



**“PREVALENCE, PATTERN AND FACTORS ASSOCIATED WITH FEMALE
STERILIZATION IN URBAN SLUMS OF CHANDIGARH, INDIA”**

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ABSTRACT

Introduction: Welfare of a country directly depends upon welfare of its women as they make a major contribution for the development of the society. Although, men and women are considered to share comparable responsibility in family planning and birth control, the primary role of prevention of pregnancy is to a large extent, borne by women. **Objective:** To investigate the prevalence of female sterilization and to examine its association with socio-demographic factors of women. **Methods:** A community-based survey was conducted among 667 women in the reproductive age (15-49 years) in four randomly selected urban slum areas of Chandigarh as a part of detailed project sponsored by Indian Council of Medical Research (ICMR). Information on socio-cultural and demographic characteristics, reproductive/fertility behaviour was collected using a predesigned and pretested semi-structured interview schedule conducting house-to-house survey. **Results:** Overall contraceptive awareness and its practice in the present study were only 84.1% and 57.3% respectively. Overall practice of female sterilization was found among 22.1% women. Overall percentage of female sterilization among all contraceptive users was 38.4%. All factors considered except socio-economic status were found to be significant factors associated with choice of female sterilization. Elderly couples married at younger ages from nuclear families, having three or more children, having no female baby were more likely to adopt female sterilization. Socio-economic status was not found a significant correlate for choosing female sterilization. **Conclusions and Suggestions:** There is large gap awareness and practice of contraceptive among women. Female sterilization came out to be the most common choice of contraceptive irrespective of socio-demographic characteristics of women indicating low male participation in adoption of contraceptives. Efforts should be made to encourage awareness and practice reducing unmet need of contraception and for increasing male participation in contraceptive adoption not merely depending on female sterilization.

KEYWORDS: Contraceptive methods, Couple protection rate, Unmet need, Married women, Sterilization.

INTRODUCTION

Welfare of a country directly depends upon welfare of its women as they make a major contribution for the development of the society. Fertility decisions of women and men are influenced by several factors. Contraception as a behavioural phenomenon has been the focus of many population researches. Although, men and women are considered to share comparable responsibility in family planning and birth control, the primary role of prevention of pregnancy is to a large extent, borne by women. The most importance determinant is, perhaps, the limited range of contraceptive option available for men compared with women. Most of women in reproductive age group bear the burden of unwanted pregnancies and go for abortion, which is mainly unsafe and associated with a high morbidity and mortality.

There are various physical and behavioural contraceptive methods available. Some women change from using temporary methods for spacing births to permanent methods for preventing births. In India, the couple protection rate (CPR) continues to be inadequate. National Family Health Survey-3 (NFHS-3), India shows that among currently married women in rural India knowledge about any method was 99.1% and knowledge about any modern method was 99.0%. NFHS-3 reported poor contraceptive prevalence rate of 56% and unmet contraceptive need 13% in eligible population groups.^[1] Female sterilization in NFHS-4 was reported to be 36% in India.^[2] Present study, a part of a detailed survey under ICMR sponsored survey, was conducted with objective to investigate the prevalence of female

sterilization and to examine its association with socio-demographic factors of women.

MATERIAL AND METHODS

Present study has been conducted in slum areas of UT Chandigarh. Chandigarh is the most economically advanced Union Territory (UT) of India and also capital of two states: Punjab and Haryana, known for its high literacy and good environmental conditions. A community-based survey was conducted among women in the reproductive age (15-49 years) in four randomly selected urban slum areas of Chandigarh as a part of detailed project sponsored by Indian Council of Medical Research (ICMR). Approval by Institutional Research Committee and Institutional Ethics Committee (IEC) was granted to undertake the project. A two-stage systematic random sample design was adopted. At the first stage, from the sampling frame available a sample of four slum areas (colonies), called primary stage units (PSU), was selected with probability proportion to size (PPS). At the second stage, a sample of households as second stage units was selected systematically within each selected PSU. Within each household, couples having wife in the reproductive age (15-49 years) along with their spouses willing to participate in the study were selected as respondents.

Sample Size

On the basis of anticipated 35% percentage of households with women having born three children with at least one living child, selected as main outcome parameter and assuming 90% confidence coefficient and 10% (of 35%) relative precision, the optimum sample size came out to be 503 households. Design effect due to selection of couples within selected households comes out to be 1.26 and hence optimum sample will require minimum of 634 couples having wife in reproductive age as study subjects. Optimum sample size was further adjusted for drop-outs and ultimate sample included results of 667 women in this study.

Study Variables

Information on socio-cultural and demographic characteristics, reproductive/fertility behaviour was collected using a pre-designed and pre-tested semi-structured interview schedule conducting house-to-house survey. Socio-cultural and demographic characteristics included background characteristics like age, religion, caste, occupation, educational status, socio-economic status (SES), place of residence; demographic variables like age at marriage, marital duration, number of pregnancies, birth history and survival status of all children, children ever born, desired no of children, desired age at marriage, desired birth intervals. Fertility behaviour included knowledge and contraceptive choices, attitude towards contraceptives, ever use of different contraceptive methods, source of knowledge, future intention of using contraceptive methods, fertility decisions, desire for last and future pregnancies, gender

preference for the child, attitude regarding the number and preference to the gender composition of children.

Statistical Methods: Statistical tests like normal-test, student's t-test, chi-square test, and Analysis of Variance (ANOVA) technique were used for analyzing quantitative data. Chi square test was used for testing statistical significance of association of qualitative parameters.

RESULTS

Table-1 presents awareness and practice of rates of different contraceptives among women. Maximum degree of awareness was found to be of four permanent methods. There were 556(83.4%) women aware of female sterilization and 553(82.9%) women reported awareness of male sterilization. Awareness of new methods of contraceptives was comparatively less among both men and women. Overall contraceptive awareness rate among women was 84.1%. Female sterilization came out to be the method of choice adopted by 147 (35.5%) women. Contraceptive prevalence rates was found to be 57.3% against contraceptive awareness rates of 81.7%, resulting in gaps between knowledge and practice to be unmet needs of contraception to the extents of 24.4%.

Table -2 shows characteristics of women who adopted female sterilization and those who didn't adopt. Elderly women aged 36-49 years were more likely to adopt female sterilization. Mean ages of wives adopting was found to be 35.13 ± 5.63 years, which was significantly higher ($P < 0.001$) than that for women not adopting sterilization. Mean age of spouses of women underwent sterilization was observed to be 38.61 ± 5.83 which was significantly higher ($P < 0.001$) than mean age of women not adopting sterilization: 28.13 ± 6.30 . Women married at younger ages were more likely to adopt sterilization as compared to those married at higher ages with significant association between female sterilization and age. Similar was the case for marital age of their spouses. It may be due to larger exposure to their reproductive life and possibility of attainment of their complete family size desired. At that stage they may decide to adopt permanent method of contraception. There was highly significant association ($P < 0.001$) between adoption of female sterilization by women and type of family. Proportion of women of nuclear families adopting sterilization was 28.4%. Improvident mothers were more likely (39.5%) to adopt sterilization as compared to non-improvident mothers (8.5%) as expected. Women from migratory population adopted sterilization more as compared to women from the city on permanent basis. In case of no male child, proportion of women adopting sterilization was higher (29.0%) as compared to those having at least one male child (2.3%). Having no male or female child both were found to be a significant correlates ($P < 0.001$) of female sterilization.

Table 1: Women by awareness and practice of different contraceptive methods.

Type of Contraceptive	Awareness(N=667)	Practice (N=667)	% of all users (N=382)
Female sterilization	556(83.4)	147(22.1)	38.5
Male Sterilization	553(82.9)	3(0.4)	0.8
IUD-(Cu-T)	521(78.1)	21(3.1)	5.5
Oral Pills	531(79.6)	32(4.8)	8.4
Injections	180(27.0)	2(0.3)	0.5
Condom	534(80.1)	189(28.3)	49.5
Spermicidal Contraceptives	30(4.5)	0(0.0)	0.0
Safe Period, Withdrawal, Abstinence	166(24.9)	36(5.4)	9.4
Others	1(0.1)	0(0.0)	0.0
No Response	44(6.6)	121(18.1)	31.7
Overall Contraceptive Awareness	561(84.1)	382 (57.3)	100.0

Table-2: Socio- demographic characteristics of women adopting sterilization.

Characteristics	Total	Female Sterilization	
		Adopted Number (%)	Not Adopted Number (%)
Age of Wife			
<18	11	0(0.0)	0(0.0)
18-25	204	4(2.0)	200(98.0)
26-35	319	82(25.7)	237(74.3)
36-49	133	61(45.9)	72(54.1)
Mean ± SD		35.13±5.63	28.13±6.30
			(P<0.001)
Age of Husband			
19-25	116	0	166(100.0)
26-35	328	49(14.9)	279(85.1)
36-49	211	92(43.6)	119(56.4)
>49	12	6(50.0)	6(50.0)
Mean ± SD		38.61±5.83	31.10±6.67
			(P<0.001)
Marital Age of wife			
10-14	48	15(31.2)	33(68.8)
15-17	145	56(38.6)	89(61.4)
18-20	263	60(22.8)	203(77.2)
21-22	114	11(9.6)	103(90.4)
23-25	83	4(4.8)	79(95.2)
Above 25	13	1(7.7)	12(92.3)
Mean ± SD		17.52±3.65	18.92±3.30
			(P<0.001)
Marital Age of Husband			
10-14	14	3(21.4)	11(78.6)
15-17	58	20(34.5)	38(65.5)
18-20	87	28(32.2)	59(67.8)
21-22	194	46(23.7)	148(76.3)
23-35	229	41(17.9)	188(82.1)
Above 35	85	9(10.6)	76(89.4)
Mean ± SD		20.48±3.21	21.90±3.50
			(P<0.001)
Family Type			
Nuclear	419	119(28.4)	300(71.6)
Joint/Extended	248	28(11.3)	220(88.7)
			X ² =26.5(P<0.001)
No of living children			
2 or less	376	32(8.5)	344(91.5)
3 or more	291	115(39.5)	176(60.5)

			$X^2=91.8(P<0.001)$
Prior Place of living			
Within Chandigarh	356	67(18.8)	289(81.2)
Outside Chandigarh	311	80(25.7)	231(74.3)
			$X^2=4.60(P=0.03)$
Socio-economic Status			
Middle	72	16(22.2)	56(77.8)
Low	595	131(22.0)	464(78.0)
			$X^2=0.003(P=0.96)$
Having Female Child			
No Female	440	116(26.4)	324(73.6)
At least one	227	31 (13.7)	196(86.3)
			$X^2=14.1(P<0.001)$
Having Male Child			
No male	493	143(29.0)	350(71.0)
At least one	174	4 (2.3)	170(97.7)
			$X^2=53.4(P<0.001)$

DISCUSSION

Contraception as a behavioural phenomenon has been the focus of many population researches. Overall contraceptive awareness and its practice in the present study were only 84.1% and 57.3% respectively. Overall practice of female sterilization was found by 22.1% women. All factors considered except socio-economic status were found to be significantly associated with practice of female sterilization. Elderly couples married at younger ages from nuclear families, having three or more children, having no female baby were more likely to adopt female sterilization. Socio-economic status was not found a significant correlate for choosing female sterilization. Number of surviving son had a direct impact on contraceptive acceptance and also on adoption of permanent methods. This indicates that after attainment of desired family size and sex composition of the family majority opted for permanent method (sterilization). Large proportion of women remained silent on sharing of contraceptive used in spite of repeated efforts, may be due to hesitation or use of male spacing methods. Condom was the main method of contraception used as well as intended to be used in future also preferred by women followed by female sterilization.

Overall contraceptive awareness in the present study was 84.1%. Also, 83.4% women were aware of female sterilization. According to NFHS-3 Survey, knowledge about various temporary and permanent methods among men and women ranges from 45% to 97%: 98 percent of women and 99 percent of men age 15-49 knew one or more methods of contraception. Over 94 percent of women and men knew about female sterilization. Male sterilization, by contrast, is known only by 79 percent of women and 87 percent of men. Ninety-three percent of men knew about condoms, compared with 74 percent of women.^[1] Contraceptive prevalence rate in the present study was only 57.3%. It is in agreement with NFHS-3 survey findings. The contraceptive prevalence rate in India was found to be 56 percent in NFHS-3 Survey.^[1]

Lack of contraceptive use may increase undesired births. Percentage of wanted births increased from 79 percent in 2005-06 to 91 percent as reported in NFHS-4 survey.^[2] In a study conducted recently, overall 59.6% rural women ever used contraceptive and contraceptive was used by 74.7% women among all women aware of contraceptives.^[3] Overall contraceptive practice in our study was 57.3% as compared to contraceptive use rate of 45.7% reported in Allahabad.^[4] Overall practice of female sterilization was found among 22.1% women in present study. Overall percentage of female sterilization among all contraceptive users was 38.4%. According to NFHS-4, female sterilization was utilized by 35.7% of women, whereas, male sterilization was utilized by only 0.3% males.^[2] Our previous studies based on this project reported current use of contraceptives to be 57.3% and impact of health education on contraceptive awareness and use of contraceptives. Contraceptive prevalence rates were increased from 57.3% in pre interventional survey to 65.5% in post interventional survey. Whereas, contraceptive awareness rates was increased from 81.7% in pre interventional survey to 95.5% in post interventional survey.^[5,6]

According to NFHS-4 female sterilization was reported to be 38.1% in Haryana.² In a recent study conducted in a rural community of Haryana, awareness of female sterilization was 34.6% but only 2.9 % practiced it. Awareness of permanent methods: tubectomy and vasectomy was found among 34.6% and 24.0% women respectively.^[3] Present study reported 38.4% female sterilization among all contraceptive users, which may be due to the fact that female sterilization have been promoted consciously, participation of men lagged behind. Three-quarters of the modern methods of contraception used in India, only 3.4% of couples rely on vasectomy and 2.4% rely on condoms.^[7] About one-third of married woman in the developing world are currently using modern of family planning.^[8] The study conducted in Orissa showed that almost half of the subjects were using some family planning methods and about one third

of them relied on traditional method of contraception. In the rest of respondents female sterilization predominated.^[9] In an earlier study, couple protection rate (CPR) was found 49.9% in Dehradun.^[10] The most commonly used method was tubectomy reported by 28.9% women while only 1.9% of the women reported that their husbands were sterilized.^[11] Contraceptive “ever users” rate was found to be 75% in Delhi.^[12] Almost half of the subjects were using some family planning methods in Orissa and about one third of them relied on traditional method of contraception.^[13] Among married women of reproductive age group in rural Patna, only 32.6% were using contraceptive methods. Amongst users, 70.9% were using permanent method of contraception and that too female sterilization.^[14]

Present study was confined only to a particular segment of population of women in slum community of a highly urbanized city in Northern India and results can't be generalized to population in general. More detailed studies are required for drawing more valid conclusions.

CONCLUSIONS

There is large gap awareness and practice of contraceptive among women. Female sterilization came out to be the most common choice of contraceptive irrespective of socio-demographic characteristics of women indicating low male participation in adoption of contraceptives. Efforts should be made to encourage awareness and practice reducing unmet need of contraception and for increasing male participation in contraceptive adoption not merely depending on female sterilization.

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