

Factors Associated with Abortion and Sterilization: A Temporal Study across Four States in India

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ABSTRACT

Despite the abortion of the Medical Termination of Pregnancy (MTP) Act more than 48 years ago, utilization of safe abortion services still remains inadequate among the community. A retrospective clinic based study was carried out among women who came for abortion and sterilization services at 23 Non-Governmental Organisation Clinics from four states namely Rajasthan, Uttar Pradesh, West Bengal and New Delhi. The aim of the study is to assess the abortion and sterilization profile along with temporal change across selected states in India and also to find out some selected associated factors in relation to the abortion and sterilization prevalence. Total 66,143 women underwent abortion and 32,162 women underwent sterilization in two years. The status of total abortion has significantly decreased and sterilization has increased over the period of time. The frequency of abortion and sterilization services was highest among the women up to the age of 30 years. Most of the abortion (2018-62.5%; 2019 48.7%) and sterilization (2018-74.8%, 2019-63.2%) were availed by women belonging to low socio-economic groups (Rs.10,000/- per month). Hindu clients sought total abortion and sterilization services in higher proportion as compared to Muslim women. 55% of women who underwent abortion already had 1-2 children. In terms of sterilization 57.5% in 2018 and 52.2% in 2019 underwent sterilization. More than 50% of the women had adopted sterilization until they had at least 3-4 children. Women need to be aware about the MTP Act and her rights about the abortion and family planning.

Keywords: Abortion, Sterilization, Socio-economic factors, India

INTRODUCTION:

In India, the Medical Termination of Pregnancy (MTP) Act was passed by the Parliament in 1971 to reduce maternal morbidity and mortality resulting from unsafe abortions (Government of India, 1971). Despite abortion being legal, the representative information on access to abortion services and abortion incidence has remained threatened. According to new study, 15.6 million abortions (14.1 million–17.3 million) occurred in India during 2015. Abortions accounted for one-third of all pregnancies in India, and nearly half of pregnancies were unintended (Singh *et al.*, 2018). According to the National Family Health Survey, abortions accounted for 3.4% of the total pregnancies in India (IIPS and ICF, 2017). Another study reported that around 6.4 million abortions are performed annually, of which 3.6 million (56%) were unsafe (Duggal and Ramachandran, 2004). Severe complication from unsafe abortion is one of the major cause for maternal mortality, morbidity and long term disability throughout the worlds (Prata *et al.*, 2013; Singh *et al.*, 2018; Banerjee *et al.*, 2012). Approximately 8% of all maternal deaths are attributable to unsafe abortion and related complications globally (Say *et al.*, 2014). In India, 8-9% of maternal mortality accounts due to abortion related complications (Registrar General of India, 2006). According to WHO, death and disability due to unsafe abortion could be prevented through proper education of family planning and provision of safe and legal abortion (WHO, 2018).

Despite the abortion of the Medical Termination of Pregnancy (MTP) Act more than 48 years ago, India became first country who officially adopted the family planning program in 1952, although utilization of safe abortion and sterilization services still remains inadequate among the community. Therefore, the aim of present study was to study the abortion and sterilization profile along with temporal change across some selected states in India and also to find out some selected associated factors in relation to the abortion and sterilization prevalence.

MATERIALS AND METHODS:

Study population:

In the present study the records of women seeking abortion and sterilization over a period of two years from January 2018 to December 2019 were accessed and data pertaining to their socio-demographic and obstetric history was recorded in a Monthly Progress Report (MPR) sheet.

Setting: A retrospective clinics record-based study was carried out among women seeking an abortion and sterilization services in 23 registered clinics from 4 states in India i.e. Rajasthan, Uttar Pradesh, West Bengal, and Delhi.

Parivar Seva Sanstha: Parivar Seva Sanstha is a professionally managed NGO. Active since its registration under the Societies Registration Act in 1978. Parivar Seva provides a range of quality, affordable reproductive health services and products in 14 States in India within legal framework of MTP Act 1971. There are 31 registered clinics in 14 States. Clinics provide a range of reproductive and sexual health services other than abortion and sterilization.

Procedure for data collection: The clinics are managed by a team comprising of clinic-in-charge, medical practitioner, registered in a State Medical Register (Gynecologists) and local resident skilled nurses, counsellor and health attendants.

Counselling is one of the important services in the clinics. Once the client has chosen the intervention/ treatment for her reproductive problem, the counsellor informs the client about the essential steps. The written consent and confidentiality form was obtained from the clients/ women including their socio-demographic, obstetrics profile and prior use of abortion and sterilization. For clients who couldn't be provided services at the clinic on the same day, the reasons were recorded in intake file. Strict attentions were paid to confidentiality by all clinic staff. The doctors and nurse were periodically oriented on recent guidelines from Ministry of Health and Family Welfare, Government of India regarding safe abortion.

The details of the registered clients/ women with all reproductive & sexual health services and other services provided by the clinics were sent from each clinic in the form of Monthly Progress Report (MPR) by the Clinic in-charge to SO office New Delhi on monthly basis. The complete data was entered in the excel sheet on a monthly basis after cross verification by Group In-charge and Medical Superintendent in the Supporting office, New Delhi. The data sheet is maintained by trained MIS officer in SO. We obtained permission from ethical committee of Parivar Seva Sanstha and also obtained written consent from all respondents.

Statistical methods

Percentage distribution was conducted for most of the variables and Chi-Square Test (X^2) was performed to examine the association between the sterilization and abortion cases and socio-economic variables.

For this present study, the total abortion and sterilization client’s details from the Master sheet and the data was analyzed using SPSS 16.0 version. $p < 0.05$ was considered as a cutoff point of significance level.

RESULTS:

The results reveal that a total of 66,143 women availed total abortion of pregnancy and 32,162 women underwent sterilization services from 23 registered clinics approved by Government from 23 clinics from 4 States between the periods of January 2018 to December 2019 (Table 1 and Figure 1). The status of total abortion has significantly decreased and sterilization has increased over the period of time. It may be due to the decreasing trend in UP and West Bengal in case of abortion and opposite in case of sterilization. The state wise distribution of abortion was significantly varied ($p < 0.05$).

Table 1: State and year-wise percentage distribution of abortion and sterilization among the study population

| States | Abortion | | | | | | Sterilization | | | | | |
|------------------------|--|-------|-------|-------|-------|--------|---------------------------------------|-------|-------|-------|-------|--------|
| | 2018 | | 2019 | | Total | | 2018 | | 2019 | | Total | |
| | No. | % | No. | % | No | % | No. | % | No. | % | No | % |
| Rajasthan | 10539 | 15.93 | 10642 | 16.09 | 21181 | 32.02 | 7241 | 22.51 | 7469 | 23.22 | 14710 | 45.74 |
| Uttar Pradesh | 8222 | 12.43 | 7755 | 11.72 | 15977 | 24.16 | 4987 | 15.51 | 5216 | 16.22 | 10203 | 31.72 |
| West Bengal | 9010 | 13.62 | 8515 | 12.87 | 17525 | 26.50 | 805 | 2.50 | 840 | 2.61 | 1645 | 5.11 |
| Delhi | 5575 | 8.43 | 5885 | 8.90 | 11460 | 17.33 | 2675 | 8.32 | 2929 | 9.11 | 5604 | 17.42 |
| Total | 33346 | 50.42 | 32797 | 49.58 | 66143 | 100.00 | 15708 | 48.84 | 16454 | 51.16 | 32162 | 100.00 |
| Chi-square Test | 31.96, $p < 0.05$ | | | | | | 3.62, $p > 0.05$ | | | | | |

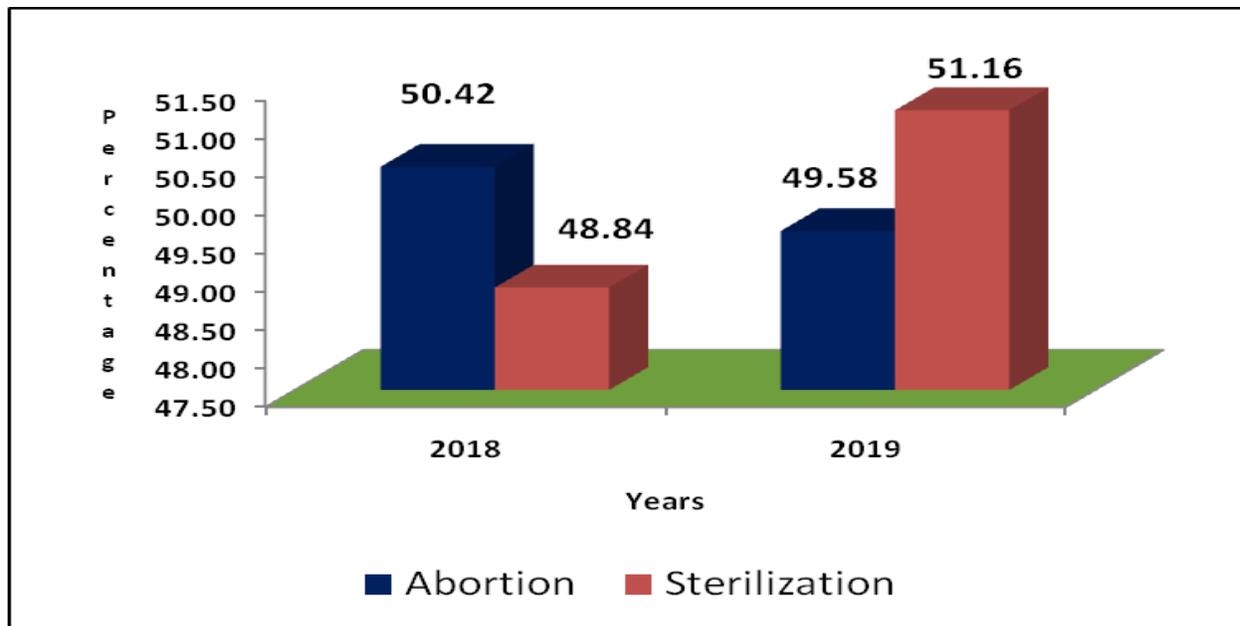


Figure 1: Year-wise comparison of percentage distribution of abortion and sterilization

Table 2 represents Socio-economic and demographic characteristics of studied women as per the parentage of abortion and sterilization between 2018 and 2019 and in most of the cases, statistical significant difference ($p < 0.05$) was observed in terms of seeking abortion and sterilization services by the clients with respect to socio demographics status in both the calendar years.

The prevalence of abortion has significantly higher among the women as per age group in 2018 as compared to 2019. The frequency of abortion and sterilization services was highest among the women up to the age of 30 years. Maximum women were between 25-30 years of age (39%). Similarly, maximum 46.3% and 42.7% women who came for sterilization services in clinics indicated that they were more likely to opt for long action and permanent method as compared to the younger age group. On the other hand, around 60% clients availed abortion services from clinics within 10 km of distance. However, 60% women came for sterilization from more than 10 km of distance.

In both the calendar year, most of the medical abortion and sterilization were availed by women belonging to low socio-economic groups (Rs.10, 000/- per month). However, frequency of both the services were higher in 2018 (Abortion- 62.5%; Sterilization – 74.8%) as compared to 2019 (Abortion- 48.7%; Sterilization – 63.2%).

Table 2: Socio-economic and demographic characteristics of studied women

| Socio-economic and demographic characteristics | Abortion | | | | Sterilization | | | |
|--|-----------------|-------|-------|-------|----------------|-------|-------|-------|
| | 2018 | | 2019 | | 2018 | | 2019 | |
| | No. | % | No. | % | No. | % | No. | % |
| Age group (years) | | | | | | | | |
| <18 | 124 | 0.37 | 09 | 0.03 | 101 | 0.64 | 00 | 0.00 |
| 18-25 | 9536 | 28.60 | 8665 | 26.42 | 2960 | 18.84 | 3395 | 20.63 |
| 25-30 | 13036 | 39.09 | 12878 | 39.27 | 7280 | 46.35 | 7027 | 42.71 |
| 30-35 | 7776 | 23.32 | 8130 | 24.79 | 4145 | 26.39 | 4654 | 28.28 |
| >35 | 2874 | 8.62 | 3115 | 9.50 | 1222 | 7.78 | 1378 | 8.37 |
| Chi-square test | 155.11, p<0.05 | | | | 156.83, p<0.05 | | | |
| Distance from clinics (km) | | | | | | | | |
| Up to 5 | 10195 | 30.57 | 9821 | 29.94 | 1900 | 12.10 | 2576 | 15.66 |
| 5-10 | 9991 | 29.96 | 10284 | 31.36 | 4250 | 27.06 | 4467 | 27.15 |
| 10-30 | 7745 | 23.23 | 7394 | 22.54 | 5224 | 33.26 | 4706 | 28.60 |
| Above 30 | 5415 | 16.24 | 5298 | 16.15 | 4334 | 27.59 | 4705 | 28.59 |
| Chi-square test | 16.08, p<0.05 | | | | 132.51, p<0.05 | | | |
| Monthly family income (Rs) | | | | | | | | |
| Upto 10000 | 20844 | 62.51 | 15984 | 48.74 | 11753 | 74.82 | 10401 | 63.21 |
| 10000-25000 | 9847 | 29.53 | 12269 | 37.41 | 2956 | 18.82 | 4659 | 28.32 |
| 25000-50000 | 2374 | 7.12 | 3783 | 11.53 | 964 | 6.14 | 1186 | 7.21 |
| Above 50000 | 281 | 0.84 | 761 | 2.32 | 35 | 0.22 | 208 | 1.26 |
| Chi-square test | 1445.68, p<0.05 | | | | 592.46, p<0.05 | | | |
| Religion | | | | | | | | |
| Hindu | 27369 | 82.08 | 26936 | 82.13 | 14215 | 90.50 | 14829 | 90.12 |
| Muslim | 5676 | 17.02 | 5464 | 16.66 | 1356 | 8.63 | 1444 | 8.78 |
| Christian | 86 | 0.26 | 74 | 0.23 | 17 | 0.11 | 14 | 0.09 |
| Sikh | 201 | 0.60 | 278 | 0.85 | 114 | 0.73 | 152 | 0.92 |
| Others | 14 | 0.04 | 45 | 0.14 | 06 | 0.04 | 15 | 0.09 |
| Chi-square test | 32.49, p<0.05 | | | | 8.027, p>0.05 | | | |
| Parity | | | | | | | | |
| None | 3855 | 11.56 | 4442 | 13.54 | 00 | 0.00 | 00 | 0.00 |
| 1-2 | 18350 | 55.03 | 18175 | 55.42 | 5055 | 32.18 | 5535 | 33.64 |
| 3-4 | 9305 | 27.90 | 8591 | 26.19 | 9035 | 57.52 | 8601 | 52.27 |
| 5-7 | 1768 | 5.30 | 1485 | 4.53 | 1520 | 9.68 | 2158 | 13.12 |
| Above 7 | 68 | 0.20 | 104 | 0.32 | 98 | 0.62 | 160 | 0.97 |
| Chi-square test | 98.45, p<0.05 | | | | 140.77, p<0.05 | | | |
| No. of past MTP | | | | | | | | |
| None | 16981 | 50.92 | 17612 | 53.70 | 9961 | 63.45 | 10618 | 64.53 |
| 1-3 | 15048 | 45.13 | 14024 | 42.76 | 5057 | 32.21 | 5202 | 31.62 |
| 4 and above | 1317 | 3.95 | 1161 | 3.54 | 682 | 4.34 | 634 | 3.85 |
| Chi-square test | 52.84, p<0.05 | | | | 7.09, p<0.05 | | | |

Hindu clients sought total abortion and Sterilization services in higher proportion as compared to Muslim women. On the other hand, 55% of women who underwent Abortion already had 1-2 children. More than 30% of the women had more than 3 children, which indicates that despite of having an ideal family size, these women experienced unwanted pregnancies and came to seek abortion care from clinics. However, in terms of sterilization 57.5% in 2018 and 52.2% in 2019 underwent sterilization to avoid further pregnancy. The present study indicated more than 50 % of the women had adopted sterilization until they had at least 3-4 children and after 3-4 children they were confident that sterilization can effectively prevent pregnancy. Finally, more than 50% of the women did not have any history of abortion. However, the frequency of past abortion among the women has decreased in 2019 (42.7%) as compared to 2018 (45.1%)

DISCUSSION:

Despite a substantial law since 1972 and approval of medical abortion since 2003, the provisions of legal and formal abortion services in India are still limited. This analysis shows that provision of safe abortion and sterilization services at registered clinics affiliated from Government of India is feasible and can full fill the needs of a large proportion of women's unwanted pregnancy.

In the present study abortion status has decreased from 50.4% to 49.5% between 2018 and 2019 among the women. The reason for reduction of abortion could be availability of medical abortion pills in every second counter of chemist/ pharmacist shops. However, female sterilization users have increased from 48.8% to 51.1%. According to a national data the female sterilization users increased to 13% points from NFHS-1 to NFHS-4 (IIPS and ICF, 2017). This indicates that the awareness regarding use of contraceptive to prevent unwanted pregnancies and permanent method of sterilization have increased among the community.

In the present study, 67.7% abortion seeker in 2018 and 65.6% abortion seeker in 2019 were up to the age of 30 years. Maximum of the women were between 25-30 years of age (39%) which is similar in other studies conducted in tertiary care hospital Chennai (73%) (Uma and Jayanyhi, 2017), Guru Govind Singh Hospital, Jamnagar (68.4%) (Gupta *et al.*, 2012). Similarly, study done at Mumbai Tertiary care hospital also indicated that the most common age

group was 25-30 (29.8%) years and 57.8% were from below 29 years of age group (Ramkrishna, *et al.*, 2019). In contrast, the community based study showed that majority (73.7%) of abortion was among the age group of 30-40 years of age (Pattanaik *et al.*, 2017). While women of all age groups seek abortion in India, review suggests that majority of those seeking abortion are 20-29 years (Stillman *et al.*, 2014). The present finding indicated that majority of women are still not aware about the use of contraceptive/ family planning programme to prevent or postpone the pregnancy. In terms of sterilization, maximum 46.3% and 42.7% women availed services from registered clinics in the year of 2018 & 2019 at the age of 25-30 years which indicates that they were more likely to prefer the use of long action and permanent method as compared to younger group. The similar findings were observed from other studies also (Chaurasia *et al.*, 2018 ; Shyam *et al.*, 2020). The data analyzed from NFHS by Abhishek Singh showed that women who had been sterilized at age 30 or older had lower odds of reporting sterilization regret than women who had been sterilization before age 25 (Singh *et al.*, 2012).

Cost of abortion has often been regarded as one of the major barriers to accessing safe abortion services. In the present study, the women from lower income group (Rs.10,000/- per month) availed more abortion and sterilization services as compared to women belonged to higher income group. Although the abortion frequency has decreased from 62.4% to 48.7% between 2018- 2019 and sterilization frequency also has decreased from 74.8% to 63.2% among women belong the low socio income groups. Higher incidence of abortion and sterilization in low socioeconomic status has also been reported by earlier studies (Koringa *et al.*, 2015; Uma and Jayanyhi, 2017; Kumar, 2014; Banerjee *et al.*, 2017; Fahim *et al.*, 2017). Unlike our study, study conducted at maternity home under Municipal Corporation reported that 41.6% women belonged to upper and upper middle class family (Chakkarwar and Fernandes, 2018). Study showed that the out of pocket payment on female sterilization was significantly higher among the women belonged to higher wealth quintile (Mohanty *et al.*, 2020). Similarly, according to national survey majority (21.3%) of women belonging to middle wealth index who availed sterilization services (NFHS-4). It is assumed that sterilization must be higher among lower social status of the women because of the highly subsidised rates provided by the Non-Governmental Organisation Clinics.

Utilization of abortion and other sexual & reproductive health services is also associated with distance from hospital/ clinics. Longer distances don't motivate the women living in faraway localities to do regular check-ups and follow-up checkups. Availability of well-equipped clinics with skilled health professionals within their locations motivate/ contribute the women for utilization of abortion and sterilization services. The present study shows that 60% of the women who availed abortion and sterilization services from registered clinics within a 10 km distance from their homes. This is because Non- Governmental Organisation clinics are located within the cities and offer these services. Other study also indicated that the expenditure done on the amount of distance travelled and mode of transportation was an essential factor to be considered for utilization of services (Banerjee *et al.*, 2017). Hindu clients sought total abortion and sterilization services in higher proportion as compared to Muslim women. These results are in concordance with various other studies where higher acceptance of abortion & sterilization is by Hindu women (Uma and Jayanthi, 2017; Koringa *et al.*, 2015; Lakkawar *et al.*, 2014; Chaurasia *et al.*, 2018). The reason could be Muslims couldn't avail service due to his religious custom.

In the present study, relatively higher number (55%) of abortion was observed in low parity (1-2 numbers of children) women. Significant association between number of abortions and gravida at which abortion occurred had also been reported by earlier studies (Gupta *et al.*, 2012). In contrast, a study from maternity home reported that 92.46% subjects were multipara and only 15 (7.54%) subjects were *primi-gravida* (Chakkarwar and Fernandes, 2018). However, the frequency of sterilization was higher among the women who already had 3-4 children. This finding was in concordance other studies (Fahim *et al.* 2017; Chaurasia *et al.* 2018), who reported that 53.3%, 44.5% women had 3 or more children at the time of sterilization. The results indicated that in spite of the completing family size, these women got unwanted pregnancy and seek termination of pregnancy. There is a need to make the women aware of the various contraceptive measures and family planning services.

More than 42% of women who availed abortion services already had history of 1-3 time abortions while more than 50% respondents were not having a history of MTP ever in both the calendar years. Similarly almost 60% of women who underwent for sterilization, who had no past history of sterilization. Our finding was lower than finding observed from others studies where 87.5% & 99.5% women were not having a history of MTP and first time they did abortion

(Gupta *et al.*, 2012). Study carried out by Chakkarwar and Fernandes reported that 35 (89.74%) subjects underwent abortion once and 4 (10.26%) subjects underwent abortion twice (Chakkarwar and Fernandes, 2018).

Since this study is recoded based retrospective study, it is totally reliant on accurate recordings of information at the clinics offering abortion & sterilization services. Although the data on Monthly Progress Reports (MPR) were cross checked by the Group in-charge of clinics and Medical Superintendents thoroughly before data entry in excel Master sheet. The population sample was not representative of the situation at the community level.

Conclusion and recommendation

Non-Governmental Organisation Clinics are providing abortion and sterilization services for the last 40 years. Although abortion and sterilization have increased over the time period, a lack of proper knowledge was observed among women with respect to their socio-demographic status. There is a need to make more women aware about the available facilities irrespective to their socio-demographic and obstetric status so that unwanted pregnancy can be avoided safely by trained health professionals from recognized institutes. Counseling should be given not only to women, but also to her husband and family members regarding safe delivery, benefits of family planning, use of contraceptives and risks associated with unsafe abortion so that timely decisions can be taken. Women should be educated about the MTP Act and safe abortion which is their right.

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