

Association between Maternal and Child Health Care Services and Postpartum Contraceptive Initiation in India: A Reproductive Calendar Approach

Introduction

Contraception and Maternal and Child Care Services are the two most important components to avoid infant and maternal mortality from which the India is constantly struggling. Many efforts have been made by government to improve MMR and IMR, from the latest NFHS-4 report, the IMR has been dropped to 41 per 1000 live birth (IIPS & ICF, 2017) from 57 per 1000 live birth, but still India is far from what it should achieve according to National Health Policy, 2017.

Postpartum Contraceptive is of relative importance as it helps to reduce both the maternal and infant mortality because of appropriate birth spacing (Barber, 2007). Studies in developing world and developed world have proved that the use of MCH services proved to be a gateway to subsequent contraceptive use after the delivery (Ahmed & Mosley, 2002; Dixit, Dwivedi, & Gupta, 2017; Hotchkiss, Rous, Seiber, & Berruti, 2005).

The study intends to study the impact of MCH services on the subsequent contraceptive use within 12 months after the last child is born using the reproductive calendar. The study is restricted to 12 months' post pregnancy period because a mother and child hold a greater risk of mortality during the latter period (Hounton, Winfrey, Barros, & Askew, 2015).

The study holds a significant importance as if the women realized the importance of the use of contraceptives post-delivery, high rates of unintended pregnancies can be cut down from the nation. Estimates from the world show that more than 215 million women who want to postpone childbearing in low and middle-income countries are not using any modern contraceptive (Singh & Darroch, 2012). The contraceptive prevalence rate could be 66% if all the women who want to space or limit their children were using contraceptives, hence avoiding the unintended pregnancy.

Data and Methods

The study used the data from the fourth round of National Family Health survey which was conducted in the year 2015-2016. NFHS is a nationally representative cross-sectional survey which includes representatives' samples of household throughout India. The survey provides state, national and district level estimates of demographic and health parameters as well as data on various socioeconomic and program dimensions. Stratified, multistage cluster sampling method is used in NFHS to obtain the representative sample of households.

Probability proportional to size (PPS) is used to select the households from all states and Union Territories. The study uses the 12 months post-partum period for the analysis and this 12 month period is extracted from the reproductive calendar by obtaining the first use of any modern method of contraception in the subsequent months after having the last child in the previous five years before the date of interview.

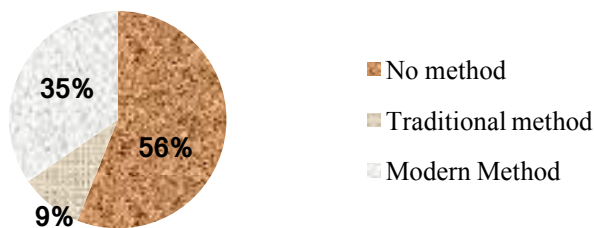
In the first stage, there were 4, 99,627 currently married women in the individual file and then we filtered out those women who had delivered live birth during five years before the survey and only the recent birth delivered by the women were selected. Finally, the analysis was based on 1, 38,068 currently married women in the age group 15-49.

For the outcome variable, we examine the duration of contraception use versus non-use of family planning after the last child with the possibility of censoring. We have used the time discrete complementary log-log model to assess the role of MCH care on the timing of initiating contraceptive use within 12 months after the delivery. The outcome of interest for the analysis is the duration of first use of any modern method after the delivery of the last child within 12 months after the birth. The modern method includes sterilization, injectable, intrauterine devices, contraceptive pills, implants, condoms, diaphragm, foam/jelly, the standard day's method, the lactational amenorrhoea method, and emergency contraception

Predictor Variables: the independent variable was the utilization of MCH care which was constructed by the factor score of the variables:

1. Number of ANC visits (At least 2).
2. Post natal checkups of mother (within 41 days after the delivery).
3. Number of Tetanus injection received during pregnancy (at least 2).
4. DPT-3 immunization received.
5. Institutional delivery by trained professional.
6. 100+ Iron Folic Tablets.

Figure1: Contraception use after the delivery of last child, NFHS (2015-2016)



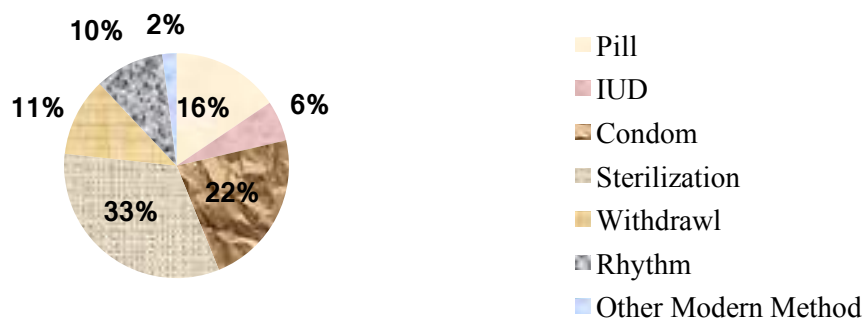
Note: NFHS: National Family Health Survey

Discussion and Conclusion

The study examined the association between use of MCH services on the early initiation of contraceptive during the postpartum period. The preliminary analysis shows that 56% of currently married women are not using any contraception method, 35% are using any modern method and 9% are still

depending on the traditional method of contraception. It can be seen that sterilization is the most dominant method among all the methods, followed by condoms and pills, the percentage users of rhythm and withdrawal methods are also high 10% and 11% respectively.

Figure 2 :Percentage Distribution of currently married women by the type of contraception used after the delivery,NFHS (2015-2016)



Note: NFHS: National Family Health Survey

A total of 1,38,068 women have included in the analysis out of which only 38% of women initiate modern contraceptive methods within 12 months after their recent child. Of which 46% belong to the Northern region, 49% of the Southern region, 34% of Eastern region, the lowest use of modern contraceptive can be seen in the eastern India where only 29% women initiate contraceptive within 12 months after the delivery. 35% of rural residents, 36% of Muslim women and 37% of Schedule Caste/Tribe women are initiating contraceptives within 12 months after the birth of the last child. Concerning the age of the women, maximum users of contraceptives are in the ages between 25-29; only 19% of women in the age group more than 40 are early initiating contraceptives. Wealth and education hold vital importance in initiation of early contraception use, 26% women belonging from the lowest wealth quintile, 47% of the wealthiest quintile is initiating contraceptive use. The same pattern can be visible from the educational status, where 29% of women who are illiterate and 43% of higher educated women are using family planning methods. Child composition of the living child also holds a significant impact on contraceptive use. 43% of women are using a contraceptive when they have both male and female child whereas the use of contraceptives is low among women when the women have no male child. The study hypothesized that does the use of MCH indicators proved to be a gateway to contraceptive use. The percentage distribution of MCH indicators somehow tries to explain the relation. 45% of women who received 4+ ANC visits, 42% women who received PNC within 41 days after the delivery, 41% women who had IFA tablets for at least 100 days, 42% women who had dpt3 immunization for her child and 39% women who had at least 2 TT injections are using contraceptives.

The findings from the discrete complementary log-log model confirm the association between MCH services and subsequent contraceptive use in the postpartum period. Earlier studies in the world also showed the results on the same lines (Barber, 2007; Dixit, Dwivedi, & Gupta, 2017; Hotchkiss, Rous, Seiber, & Berruti, 2005). Moreover, the use of MCH services has a significant positive impact on the early use of family planning method among currently married women, aged 15-49 (Odds ratio-1.113; S.E-0.010). Many socioeconomic factors also significantly impact the timing of contraceptive use among women. Gender preference can also be one of the critical factors that hinder the early initiation of contraceptive use.

The significant findings from the study indicate that if the knowledge about the use of contraceptives is provided during the MCH services, the likelihood of the adopting early use during the postpartum increases. It can help the government to provide all the facilities in one place so that it is cost effective and also boost the contraceptive use among the users. This integration also helps to reduce the unmet need for family planning and unintended pregnancies, which eventually contributes towards the positive growth of the country.

According to a study in India, 84% of women at least once visited the MCH centre to receive at least one of the services (Dixit, Dwivedi, & Gupta, 2017) so the women can be educated and motivated to initiate early contraception use just after the delivery as providing all the information in the same place first proves to be cost-effective (Foreman, 2011) and second during the utilization of these MCH services, women come in contact with these service providers and helps them to develop trust in the health care system and this trust enable to improve the condition of health system. A study in India, examined the relationship between

strengthening the MCH services and contraceptive use and found that increase in the utilization of MCH services will possibly increase the use of family planning in Orissa and this would eventually increase the safe motherhood and child survival (Sinha, 1997), also another study proved that integration of postpartum services with MCH services like antenatal and postnatal visits proved to be an effective tool for initiating contraceptive use (Mumah, Machiyama, Mutua, Kabiru, & Cleland, 2015).

References

- Dixit, P., Dwivedi, L. K., & Gupta, A. (2017). Role of Maternal and Child Health Care Services on Postpartum Contraceptive Adoption in India. *SAGE Open*, 7(3), 2158244017733515.
- Foreman, M. (2011). The challenges of integrating family planning and maternal/child health services.
- Hotchkiss, D. R., Rous, J. J., Seiber, E. E., & Berruti, A. A. (2005). Is maternal and child health service use a causal gateway to subsequent contraceptive use?: A multi-country study. *Population Research and Policy Review*, 24(6), 543–571.
- Hounton, S., Winfrey, W., Barros, A. J. D., & Askew, I. (2015). Patterns and trends of postpartum family planning in Ethiopia, Malawi, and Nigeria: evidence of missed opportunities for integration. *Global Health Action*, 8(1), 29738.
- International Institute for Population Sciences (IIPS) and ICF. 2017. National Family Health Survey (NFHS-4), 2015-16: India. Mumbai: IIPS.
- Mumah, J. N., Machiyama, K., Mutua, M., Kabiru, C. W., & Cleland, J. (2015). Contraceptive adoption, discontinuation, and switching among postpartum women in Nairobi's urban slums. *Studies in Family Planning*, 46(4), 369–386.
- Singh, S., & Darroch, J. E. (2012). Adding it up: Costs and benefits of contraceptive services. Guttmacher Institute and UNFPA.
- Sinha, R. K. (1997). Maternal health care and contraceptive acceptance in Orissa: evidence from a baseline survey. *IASSI Quarterly*, 16(3–4), 6.