

**ACCEPTANCE OF POST PLACENTAL INTRAUTERINE CONTRACEPTIVE DEVICE:  
RECENT INCREASE IN TREND****Dr. A. Anandhi<sup>1</sup> and R. Mothilal<sup>2\*</sup>**

<sup>1</sup>Professor of OB & G Department and Project Officer (Family Welfare), Government Kilpauk Medical College Hospital, Chetpat, Chennai-10.

<sup>2</sup>Lecturer in Statistics and Demography, Postpartum Centre (Family Welfare), Government Kilpauk Medical College Hospital, Chetpat, Chennai-10.

**\*Corresponding Author: R. Mothilal**

Lecturer in Statistics and Demography, Postpartum Centre (Family Welfare), Government Kilpauk Medical College Hospital, Chetpat, Chennai-10.

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**ABSTRACT**

**Background:** IUCD is a temporary method of contraception in use for many years. Our main objective is to find the acceptance of (postplacental intrauterine contraceptive device) PPIUCD in recent years. **Methods:** Retrospective Analysis was carried out to collect information regarding IUCD insertion in all women delivered at Government Medical College Hospital, Chennai -10 in Tamil Nadu from April 2015 to March 2018. **Results:** Total women delivered in our hospital were 17,577 over a period of 3 years. Three years comparative study revealed significant increase in acceptance of PPIUCD insertion among primipara from 31.7% TO 64.04%. Acceptance of PPIUCD in delivered mothers was 28.9 % in first year (April 2015 to March 2016) to 54.6% in third year (April 2017 to March 2018). Most of the women were in the age group of 20 to 24 years (49.5%) and the proportion of PPIUCD acceptance was more in caesarian section (59.2%) than in vaginal deliveries (40.8%) and a sudden increase in the acceptance of PPIUCD among vaginal delivery were found in the study period. **Conclusions:** The present study being retrospective analysis showed sudden increase in coverage rate of PPIUCD from 2015-2016 to 2017-2018. Though the patients were motivated in the same way throughout the period, training and motivation given to the staff nurses, RMNCH Counselor and duty doctors in the labour ward for PPIUCD insertion and daily review instead of weekly had brought the significant increase in the coverage. This clearly shows the role of service provider in the success of a national program though acceptor is always ready in most of the times.

**KEYWORDS:** PPIUCD, Contraception, Intra caesarean insertion, Counseling.

**INTRODUCTION**

IUCD is one of the most commonly used reversible methods of contraception among women in India for decades. The acceptance of a PPIUCD can help women to achieve a healthy birth spacing interval, thus reducing the morbidity and mortality of mother and new born.<sup>[1-4]</sup> It offers highly effective, long term protection against pregnancy with prompt return to fertility upon removal<sup>5</sup>. It does not require daily action on the part of user or repeated visits for provider. Provision of PPIUCD is an example of integration of the National Maternal and Child Health and Family Planning Program in a Facility Based delivery by a skilled birth attendant.<sup>[12]</sup> This study throws light on the role of the health service providers who can bring about a remarkable change in the coverage rate of PPIUCD.

**METHODS**

This is a retrospective descriptive study design conducted at Government Kilpauk Medical College and Hospital, Chetpat, Chennai-10, Tamilnadu, India from

April 2015 to March 2018 three year period. Source of data was collected from case records of maternity department in our hospital, PPIUCD register in family planning out-patient department. Department of Obstetrics and Gynecology, Government Kilpauk Medical College Hospital, Chennai, Tamilnadu, India.

**Inclusion criteria**

Women delivered by normal vaginal or instrumental delivery or by caesarean section were included. CuT380A was inserted for those who fulfilled the medical eligibility criteria and willing to come for follow up after 3 months.

**Exclusion criteria**

Women with the following conditions were excluded. History of premature rupture of membranes for >24 hours, women with uterine anomalies, history of recurrent pelvic infection, postpartum haemorrhage and malignancies.

### Study parameters

All case records were analysed for the following parameters- total number of deliveries, primipara, multipara, normal vaginal delivery within 10 minutes or 48 hours or by caesarean section, complications and expulsion. PPIUCD register was verified for the insertion of IUCD. Data analysis was done for the above parameters using Microsoft office word, Microsoft office excel software and tabulated.

### Insertion Techniques

**Following vaginal delivery** Under strict aseptic precautions keeping the necessary instruments like Sims speculum, sponge holding forceps, Kellys forceps, over head lamp, Provide one Iodine, kidney tray, and cotton swabs ready, insertion was performed using modified Kelly's forceps or manually using hand. The patient was placed in a lithotomy position with buttocks at the edge of the table. Sims speculum was gently inserted into the vagina to visualize the cervix. The anterior lip of the cervix was then gently grasped with the sponge holding forceps. The IUCD was removed from the insertion sleeve and grasped with the modified Kelly's forceps using no-touch technique. It is inserted in to lower uterine segment and the other hand is placed over the fundus and uterus was pushed gently upward to reduce the angle and curvature between the uterus and vagina. IUCD with

forceps was moved upward until it can be felt at the fundus. Then the forceps were opened to release the IUCD and swept to side wall.

Uterus was stabilized until forceps removal was complete. The cervical os was then gently inspected for the strings. Sims speculum was removed. Manually hand is inserted up to the fundus and IUCD is left there. **During caesarean section** Following placental delivery, uterus is stabilized at fundus. IUCD should be inserted into the uterus through uterine incision and released at fundus of uterus. There is no need to guide the strings to the lower uterine segment. Care to be taken not to include strings during uterine closure.

### Statistical Analysis

Categorical variables were reported using percentage and chi-square test used for PPIUCD acceptance with parity and mode of delivery that LSCS, Vaginal delivery (N/A) and the result reported using p-values. The educational level and acceptance were reported in percentage and also using correlation coefficient (r). The Z test used for the PPIUCD insertions among the delivery to determine the significance of the difference in proportions. The statistical calculations were done using MS Excel and Statistical Package.

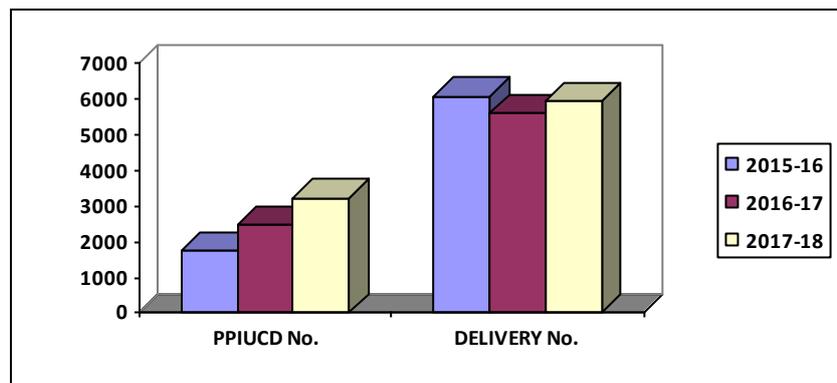
## RESULTS

**Table 1: Acceptance of PPIUCD.**

Year	Delivery No.	PPIUCD No.	Percentage	Z test p value
2015-16	6076	1754	28.9 %	<0.00001
2016-17	5581	2462	44.1%	<0.00001
2017-18	5920	3231	54.6%	<0.00001

During the three year study period - April 2015 to March 2018, number of women delivered in our medical college hospital were 17577. During the study period of three years total number of women delivered in first year (2015-2016) were 6076, in the second year (2016-2017) were 5581 and in the third year (2017-18) were 5920. Acceptance of PPIUCD in the first year was 28.9%

(1754), where as in the second year it was 44.1% (2462) and similarly, in the third year it was 54.6% (3231) which shows an increase in the acceptance (Table 1 and Figure 1). The difference in proportions obtained are due to chance and it is statistically significant at p value is less than 0.05.



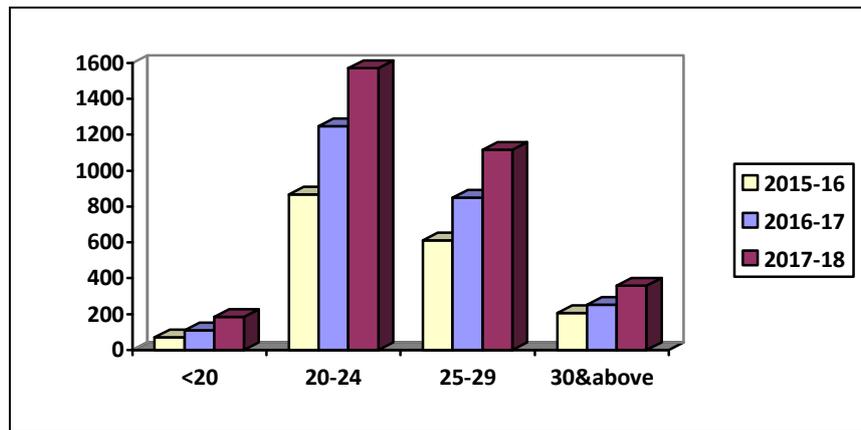
**Figure 1: Acceptance of PPIUCD.**

Table 2 and Figure 2 shows that age wise comparison of PPIUCD Acceptors and it reveals that women who accepted PPIUCD with < 20 years was increased gradually from first year to third year and there is no change in acceptance with the age group (25-29) years in

all the three years. But it was slightly decreased with the age group (20-24) in the third year compared with 2<sup>nd</sup> year and the proportion of PPIUCD acceptors in (20-24) years age group was 49.5% in the study period.

**Table 2: Age wise PPIUCD insertion.**

Age Group	2015-16	2016-17	2017-18	Total
<20	70 (4.0%)	109 (4.4%)	184 (5.7%)	363 (4.9%)
20-24	867 (49.4%)	1249 (50.7%)	1573 (48.7%)	3689 (49.5%)
25-29	612 (34.9)	850 (34.5%)	1116 (34.5%)	2578 (34.6%)
30 & above	205 (11.7%)	254 (10.3%)	358 (11.1%)	817 (10.9%)
Total	1754	2462	3231	7447



**Figure 2: Age wise PPIUCD insertion.**

Overall, the acceptance of PPIUCD during 2015-16 were 49.4% (867) , in the year 2016-17 were 50.7 % (1249) and in the year 2017-18 were 48.7% (1573) and mostly

49.5% prefer temporary method of contraception in this age group (20-24) and the mean age of PPIUCD Acceptors was 24.6 years.

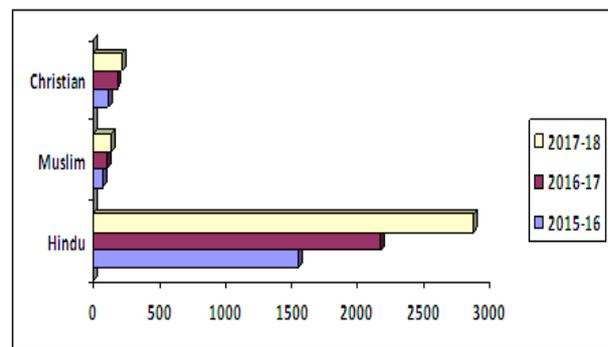
**Table 3: Religion wise PPIUCD insertion.**

Religion	2015-16	2016-17	2017-18	Increase/Decrease w.r.t to 1 <sup>st</sup> year	Annual Growth Rate
HINDU	1561	2174	2875	1314	28.1%
MUSLIM	74	107	136	62	27.9%
CHRISTIANS	117	181	220	103	29.3%
Total	1754	2462	3231	1477	28.1%

The table 3 and figure 3 stated the trend in PPIUCD Acceptance among religion during the year 2015-16 to 2017-18. It shows that the acceptance of PPIUCD was in increasing trend among the religion namely Hindu, Muslim and Christian. The acceptance was seen more in Hindus followed by Christian and Muslim.

The annual percentage rate growth of PPIUCD insertion was noted and it is 28.1%. It reveals that there is no change in annual growth rate of PPIUCD acceptance among Hindu, Muslims except Christians even though the acceptance was more in Hindu followed by Christian and Muslims. It stands that PPIUCD insertions were not made religion basis. It is made available irrespective of religions at free of cost. It shows the integrity of postpartum intrauterine contraceptive device insertions

were made to the mothers immediately after the delivery in this tertiary care hospital.



**Figure 3: Religion wise PPIUCD insertion.**

The table 4 shows the percentage of PPIUCD acceptance among caste. It reveals that the acceptance was more during the third year compared with first and second year among scheduled caste and scheduled tribe. The acceptance less was seen in the third year compared with first and second year among other castes.

**Table 4: Community / Caste wise Percentage of PPIUCD Acceptance.**

CASTE	2015-16	2016-17	2017-18
SC / ST	36.7%	35.6%	57.5%
Others	63.3%	64.4%	42.5%

**Table 5: Percentage of Literacy level in PPIUCD acceptors.**

Literacy Level of acceptor	2015-16	2016-17	2017-18
Illiterate	6.04	6.71	11.02
Primary school	9.78	7.27	11.33
High School	49.01	44.27	34.82
Higher secondary School	16.02	21.89	21.97
Diploma	9.46	7.72	7.24
College education	9.69	12.14	13.62
Correlation coefficient (r)	0.203	0.319	0.326

The table 5 shows the percentage of literacy level among the PPIUCD Acceptors. The acceptance was comparatively more in third year other than the first two years among the illiterate mothers and it implicate with the behavioral change of women, motivation and counseling of mothers that stands improved now. 99% were literate among the acceptors. Secondary school education acceptors were double the Primary school education acceptors. Similarly, College education doubles the diploma in the acceptance and one third of acceptors in high school education. This finding confirms that importance of education in deciding future pregnancy. Education has the positive effect on contraceptive use. The PPIUCD acceptance with educational status is a positive correlation coefficient and it is considerable.

The table 6 and figure 6 stated the trend in PPIUCD Acceptance among mode of delivery during the year 2015-16 to 2017-18. It reveals that a sudden increase of PPIUCD acceptance was noted among the normal / assisted delivery from 13.9% to 55.3%. But the PPIUCD acceptance was steadily increased from 43.3%, 48.1% and 53.9% among caesarian section delivery. We observed that there is an association between the PPIUCD acceptance with parity and mode of delivery as p value is <0.05 and the result is significant at 5% level of significance. The trend has been now changed was noticed in accepting the PPIUCD in the 3<sup>rd</sup> year compared with 1<sup>st</sup> year as it doubles the acceptance with one child irrespective of mode of delivery. Similarly, it was four times in respect of primi and thrice in multi parity in vaginal delivery during the study period.

**Table 6: Trend in Mode of delivery and PPIUCD Acceptance.**

Year	Mode of Delivery	Number	PPIUCD			%	P value
			Primi	Multi	Total		
2015-16	LSCS	3093	788	552	1340	43.3	<0.00001
	N/A	2983	260	154	414	13.9	
2016-17	LSCS	2941	889	528	1417	48.1	<0.00001
	N/A	2640	743	302	1045	39.6	
2017-18	LSCS	3058	1139	510	1649	53.9	<0.046315
	N/A	2862	1034	548	1582	55.3	
Total	LSCS	9092	2816	1590	4406	48.5	<0.00001
	N/A	8485	2037	1004	3041	35.8	

The figure 6a shows the PPIUCD acceptance among caesarian section delivery and it increased steadily during the three years. The figure 6b shows the PPIUCD acceptance among normal assisted delivery and it is increased suddenly from 2016-17. It reveals that the trend has been changed among mode of delivery. The proportion of acceptance of PPIUCD were 59.2% in caesarian section and 40.8% in vaginal delivery and the proportion of PPIUCD acceptors in (20-24) years age group was 49.5% in the study period.

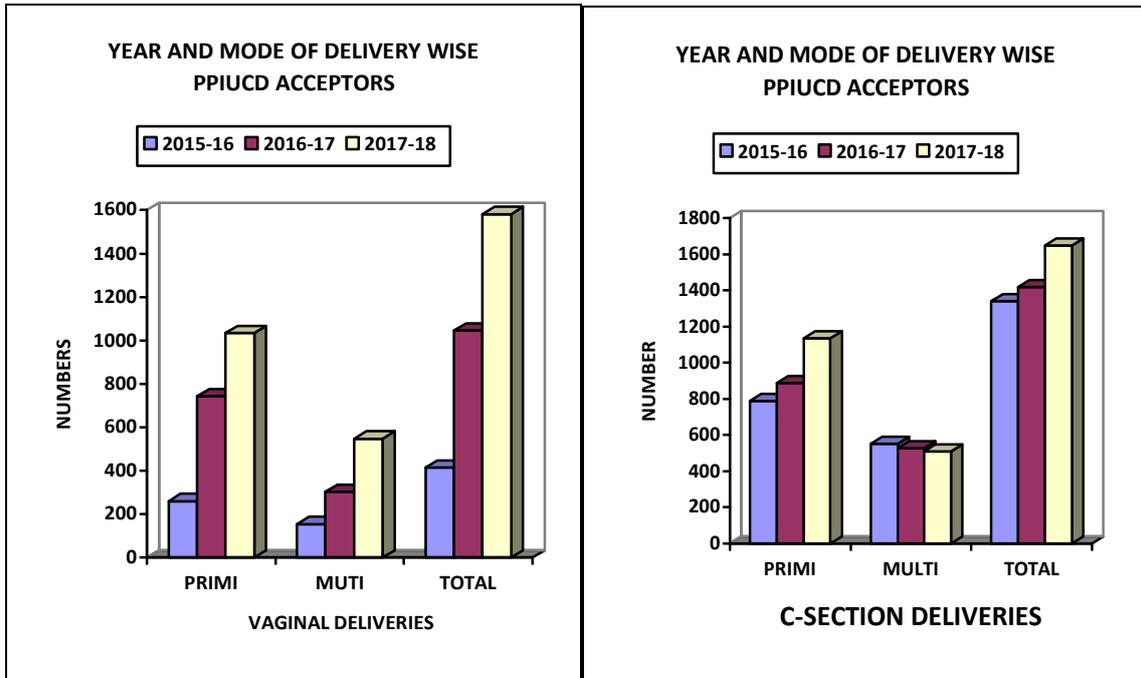


Figure 6: PPIUCD Acceptance with parity among mode of delivery.

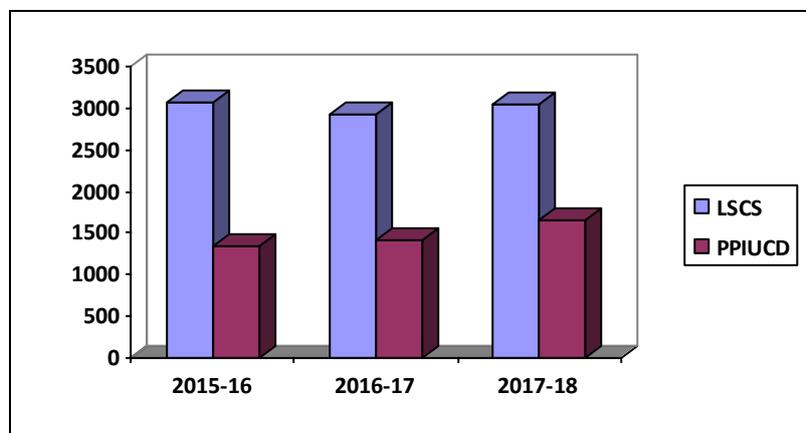


Figure 6a: PPIUCD Acceptance in Caesarian section.

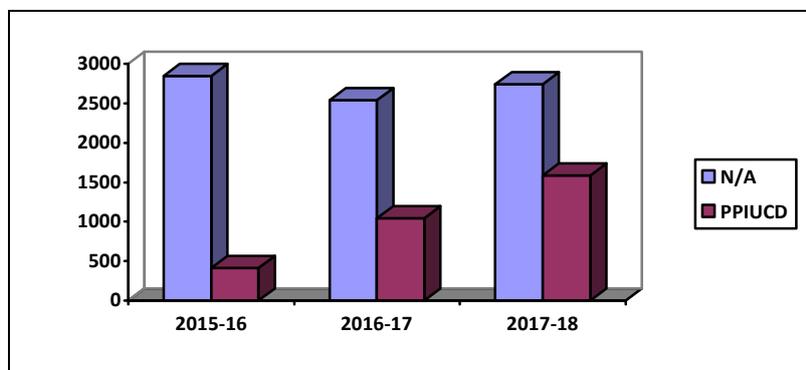


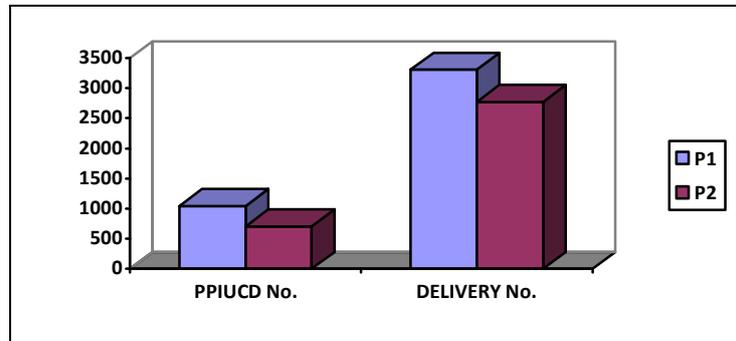
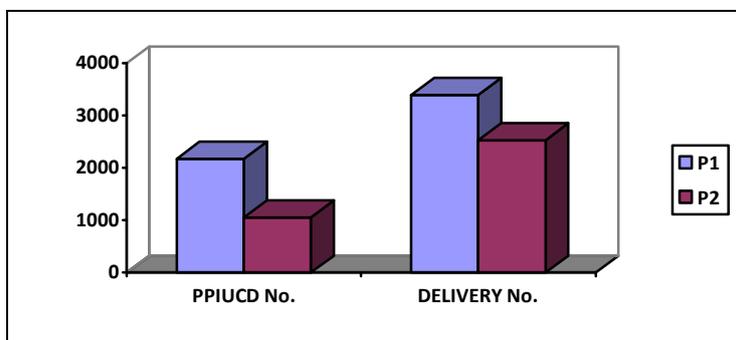
Figure 6b: PPIUCD Acceptance in Normal Assisted Delivery.

In comparing the acceptance of PPIUCD with parity following observation were made. In the first year Total number of deliveries in primipara were 3306 out of which 1048 (31.7%) accepted PPIUCD. In second year total number of deliveries in primipara were 3084 out of which 1632 (52.9%) accepted PPIUCD. In the third year

total number of deliveries in primipara were 3393 out of which 2173 (64.04%) who made the major contribution for the increase in acceptance (Table 7, Figure 7).

**Table 7: Parity distribution.**

	PPIUCD NO.	DELIVERY NO.	PERCENTAGE
2015-16			
P <sub>1</sub>	1048	3306	31.7%
P <sub>2</sub>	706	2770	25.5%
2016-17			
P <sub>1</sub>	1632	3084	52.9%
P <sub>2</sub>	830	2497	33.2%
2017-18			
P <sub>1</sub>	2173	3393	64.04%
P <sub>2</sub>	1058	2527	41.86%

**Figure 7a: Parity Distribution from 2015-2016.****Figure 7b: Parity Distribution from 2016-2017.****Figure 7c: Parity Distribution from 2017-2018.****DISCUSSION**

The copper T 380 A is a highly effective (>99%) method of family planning. There are 0.6 to 0.8 pregnancies / 100 women in the first year of use. Most of the patients were primipara in the age group between 20 to 29 years to accept the contraceptive device which is a onetime use, lasting for 10 years, independent of coital activity

and requires neither a separate visit for insertion nor wait for the menstrual cycle to be resumed. It also has the advantage of being independent of lactation and partner's cooperation and if any complication arises like pain or excessive bleeding it can be removed at any time. It must be inserted after the patients were counseled and informed consent being obtained during the antenatal

period itself. Most of the patients are referred and their consent is recorded in the antenatal case record. The coverage rate was low in the first year compared to second and third year of the study period. Continuous motivation was provided and their works were supervised by checking the PPIUCD insertion compared to the number of deliveries on day to day basis instead of weekly review. This showed more than double fold increase in acceptance of PPIUCD approximately. Vidyarama *et al.*<sup>[1]</sup> in her experience at a tertiary care centre as a LARC showed an acceptance rate from 2 to 15% which varied according to age, parity, literacy. Our study showed higher acceptance in primi para which correlated with their study. They also share that there is need to strengthen our counseling services and motivate trained personnel to improve the acceptance rate which is very well correlated with our study. Mishrasujanendra *et al.*<sup>[2]</sup> in her study on evaluation of safety, efficacy, and expulsion of post-placenta and intra-caesarean insertion of intrauterine contraceptive devices (PPIUCD) stated the importance to arrange training on PPIUCD in order to increase knowledge and skills among healthcare providers. This will also further promote PPIUCD use and aid in reduction of the expulsion rates. Cash incentives to the acceptor, motivator and of course provider would bring about a substantial progress in the PPIUCD use in developing countries like India and also stated that most of the PPIUCD acceptors were in the (20-29) age group, most of them literate, most of them Hindu followed by Christian and Muslim, acceptance with primi (64.5%) was higher than multi para women. Our study showed most of the PPIUCD acceptance were in the (20-24) age group followed by (25-29) age group, in primi (64%), most of them Hindu followed by Christian and Muslim, most of them literate which correlated with their study. Someshkumar *et al.*<sup>[3]</sup> studied 2733 married women and observed that the mean age of acceptance was 24 years and high acceptance in primipara which correlates with our study. Kittur S *et al.*<sup>[7]</sup> in their study stated that most of the patients were primipara in the age group between 20 to 29 years to accept the contraceptive device which is a onetime use, lasting for 10 years, independent of coital activity and requires neither a separate visit for insertion nor wait for the menstrual cycle to be resumed. The PPIUCD acceptors education was stated in their study that college (18.09%), School (52.38%). Our study showed that most of the mothers accepted PPIUCD were primipara, in the age group between 20 to 29 and college education (13.6%), school(67.9%) which correlates with their study. Kanmani K *et al.*<sup>[8]</sup> in their study stated that women between 20-29 years who accepted PPIUCD were 81.5 % who mostly prefer temporary method of contraception in this age. Continuous motivation was provided and their works were supervised by checking the PPIUCD insertion compared to the number of deliveries on day to day basis instead of weekly review and PPIUCD acceptance 87.80% in P<sub>1</sub> and 45.3% in P<sub>2</sub>. Our study showed that high acceptance in primipara was 64.04% and 41.9% in multipara and 84.3% were in the age group

20-29 who accepted PPIUCD which correlated with their study. Sonali Deshpande *et al.*<sup>[9]</sup> in their study stated that the acceptability with PPIUCD were 28%, 64.6% and 7.4% in the age group <20, 20-29 and >30 years respectively; it were 51.4%, 38.88% and 9.67% in the Hindu, Muslim and Christian respectively and also it was with no formal education, Primary, secondary and higher education were 2.1%, 35.8%, 42.89% and 19.34% respectively and 23.7% in parity P<sub>1</sub> , 74.3 in P<sub>2</sub>. In the present study the PPIUCD acceptance among <20years (5.7%), 20-29 years (83%) and >30 years (11%); Hindu (88%), Muslim (4.2%) and Christian (6.9%) and 11% in no formal education, Primary (11.3%) and high school (34.8%), secondary (21.9%) and higher education (20.8%). Farah Shahbaz, Robina Tariq, Fatima Shahbaz *et al.*<sup>[10]</sup> conducted a study and found that the acceptance rate of PPIUCD among delivery was 30%. In the present study, the acceptance rate of PPIUCD was found 42.4% and growth rate was 28.1% among the deliveries in the three year study period. Now, the acceptance rate of PPIUCD was increased to 54.6% among delivery for the year 2017-18. Runjun Doley and Bornali Pegu<sup>[11]</sup> found the PPIUCD acceptance was more in caesarian section than in vaginal delivery and in the age group (20-24) years. Our study showed the PPIUCD acceptance was more in caesarian section than in vaginal delivery and high acceptance in the age group (20-24) years which correlated with their study.

## CONCLUSION

PPIUCD is known as an effective, safe, cost effective, long lasting and reversible contraception for many years. Counseling given in the antenatal period will increase the acceptance rate but the roll of health care provider and supervision of their work on day to day basis will increase the acceptance. Understanding this issue Government of India has announced a cash incentive of Rs.150 for the provider which definitely increases the overall rise throughout the country. The acceptance of PPIUCD among multi para mothers as well as in primi mothers were increased during the study period was noted. The trend of PPIUCD acceptance with one child among mode of delivery was now changed. Most of the primi gravida are referred to tertiary care centre for safe confinement and we should not miss the opportunity of providing them the family planning service to be rendered which will significantly help in reducing the maternal and neonatal morbidity and mortality.

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