Original Article

Contraceptive behavior of couples undergoing sterilization in an Eastern State of India

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Abstract

Background: As a part of a larger study for evaluating the effectiveness of a community-based family welfare program, this study assessed the contraceptive behavior of couples preceding sterilization and termination of pregnancies, if any during the interim period. **Methods:** During May–June 2013, a cross-sectional study was undertaken in three districts of Odisha, an eastern state of India with poor maternal health indicators. Using a 15 × 14 cluster design with probability proportionate to size sampling 15 village clusters from each district were selected. Seven beneficiaries from the catchment area of two Accredited Social Health Activist of the selected villages were interviewed (14 respondents from each village) using a pretested predesigned questionnaire. **Results:** A total of 630 clients with either of the partner having undergone sterilization were interviewed. Male partner having undergone vasectomy was <1% ($n = 3$). The mean age (standard error mean [SEM]) of the respondent women was 34.54 ± 0.26 years. The mean age of the women at the time of sterilization was 27.12 (standard deviation [SD], 3.8, SEM 0.15 and median 26.83 years) years. Women as young as 22 years had undergone sterilization. Average family size was 2.81 with about 29 respondents (4.5%) having 5 or more children. The average duration between the last childbirth (LCB) to the date of sterilization was 18.37 months (range: 1–142 months, SD: 24 months, SE: 10 months). Seventy-two percent of the respondents did not use any method of contraception during this period. Methods adopted for contraception among the users was pill (20%) followed by condom (7%), and intrauterine contraceptive device (IUCD) was least used (0.2%). Ten percent of the women had undergone abortion before sterilization either once (7.9%) or more than once (2.1%). **Conclusion:** There was a gross delay in sterilization after LCB. Postpartum sterilization or IUCD were also not used frequently.

Keywords: Birth control, contraception, contraceptive usage, fertility, tubectomy

Introduction

Pregnancy is a physiological condition; however, it poses a serious threat to survival in developing countries, where 99% of maternal deaths occur.[1] Sub-Saharan Africa and South Asia contribute to nearly 90% of all maternal deaths and India and Nigeria alone contribute one-third of the mortality, with India having the highest number of maternal deaths in the world.[1] United Nations agencies estimate that around 50,000[2] maternal deaths occur in India each year, which makes up almost one-fifth of the maternal deaths that occur annually worldwide.[3] The maternal mortality varies widely among the states of India with about four states contributing to nearly 40% of all maternal deaths in the country.

The State of Odisha, situated along the east coast of India has a population of 41.2 million and has a maternal mortality ratio (MMR) of 235 per 100,000 live births[4] (SRS-2012). The contraceptive prevalence rate for modern methods is 45%, and the unmet need for family planning remains at 15%[5] (NHFS-III, 2005–2006).

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Women in developing countries have on average many more pregnancies than women in developed countries (TFR 4.1 vs. 1.7). The lifetime risk of death due to pregnancy is about 23 times higher and the risk increases with increasing age of the mother (>35 years) and parity.[6,7]

A systematic review of the distribution of causes of maternal deaths across the globe indicates that there is a need for increased attention to access in those areas of services that can help women avoid unwanted births,[8] which account for about 25–40% of maternal deaths globally.[9] Research has shown that meeting the unmet need for family planning alone can reduce one-third of maternal deaths.[10]

Helping women access family planning services will influence the interval, timing, and number of pregnancies and births, and thereby reducing MMR.[7,11] Family planning, by reducing demographically high-risk births, especially high-parity births reduces the MMR and thus averts additional maternal deaths indirectly.[11] In India, it is estimated that family planning reduces 15.7% of high-risk births.[4]

However, little is known, especially at the policy level about the contraceptive behavior and the risk of unwanted pregnancies among women before sterilization. Knowledge about the same would also serve as a proxy indicator of unmet need for FP services. Hence, the study was conducted with an objective to assess the contraceptive behavior of couples preceding sterilization including abortions during the interim period.

Methods

The study was undertaken as a part of the larger study for evaluating the effectiveness of a community-based family welfare program. During May–June 2013, a cross-sectional study was undertaken in three districts of Odisha (Ganjam, Nayagarh, and Khordha). A total of 630 samples were selected for the study using a 15 × 14 cluster design with probability proportionate to size sampling. 15 village clusters (panchayats) from each district were selected for the survey and seven beneficiaries from the catchment area of two Accredited Social Health Activist of the selected villages were interviewed. Thus, 14 respondents from each village were interviewed using a pretested predesigned questionnaire. Ever married couples with either of the partner who has undergone any permanent method of sterilization were invited to be included in this study. Outcome variables like average family size, age at sterilization, duration between last childbirth (LCB), and the date of sterilization and the method of contraception adopted before sterilization were the outcome variables. Interview was conducted by trained medico-social workers in the local vernacular language, Odia. Data were expressed as a percentage for categorical variables, and continuous variables were expressed as mean, standard deviation (SD) and standard error of mean (SEM), using SPSS software (version 20.0, SPSS Inc., Chicago, II, USA). Ethical clearance was obtained from the Institutional Ethical Committee of IMS and SUM Hospital, Bhubaneswar. An informed written consent was obtained from the study participants before conducting the survey.

Results

A total of 630 clients (210 for each district) with either of the partner having undergone sterilization were interviewed. A male partner having undergone vasectomy was <1% (n = 3) of the total clients interviewed with all others clients having undergone female sterilization. The mean age of the women at the time of sterilization was 27.12 (SD, 3.8, SEM 0.15 and median 26.83 years) years. Women as young as 22 years had undergone sterilization. Average family size was 2.81 with about 29 respondents (4.5%) having 5 or more number of children. The average duration between the LCB to the date of sterilization was 18.55 months (range: 1–142 months, SD: 24.64 months, SE: 0.98 months). Seventy-two percent of the respondents did not use any method of contraception during this period. Methods adopted for contraception among the users was pill (20%) followed by condom (7%), and intrauterine contraceptive device was the least used method (0.2%). Ten percent of the women had undergone abortion before sterilization either once (7.9%) or more than once (2.1%).

Discussion

Use of contraception prior to sterilization

As a signatory to the millennium development goals (MDG),[12] under MDG 5 India is committed to reduce maternal mortality to 109 deaths per 100,000-live births, by 2015. It is a daunting challenge for India, as the latest estimates of MMR 2007–2009, shows a national average of 212 deaths/100,000 live births, a decline of only 89 deaths per 100,000 live births since 2001–2003.[13] The average annual decline of MMR in India during 1990–2010 has only been 5.2%.[1] Evidence has shown that high maternal mortality correlates strongly with inadequate access to family planning information and services.[14] Studies have also shown that women facing unwanted pregnancies are far more likely to seek induced abortions, including illegal abortions.[15] In India, abortions are the third most common reasons for maternal deaths.[16] Further, a regional study by the WHO confirms that women in India do not have access to a wide choice of contraceptives, particularly modern, nonpermanent contraceptives, leading to unwanted pregnancies that are poorly managed or often to unsafe abortions.[15] The inadequacy of contraceptive use as revealed by the NFHS-3[5] shows that in India, almost a quarter (21%) of all pregnancies that resulted in live births were unplanned and unwanted when the woman became pregnant. Only 56% of Indian women used any method of contraception, and even less (49%) used modern forms of contraception. Only 27.9% of women in India are being informed by a health or a family worker on choices for contraceptives.[5]

This study has revealed that close to 72% of women were not using any method of contraception before sterilization, that probably commensurate with poor access to service. A study

from Maharashtra[17] had noted that 84% of beneficiaries were not using any modern contraceptive method before sterilization. Similarly another study from Shimla[18] had also reported only 22% of women using any contraceptive method before sterilization.

Age at sterilization

The median age at sterilization in India has declined from 27 years in 1992–1993-25 years in 2005–2006. A. Kumar and Randhawa[18] had reported that 72.9% of the women undergoing sterilization were between the ages of 20 and 33 years with the mean age at sterilization being 27.5 years. This shows similar behavior when compared to this study which is 27.12 years. Studies conducted to explore the reasons has revealed that fear of side effects as one of the main reasons for either nonacceptance or discontinuance of other contraceptive methods than terminal methods as shown by Kumar *et al.*,[19] While another study[20] has revealed that women believed modern reversible methods and vasectomy have high physical and social risks, and the achievement of fertility goals is likely due to the use of female sterilization with abortion as a back-up method.

High rate of medical termination of pregnancy; risk of maternal mortality ratio

Evidence has shown that unwanted pregnancies expose women to significant risks to their health, including complications from unsafe abortions and high-risk pregnancies.[21] In this study, we have noted that 10% of the women had undergone abortion before sterilization either once (7.9%) or more than once (2.1%), which amounts to a huge burden in absolute terms. Several studies report that the desire to limit family size and to space the next birth are the main reasons mentioned by the majority of abortion seekers,[22] clearly highlighting that there is a substantial unmet need for contraception among women in India. The UNFPA estimates that one in three deaths related to pregnancy and childbirth could be avoided if all women had access to contraceptive services, which indicates some 175,000 maternal deaths, and even more cases of maternal morbidity could have been prevented annually worldwide.[15]

Long interim period between last childbirth and sterilization

The average duration between the LCB to the date of sterilization in our study was found to be 18.55 months, which is relatively long predisposing to the risk of pregnancy. While considering protection by lactational amenorrhea is for 4 months, provided majority of women practice breastfeeding (30.7% AHS, 2012–2013),[23] still a large proportion of women would remain unprotected for at least more than a year. This may be owing to nonavailability of services which was not explored in the study. Further, this long interim period may also predispose to other morbid conditions such as endometriosis and fibroids as evidenced by other studies.[24,25]

Sterilization regret

A potential consequence of early age at sterilization is "sterilization regret." It is a phenomenon observed poststerilization, where the woman regrets having undergone sterilization. In this study, women as young as 22 years has undergone sterilization, which may have been associated with a high chance for sterilization regret. In India, nearly 5% of the sterilized women aged 15–49 in 2005–2006 reported sterilization regret.[26] The level of regret was highest in Jammu and Kashmir, Jharkhand, and Karnataka (8% each), with Kerala (7%), Orissa (7%), and Uttarakhand (6%) not far behind. Sterilization regret did not vary by urban-rural residence. Sterilization regret varied considerably across the categories of the variables of interest. The level of sterilization regrets varied significantly by age at sterilization, years since sterilization, sex composition of children, and experience of child loss and region of residence. Still there is high chance for sterilization regret in women who has undergone sterilization at earlier ages than late ages.

Conclusion

The study found that there was a gross delay in sterilization after LCB. Postpartum sterilization or postpartum intrauterine device insertion was also not used frequently. Many couples would benefit from an opportunity to reexamine what their fertility desires might be if their circumstances should change, which would also decrease the sterilization regret. A number of implications thus exist from this study for the family planning program in India. First, India should be more focused on providing a good mix of family planning methods, particularly to younger couples with the enhanced provision of reversible methods of family planning. Second is an enhanced counseling service with a tailor-based approach. Third is giving importance to postpartum contraception, so as to increase spacing and decrease unwanted abortions.

Limitations of the study

- The study is conducted only in selected districts and hence generalizing must be done with care. The findings may not represent the situation of whole of eastern India
- Sampling should have been done randomly considering both coastal and tribal districts. The results may differ if tribal districts are included in the method.

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Conflicts of interest

There are no conflicts of interest.

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