

Use of various contraceptive methods in postpartum women – A prospective study in south Indian women

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Abstract

Background: Although most women would want to wait for more than two years before having another baby, their fertility behaviours during the first year following birth may decrease or increase the length of the birth interval. The purpose of this study is: 1. To study the most preferred contraception out of various contraceptive methods by the postpartum women. 2. To study the failure rates in the chosen method of contraception by the postpartum women. 3. To study the side effects and complications of the method chosen by the postpartum women. **Materials and Methods:** This prospective study is carried out at a tertiary care Centre in the Department of Obstetrics and Gynaecology at Owaisi Hospital and Research Centre and Princess Esra Hospital affiliated by Deccan College of medical sciences, Hyderabad. The study population included 400 pregnant women attending ANC's also attending Family planning counselling clinic for a period of 2 years. **Results:** Out of 5328 antenatal patients who delivered, patient counselling was given for Postpartum Contraception, 3826 (71%) women delivered at our hospital, Out of which 1566 (29%) requested for postpartum contraception and 400 (7.5%) of them were enrolled for our study considering inclusion and exclusion criteria. **Conclusion:** IUCD is the most preferred reversible postpartum contraceptive method among various contraceptive methods in postpartum women for birth spacing in our study. It is a long-acting reversible contraceptive (LARC) method which is safe, cheap and highly effective in preventing unintended pregnancy and spacing births than with other reversible methods - Oral contraceptive pills or Injection DMPA. Sterilization was the second common method preferred by postpartum women who completed their family. The complications and failure rates are very low. So, it is the best method to be preferred if the family is completed.

Key Word: contraceptive methods, postpartum women.

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INTRODUCTION

Among all the countries in the developing world, India has the unique distinction of having the first National Family Planning programme since 1951. It is still the second most populous country in the world after China.

Population and literacy have been a concern for India for decades. The obvious manner in which to accomplish this is to educate and make available the necessary and appropriate contraceptive methods to the Indian population. Current contraceptive methods available are not proving effective as they are being inconsistently and incorrectly used by a large majority of the population or no birth control is being used at all. It is important for greater access and information to be provided to the men and women of India so that they may be used effectively. The worldwide population accounting for 7.2 billion. The Republic of India is a country in South Central Asia which comprises the major part of the Indian subcontinent. According to the Population reference bureau, the 2014 Census accounted for a population of 1,296 million people living in the country. India is the

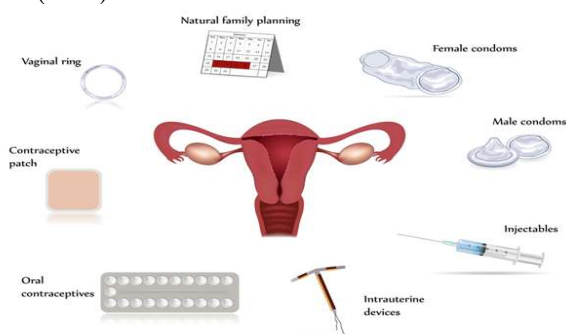
world's second most populous country.¹ The census of 2001 and 2011 shows a decline in population growth from 21.34% to 17.46%. Female literacy on the other hand has increased by a mere 54% to 65% in the same decade². Unintended pregnancies are associated with a higher risk of adverse maternal and neonatal outcomes, particularly when they occur within a short time interval from a previous birth.³ Unintended pregnancies (UIPs) and short inter-pregnancy intervals (IPs) have been associated with maternal morbidity during pregnancy and with small for gestational age, low birthweight, and preterm delivery.^{4,5}

Postpartum family planning: Postpartum period is one of the critical times when both woman and new born need a special and integrated package of health service as morbidity and mortality rates are quite high during this period and the women are vulnerable to unintended pregnancy. Women are highly motivated and receptive to accept Family planning (FP) methods during the postpartum period. Demographic and health survey show that 40 percent of women in the first year postpartum intend to use a family planning method but are not doing so.^{6,7}

Family Planning Programmes: Among all the countries in the developing world, India has the unique distinction of having the first National Family Planning programme since 1951. Since then, maternal mortality has decreased by two-thirds, fertility has declined by two-fifths, and life expectancy at birth has improved significantly. The successive 5-year plans have stressed the importance of the cafeteria approach, wherein the clients are offered a variety of contraceptive methods, from which they make their choice.⁸ The main concern of the National Family planning policy of February 2000 was to address the unmet needs of contraception by 2010. Enabling families to achieve their reproductive goals and reduction in infant mortality were the other concerns. Its final objective is to achieve population stabilization by 2045⁹. NFHS-3(2005-06) Nationwide, the small family norm is widely accepted (the wanted fertility rate for India as a whole is 1.9 (NFHS-3) and the general awareness of contraception is almost universal (98% among women and 98.6% among men: NFHS-3). NFHS and surveys showed that contraceptive use is generally rising. Contraceptive use among married women (aged 15-49 years) was 56.3% in NFHS-3 (an increase of 8.1 percentage points from NFHS-2)¹⁰ In 2005, with the goal of reducing the numbers of maternal and neonatal deaths, the Government of India launched Janani Suraksha Yojana (JSY), a conditional cash transfer scheme, to initiate women to give birth in a health facility. Since the inception of JSY, facility-based births in the public sector have increased from 700,000 in 2005 more than 11

million in 2012¹¹ With increasing numbers of women electing to give birth in health institutions, the Government of India decided to strengthen PFP and to introduce PPIUCD services in a phased manner, with the first batch of clinician trainings, in 2009. The provision of PPIUCDs is being rapidly scaled up in India, with facilities in at least nineteen states offering the method in 2013. Previously, concerns about the PPIUCD focused on high expulsion rates. However, lower expulsion rates have been reported more recently with improvements in insertion technique.^{12,13} There has been a paradigm shift in the demographic and socioeconomic conditions of the country. There is a continuous effort to bring women to deliver in institutions. Couples no longer desire large families, women are getting educated, and the age of women at first childbirth has been pushed to the late twenties. Couples are looking at reversible long-acting methods of contraception to space and to limit families. Female sterilization which has been the mainstay of the previous decade is no longer in favor. Remarriages after divorce and second marriages have changed the social scenario in favor of IUCD as an effective long-term method for birth spacing.¹⁴ Postpartum family planning (PFP) by using an effective contraceptive method will be able to prevent an unplanned pregnancy, within a short interval period. The choice of a post-partum contraceptive method depends on many factors, including the need for a temporary versus a permanent method, the infant feeding choice and the extent to which informed consent is made prior to delivery.

These are the various contraceptive methods available to the postpartum woman with their advantages and disadvantages and their failure rates mentioned in the below (table).



AIMS AND OBJECTIVES

1. To study the percentage of postpartum women seeking family planning measures in our setup.
2. To study social demographic and obstetric characteristics of the postpartum women seeking family planning method

3. to study the most preferred contraception out of various contraceptive methods by the postpartum women in our setup
4. To study the failure rates in the chosen method of contraception by the postpartum women in our setup.
5. To study the side effects and complications of the method chosen by the postpartum women in our setup.

METHODOLOGY

Study Design: The study is a hospital based Prospective analytical study on Pregnant women attending the active ANC's also attending Family Planning Counselling clinics in the department of Obstetrics and Gynaecology. Informed consent was obtained from all cases after explanation of nature and purpose of study. The study was approved by the ethical committee of the hospital

Study Setting: The study is carried out at a tertiary care Centre in the Department of Obstetrics and Gynaecology at Owaisi Hospital and Research Centre and Princess Esra Hospital affiliated by Deccan College of medical sciences, Hyderabad.

Study Period: Two years of period from October 2014 to September 2016.

Study Population: The study population included 400 pregnant women attending ANC's also attending Family planning counselling clinic at Owaisi Hospital during the study period.

Inclusion criteria: All Postpartum Women aged between 18-45 years following uncomplicated normal delivery and by caesarean section, counselled on various Contraceptive methods, their advantages, disadvantages and failure rates

during their ANC's in Family planning clinic and willing to participate in the study.

Exclusion criteria:

- Grand multiparous women
- Bad obstetric history
- Psychiatric disorders
- No living issues
- Under nourished or severely anaemic
- Type 2 DM, HTN, Epilepsy
- Preterm delivery
- IUGR babies
- women whose baby had congenital disease or disease that could affect oral feeding or if the baby was in NICU were excluded from the study.

Counselling of the patients: Women were sensitized about Various contraceptive methods available, advantages, side effects and failure rates of family planning methods during ANC visits and at the time admission that is before delivery and about the Research study. Enrolled the participants by taking a written informed consent. Pretested questionnaire included the demographic characteristics of the patient such as Age, Number of children, Place of Residence(Urban/Rural), Education status (Illiterate/Primary school/High school/Higher education degree) and their preferred Contraceptive method were also recorded. Out of 5328 antenatal patients who delivered, patient counselling was given for Postpartum Contraception within last one year October 2014 to October 2015, 3826 women delivered at our hospital, Out of which 1566 requested for postpartum contraception and 400 of them were enrolled for our study considering inclusion and exclusion criteria.

A total of 400 cases were enrolled for the study

The cases were grouped into:

Groups	Enrolment criteria	No. of Patients enrolled
Group I	Postpartum Contraception who had Term LSC	100
Group II	Postpartum Contraception who had Term vaginal delivery and up to 48hrs	100
Group III	Postpartum Contraception after 6 weeks Vaginal delivery or Term LSCS	200

Patients were motivated for postpartum contraception during Antenatal visits, first stage of labour and before undergoing caesarean section. Detailed history was taken, women were counselled about advantages and disadvantages of postpartum contraception and informed consent was taken. A thorough physical examination is carried out.

Statistical Analysis: All the collected data was entered in Microsoft Excel sheet and then transferred to SPSS software ver. 17 for analysis. Qualitative data was presented as frequency and percentages and analysed using chi-square test of fisher's exact test (in case of 2x2 contingency tables). Quantitative data was presented as mean and SD and compared by unpaired t-test or Man Whitney U test (in case of non-normal distribution). p-value < 0.05 was taken as level of significance.

RESULTS

A hospital based Prospective analytical study on use of various contraceptive methods from October 2015 to September 2016 in Postpartum women attended active ANC's and Family Planning Counselling clinics in the department of Obstetrics and Gynaecology at Owaisi Hospital and Research Centre and Princess Esra Hospital, Hyderabad.

Table 1: Patients Requesting For Postpartum Contraception

Total antenatal Patients	Total no. of deliveries	Total no. of patients requesting for Post-partum contraception	Study population enrolled
5328	3826	1566	400

Table 2: The study population (400 patients) was distributed as under

Groups	Enrolment criteria	No. of Patients enrolled
Group I	Postpartum Contraception who had Term LSCS	100
Group II	Postpartum Contraception who had Term vaginal delivery and up to 48hrs	100
Group III	Postpartum Contraception after 6 weeks	200

Table 3: Total Patients Opted For Postpartum Contraception (LSCS / Term Vaginal Delivery – 48 Hours / > 6 weeks Delivery)

Total no. of patients enrolled in the study (N=400)	Percentage
Patients Delivered by LSCS and opted Postpartum Contraception at the time of LSCS.	84 21%
Patients Delivered by Term Vaginal Delivery and upto 48 hours and opted Postpartum Contraception	72 18%
Patients Delivered by LSCS and Term Vaginal Delivery and opted Postpartum contraception after 6 Weeks delivery	173 43.25%
Total no. of Patients who opted Postpartum Contraception	329 82.25%

T Value= -14.66848; Chi Square, Z= 4.26489; P value = 0.00001; Significant at P < 0.05

Total 329 patients opted for Postpartum contraception out of 400 patients who were enrolled for this study from all the 3 groups - at the time of LSCS, at the time of Term Vaginal Delivery upto 48 hours and 6 weeks after delivery. That is 82.25% of patients opted for Various methods of postpartum contraception.

Table 4: Preferred Contraception Out Of Various Methods Of Postpartum Contraception (LSCS / Term Vaginal Delivery – 48 Hours / > 6 weeks Delivery)

Postpartum Contraceptive Method	No. of patients opted Postpartum contraception	Percentage
Sterilization	122	30%
IUCD	129	32%
Oral Contraceptives Pills (OCP's)	42	11%
Injection Depot medroxyprogesterone acetate (DMPA)	36	9%
Total no. of Patients who opted Postpartum contraception	329	82%

T Value= -5.4673; Chi Square, Z= 3.43343; P value = 0.000298; Significant at P < 0.05

The above Table shows

1. IUCD is the most preferred method of Postpartum contraception, that is 129 patients out of 329 from all the three groups (LSCS / Term Vaginal Delivery – 48 Hours / > 6 weeks Delivery), which accounts for 32.25%.
2. Sterilization is the second best preferred method of Postpartum contraception who have completed their family, that is 122 patients out of 329 from all the three groups (LSCS / Term Vaginal Delivery – 48 Hours / > 6 weeks Delivery), which accounts for 30.5%.
3. Injection Depot medroxyprogesterone acetate is the least preferred method of Postpartum contraception, that is 36 patients out of 329 from all the three groups (LSCS / Term Vaginal Delivery – 48 Hours / > 6 weeks Delivery), which accounts for 9%.

Table 5: Failure Rates Of Various Methods Of Post Partum Contraception after One Year Follow Up From October 2015 To September 2016

Method of postpartum contraception	No. Of cases after 1 year follow up	No. Of cases with failure rate	Percentage
Tubectomy	98	1	1.02%
IUCD	98	3	3.06%
Oral contraceptive pills	36	0	0%
Injection depot medroxyprogesterone acetate	28	1	3.5%

Chi Square, Z= 2.1258; P value = 0.01676; Significant at P < 0.05

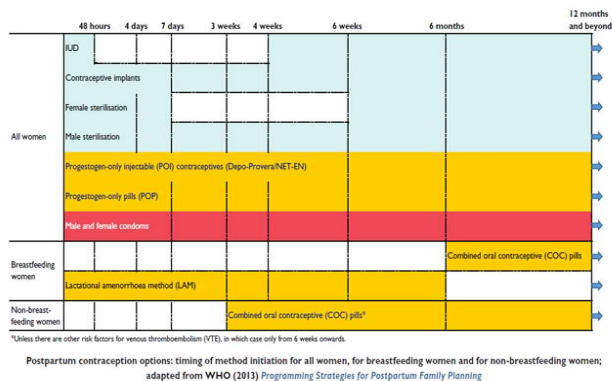
The above table shows the failure rates of Postpartum Contraception after one year follow up, 1 patient with Injection DMPA and Sterilization and 1 patients with IUCD and 2 patients with OCP'S showed a failure rate of Postpartum Contraception.

DISCUSSION

A hospital based Prospective study was conducted from October 2014 to September 2016 in Pregnant women attended antenatal outpatient and family planning counselling clinics in the department of Obstetrics and Gynaecology at Owaisi Hospital and Research Centre and Princess Esra Hospital, Hyderabad, Deccan College of Medical Sciences. Out of 5328 antenatal patients who delivered, patient counselling was given for Postpartum Contraception within last one year October 2014 to October 2015, 3826 (71%) women delivered at our hospital, Out of which 1566 (29%) requested for postpartum contraception and 400 (7.5%) of them were enrolled for our study considering inclusion and exclusion criteria. The World population accounting for 7.2 billion. Among all the countries in the developing World, India is still the second most populous country after China accounting for 1,296 million people and has the unique distinction of having the First National Family Planning program since 1951¹⁵ The family planning program has undergone transformation in terms of policy and programme implementation which helped in fertility control and the successive 5-year plans have stressed the cafeteria approach, wherein the clients are offered a variety of contraceptive methods from which they make up their mind about their choice of contraception based on their age, parity, profession, social class and previous contraceptive experiences. The first important contribution to the use of contraception to reduce the number of unwanted births, unsafe abortion is the second most important contribution to reduce the morbidity and mortality associated with obstetric. Despite all these problems, the worldwide estimation of contraceptive prevalence among 15-49 years of age is 62.7% (50). Data on postpartum family planning among young women worldwide is limited. The prevalence of postpartum contraceptive use even within some countries varies depending on geography, socioeconomic and religious factors. This present day transformation in opting various contraceptive methods is the reason I have decided to do this important dissertation on use of various contraceptive

methods in postpartum women. Postpartum Family planning (PPFM) aims to prevent unintended pregnancy and closely spaced pregnancies through the first 12 months after childbirth. According to an analysis of Demographic and Health Surveys data from 27 countries, 95% of postpartum women (0–12 month's) want to avoid pregnancy for next 24 months; but 70% of them don't use contraception.¹⁶ Family planning counselling with the intention to inform, motivate and educate couples by helping them to make voluntary and informed choices about contraception. Family planning counselling can be provided during different periods of a woman's reproductive life. The antenatal, immediate postpartum and the extended postpartum periods offer convenient time for contraceptive counselling due to multiple interactions between the health care providers and women. In order to promote the postpartum contraceptive use, contraceptive counselling has been integrated into maternal health and child care services in many countries worldwide. Postpartum education and counselling has been reported to increase contraception usage, but also to have no impact on the use of effective and modern postpartum contraception. A meta-analysis regarding the effectiveness of postpartum education on contraceptive use concluded that postpartum education led to more contraceptive use and fewer unplanned pregnancies.¹⁷ In Mexico, where family planning counselling is integrated into routine prenatal care, IUD and sterilization increasing significantly with prenatal family planning counselling.²¹ A study in Nigeria to determine the influence of antenatal and post-natal counselling on the postpartum contraceptive use found that women who had multiple antenatal contraceptive counselling were more likely to use postpartum contraception by 6 weeks than those who received single one-on-one postnatal counselling.¹⁸ We have enrolled 400 patients and divided in three groups, 100 patients of Term LSCS, 100 patients with Term vaginal delivery and up to 48hrs and 200 patients with Term LSCS or Term Vaginal delivery after 6 weeks seeking contraception as Group I, II, and III respectively. In our study, effectiveness and failure rates,

complications, side effects on various contraceptive methods in women who received postpartum contraception were followed up for 12 months from October 2015 to September 2016 and were evaluated accordingly. We have followed the protocols and guidelines set by WHO 2013 on postpartum contraception in regard to the timing of method initiation for all women, for breastfeeding women and for non-breastfeeding women.

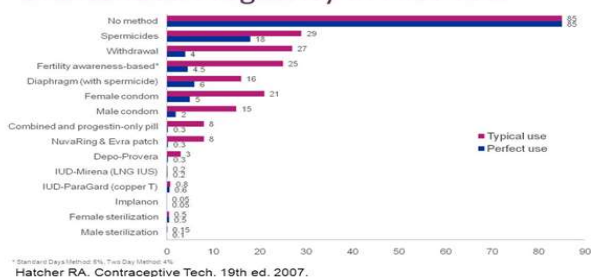


Total 329 (82.25%) patients opted for postpartum contraception out of 400 patients who were enrolled. Remaining 71(17.25%) patients were counselled for postpartum contraception but did not opt for it due to plan of other pregnancy in near future, not accepted by partner or against religious beliefs and fear of possible complications. Husband was the decision maker in most of the women, the husband was playing a vital role in family planning acceptance, and these findings correlate with the study conducted by Meenakshi Singh *et al.*, 2015.¹⁹ In spite of giving proper counselling to antenatal group of patients not all of them followed what they have decided before. So, counselling sessions for couples as a whole to be taken very well in women seeking hospital deliveries IUCD is the most preferred method over other postpartum contraceptives as it is safe, long acting and reversible as in the study conducted by Maluchuru S. *et al.*²⁰ Permanent contraception methods are an important part of the contraceptive methods designed to meet the needs of women who have completed desired family size or wish never to become pregnant. Current surgical approaches to permanent contraception are well tolerated and highly effective. Royal College of Obstetricians and Gynaecologists (RCOG) states Postpartum sterilization is a permanent contraceptive method and that woman should be made aware of increased regret and possible increased failure rate of sterilization immediately postpartum and, ideally, sterilization can be performed within the first 7 days postpartum or any time after 6 weeks of delivery.²¹ The efficacy of tubal ligation has been most extensively studied in the US Collaborative

Review of Sterilization (CREST) study. The findings demonstrated that tubal ligation is highly effective, though effectiveness varies by the ligation method employed and by the patient's age, race, and ethnicity.²² Contraception for breastfeeding women should be highly effective and not impair lactation. Progestin-only pills are traditionally the oral contraceptive of choice because of concerns that combined oral contraceptive pills may reduce breast milk production and, in turn, result in early discontinuation of breastfeeding or poor infant growth.²³ In non-breastfeeding women, combined pills are known to have several advantages over progestin-only pills: fewer side effects, better efficacy, and higher continuation rates.²⁴ World Health Organization (WHO) assigns a category 2 (Generally use the method) for initiation of progesterone only pills within six weeks of delivery and a category 1 (Use method in any circumstances) from 6 weeks to 6 months in primarily breastfeeding women and category 4 (unacceptable health risk) for initiation of combined pills within six weeks of delivery and a category 3 (theoretical or proven risks usually outweigh the advantages) from 6 weeks to 6 months in primarily breastfeeding women.²⁵ Studies demonstrate no harmful effect of Progesterone only pills on breastfeeding performance and generally demonstrate no harmful effects on infant growth, health or development²⁶ while it shows conflicting results regarding effects on breastfeeding continuation or exclusivity in women exposed to combined oral contraceptive pills during lactation. No consistent effects on infant growth or illness have been reported.²⁷ World Health Organization (WHO) assigns a category 3 (theoretical or proven risks usually outweigh the advantages) for initiation of Injection depot medroxyprogesterone acetate within six weeks of delivery and a category 1 (Use method in any circumstances) from 6 weeks to 6 months in primarily breastfeeding women. Qualitative data were collected by in-depth interviews of the clients whose records were available as a family planning unit of a University Hospital between November 2005 and October 2007. Majority of the women preferred injectable and explained their choices based on the fact that injectable are non-coital dependent, with little or no risk of failure or forgetfulness on the part of the users. And especially for those with no spousal consent, the women found injectable as convenient in-order to avoid detection by their spouses.²⁸ Immediate postpartum Cu-IUD insertion, particularly when insertion occurs immediately after delivery of the placenta, is associated with lower expulsion rates than delayed postpartum insertion. Additionally, post-placental placement at the time of caesarean section has lower expulsion rates than post-placental vaginal insertions. Insertion complications of

perforation and infection are not increased by IUD placement at any time during the postpartum period.²⁹ According to Family planning division, Ministry of health and family planning welfare, Government of India,2010, Risk of expulsion is lower for insertions done within 10minutes of delivery than for those done between 10minutes to 48 hours.³⁰ According to CREST study, the cumulative 10-year probability of pregnancy following tubal ligation was 18.5 per 1000 procedures. pregnancy rates were highest following laparoscopic sterilization (36.5 pregnancies per 1000 procedures) Sterilization failure occurred more commonly in women who underwent the procedure at a younger age due to increased fertility in these women³¹ Winner *et al* in his study explains about a cohort study that in patients using IUCD has lower failure rates at 12 months than patients using other reversible methods, so if more women use IUCD method we can expect decrease in the number of unintended pregnancies. Studies done in the United States on postpartum contraceptive use among adolescent mothers have identified that those using long acting reversible contraceptive methods (LARC) like intrauterine devices immediately after delivery have a lower risk of rapid repeat pregnancy compared to those who adopt short acting methods such as oral contraceptive pills³⁵ Recent reviews of DHS surveys from developing countries, however, indicate a high level of general knowledge about contraception in most countries, but fear of side effects and disturbances in the menstrual cycles is increasingly becoming the main reasons for non-use of oral contraceptives and hormonal injections³² In an opinion published in October 2008, ACOG recommended that clinicians not allow concerns about the effects of DMPA on BMD to prevent their prescribing the contraceptive or limit use to 2 years.⁴⁷ Instead, clinicians should inform women about the relative benefits and risks so they can weigh the risk of fracture with the risk of unintended pregnancy.

Percentage of Women Experiencing Unintended Pregnancy in First Year



Similar studies conducted by Hatcher RA *et al* shows Percentages of women experiencing an unintended pregnancy with typical versus perfect contraceptive use

IUCD, sterilization, OCP's and Injection DMPA failure rates after perfect use is 0.6%, 0.5%,0.3%, 0.3% respectively and after typical use 0.8%, 0.5%, 8%, 4% respectively which is similar to the typical use of our study.

CONCLUSION AND SUMMARY

1. Postpartum Family planning is critical for birth spacing, and thus for the health of women, infants and children. Every woman should have access to her preferred method of contraception out of various methods postpartum contraception for spacing or limiting births.
2. Effective counselling on various contraceptive methods of Postpartum family planning, health promotion activities,counselling to family members including spouse and conducting innovative product delivery programs increase knowledge and its use and decrease pregnancy rates during the postpartum period
3. IUCD is the most preferred reversible postpartum contraceptive method among various contraceptive methods in postpartum women for birth spacing in our study. It is a long-acting reversible contraceptive (LARC) method which is safe, cheap and highly effective in preventing unintended pregnancy and spacing births than with other reversible methods - Oral contraceptive pills or Injection DMPA
4. Sterilization was the second common method preferred by postpartum women who completed their family. The complications and failure rates are very low. So, it is the best method to be preferred if the family is completed.
5. Long-acting reversible contraception (IUCD) last for several years. It is as effective at preventing pregnancy as sterilization and it can be removed at any time if you want to become pregnant.

Through birth spacing and prevention of high-risk and unwanted pregnancies, PFP helps women who delivered recently to avoid exposure to the risks of maternal death. Likewise, the importance of the interplay between maternal health services and use of contraception in the postpartum period has been recognized for decades.

FUTURE PERSPECTIVES

- Progesterone vaginal ring (PVR) as a new contraceptive option designed specifically for use by breastfeeding women to extend the period of lactational amenorrhea and promote birth spacing.
- Each ring delivers a daily dose of 10 mg of progesterone and can be used continuously up to

3 months with a woman being able to continue with its use up to 1 year (four rings used consecutively).

- Preliminary results indicate that many women who had used the method found it acceptable and their partners supported its use. Activities aimed at having PVR registered and made available in countries are ongoing.
- Given that the use of PVR does not require extensive clinical training, it will be easier to integrate it at all levels of the health system from tertiary health facilities to community-based services.
- The PVR has been recently included in the WHO *Model List of Essential Medicines* and the WHO's fifth edition of the *Medical Eligibility Criteria for Contraceptive Use* which should facilitate its introduction into the public and private sectors.
- The latest trends in contraceptive use, unmet need for family planning and method-specific prevalence over time, Frequency of contraceptive use is still low in India.

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