant positions of staff.

"I*t is a new program so we should concentrate more on monitoring and awareness of people. Staff involvement is also very necessary."*(Program Manager- Rajasthan)
The program managers of Maharashtra suggested that training of untrained staff, more focus on retention rate of PPIUCD instead of insertion.
"Hands on training should be given wherever there is gynaecologist or specialist." (Program manager- Maharashtra)

D. Facility assessment and observations of PPIUCD insertion

D.1. Health facility Assessment

D.1.1 Status of health facilities for inserting PPIUCD in Rajasthan

Status of logistics available with respect to PPIUCD insertion in the health facilities in the study districts is given in table 22. IEC material related to PPIUCD was found to be visible in the waiting area in 12 facilities and Eligibility checklist in 3 facilities out of 18 facilities in study districts of Rajasthan only. The follow up register was not available at all the study health facilities in contrast to PPIUCD service delivery register. The proportion of trained (on PPIUCD insertion) staff posted in labor room was less in Maharashtra i.e. 54.7% (158/289) than Rajasthan i.e. 73.4% (105/143).

Table 22: Logistics details for PPIUCD services in health facilities

Logistics for PPIUCD Insertion	Rajasthan N= 18	Maharashtra N= 18	Total N=36
Job Aid/Eligibility checklist	3	0	3
IEC material on PPIUCD, visible in waiting area	12	0	12
Equipments for sterilization in working condition	16	15	31
Vaginal retractor (Sims or other vaginal retractor)	17	15	32
Ring forceps or sponge-holding forceps	18	14	32
Long placental forceps (Kelly placental forceps)	16	14	30
Sterile Cotton swabs	18	17	35
Povidone iodine or chlorhexidine	18	17	35
Sterile gloves	18	17	35
Copper T 380 A/ 375 , in a sterile package	18	18	36
PPIUCD service delivery register	18	18	36
PPIUCD Follow up register	7	4	11

D.2. Observations of PPIUCD insertions in the labor room

Total number of PPIUCD insertions observed was 28 (20 in Rajasthan and 8 in Maharashtra) in study districts. It was observed that 19 out of 28 PPIUCD insertions were done during post placental period, and 8 within 48 hours of delivery. However, one PPIUCD insertion during caesarean section was observed in Rajasthan.

Consent was obtained before all 20 PPIUCD insertions observed in Rajasthan. But in Maharashtra, consent was obtained only in 5/8 observations and no consent was obtained in 3 PPIUCD insertion cases observed. Out of 25/28 consents obtained, 21 consents were obtained from the client herself, 3 from the clients as well as her relatives and 1 from the person accompanying client. The type of consent taken before PPIUCD insertion was also observed in the health facilities. Out of total 25 consents obtained, in 10 observations written consent was taken, while in 9 observations only verbal consent was taken, and in remaining 6 observations both verbal (before PPIUCD insertion) and written (after PPIUCD insertion) consent were taken.(Annexure 1, Table 15).

Out of 28 observations, 10 consents were recorded in Patient's file. However, no recording of consent was done in eight observations (Annexure 1 Table 16). Usually the writing consisted '*I have given consent for the PPIUCD'* under the consent obtained.

Availability of logistics at time of PPIUCD Insertion in the health facilities in the study districts is given in table 23. Almost all the necessary logistics were available during the PPIUCD insertion time except Kelly's forceps.

Table 23: Availability of logistics at time of PPIUCD Insertion

Logistics	Rajasthan N= 20	Maharashtra N=8	Total N= 28
Sim's speculum	19	8	27
Kelly's forceps	14	7	21
Sponge holding forceps	19	8	27
CuT unopened	20	8	28

The aseptic measures observed during the process of PPIUCD insertion in the health facilities in the study districts is given in table 24. A clean labor table was found in all the observations in Rajasthan as compare to Maharashtra. The practice of immersing the gloved hands in 0.5% chlorine solution by the service providers after procedure done was found not appropriate in both the states.

Table 24: Aseptic measures observed during the process of PPIUCD insertion

Aseptic measures	Rajasthan N=20	Maharashtra N=8	Total N=28
Clean Labor table	20	6	26

Clean sheet was used during labour and PPIUCD Insertion	16	4	20
Service provider wears fresh pair of gloves for PPIUCD Insertion	10	7	17
Service provider immerse gloved hands in 0.5% Chlorine solution	6	1	7

Mostly PPICD insertions were done by using Kelly's forceps (22/28). (Table 25). However, PPIUCD insertion was also done manually as observed in three PPIUCD insertions. The thread was visible in nine out of 28 observations done. A service provider in Maharashtra also touched the CuT before inserting it, while adjusting the CuT in Kelly's forceps in one of the observation (CuT pack was opened by assistant).

Table 25: Method used for PPIUCD Insertion

Method used	Rajasthan N=20	Maharashtra N=8	Total N=28
Kelly's forceps	15	7	22
Manual method	2	1	3
Sponge holding Forceps	1	0	1
Plunger or conventional method	2	0	2
Total	20	8	28

The record registers as per the GOI guidelines were found in 20/28 observations (17 in Rajasthan and 3 in Maharashtra). Registers other than as per the GOI guidelines were found to be used in rest of the observations.(Annexure 1 Table 17). Most of the service providers asked the women to visit after one and half month for follow up and whenever there would be any problem as part of instructions given to women.

Discussion and Conclusions

The study assessed the quality of postpartum IUCD insertion services in two states of India. Results of the study shed light on experiences and perspectives of clients, service providers and managers as well provide data on readiness of facilities, focussing on consent, counseing, quality of care, and continuation rates. The study used both quantitative and qualitative methods.

Study results showed that most of the necessary equipment and supplies were available at the facility level for PPIUCD insertion. However, IEC material and eligibility checklist was not available at the health facilities – availability of checklists. Of clients who were listed in the facility to have received PPIUCD, 36% were not aware about the PPIUCD insertion – this was reported by clients in all periods (those wo had an insertion in last 48 hours and were in postnatal ward, those who had an insertion in last 1-2 months as well those who had an insertion in last 4-6 months. Lack of awareness could be either because the clients did not have an IUCD insertion but their names were erroneously entered in records, or because they were not informed that an IUCD was being inserted. The reasons for this need to be explored and addressed.

Of clients who were aware that they had a PPIUCD inserted, 55% reported that consent was sought from them, while 8% reported that consent was taken only from family members. Of these clients, only 34% were counselled during antenatal period, while 41% were counselled immediately after delivery. The service providers also confirmed that they prefer to counsel after delivery, since they were afraid t hat if they counselled during pregnancy, then clients would go to private hospitals for delivery or would refuse just before insertion. Qualitative study with the clients not only validated the quantitative study findings but also provided useful insights.

Of the clients who were aware of PPIUCD insertion, and had a PPIUCD insertion in last 1-2 months, 19% had got it removed, 10% had it expelled, while 71% had retained the PPIUCD. Of those who were interviewed 4-12 months after delivery, around 43% had it either removed or expelled. Other studies have also shown variation discontinuation rates – ranging from low expulsion rate was 3.6% at six weeks of follow up [4] to a high rate of 29% discontinuation at 6 weeks[3]. The satisfactory level was found to be higher (77%) among the clients who retained the PPIUCD as compare to those who did not retain it (21%).

For removal; clients went to same facility or other government hospital. Also, some of them went to private hospitals. The service providers also reported that the clients preferred private facilities for removal of PPIUCD because the clients were told not to remove the PPIUCD in government hospitals. The commonest problem after PPIUCD insertion reported was abdominal pain, heavy bleeding, thread related problems by clients as well as service providers in their quantitative and qualitative interviews.

All of the service providers and program managers perceived that PPIUCD program was useful, especially for women who were not willing for sterilization. Most service providers had received training in PPIUCD, more than half had received hands on training or training on manikins.. About 66% of service providers reported that they obtained consent immediately after delivery. However, a significant proportion reported that they had "expected levels of achievement" or targets for PPIUCD and that they were unreasonable.

[3] Kant S, Archana S, Singh AK, et al. Acceptance rate, probability of follow-up, and expulsion of postpartum intrauterine contraceptive device offered at two primary health centers, North India. J Family Med Prim Care. 2016

They knew the targets given to them for PPIUCD insertion. The targets should either be increased or remain same as revealed from their quantitative and qualitative interviews in Maharashtra as PPIUCD is very beneficial and good program. However, the service providers in Rajasthan reported that the targets should be decreased as it was difficult for them to achieve the targets. They felt pressure when targets were not achieved because of the pressure from the higher authorities. The program managers agreed to this. The program managers reported that they give warning notices to the service providers or hold their incentives for not achieving targets. The program managers were also given some targets to achieve at district level, which connects the chain of feeling pressurized. The service providers and program managers reported some difficulties in achieving targets like the cultural beliefs, tribal area, illiteracy which is contributing factor for little or lack of understanding of PPIUCD and its program.

The negative experiences or misconceptions about PPIUCD heard from other people including relatives or neighbours resulted in refusal for insertion and early removal of PPIUCD. The suggestions given by the service providers and program managers were almost same. They stressed on counseling and awareness of PPIUCD so that the acceptance rate should have increased. However, Program managers also suggested focusing on retention rate rather than insertion rate of PPIUCD. They also suggested that there should be proper communication between hospital staff and community health works (ASHA/ ANM) so that they can follow and motivate the clients for retaining and continued use of PPIUCD.

Policy Implications of the study

It was observed that about 35% (N=233) clients were completely unaware of the PPIUCD insertion in them. Counseling is done mostly at the time of delivery when woman is not in her state of mind to decide about PPIUCD. Around 5% women were counseled for PPIUCD after the PPIUCD insertion. However, 31% women were never counseled for PPIUCD. This has implications in terms of violation of the reproductive rights of the women, increased morbidity of the women (without her knowledge), like if she plans to have child after a year or so her inability to conceive may lead to psychological stress or she may experience reproductive tract infections etc.

Another important issue is that no consent for PPIUCD was obtained as reported by 58% clients. However, it is clearly given in the guidelines that consent for PPIUCD insertion is MUST. This indicates that the consent taking process is not being followed up properly. About 37% clients were not asked about the PPIUCD insertion in labour room, while this should not be there. Inserting CuT after refusal (6% cases) or when she wanted to opt for sterilization again indicated violation of the reproductive rights of the women. The counselling during ANC is not adequate and people are not much aware of PPIUCD. Apart from quantity, the quality of the services is also important.

Time again targeted top to bottom approach for family planning is being condemned as it violates reproductive rights approach. However, for implementing PPIUCD, targeted approach is being followed religiously. Program managers and service providers are pressurized to meet the targets, warning letters are also issued for not achieving these targets.

Strengths of the Study

The strength of this study is the mixed (both quantitative and qualitative) methods study design to assess the PPIUCD status from the clients, service providers and program managers' perspective. This methodology enabled us to have the holistic view of the program implementation in Maharashtra. Diverse sampling of the districts helped us in understanding the extremes of the situations. Quantitative study design provided the facts and figures about PPIUCD insertions, and the qualitative study provided the explanations for those facts by triangulation of data, which enhanced and validated the findings of the quantitative study.

Limitation of the study

The limitation of this study is that we included the participants having PPIUCD insertion up to 1 year, which may have recall bias; and also the follow up and the experiences after this period could not be ascertained.

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