

Women's Perception of Their Reproductive Health Before and After Sterilization in Rural Maharashtra, India

*Sterilization provides a unique opportunity
for diagnosing and treating women as well as
raising reproductive health awareness*

By Arundhati Char*

Few community-based studies in India have investigated the determinants of women's self-reports of reproductive tract infections and other forms of gynaecological morbidity. One of the most striking findings to emerge from the

* Chief of Information, Education and Communication at Deep Kumar Tyagi, India (an affiliate of DKT, International, United States of America, a contraceptive social marketing organization).

few that have done so is the strong association between the use of female sterilization, or in some cases the intrauterine device (IUD), and reported or diagnosed gynaecological morbidity.

In a pioneering study by Bang and others (1989), women who reported symptoms of morbidity attributed these symptoms to sterilization. Other more direct explorations in rural Karnataka and the slums of Mumbai report a strong association between the experience of sterilization and reported morbidity (Bhatia and Cleland 1995; Parikh and others, 1996; Koenig and others, 1998). In rural Karnataka, for example, sterilized women had a significantly higher level of laboratory-confirmed lower reproductive tract infections than other women (Bhatia and others, 1997). A study of pelvic inflammatory disease (PID) in Mumbai concludes that it is invasive procedures, such as IUD insertion, sterilization and abortion, rather than sexually transmitted diseases, that account for much of the PID in that city (Brabin and others, 1998; Gogate and others, 1998). Similar findings have been observed in studies conducted in Bangladesh and Egypt (Wasserheit and others, 1989; Younis and others, 1993). In view of the fact that female sterilization (tubal ligation) remains the leading method of fertility regulation in India, being used by 35 per cent of Indian couples and by as many as 49 per cent in the state of Maharashtra (IIPS, 2000), it is crucial that the factors underlying this association be better explored.

The studies cited above observed strong associations between the experience of sterilization and reporting of symptoms, but they did not go further in exploring causal mechanisms. At least two hypotheses can be advanced to explain the link between sterilization and reported or diagnosed gynaecological morbidity. First, poor conditions during sterilization may have resulted in iatrogenic infections (see, for example, Jejeebhoy and Koenig, forthcoming); the pressures on those conducting the procedure to achieve family planning targets (Khan and others, 1999) and the poor overall quality of care at sterilization (Koenig and others, 2000) make this a plausible hypothesis. Other possibilities are that the procedures exacerbate pre-existing conditions, or that the generally negative attitudes to sterilization lead women to attribute any post-sterilization gynaecological morbidity to the sterilization procedure itself. A long interval between the sterilization procedure and the reported morbidity clearly makes causation especially difficult to establish. A feature of the previous studies is that these intervals were not standardized. The time between sterilization and interview varied in each sample: some women may have been sterilized 10 or more years previously.

The objective of this study was to explore the links between reported morbidity at the time of sterilization and self-reported morbidity six months after sterilization among a sample of rural women in Maharashtra. Data come from a larger prospective study intended to explore the links between sterilization and gynaecological morbidity in depth. This larger study contained several phases: (a) a facility-based survey of women awaiting sterilization, inquiring about reported morbidity in the three months preceding the survey; (b) a pelvic examination of these women, clinical and laboratory diagnosis of morbidity, and treatment of those in need; (c) a one-week follow-up of women to assess immediate complications of the procedure; and (d) a six-month follow-up survey in which women reported morbidity experienced in the previous three months. Detailed analyses of findings from these other phases of the study are reported elsewhere (Char and Vaidya, 2000).

Methods

Study site and background

In Maharashtra, sterilizations are routinely performed in weekly “camps” held at primary health centres (PHCs). This study was undertaken at one such PHC, located in Palghar Block, a largely tribal area of Thane district, about 100 kilometres north of Mumbai. Palghar Block contains 10 PHCs and 59 subcentres. However, only one of these centres – the PHC located at the block headquarters – holds regular laparoscopy camps. This PHC was therefore selected for the study. It serves a largely rural area, where the main occupations are agriculture and fishing and, more recently, factory labour. Prevalent morbidities in the area include gastrointestinal diseases, malaria and various viral infections. Because the area is well served by rail and road, the PHC is accessible to the population and its services are well used.

The services provided by the PHC are typical of Indian PHCs in general. Sterilization camps are held each week. The PHC is staffed by two full-time male medical officers, along with nurses and auxiliary nurse midwives. Typically, between 20 and 100 women seek sterilization at each of these weekly camps, peaking during the period from September to March. Although government norms stipulate that women undergoing sterilization be examined and screened for contraindications, these norms are rarely observed. Medical officers are expected to deal with the regular patient flow at the outpatient department as well as the screening of women awaiting sterilization. Discussions with the medical officers and further observations revealed that they tended to overlook or conduct no more than a cursory screening of women, and clinical examinations of the women were almost entirely absent.

Study design

Before fieldwork was initiated, detailed pre-testing exercises were carried out to test and finalize data collection instruments. In-depth discussions were conducted with women who had undergone laparoscopic sterilization to elicit views about health problems encountered before and after sterilization, and to understand local terminology used to describe gynaecological symptoms. Instruments were then developed, pre-tested and revised, with particular care being given to the framing of questions about symptoms and their severity. The six investigators who conducted the survey were trained by the research team. Informed consent was obtained from all study participants after apprising them of the purpose of the study and the clinical tests that would be undertaken.

The main study was conducted in 1997/98. It was designed to minimize inconvenience to women who sought sterilization at PHC camps. The typical procedure at these camps was as follows. On camp days, women tended to arrive at the health centre from early morning. Routinely, blood and urine tests were conducted, blood pressure was taken, and anti-tetanus injections were given. Thereafter, the women waited for an average of three hours before the surgeon performed the sterilization. It was during this time that the first two main phases of the study – the survey and the clinical examination – were conducted.

The study sample comprised the first 20 women seeking sterilization at successive weekly camps, who consented to participate. The team elected to recruit no more than 20 on each occasion because of the difficulties involved in conducting a thorough physical examination of more than that number. A semi-structured questionnaire was administered to all the women, in which detailed information was elicited on current health status, and obstetric and contraceptive histories. The questionnaire focused on questions relating to the experience over the previous three months of such gynaecological problems as menstrual disorder, abnormal vaginal discharge, pain during intercourse, itching in the vaginal region and prolapse (probed as “something coming out from down below”).

Each woman was then given a counselling session in which she was provided with an opportunity to learn about various reproductive and child health issues, including safe sex information; for most women, this was the first time that such an opportunity had been given to them. Finally, women underwent a detailed clinical examination conducted by a gynaecologist; all those who were diagnosed clinically as requiring treatment or as anaemic were treated immediately and, if necessary, advised not to undergo sterilization that day. Swabs and mounted smears were sent to a laboratory and tested for chlamydia, trichomoniasis and gonorrhoea.

After their sterilization, women were visited at their homes one week after the procedure and again six months later. At this latter visit, women reported once again on morbidities experienced in the preceding three months.

A total of 511 women constituted the base-line sample; another 24 women who had initially agreed to participate in the study refused to undergo clinical examination, and were dropped from the sample. At the six-month follow-up, 40 (8 per cent) of the women could not be located, resulting in a sample of 471 women in this phase of study. A comparison of the socio-demographic and morbidity profiles of women lost to follow-up with those who were re-interviewed at six months post-sterilization revealed no significant differences in characteristics. The main reasons for loss to follow-up included household out-migration. The results presented here focus on the perceived gynaecological morbidity of these 471 women both before and six months after sterilization.

Results

Characteristics of women attending the PHC for sterilization

Table 1 presents the socio-demographic profile of the study participants. It is notable that at sterilization the large majority were aged 20-34 years, with a mean age of 26.6 years, and had an average of 3.4 children ever born and 3.1 surviving. A total of 4 per cent of the women had experienced a miscarriage, and an equal proportion had had a pregnancy terminated. More than half the women (51 per cent) had delivered their last child at home. Also notable is that only 8 per cent had used contraception, mainly IUDs and oral contraceptives.

Self-reported symptoms of gynaecological morbidity at sterilization

Table 2 outlines women's experiences of symptoms of gynaecological morbidity in the three months preceding sterilization, as reported at sterilization. As other studies have shown, the leading symptom reported by women was excessive discharge — limited here to those reporting a foul-smelling, greenish-yellow, thick and sticky discharge. Over half of all women reported the experience of such discharge. Aside from vaginal discharge, almost half of all women reported menstrual disturbances. These included passing of clots, inter-menstrual bleeding, scanty or prolonged bleeding, severe back or abdominal pain before or during a period that rendered women unable to perform normal tasks. In addition, almost one fifth reported lower back pain, and about one tenth reported vaginal itching or painful intercourse.

Table 1. Socio-demographic profile of the sample of women awaiting sterilization in rural Maharashtra

Socio-demographic characteristics	
Religion (percentage)	
Hindu	95
Education (percentage)	
With any education	66
Who had completed high school	15
Economic activity (percentage)	
Working for wages	15
Working in family farm or business	21
Living arrangements (percentage)	
Living in nuclear families	61
Income (rupees)	
Mean monthly family income	1,662
Age (years)	
Mean current age	26.6
Mean age at menarche	14.0
Mean age at first pregnancy	26.6
Pregnancies	
Mean number of pregnancies	3.4
Mean number of live births	3.4
Mean number of living children	3.1
Mean family size	6.1
Number	471

A large proportion of the women (85 per cent) reported that they had been suffering from one or more disorders in the three months preceding the survey. Women who had experienced symptoms had typically experienced more than one symptom. Thirty-five per cent of the sample reported the experience of a single symptom, about half reported two or more symptoms, and 20 per cent reported three or more symptoms.

As indicated above, all 471 women underwent a gynaecological examination and women diagnosed on clinical examination or laboratory testing as having a morbidity were immediately treated for it. As reported elsewhere (Char and Vaidya, 2000) less than 10 per cent were diagnosed as having a sexually transmitted infection (2 per cent and 7 per cent with gonorrhoea and syphilis respectively) and 8 per cent were diagnosed as having one or more endogenous infections (bacterial vaginosis, pus cells, Gardnerella vaginalis, etc.). Among the most common conditions detected by clinical examination

Table 2. Reported morbidity at sterilization (number and type of symptoms reported), among women in rural Maharashtra

Morbidity	Percentage of women
Prevalence	
Women reporting one or more symptoms	84.7
Type of symptom (among those reporting a symptom)	
Menstrual problems	43.7
Vaginal discharge (foul-smelling, greenish-yellow colour, thick, sticky)	52.4
Lower back pain	19.1
Itching	11.9
Pain during intercourse	10.8
Frequent urination or burning on urination, along with fever and shivers	1.7
“Something coming out” (prolapse)	1.5
Number of symptoms reported (all women)	
1	34.5
2	29.9
3	10.6
4+	9.7
Mean (those reporting one or more symptoms)	2.0

were uterine prolapse (10 per cent), vaginal prolapse (22 per cent), vaginal infection (9 per cent) and pelvic infection (6 per cent). A total of 412 of the 471 women (87.5 per cent) received some form of treatment. All 412 received iron supplementation and three fifths were also treated for specific reproductive tract infections according to national guidelines under the syndromic management approach for symptoms of vaginal infections.

Changes in reported morbidity six months after sterilization

Despite the fact that women diagnosed with these conditions were all treated, reported morbidity levels six months later suggest a profile of morbidity that is no different from that prior to sterilization (table 3). A large majority (90 per cent) of the 399 women reporting a morbidity before sterilization continued to report morbidity six months later, of the 72 women who did not report a morbidity in the pre-sterilization period, only 25 per cent continued to be symptom-free six months later. Only 41 (10 per cent) of the women who reported a symptom prior to sterilization were symptom-free six months later. Moreover, the average number of morbidities reported by symptomatic women remained unchanged, at about two.

Table 3. Prevalence of symptoms before and after sterilization among women in rural Maharashtra

Women reporting morbidity before sterilization	Number of women reporting morbidity after sterilization		
	No morbidity reported (percentage)	Morbidity reported (percentage)	Total (percentage)
No morbidity reported	18 (25)	34 (75)	72 (100)
Morbidity reported	41 (10)	358 (90)	399 (100)
Total	59 (13)	412 (87)	471 (100)

Data in table 4 also suggest little change in the nature of reported symptoms over the six-month period. There is some switching between categories but, by and large, reporting over the six-month period (except for increased reporting of lower back pain in the post-sterilization period) remained remarkably consistent. Among women who had initially reported vaginal discharge, virtually all continued to experience the condition six months later, moreover, another 8 per cent of the total sample, who had not experienced the condition in the pre-sterilization period, did so six months later. Even among the 245 women treated with antibiotics, no change in reporting of vaginal discharge occurred: 78 per cent at sterilization versus 80 per cent six months later.

Nor did reported severity of the morbidities significantly decline. Table 5 presents the distribution of women reporting various symptoms at sterilization, by their perception of a change in the severity of those symptoms six months

Table 4. Percentage distribution of women according to presence of symptoms prior to and six months after sterilization, by type of symptom, in rural Maharashtra

Type of symptoms	Presence of symptoms in 471 women				Total
	Absent at both times	Absent pre-sterilization, present 6 months later	Present pre-sterilization, absent 6 months later	Present at both times	
Menstrual problems	44.3	10.0	9.6	36.1	100
Vaginal discharge	39.3	8.3	0.8	51.6	100
Lower back pain	63.4	17.5	6.2	12.9	100
Itching	79.2	8.9	5.5	6.4	100
Pain during intercourse	83.5	5.7	2.3	8.5	100

Table 5. Among women in rural Maharashtra reporting specified morbidities at sterilization, percentage distribution according to changes in severity of reported condition six months after sterilization, by type of symptom

Type of symptom	Changes in severity of symptoms			Number of women
	More severe	No change	Less severe or eliminated	
Menstrual problems	15.8	57.5	26.7	215
Vaginal discharge	14.9	80.5	4.6	247
Lower back pain	46.1	19.4	34.6	90
Itching	12.6	34.5	52.9	56
Pain during intercourse	13.9	57.4	28.7	51

later. Among women reporting vaginal discharge at the time of sterilization, 81 per cent reported no change in severity six months later, 15 per cent reported an increase in severity, and only 5 per cent reported some improvement or elimination of the symptom. Larger proportions of women reporting other conditions at the time of sterilization did report reduced severity but, on balance, the improvement was minimal.

Perceived change in health status six months after sterilization

Women were asked finally to assess their overall health status six months after sterilization. Over half (58 per cent) reported no change in their overall health. Almost one in five (18 per cent) reported an improvement, but almost one quarter (23.4 per cent) reported a deterioration. Of this latter group, two thirds attributed the deterioration in their health specifically to the sterilization experience and, secondarily, to overwork.

Conclusion

The study found that a large proportion of women undergoing sterilization experienced one or more gynaecological conditions at the time of sterilization. Significant proportions of these were diagnosed clinically or by laboratory testing as suffering from a morbidity. In resource-poor settings such as in India, where few women are likely to seek care for symptoms of gynaecological morbidity, sterilization may provide a unique opportunity to assess and provide treatment for women experiencing morbidity. Findings argue for the incorporation of gynaecological examination, treatment and reproductive health counselling into routine sterilization services.

Despite the provision of these services and the treatment of over half the sample for reproductive tract infections, perceived morbidity levels six months following sterilization had not declined, nor had the perceived severity of the reported conditions. We cautiously advance one possible interpretation. As indicated previously, the study design required that women were treated not only for morbidities detected clinically or by laboratory tests, but were also provided counselling and information. These procedures may have sensitized women at the time of sterilization to perceive such conditions as discharge, lower back pain and menstrual conditions as disorders and not as “a woman’s lot to be endured in silence”. Consequently, they may have been more likely to notice and report symptoms after sterilization than before it.

No link was found between treatment of reproductive tract infections at the time of sterilization and self-reported symptoms of discharge six months later. This result is consistent with the weak correspondence between self-reports and biomedical evidence of infection. It may also reflect rapid re-infection, since treatment of women for sexually transmitted infections is likely to be ineffective unless husbands are also treated.

The impact of treatment on biomedical (as opposed to self-reported symptoms) disorders six months later is impossible to assess in this study, since limited resources did not allow for repeating the full gynaecological examination and testing of women at six months post-sterilization. Subsequent research is needed to explore the links between pre- and post-sterilization morbidity as assessed by clinical diagnosis and laboratory testing.

Despite counselling and awareness-raising, women continued to link their symptoms with sterilization. Almost two thirds of the women in this study who reported a general deterioration in their health status attributed this deterioration to sterilization.

The findings tentatively suggest that sterilization provides a unique opportunity for diagnosing and treating women reporting and/or experiencing reproductive tract infections and other gynaecological disorders, as well as raising reproductive health awareness and providing counselling on symptoms and their possible aetiology. They also suggest that this is not enough: women may indeed become more sensitive to their bodies and experiences of symptoms of morbidity, but it does not follow that they are sufficiently empowered to seek care for these in the post-sterilization period. It is equally important that health workers be charged with sensitive questioning, counselling, treating and referring of women reporting symptoms of gynaecological morbidity.

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