

Evaluation of the Use of Intra Uterine Device Postpartum (IUDPP) in Spontaneously and Cesarean Section Labor

1st Ivanna Beru Brahmana

*Obstetrics & Gynecology Section, Medical Study Program,
Faculty of Medicine and Health Sciences
(Universitas Muhammadiyah Yogyakarta)
Yogyakarta, Indonesia
ivanna@umy.ac.id*

2nd Sri Nabawiyati Nurul Makiyah

*Hystology Section, Medical Study Program,
Faculty of Medicine and Health Sciences
(Universitas Muhammadiyah Yogyakarta)
Yogyakarta, Indonesia
nurul_makiyah@umy.ac.id*

Abstract --- Family Planning (KB) Postpartum is important because postpartum control is safe and can increase family planning coverage, be effective in terms of time and reduce Maternal Mortality Rate (MMR). Postpartum family planning coverage is still very low. Objective : To making evaluation of postpartum IUDs in the private practice of the Obstetrician and Gynecologist in Klaten, Central Java.

Methods : Observational study with cross sectional design. Data was taken from medical records for 2 years from April 2016 to December 2017 with inclusion criteria for women who gave birth either spontaneously or cesarean section (SC) and were willing to do post-natal IUD installation. Data was taken at the time of the first control, namely day 5 to day 7 postpartum, second control was one month later and the third control was 6 months after the second control. Data processed is data from the results of the last IUD examination, no results from the first, second, or third controls are determined. Data taken in the form of: age, pregnancy to what, how to spontaneous or SC delivery, evaluated whether there is leucorrhoea, erosion, expulsion, translocation, menometroragia, husband complaints and pain.

Results : of the study were analyzed descriptively. The results showed that fifty-seven respondents fulfilled the inclusion criteria and exclusion criteria. Respondents were 28.96 ± 5.12 years old, parturition was 1.74 ± 0.77 times, IUD was installed at SC 87, 72% and spontaneous 12.28%. Respondents experienced leucorrhoea 66.67%, but respondents did not experience erosion, expulsion, translocation, menometroragia, husband complaints and pain. It was concluded that IUD postpartum were safe and well done.

Conclusion : To evaluate the incidence of leucorrhoea and erosion, an evaluation of larger respondents is needed, so that more accurate figures are obtained. The use of IUDPP was also stated to be more effective.

Keywords: IUD Postpartum, postpartum family planning, Spontaneous, Cesarean Section.

I. INTRODUCTION

The Maternal Mortality Rate (MMR) in Indonesia according to the Indonesian Demographic and Health Survey (SKDI) in 2012 is still high, at 359 per 100,000 live births. Efforts to reduce the MMR are still ongoing. To achieve this we need hard work from the government and the community to ensure that every mother has access to: quality health services, since pregnancy, childbirth assistance by trained health personnel, and postpartum care

for mothers and babies, special care and referral in the event of complications, and access to family planning facilities. Efforts to prevent pregnancy are by installing family planning. In 2013 around 38% of fertile age women did not have family planning so they were more likely to get pregnant and die during childbirth. [1]

Four too, which is too young, too old, too close, and too much, a risk factor for maternal death. Too young, is the age of pregnant women who are too young, ie under the age of 20 years. Too old is the age of pregnant women who are too old, that is, over 35 years. Too often pregnancy is too frequent, such as without distance, so giving birth is immediately followed by a subsequent pregnancy, so the distance of pregnancy or childbirth is less than 2 years. Too many are too many children born to a mother, namely more than 4 children.

The family planning method consists of: short-term birth control methods (pills and injections) and long-term family planning (IUD (Intra Uterine Device) and implants / implants)). The long-term method with an IUD reaches a 5-year, 8-year usage range, and even 10 years. For implant / implant use, it has a span of 3 years. Thus to prevent being too close to the previous 4, the KB method chosen is a long-term family planning method. In this study IUD was chosen. An IUD contraceptive device is a family planning device that is safely placed in the womb as a means of sparing pregnancy. The use of an IUD is usually done at intervals, which is when the child is finished postpartum or about 40 days after giving birth, or six weeks postpartum. However, the IUD is also safe to be installed immediately after delivery, which is 10 minutes after the placenta is born, both in spontaneous labor, and during the operation of Sectio Caesarea (SC). [2]

Because of the risk of not having a postpartum mother with no control in the puerperium period, the use of postpartum family planning is encouraged. An IUDPP (Intra Uterine Device Post Partum) study in Karachi stated that a mother in a healthy condition who visits a health service place is only during delivery. Therefore, it is expected that the installation of IUDPP is the right time for family planning [3]. An IUD contraceptive will be installed immediately after delivery, which is about 10 minutes after

placental release. Thus, when the mother leaves the hospital after giving birth, the mother has received complete treatment for labor and family planning chosen as an effort to thin the next pregnancy.

Use of IUD Postpartum (IUDPP) with the installation of an IUD when the mother's uterus is still large due to postpartum, the uterus has not yet finished involution, raises many questions. Is the IUD installed not easy to come out of the vagina? Will the IUD not injure the newly born uterus where the uterus is still so soft? These conditions cause a desire to observe the installation of IUDPP.

Implementation of the IUD postpartum (IUDPP) has been carried out in several hospitals in Indonesia. One of them in the city of Klaten, began to be introduced to the postpartum family planning program through the *My Choice Program* from JHPIEGO (John Hopkins Program for International Education in Gynecology and Obstetrics) with a sponsor from the Bill and Melinda Gates Foundation. The implementation of the program is carried out in stages, starting from socialization, to training, and assistance in implementing IUDPP installation to patients. An audit of the implementation of IUDPP was carried out after the program. Monthly reporting is carried out on ongoing activities.

In this IUDPP installation training, IUDPP will be installed in patients who give birth spontaneously and SC, who have received counseling and agreed to have IUDPP installed by signing an informed consent. Installation of IUDPP is not done in patients who have a fever (temperature > 37°C), ruptured membranes > 18 hours, postpartum hemorrhage that has not been resolved. The IUDPP installation requirements were also carried out at the IUDPP evaluation in Karachi. [3]

In many other countries the implementation of IUDPP has been carried out a lot. Even evaluation of IUDPP installation has been done a lot. The expulsion rate of 12% occurred in the installation of IUDPP after vaginal delivery compared to 0% in the installation of IUDPP during cesarean section, and by 6% in the IUDPP installation in the interval period. The incidence of perforation was not found in all study groups. [4] Katheit G et al. mentioned that knowledge about IUDPP was far lower than the interval period IUD installation (5.79% compared to 73.55%), acceptance of IUDPP installation at the age between 21-25 years was 50.88%. The expulsion rate was 10.5%, but no perforation or other major complications were found. Installation of IUDPP is said to be safe, the value of effectiveness is high, has long-term effects, and is a contraception at a low cost. Expulsion rates can be suppressed if family planning staff are increasingly trained and IUDPP installation is inserted into the uterine fundus. [5]

The study, which was conducted over 2 years from January 2016 to December 2017 by Makins A. Et al., By conducting IUDPP installation counseling by 6477 trained health providers, obtained 219,242 people counseling from 239,033 ongoing deliveries. It was concluded that the acceptance of the installation of family planning, especially the installation of IUDPP in several different countries could get a response that was different in accordance with

the local culture and not possible to generalize to all countries. [6]

A Cochrane Systematic Review that assesses the installation of IUDPP states that IUDPP is safe and effective, the incidence of expulsion is higher than that of IUD during the interval period. [7] Other studies suggest that the installation of IUDPP 10 minutes after placental release is a potential contraception to reduce the incidence of pregnancy unwanted and short distances between pregnancies. [8]

With this situation, it is planned to evaluate the implementation of IUDPP installation, both in patients who are born spontaneously, as well as in cesarean section (SC). The evaluation was carried out on patients who came in control of the Obstetrics & Gynecology Specialist doctor who practiced in Klaten who had attended a postpartum family planning training program at that time.

II. METHODS

Observational study with cross sectional design. Data was taken from medical records for 2 years from April 2016 to December 2017, with inclusion criteria for women who gave birth either spontaneously or cesarean section (SC) and were willing to do IUDPP installation. Data was taken at the time of the first control, namely day 5 to day 7 postpartum, second control was one month later and the third control was 6 months after the second control. Data processed is data from the results of the last IUD control examination, not separated from the results of the first, second, or third controls. Data taken in the form of: age, pregnancy to what, how to spontaneous or SC delivery, evaluated whether there is leucorrhoea, erosion, expulsion, translocation, menometroragia, husband complaints, and pain. The results of the study were analyzed descriptively.

The age in question is the age of the mother giving birth, how many pregnancies are the pregnancies being undertaken by the mother, including counting all the number of children born and the possibility of miscarriages that occurred in the previous pregnancy. Ways of delivery are vaginal or spontaneous birth, and cesarean section or surgical birth. Leucorrhoea is the presence or absence of leucorrhoea complaints after IUDPP installation, both before the pregnancy the mother has complaints of vaginal discharge or not. Erosion is obtaining a wound in the portio or cervix, known by gynecological examination, with injury to the portio or cervix. Expulsion is the occurrence of IUDPP discharge after installation, out of the vagina. Translocation is the shifting occurrence of IUDPP after installation, which is likely to penetrate the uterus into the abdominal cavity. Menometroragia is the occurrence of vaginal bleeding that continues to connect, or almost non-stop, complained by the person concerned. Husband's complaints are complaints from husbands, with uncomfortable complaints during sexual intercourse, which is likely due to the presence of threads in the vagina. Pain is a complaint conveyed by the mother, both during sexual intercourse and everyday conditions.

III. RESULT & DISCUSSION

The results of the study were analyzed descriptively. The results showed that fifty-seven respondents fulfilled the inclusion criteria and exclusion criteria. Respondents were 28.96 ± 5.12 years old, parturition was 1.74 ± 0.77 times, IUD was installed at SC 87, 72% and spontaneous 12.28%. Respondents experienced leukorrhea 66.67%, but respondents did not experience erosion, expulsion, translocation, menometroragia, husband's complaints and pain.

Most IUDPP installations were conducted on respondents aged between 20 and 35 years old, 45 (78.95%) people, followed by respondents aged more than or equal to 35 years, 11 (19.30%) people, and only 1 (1.75% of respondents under the age of 20 years. Installation of IUDPP was carried out at the time of the SC as many as 50 (87.72%) respondents and only 7 (12.28%) of respondents who performed postpartum IUDPP installation spontaneously. Installation of IUDPP was installed in primigravida pregnancies (first pregnancy) of 22 (38.60%) respondents, sekundigravida (second pregnancy) as many as 17 (29.82%) respondents, and in multigravida (third pregnancy or more) as many as 18 (31.58 %) respondents.

Table 1. Profile of IUDPP Respondents

Patient Profile		Number of patients (n=57)	Percentage (%)
Age of respondents (years)	< 20	1	1,75
	20 – 35	45	78,95
	≥ 35	11	19,30
Type of labor	SC	50	87,72
	Spontaneous	7	12,28
Pregnancy to	Primi	22	38,60
	Sekundi	17	29,82
	Multi	18	31,58
History of previous pregnancy	History of SC & abortion (-)	43	75,44
	History of SC	3	5,26
	History of abortion	8	14,04
	History of SC & abortion	3	5,26

Based on the presence or absence of a history of SC and / or abortion in previous pregnancies, IUDPP was installed in 43 (75.44%) of respondents without a history of SC and / or abortion in a previous pregnancy, 3 (5.26%) respondents had a history of SC in a previous pregnancy, 8 (14.04%) respondents were given a history of abortion, and 3 (5.26%) respondents were placed with a history of SC and a history of abortion in a previous pregnancy.

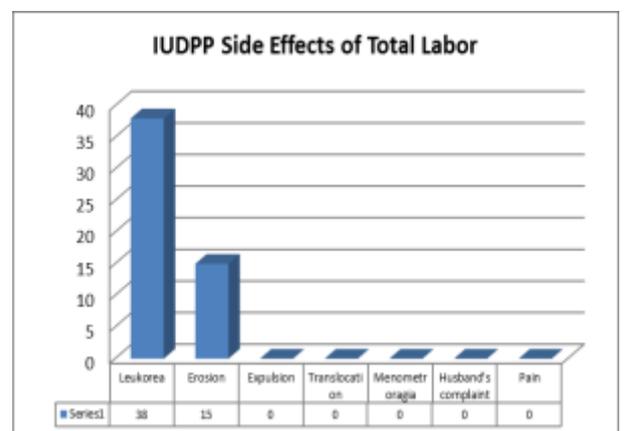
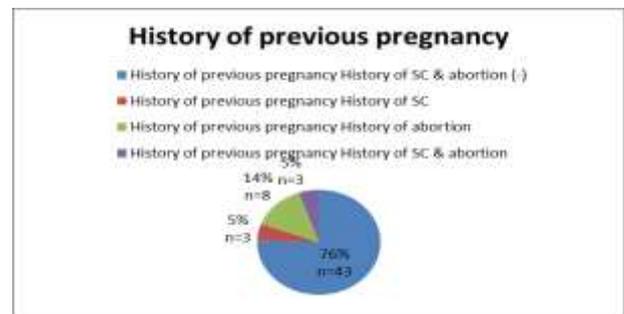
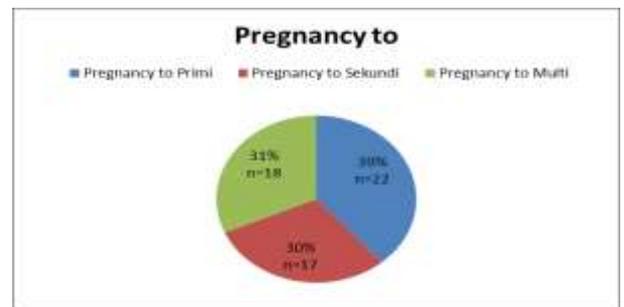
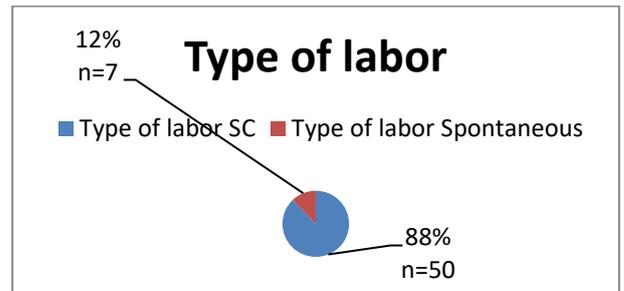
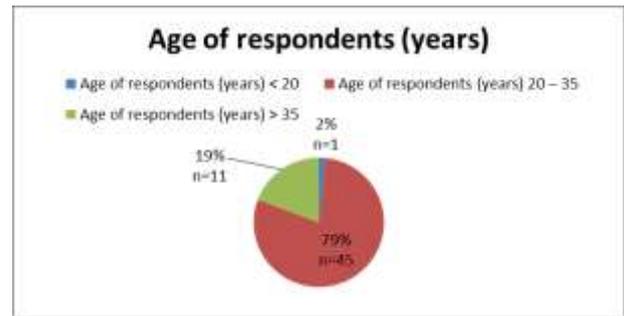


Diagram 1. IUDPP Side Effects of Total Labor

Diagram 1 shows the results of evaluating the use of IUDPP from all respondents on the incidence of leucorrhoea, erosion, expulsion, translocation, menometroragia, husband complaints, and pain. The incidence of leucorrhoea was experienced by 38 (66.67%) respondents, and erosion was experienced by 15 (26.32%) respondents. Expulsion events, translocation, menometroragia, husband complaints, and pain were not found, both in SC labor and spontaneous labor.

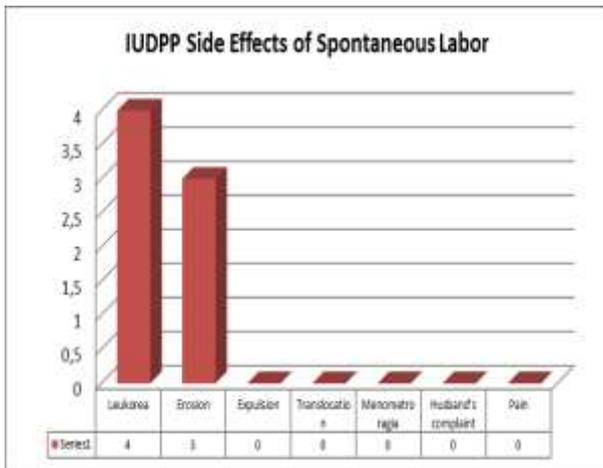


Diagram 2. IUDPP Side Effects of Spontaneous Labor

Diagram 2 shows the results of evaluating the use of IUDPP at spontaneous labor on leucorrhoea events, erosion, expulsion, translocation, menometroragia, husband complaints, and pain. The incidence of leucorrhoea was experienced by 4 (57.14%) respondents, and erosion was experienced by 3 (42.86%) respondents. Expulsion, translocation, menometroragia, husband complaints, and pain were not found in all respondents.

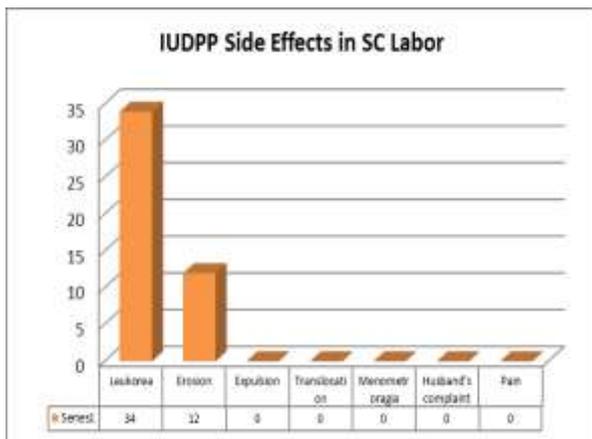


Diagram 3. IUDPP Side Effects in SC Labor

Diagram 3 shows the results of evaluating the use of IUDPP in SC labor to the incidence of leucorrhoea, erosion, expulsion, translocation, menometroragia, husband complaints, and pain. The incidence of leucorrhoea was experienced by 34 (73.91%) respondents, and erosion was experienced by 12 (26.09%) respondents. Expulsion,

translocation, menometroragia, husband complaints, and pain were not found in all respondents.

Installation of IUDPP is a new hope for increasing family planning coverage. With family planning, it is expected that there will be no pregnancy that has not been prepared, because the pregnancy that is prepared will get a healthy pregnancy both mother and fetus, and a safe delivery occurs. With safe labor, it is expected to reduce the risk of death in the mother. Thus the installation of IUDPP is indirectly expected to reduce the Maternal Mortality Rate (MMR). Installation of IUDPP shows that maternity activities have been completed, their deliveries have been served and family planning services, effectively the mother will visit a health care center for postpartum control, all control whether there are complaints of family planning. Thus IUDPP is more efficient in terms of time. In addition, the mother did not feel afraid when IUD was installed, because the installation was carried out after spontaneous delivery, where pain during contractions during spontaneous labor had covered the mother's fear when IUD was installed. Installation of IUDPP when SC means IUDPP is installed while still anesthetized, so it is not scary. Thus, with IUDPP, it is more efficient not to refuse to visit health services. Besides that, from existing evaluations, complaints of pain were not found in respondents who gave birth spontaneously or SC. Thus the installation of IUDPP will be fun for both the mother and the health workers who serve the delivery. [3]

Expulsion was not obtained during IUDPP installation both spontaneously and SC. This shows doubts about the installation of a postpartum IUD, when the uterine cavity is still so loose, and the opening of the birth canal, even to the complete opening, can be ignored. The low expulsion incidence in IUDPP installation was also shown in a large sample of studies, namely 792 / 60,724 (1.30%) respondents, taken from 137 health facilities that received IUDPP installation training by Jhpiego in India. In this study also assessed the incidence of infection in IUDPP installation. The incidence of infection occurred at 382 / 60,724 (0.63%) respondents. [9] There is no mention of what is meant by the criteria for this infection. If the incidence of infection is similar to the evaluation of leucorrhoea and cervical erosion in this study, the incidence of leucorrhoea and erosion in this study was quite high, namely leucorrhoea experienced by 38 (66.67%) respondents, and erosion experienced by 15 (26.32%) respondent. This high incidence is likely to be too little the number of respondents evaluated compared to research conducted in India. IUDPP installation training in Indonesia trained by Jhpiego also covers many cities. If all training sites in Indonesia are evaluated as a whole, it is likely that a more accurate percentage of leukore and erosion events will be obtained. Expulsion incidence of 4.5% (45/1000) of respondents was reported in the Farah Shahbaz et al., 10% (30/300) of respondents in the Gunjan Goswami et al, 0.32% (06/1832) in the study of Banapurmath et al., 3.09% in the Doley R and Pegu B. study, 12.3% (18/146) in the evaluation 6 months after IUDPP installation in the study of Ali R. et al, 5.2% in the Sharma A et al, 6.96% in the Singh U et al, 10.68% in the study of Shukla M et al., 5.3% (9/171)

in the Hooda R. et al., and 17.7% (23/130) in the study of Kant S. et al. [10-19].

Translocation events were also not obtained at IUDPP installation both post spontaneous and SC delivery in this study. Translocation events are not mentioned in other studies. The incidence of perforation was not found in the Banapurmath et al study of 1832 respondents. [12]

The incidence of menometroragia or bleeding and pain complaints were not found in the installation of IUDPP both spontaneously and SC. This shows IUDPP is safe. Gunjan Goswami et al reported bleeding events of 6.67% (20/300) of respondents, pain of 6.67% (20/300) of respondents, and incidence of bleeding and pain at 20% (60/300) of respondents in IUDPP installation. [11] The incidence of abnormal bleeding was not found in the Banapurmath et al study of 1832 respondents [12]. Doley R and Pegu B study reported that irregular bleeding and pain were 12.35% and 2.13% and 16.66% and 13.54% respectively in the Sharma A et al [13, 15]. Each of which was 27.23% in the form of menorrhagia and no complaints of pain in the study of Shukla M. et al., and 10.5% (18/171) in the form of irregular bleeding in the study of Hooda R. et al [17, 18]. About 5.5% (7/130) in the form of vaginal bleeding, 16.4% (21/130) in the form of vaginal bleeding, pain complaints, and bleeding complaints with pain 3.9% (5/130) in the study of Kant S. et al [19].

Husband complaints when related were not found in this study. The incidence of husband complaints is not mentioned in other research reports.

IV. CONCLUSION & RECOMMENDATION

Installation of IUDPP both post-spontaneous and SC delivery is safe, effective and efficient, no expulsion, translocation, menometroragia, husband complaints, and pain were not found. This is lower than similar events reported in the references. [9-19] The incidence of leucorrhoea was experienced by 38 (66.67%) respondents, and erosion was experienced by 15 (26.32%) respondents. To evaluate the incidence of leucorrhoea and erosion, an evaluation of larger respondents is needed, so that more accurate figures are obtained. The use of IUDPP was also stated to be more effective and cheaper in the research of Washington et al. [20]

The recommendation, are: IUDPP installation evaluation shows conditions that are safe, effective and efficient, minimal side effects, and need to be informed more widely, broader IUDPP installation training needs to be carried out for all health workers in all health facilities in Indonesia, so that IUDPP installations can be more routinely performed on maternity wherever they are and installation of IUDPP is expected to increase family planning coverage, and indirectly reduce Maternal Mortality Rate (MMR).

REFERENCES

- [1] Afshan A., Asim S.S. (2014). Immediate Postpartum IUCD (PPIUCD) Insertion: An Opportunity Not To Be Missed. *ASH & KMDC*, 19(1),15.
- [2] Ali R, Kausar S, Akram A. Post-placental Intrauterine Contraceptive Device at Cesarean Section. *APMC* 2015;9(4):189-193.
- [3] Banapurmath S.T.R., Dutrad G.B.S., Doreswamy N., Shyamala. (2014). Feasibility of Postpartum Insertion of Intrauterine Contraceptive Device-Expanding The Use of Intrauterine Contraceptive Device in Postpartum Period-A Cross Sectional Study in Developing Country, India. *Int J Cur Res Rev*, Vol 06(14), 38-48.
- [4] Chhari A., Zutshi V., Sharma R., Batra S. (2015). Comparison of post placental IUD with interval IUD. Abstract. *International Journal of Reproduction, Contraception, Obstetrics and Gynecology*, Vol 4, No. 4.
- [5] Cochrane Systematic Review - Immediate post-partum insertion of intrauterine devices. Intervention Version published: 12 May 2010
- [6] Doley R, Pegu B. (2016). A Retrospective Study on Acceptability and Complications of PPIUCD Insertion. *J. Evolution Med. Dent. Sci*, 5(31), 1631-1634.
- [7] Farah Shahbaz, Robina Tariq, Fatima Shahbaz et al. (2016). Evaluation of Post Placental Trans Caesarean/Vaginal Delivery Intrauterine Device (PPIUCD) in Terms of Awareness, Acceptance and Expulsion in Services Hospital, Lahore. *PJMHS*, Vol 10, No.2, 338-340.
- [8] Gunjan Goswami, Kalpana Yadav, Ankita Patel. (2015). A Prospective Study to Evaluate Safety, Efficacy and Expulsion Rate of Post Placental Insertion of Intra Uterine Device. *Journal of Evolution of Medical and Dental Sciences*; Vol. 4, Issue 56, July 13, 9770-9774.
- [9] Hardeman J., Weiss B.D. (2014). Intrauterine Devices: An Update. *Am Fam Physician*, 89(6), 445-450.
- [10] Hooda R., Mann S., Nanda S., Gupta A., More H., Bhutani J. (2016). Immediate Postpartum Intrauterine Contraceptive Device Insertions in Caesarean and Vaginal Deliveries: A Comparative Study of Follow-Up Outcomes. *Int J Reprod Med.*, 2016, 7695847.
- [11] Immediate Postpartum Long-acting Reversible Contraception. Committee Opinion No. 670. *American College of Obstetricians and Gynecologists*. *Obstet Gynecol* 2016;128:e32-7.
- [12] Infodatin. Pusat Data dan Informasi Kementerian Kesehatan RI. 2014.
- [13] Kant S., Archana S., Singh A.K., Ahamed F., Haldar P. (2016). 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*, 5, 770-6.
- [14] Katheith G et al. (2013). Evaluation of post-placental intrauterine device (PPIUCD) in terms of awareness, acceptance, and expulsion in a tertiary care centre. Abstract. *Int J Reprod Contracept Obstet Gynecol*, 2(4), 539-543.
- [15] Makins A, Taghinejadi N, Sethi M, Machiyama K, Thapa K, Perera G, Munganyizi PS, Bhardwaj A, Arulkumaran S. (2018). Factors influencing the likelihood of acceptance of postpartum intrauterine devices across four countries: India, Nepal, Sri Lanka, and Tanzania. Abstract. *Int J Gynaecol Obstet*, 143 Suppl , 13-19.
- [16] Sharma A., Gupta V., Bansal N., Sharma U., Tandon A. (2015). A Prospective Study of Immediate Postpartum Intra Uterine Device Insertion in A Tertiary Level Hospital. *Int J Res Med Sci*, 3(1), 183-187.
- [17] Shukla M., Qureshi S., and Chandrawati. (2012). Post-placental Intrauterine Device Insertion - A Five Year Experience at A Tertiary Care Centre in North India. *Indian J Med Res*, 136(3), 432-435.
- [18] Singh U., Sonkar S., Yadav P., Dayal M., Gupta V., Saxena S. (2017). Comparative Evaluation of Postpartum IUCD Versus Interval IUCD at A Tertiary Care Centre in Allahabad, India. *Int J Reprod Contracept Obstet Gynecol.*, 6(4), 1534-1538.
- [19] V. Yadav et al. (2016). Comparison of Outcomes at 6 Weeks Following Postpartum Intrauterine Contraceptive Device Insertions by Doctors and Nurses in India: a Case-control Study. *Contraception* 93, 347-355.
- [20] Washington C.I., Jamshidi R., Thung S.F., Nayeri U.A., Caughey A.B., Werner E.F. (2015). Timing of Postpartum Intrauterine Device Placement: a Cost-Effectiveness Analysis. *Fertility and Sterility*, 103(1), 131-137.