Social Science Spectrum ISSN 2454-2806
Vol. 2, No. 2, June 2016, pp. 119-130

Contraceptive Behaviour and its Determinants among Scheduled Tribes in India: A Regional Analysis

Manas Ranjan Pradhan[*], Jitendra Gouda[**] and Ranjan Kumar Prusty[***]

Abstract

Using information collected from 10,815 currently married Scheduled Tribe (ST) women aged 15-49 years incorporated in the third round of National Family Health Survey, 2005-06, this study analyzes the differential contraceptive behavior and its determinants across regions of India. Inferential statistics and multivariate techniques are used as the methods of analysis. The family planning preference, method mix and its determinants among ST women varies largely across the regions though female sterilization remains as the most adopted family planning method. ST women from North-eastern region are less likely to use any modern method [OR=0.52; P<0.001; CI:0.40-0.67], and female sterilization [OR=0.38; P<0.001; CI:0.28-0.50], but more likely to use any modern spacing method [OR=1.20;0.80-1.80] than those from Northern region. Higher age, at least one living son, education, working outside the household and media exposure are other important covariates that are associated with the utilization of family planning methods.

Key words: Contraceptive behaviour, Scheduled Tribes, India.

I. Introduction

Scheduled Tribes (STs) are viewed, historically or developmentally, as a social group which follows a unique way of living and are at bottom of development; be it health, education, economic conditions and access to national resources (Cornell, 2006; Subramanian et al., 2006; Horn, 2014). A major proportion of India's ST population lives in remotely located villages, far flung and forest area. Such living arrangement has adverse implications on their education, health and livelihood, which are found to be poor (Cornell, 2006; Subramanian et al., 2006; Rakibul & Mashhood, 2010; Das et al., 2011; Ministry of Tribal Affairs, 2014). STs often exhibit poor healthcare seeking behaviour owing to their socio-cultural beliefs, status and geographical isolation. Lack of access to public health facilities by the STs affects their progress adversely and makes them more vulnerable as compared to the rest of the population (Baird, 2008). The constitution of India has recognized the tribes as specific indigenous people and their status is acknowledged to some formal degree by national legislation (Xaxa, 1999). The STs constitute nine per cent of Indian population (RGI, 2011). The corresponding figure is highest in the Northeast (27 per cent) and lowest in Central region (3 per cent) of the country.

Reproduction and fertility behaviour of any given population has paramount importance to determine the autonomy of women (Acharya et al., 2010). The ST population in general follows matrilineal kinship system wherein a woman enjoys a higher level of autonomy (Saikia et al., 2001). Further, such a family structure is expected to empower the ST women to have greater say on their fertility behaviour and addressing other reproductive health issues. Contrary to this, studies have

[*] Assistant Professor, International Institute for Population Sciences (IIPS), Govandi Station Road, Deonar, Mumbai 400088, India. Email: manas@iips.net

[**] Jitendra Gouda, Doctoral Fellow, International Institute for Population Sciences, Govandi Station Road, Deonar, Mumbai 400088, India. Email: jitushome@gmail.com

[***] Assistant Professor, Indian Institute of Health Management Research (IIHMR), Prabhudayal Marg, Near Sanganer Airport, Jaipur 302029, Rajasthan, India. Email: prustyranjan2006@gmail.com

The authors wish to thank the anonymous reviewers of this journal for their useful comments and feedback on the earlier version of the paper.

shown that, the incidence of early marriage among ST women is relatively common than the rest of the population. In addition to that, the Total Fertility Rate (TFR) of ST population in developed countries like New Zealand, Australia and Canada remains high whereby the national fertility average of these countries is abysmal (Saikia et al., 2001; Johnstone, 2011). In India, after more than five decades of having an ante-natalist policy, the TFR of ST population is 3.06, which is higher than the overall TFR of 2.85 (Saha & Verma, 2006). Studies have also found that the incidence of neonatal and infant mortality is disproportionately higher among ST population than the rest of the population. In most cases, the mother-related covariates like short birth interval and anaemic health condition remain as main predictors of high neonatal and infant deaths (Shrinivasa et al., 2014; Sahu et al., 2015).

The administrative classification of Indian regions differs significantly by their geography and other socio-economic parameters. The health indicators are also not equal across the regions in India (NSSO, 2001). Given the common practice of early marriage, short birth interval and high fertility among ST population, it has become more pertinent than ever to understand the pattern of different family planning methods used and its determinants among these groups. Better understanding in this direction will have a number of policy implications to address the high fertility, unwanted pregnancies and associated reproductive health issues. The objective of this study is to analyze the pattern of different family planning methods used and their potential determinants among STs across different regions of the country.

II. Methods

Data source

The study uses information collected from 10,815 currently married ST women aged 15-49 years incorporated in the third round of National Family Health Survey (NFHS-3) 2005-06. The latter is the Indian version of Demographic Health Survey (DHS) which is conducted in more than 80 countries all over the world. It is a nationally representative household survey that provides data for a wide range of monitoring and impact evaluation indicators in the areas of population, health and nutrition. The sample is a multistage random sample with an overall response rate of 98 per cent. Details of sample design, including sampling frame and sample implementations, are provided in the survey report for all India (IIPS & Macro International, 2007).

Variables

The variables used were drawn primarily through extensive literature review that has social relevance and could potentially affect the use of any specific family planning method among STs. They can be divided into two categories, i.e. outcome and predictor variables.

Outcome variables

Use of any family planning method: In NFHS-3 currently married women were asked whether they or their husbands were doing something or using any method to delay or avoid getting pregnant at the time of the survey. This information was used as an outcome variable to define ‘current use of any family planning method’.

Use of any modern family planning method: In NFHS-3 currently married women were asked about the type of method they/their husbands used at the time of survey. Women having answered female sterilization, male sterilization, pill, IUD/LOOP, injectable, implants, condom, female condom, diaphragm, foam/jelly were clubbed together and coded as ‘Current use of any modern method’.

Use of any modern spacing method: In NFHS-3 currently married women were asked about the type of method they/their husbands used at the time of survey. Women having answered pill,

IUD/LOOP, injectable, implants, condom, female condom, diaphragm, foam/jelly were clubbed together and coded as 'Current use of any modern spacing method'.

Use of female sterilization: In NFHS-3 currently married women were asked about the type of method they/their husbands used at the time of survey. Women having answered female sterilization were coded as 'Current use of female sterilization'.

Predictor variables

In NFHS-3 information on the number of socio-economic and demographic covariates has been collected which could potentially affect the current use of family planning methods of ST women. This study used the region as defined in NFHS-3 (North, Central, East, North-east, West and South). The other variables which were included as predictors in the analysis were current age of the women (15-24, 25-29, 30-49 years), number of living sons (no living son, at least one), completed years of schooling (no schooling, <10 years, 10+ years), religion (Hindu, Others), occupation (not working/household work, work outside the household), frequency of watching television (not at all, less than once/At least once a week, almost every day), awareness of family planning information through media (no, yes), household size (<5 members, 5+ members), final say on healthcare (respondent alone, respondent and husband/partner, husband/partner/someone else), sex of the household head (male, female), wealth quintile (poorest/poorer, middle, richer/richest) and place of residence (urban, rural).

Statistical analysis

Descriptive statistics and bivariate analyses were carried out to estimate the level and pattern of different family planning methods used among ST women. Bivariate and tri-variate analyses were used to understand the socio-economic and demographic differentials in the different family planning methods used. Multivariate analysis in terms of binary logistic regression was used to estimate the adjusted effect of selected socio-economic and demographic covariates on the current use of different family planning methods among ST women. Binary logistic regression was used due to the nature of the outcome variables. The outcome variables have two categories, namely, 'no' and 'yes' (coded as 0 and 1 respectively). The results were presented in the form of odds ratio (OR) with 95 per cent of confidence interval. The OR explains the probability that a woman with any specific attribute or characteristics will use a particular family planning method relative to the probability that a woman with other attribute or characteristics will use the same. The model can be put into a more compact form as follows:

$$\ln\left(\frac{p_i}{1-p_i}\right) = \beta_0 + \beta_{1x_1} + \cdots + \beta_{Mx_{m,i}}$$

Where $\beta_{0,\ldots,}\beta_M$ are regression coefficients indicating the relative effect of a particular explanatory variable on the outcome. These coefficients change as per the context in the analysis in the study. In all the analysis, weights were used to restore the representativeness of the sample. IBM-SPSS software (Version 20.0) was used for bivariate and multi-variate analyses with a significance level of 5 per cent.

III. Results

Socio-economic and demographic profile of the ST women

More than half of the ST women across the regions were in the age group of 30-49 years (Table 1). Three-fourths of women reported at least one living son and work outside the household. About 70 per cent of these women were non-literates. Exposure to family planning message through media was very uncommon among the ST women. In none of the regions, ST women were the prime decision makers on healthcare. The highest involvement of ST women on healthcare was in western region (31 per cent). At national level, 70 per cent ST households had five or more members. The corresponding figure was 76 per cent both in North and Central regions. Poverty was widely

prevalent among the ST population as nearly three-fourths of ST women at national level (73 per cent) were from poorest/poorer households and lived in rural area. These results were statistically significant at P<0.001 (Table 1).

Current use of family planning method

Age and use of a family planning method is positively correlated (Table 2). ST women aged 30-49 years had higher utilization of a family planning method at national level (63 per cent) and in all regions. Women with at least one living son had higher utilization of a family planning method than those without a living son. The result was statistically significant at P<0.001. A higher percentage of women with 10 or more years of schooling used a family planning method than those without any schooling. At national level, half of the ST women working outside the household used a family planning method, higher than the women who were not working or were housewives (44 per cent). This pattern was observed in North (42 per cent), Central (49 per cent), East (35 per cent), West (66 per cent) and South (65 per cent) regions. Message on family planning from media had a positive impact on its use among ST women across the regions. At national level, more than half of ST women (54 per cent) who had final say on their own healthcare used a family planning method than those who were not involved in their own healthcare decisions (44 per cent). The result is found to be statistically significant at P<0.001. Male-headed households had higher utilization of a family planning method than the female-headed households. The only exception was observed in South region. Economic condition and use of a family planning method were found to be positively related in the study. ST women following Hinduism made a higher use of a family planning method at national level and in North, Central, East and Northeast regions. In West and South regions, women from other religious categories made a higher use of a family planning method than the Hindus. ST women residing in urban areas made a higher utilization of a family planning method than those in rural areas. This pattern was observed across the regions.

Current use of a modern spacing family planning method

ST women in their early ages (15-29 years) used a modern spacing method more than those women aged 30-49 years (Table 3). Women aged 25-29 years from Northeast (20 per cent) recorded the highest utilization of a modern spacing method. The corresponding figure was significantly low in South (0.5 per cent). Use of a modern spacing method was higher among women with at least one living son at the national level (5 per cent) and in North (7 per cent), Central (3 per cent) and East (8 per cent) regions. In West, women without a living son (6 per cent) made a higher utilization of modern spacing method compared with women with at least one living son (3 per cent). Education and use of a modern spacing method were positively associated among ST women. In North, women with 10 and more years of schooling (26 per cent) recorded the highest utilization of a modern spacing method than the corresponding group from any other region. ST women not engaged in income generating activities or housewives used a modern spacing method more than working women. This pattern was observed across regions, the highest being at Northeast (14 per cent). Watching television and use of a modern spacing method were positively associated in all the regions. Family planning message from media and use of a modern spacing method were also positively associated, the highest being observed at Northeast (16 per cent). At national level more than five per cent women not involved in healthcare decisions used a modern spacing method than four per cent women involved in healthcare decisions. Number of household member and use of a modern spacing method were positively correlated at national level and in North, Central, East and West regions. Economic condition and use of a modern spacing method was positively associated. Women from urban area had the highest use of modern spacing method than their rural counterparts; the highest being observed in North region (22 per cent).

Current use of female sterilization

Age and female sterilization acceptance were positively related across regions (Table 4). A higher percentage of ST women with at least one living son had gone for sterilization than the women

without a living son. At the national level, 38 per cent of women without education as compared with 22 per cent women with 10 and more years of schooling adopted sterilization. In South women without education (61 per cent) recorded the highest acceptance of female sterilization. Working outside the household and female sterilization were positively correlated, the highest being observed in South (60 per cent). A higher percentage of women watching television programmes had more frequently accepted female sterilization. Family planning message from media and female sterilization were positively associated. Women's involvement in healthcare decisions and female sterilization were as also positively related; the highest being in West (59 per cent). A higher percentage of women from households with five or more members adopted female sterilization than women with less than five household members. Similarly, more women from affluent households accepted sterilization than women from poor households. Again, a higher percentage of Hindu women had gone for female sterilization than women from 'Others' religious category. The only exception was observed in West region. A higher percentage of urban ST women in North, Central, East and Northeast and national level accepted female sterilization than their rural counterparts.

Determinants of family planning services utilization

ST women aged 30-49 years were more likely to use all the selected family planning methods than those women aged 15-24 years (Table 5). Yet, the women aged 30-49 years had the highest likelihood (OR: 7.74; CI: 6.43-9.33) to undergo sterilization than to use any other family planning method. Women with at least one living son were more likely to adopt all the selected family planning methods. Nevertheless, this likelihood was the highest for female sterilization. Women with 10 and more years of schooling were 3.5 times more likely to use a modern spacing method than women without education. Women working outside the household were more likely to use any method of family planning, modern method and female sterilization. Women watching television programmes were more likely to use all selected family planning methods than those not watching them at all. Women with message on family planning from media were more likely to use all selected family planning methods than those without any information from media. Women having received message on family planning from media were 1.87 times ($P<0.001$; CI: 1.43-2.45) more likely to use a modern spacing method than those who did not receive it. Women not involved in making healthcare decisions were less likely to use family planning methods. The only exception was in the case of modern spacing method whereby husband/someone else involved in healthcare decision was 1.58 times ($P<0.001$; CI: 1.17-2.14) more likely to use modern spacing methods. Women from affluent households were more likely to use a family planning method, modern spacing methods and female sterilization. ST women from West and South regions were more likely to use any family planning methods, modern spacing methods and female sterilization than ST women from North ($P<0.001$). Yet, women from West and South were 0.35 ($P<0.001$; 0.23-0.53) and 0.07 ($P<0.001$; 0.03-0.16) times respectively less likely to use any modern spacing method than corresponding women from North.

IV. Discussion and conclusion

This study incorporated the nationally representative sample of ST women to understand their family planning preference and its determinants across regions. It is important owing to the vast regional differentials in the healthcare infrastructure plus socio-cultural, demographic and healthcare seeking behaviour of STs. The result shows that across the regions, a majority of ST women have at least one son, are illiterate, work outside the house, not acquainted with media like watching television programme or getting message on family planning from media, not involved in healthcare decisions, have a larger family size, are in male headed households, poor and reside in rural areas. Family planning preferences, method mix and their determinants among ST women also varied largely across the regions. Female sterilization remained as the most preferred family planning method in all the selected regions. The use of modern family planning methods was found to be high among the ST women from South, while their counterparts from Northeast are ahead of other regions in the use of modern spacing methods. This is probably owing to their relatively better social and educational standards.

Age, having at least one living son, education, working outside the household, watching television programme and getting family planning message from media were major covariates for the use of all selected family planning methods among ST women. Multivariate analysis shows that ST women in West and South regions were more likely to use a family planning method and female sterilization than women from other regions. In contrary to this, ST women in West and South were less likely to use a modern spacing method whereas the likelihood to use modern spacing method was higher in Northeast. Furthermore, ST women across their covariates use family planning methods less than the rest of the population. It was true for all the selected family planning methods and regions. A study conducted among a similar group (Mru- a Schedule Tribes community in Bangladesh) corroborates the findings of this study that tribal women utilize family planning methods less than the rest of the population (Islam & Thorvaldsen, 2012). At the regional level, ST women in South recorded the highest use of all selected family planning methods - higher than the national average. The only exception was observed in the case of modern spacing method which was as low as below one per cent in the region. Female sterilization was the most commonly practised family planning method in the region - higher than the national average. Many other studies also confirm that female sterilization is common among STs in India (Jain, 1997; Bhasin & Nag, 2007). Along with South, the West region recorded the second highest use of all selected family planning methods- higher than the national average. East region had the lowest use of all selected family planning methods among ST women in the country. Variations in such preferences could primarily be attributed to the socio-economic status and cultural beliefs of the ST women. In addition to this, at programme level the availability, accessibility and affordability of the services can also largely fuel the use of any specific family planning method in the regions (Sahoo, 2007; Das, 1999; NSSO, 2001; RGI, 2011; Ram, Shekhar and Chowdhury, 2014).

This study suggests a poor state of ST women where a majority of them are illiterate, poor and do not have any media access to receive information on family planning services. Thus, there is a need for expanding the outreach of family planning promotion campaigns with more velocity to integrate the family planning needs of disadvantaged ST women. The role of community health volunteer remains very significant to generate awareness about different family planning services at community level. Accredited Social Health Activists (ASHAs) under the National Health Mission are already positioned as important stakeholders in delivering essential maternal healthcare services such as antenatal, delivery care and post-natal care in rural India (Bajpai & Dholakia, 2011; Mane & Khandekar, 2014) should also be entrusted to provide family planning services, especially in the tribal dominated areas. At programme level, the government needs to broaden the choices with further emphasis on modern spacing methods especially in ST dominated areas.

The strengths of the study are that it provides a regional pattern in contraceptive use, method mix and its determinants among STs. They are of extreme importance for on-going and prospective family planning programmes and policies. Besides, understanding contraceptive behaviour of the socio-economically deprived ST women and addressing the barriers in contraceptive use are important from the equity perspective.

Limitations of the study

Besides the variables included in the analysis, a number of other programmatic as well as non-programmatic variables might affect the contraceptive use and method mix among STs which are not available in the dataset used. Thus, inclusion of such information in the future studies may give a better understanding about the family planning utilization and its determinants among the STs.

References

Acharya, D. R., Bell, J. S., Simkhada, P., van Teijlingen, E. R., & Regmi, P. R. (2010). Research Women's autonomy in household decision-making: A demographic study in Nepal. *Reproductive health*, 7(15), 1-12.

Baird, R. (2008). *The impact of climate change on minorities and ST peoples. Briefing*. Minority Rights Group International: London. Available at: http://www.ohchr.org/Documents/Issues/ClimateChange/Submissions/Minority_Rights_Group_International.pdfAccessed on 5th October 2015.

Bajpai, N., & Dholakia, R. H. (2011). *Improving the performance of accredited social health activists in India*. Mumbai: Columbia Global Centres South Asia. Available at: https://scholar.google.co.in/scholar?q=IMPROVING+THE+PERFORMANCE+OF+ACCREDITED+SOCIAL+HEALTH+ACTIVISTS+IN+INDIA&btnG=&hl=en&as_sdt=0%2C5Accessed on 28th August 2016.

Bhasin, M. K., & Nag, S. (2007). Demography of the tribal groups of Rajasthan: 5. Dynamics of family planning methods usage. *Anthropologist*, 9(2), 99-106.

Cornell, S. E. (2006). *ST peoples, poverty and self-determination in Australia, New Zealand, Canada and the United States.* Native Nations Institute for Leadership, Management, and Policy. http://nni.arizona.edu/resources/inpp/2006_CORNELL_JOPNA_ST.peoples.pdf

Das, A. (1999). Socio-economic development in India: A regional analysis. *Development and Society*, 28(2), 313-345.

Das, M. B., Hall, G., Kapoor, S., &Nikitin, D. (2011). *ST peoples.* Available at http://siteresources.worldbank.org/EXTINDPEOPLE/Resources/407801-1271860301656/India_brief_clean_0110.pdf Accessed on 29th September 2015.

Horn, P. (2014). ST Peoples, Poverty, and Development. *The Journal of Development Studies*, 50(11), 1588-1590.

International Institute for Population Sciences (IIPS) and Macro International. National Family Health Survey (NFHS-3) *Report, 2005–06; India*: Volume I. Mumbai, IIPS 2007.

International Institute for Population Sciences (IIPS) and Macro International. National Family Health Survey (NFHS-3) *Report, 2005–06; India:* Volume II. Mumbai, IIPS 2007.

Islam, M. R., & Thorvaldsen, G. (2012). Family planning knowledge and current use of contraception among the Mru ST women in Bangladesh: a multivariate analysis. *Open Access Journal of Contraception*, 3, 9-16.

Islam, R., & Sheikh, M. A. (2010). Cultural and socio-economic factors in health, health services and prevention for ST people. *Antrocom Online JAnthropol*, 6, 263-73.

Jain, D. C. (1997). Family planning use and its determinants among Gond tribe of Madhya Pradesh: A Case Study of Gonds of Jabalpur district. In *Proceeding of national symposium on tribal health* (pp. 285-292). Available at: http://www.nirth.res.in/publications/nsth/35.DC.Jain.pdf Accessed on 13th October 2015.

Johnstone, K. (2011). ST fertility transitions in developed countries. *New Zealand Population Review*, 37, 105.

Ministry of Tribal Affairs (2014). *Report of the high level committee on socioeconomic, health and educational status of tribal communities of India.* Government of India. Available at http://www.indiaenvironmentportal.org.in/files/file/Tribal%20Committee%20Report,%20May-June%202014.pdf Accessed on 8th August 2015

NSSO (2001). *Concepts and Definitions used in NSS*. Golden Jubilee Publication. Ministry of statistics and programme implementation. Government of India. Available at http://mospi.nic.in/Mospi_New/upload/nsso/concepts_golden.pdf Accessed on 17th August 2015

Ram, F., Shekhar, C., & Chowdhury, B. (2014). Use of traditional contraceptive methods in India & its socio-demographic determinants. *The Indian Journal of Medical Research*, 140 (Suppl 1), S17.

Saha, K. B., and A. Verma. (2006), High fertility among scheduled tribes of Madhya Pradesh. *The Indian Journal of Medical Research* 123(1), 89-90.

Sahu, D., Nair, S., Singh, L., Gulati, B. K., & Pandey, A. (2015). Levels, trends & predictors of infant & child mortality among Scheduled Tribes in rural India. *The Indian Journal of Medical Research*, 141(5), 709.

Sahoo, H. (2007). Determinants of contraceptive use in Orissa: An analysis from national family health survey III. *Health, Population Perspectives and Issues*, 30(3), 208-21.

Sankar Saikia, U., Steele, R., & Dasvarma, G. (2001, August). Culture, religion and reproductive behaviour in two ST communities of northeastern India: A discussion of some preliminary findings. In IUSSP conference, Salvador, Brazil (pp. 12-14).

Shrinivasa, B. M., Philip, R. R., Krishnapali, V. K., Suraj, A., & Sreelakshmi, P. R. (2014). Prevalence of anemia among tribal women of reproductive age-group in Wayanad district of Kerala. *International Journal of Health & Allied Sciences*, 3(2), 120.

Subramanian, S. V., Smith, G. D., & Subramanyam, M. (2006). ST health and socioeconomic status in India. *PLoS Med*, 3(10), e421.

Xaxa, V. (1999). Tribes as ST people of India. *Economic and Political Weekly*, 34(51), 3589-3595.

Table 1. Socio-economic and demographic profile of ST women by regions, India, 2005-06

Characteristics	North	Central	East	North-east	West	South	India	Chi-Square Test (χ^2)
Current age of women (years)								
15-24	28.0	26.1	31.8	19.1	23.6	30.9	23.4	163.89, P<0.001
25-29	19.0	19.8	20.8	20.7	21.4	22.9	20.7	
30-49	53.0	54.0	47.4	60.2	55.0	46.2	56.0	
Number of living son								
No living son	21.2	25.1	33.3	23.9	23.4	26.8	26.4	65.42, P<0.001
At least one living son	78.8	74.9	66.7	76.1	76.6	73.2	73.6	
Completed years of schooling								
No education	82.2	78.5	76.1	38.6	57.4	69.0	69.5	649.35, P<0.001
<10 years schooling	14.4	19.6	19.9	45.3	31.6	24.5	24.4	
10 or more years of schooling	3.4	1.8	4.0	16.1	10.9	6.5	6.1	
Occupation								
Not working/household work	26.7	21.8	28.1	51.7	27.4	29.6	28.5	229.25, P<0.001
Work outside the household	73.3	78.2	71.9	48.3	72.6	70.4	71.5	
Television watching								
Not at all	78.0	69.5	72.8	38.7	53.3	46.1	62.4	730.78, P<0.001
Less than once/At least once a week	10.9	20.9	19.7	31.4	21.6	20.2	20.6	
Almost everyday	11.1	9.6	7.5	29.9	25.0	33.8	17.0	
FP message from media								
No	81.1	61.7	76.2	51.5	65.7	60.1	66.8	259.45, P<0.001
Yes	18.9	38.3	23.8	48.5	34.3	39.9	33.2	
Final say on healthcare								
Respondent alone	25.2	18.5	28.5	25.9	30.5	19.6	24.6	426.57, P<0.001
Respondent and husband/partner	20.2	32.7	35.6	58.1	33.1	39.6	35.3	
Husband/partner/someone Else	54.6	48.9	36.0	16.0	36.5	40.8	40.1	
Household size								
Less than 5 members	23.5	23.8	33.2	33.4	30.0	42.3	30.3	130.33, P<0.001
5 or more members	76.5	76.2	66.8	66.6	70.0	57.7	69.7	
Sex of the household head								
Male	90.1	97.0	93.9	91.2	94.5	93.4	94.1	64.01, P<0.001
Female	9.9	3.0	6.1	8.8	5.5	6.6	5.9	
Wealth index								
Poorest/poorer	71.5	89.1	86.3	42.5	58.5	59.2	72.9	1024.34, P<0.001
Middle	13.7	6.4	8.0	23.9	19.8	21.9	13.5	
Richer/richest	14.7	4.5	5.8	33.6	21.8	18.9	13.6	
Religion								
Hindu	91.1	99.1	80.8	38.0	98.3	95.6	87.8	2134.01, P<0.001
Others	8.9	0.9	19.2	62.0	1.7	4.4	12.2	
Place of residence								
Urban	6.5	5.4	6.7	15.4	15.1	16.9	10.0	191.49, P<0.001
Rural	93.5	94.6	93.3	84.6	85.0	83.1	90.0	
Total	10.3	25.7	23.7	9.1	18.9	12.4	100.0	N=10815

Table 2. Covariates of current use of any family planning method among ST women by region, India, 2005-06

Characteristics	North	Central	East	North-east	West	South	India	Chi-Square (χ^2)
Current age of women (years)								
15-24	14.7	14.7	18.7	24.2	27.0	27.5	20.4	37.02, P<0.001
25-29	42.4	44.9	31.7	44.4	60.8	74.4	48.7	123.72, P<0.001
30-49	53.8	63.3	47.1	51.0	81.2	81.5	63.0	301.9, P<0.001
Number of living son								
No living son	7.2	8.1	13.8	28.3	19.9	25.8	15.6	76.25, P<0.001
At least one living son	49.4	59.8	45.1	48.6	75.0	76.7	59.5	352.26, P<0.001
Completed years of schooling								
No Education	40.2	48.0	33.9	38.7	67.4	65.4	48.1	339.14, P<0.001
<10 years schooling	41.1	41.7	36.4	44.4	55.6	58.0	46.5	47.7, P<0.001
10 or more years of schooling	44.4	55.6	41.7	54.5	53.5	58.1	52.1	5.21, P<0.001
Occupation								
Not working/household work	35.2	38.7	33.9	47.1	52.0	59.1	43.7	69.87, P<0.001
Work outside the household	42.2	49.1	35.0	39.9	66.0	64.7	49.6	309.22, P<0.001
Television watching								
Not at all	34.2	44.8	31.4	33.2	58.0	61.1	42.7	232.34, P<0.001
Less than once/at least once a week	57.5	48.3	39.9	47.2	67.5	61.6	52.2	63.21, P<0.001
Almost everyday	66.7	58.3	53.3	54.1	66.2	66.6	61.9	17.16, P<0.001
FP message from media								
No	36.2	44.1	31.5	35.5	59.5	62.1	44.0	282.23, P<0.001
Yes	58.4	51.3	45.1	52.5	67.3	64.5	55.9	66.04, P<0.001
Final say on healthcare								
Respondent alone	39.4	53.9	43.3	44.7	70.7	65.2	53.6	105.37, P<0.001
Respondent and husband/partner	45.0	49.1	31.0	43.5	64.2	64.1	48.4	166.6, P<0.001
Husband/partner/someone else	39.1	42.7	31.5	43.2	53.2	60.7	43.9	107.49, P<0.001
Household size								
Less than 5 members	31.4	37.1	29.0	44.2	55.2	56.3	42.0	119.18, P<0.001
5 or more members	43.1	49.9	37.5	43.6	65.2	68.0	50.5	257.34, P<0.001
Sex of the household head								
Male	42.2	47.4	35.4	45.4	62.6	62.8	48.6	312.18, P<0.001
Female	24.1	28.8	23.6	27.9	54.4	66.1	36.2	51.2, P<0.001
Wealth index								
Poorest/poorer	33.7	45.0	32.3	35.8	60.3	58.4	43.5	257.76, P<0.001
Middle	50.0	57.6	49.7	43.4	61.8	66.3	56.3	27.52, P<0.001
Richer/richest	63.2	68.5	50.0	54.3	67.5	74.2	63.5	28.66, P<0.001
Religion								
Hindu	41.8	46.9	38.2	59.8	61.8	62.7	50.3	255.72, P<0.001
Others	26.8	38.9	20.5	33.9	80.8	70.7	31.4	80.28, P<0.001
Place of residence								
Urban	60.8	50.9	50.8	54.2	66.5	64.2	59.3	14.08, P<0.001
Rural	39.0	46.6	33.5	41.9	61.4	62.9	46.7	329.67, P<0.001
Total	40.4	46.8	34.7	43.8	62.2	63.1	47.9	290.20, P<0.001

Table 3. Covariates of current use of any modern spacing method among ST women by region, India, 2005-06

Characteristics	North	Central	East	North-east	West	South	India	Chi-Square (χ^2)
Current age of women (years)								
15-24	5.3	3.8	7.1	13.6	8.1	1.7	6.1	34.0, P<0.001
25-29	10.6	3.0	8.1	19.7	5.1	0.5	6.5	68.15, P<0.001
30-49	6.3	1.3	5.4	10.0	1.3	0.2	3.5	108.02, P<0.001
Number of living son								
No living son	5.4	1.4	4.5	12.6	5.9	1.6	4.4	44.24, P<0.001
At least one living son	7.3	2.6	7.5	12.9	3.4	0.6	5.0	141.84, P<0.001
Completed years of schooling								
No education	5.3	1.0	4.7	10.0	0.8	-	2.8	131.8, P<0.001
<10 years schooling	10.7	5.2	12.2	12.7	2.8	2.6	7.3	51.95, P<0.001
10 or more years of schooling	25.9	25.0	13.7	18.8	23.6	1.6	18.2	17.46, P<0.001
Occupation								
Not working/household work	8.1	5.4	9.1	13.7	9.6	1.4	8.1	37.72, P<0.001
Work outside the household	6.4	1.4	5.5	11.7	1.8	0.6	3.5	139.8, P<0.001
Television watching								
Not at all	4.6	0.7	5.5	9.7	1.0	0.2	3.0	117.79, P<0.001
Less than once/at least once a week	10.3	4.4	7.3	14.2	4.5	1.6	6.4	36.87, P<0.001
Almost everyday	20.7	9.0	14.1	15.0	10.0	1.3	9.6	47.76, P<0.001
FP message from media								
No	4.2	0.9	4.7	9.5	1.4	0.7	3.0	105.12, P<0.001
Yes	18.1	4.5	12.6	16.0	9.1	1.1	8.6	92.45, P<0.001
Final say on healthcare								
Respondent alone	8.1	1.4	4.3	13.4	2.3	0.5	4.2	63.02, P<0.001
Respondent and husband/partner	3.8	1.6	6.5	12.2	5.9	0.3	5.1	80.94, P<0.001
Husband/partner/someone else	7.4	3.1	8.2	13.5	3.8	1.3	5.1	54.96, P<0.001
Household size								
Less than 5 members	6.5	1.9	4.3	13.3	2.8	1.5	4.1	66.59, P<0.001
5 or more members	7.0	2.5	7.5	12.5	4.6	0.2	5.2	119.27, P<0.001
Sex of the household head								
Male	7.6	2.3	6.4	12.9	3.9	0.8	4.8	172.16, P<0.001
Female	-	3.4	7.2	11.5	5.1	-	4.7	15.04, P<0.01
Wealth index								
Poorest/poorer	4.3	1.5	5.3	11.1	1.4	0.7	3.3	118.75, P<0.001
Middle	5.6	6.4	9.7	10.3	2.5	0.5	5.1	29, P<0.001
Richer/richest	20.7	12.4	19.4	16.2	12.1	1.7	12.9	32.65, P<0.001
Religion								
Hindu	6.1	2.2	6.8	16.3	4.0	0.8	4.4	165.4, P<0.001
Others	14.3	11.1	5.2	10.5	-	-	8.1	16.78, P<0.005
Place of residence								
Urban	21.6	9.4	17.5	18.7	12.4	1.9	12.1	28.44, P<0.001
Rural	5.8	1.9	5.7	11.7	2.4	0.6	4.0	160.9, P<0.001
Total	6.9	2.3	6.5	12.7	4.0	0.8	4.8	309.49, P<0.001

Note: (-) denotes no cases.

Table 4. Covariates of female sterilization among ST women by region, India, 2005-06

Characteristics	North	Central	East	North-east	West	South	India	Chi-Square (χ^2)
Current age of women (years)								
15-24	7.6	7.8	3.1	2	14.6	22.3	9.3	111.27, P<0.001
25-29	27.8	38.1	16.0	8.5	51.7	68.9	36.1	250.62, P<0.001
30-49	42.8	51.7	30.5	26.2	67.6	78.2	49.6	458.91, P<0.001
Number of living son								
No living son	0.6	3.3	2.2	4.2	10.1	21.4	6.2	143.57, P<0.001
At least one living son	37.7	48.9	26.9	21.4	61.9	72.4	45.8	635.26, P<0.001
Completed years of schooling								
No education	31.2	38.9	21.0	17.5	56.0	61.3	37.6	495.19, P<0.001
<10 years schooling	25.0	33.1	11.9	18.7	47.9	54.3	32.4	199.76, P<0.001
10 or more years of schooling	14.8	25.0	8.3	13.4	23.4	48.4	21.6	39.46, P<0.001
Occupation								
Not working/household work	24.8	28.6	13.0	17.3	35.9	55.2	27.5	194.56, P<0.001
Work outside the household	31.7	39.9	20.9	17.1	55.0	60.2	38.5	501.29, P<0.001
Television watching								
Not at all	26.1	36.5	16.8	11.6	45.9	56.2	31.6	400.78, P<0.001
Less than once/at least once a week	40.7	37.7	23.8	19.3	56.1	58.4	38.3	139.77, P<0.001
Almost everyday	46.0	43.9	23.1	22.2	52.6	62.6	45.4	117.31, P<0.001
FP message from media								
No	27.7	36.0	18.5	15.1	49.5	57.1	33.6	455.34, P<0.001
Yes	38.5	39.8	19.1	19.6	50.3	61.3	38.8	231.08, P<0.001
Final say on healthcare								
Respondent alone	29.3	45.9	25.8	19.0	58.9	58.7	40.4	182.05, P<0.001
Respondent and husband/partner	34.0	39.1	16.4	17.2	48.6	59.8	34.6	300.02, P<0.001
Husband/partner/someone else	28.4	33.1	15.4	14.3	43.3	57.6	32.8	243.02, P<0.001
Household size								
Less than 5 members	22.3	28.9	15.9	12.9	42.5	49.9	29.6	203.45, P<0.001
5 or more members	32.1	40.1	20.1	19.4	53.0	65.3	37.9	512.5, P<0.001
Sex of the household head								
Male	31.0	37.8	19.2	18.0	50.3	58.3	35.9	618.53, P<0.001
Female	19.0	25.4	9.9	9.8	42.3	64.5	26.7	82.38, P<0.001
Wealth index								
Poorest/poorer	25.6	36.2	18.0	9.8	48.8	54.9	32.4	473.63, P<0.001
Middle	41.7	45.6	29.2	21.1	53.7	61.0	44.2	83.31, P<0.001
Richer/richest	39.7	50.6	14.4	23.9	48.9	68.5	42.3	124.12, P<0.001
Religion								
Hindu	32.0	37.6	21.1	20.4	49.6	58.8	38.1	468.06, P<0.001
Others	8.6	22.2	9.0	15.5	61.5	58.5	15.9	111.98, P<0.001
Place of residence								
Urban	36.5	37.9	21.6	26.9	48.2	59.9	41.2	55.98, P<0.001
Rural	29.4	37.4	18.5	15.5	50.1	58.6	34.7	632.12, P<0.001
Total	29.8	37.5	18.7	17.3	50.8	58.8	35.4	852.67, P<0.001

Table 5. Odds ratio of utilization of different family planning methods among ST women in India, 2005-06

Characteristics	Any method		Any modern method		Any modern spacing		Female sterilization	
	Odds Ratio	95% CI	Odds Ratio	95% CI	Odds Ratio	95% CI	Odds Ratio	95% CI
Current age of women (years)								
15-24 ®								
25-29	2.743***	2.33-3.23	3.306***	2.77-3.94	0.897	0.67-1.21	4.514***	3.68-5.54
30-49	4.752***	4.11-5.49	5.432***	4.64-6.36	0.499***	0.37-0.67	7.744***	6.43-9.33
Number of living son								
No living son®								
At least one living son	5.79***	4.98-6.74	6.817***	5.76-8.07	1.781***	1.34-2.36	9.693***	7.82-12.01
Completed years of schooling								
No education®								
<10 years schooling	1.09	0.94-1.26	0.987	0.85-1.15	1.641***	1.24-2.18	0.995	0.85-1.17
10 or more years of schooling	0.94	0.72-1.24	0.677*	0.51-0.90	3.5***	2.37-5.17	0.328***	0.24-0.45
Occupation								
Not working/household work®								
Work outside the household	1.24***	1.09-1.41	1.367***	1.19-1.56	0.824	0.65-1.05	1.471***	1.27-1.70
Television watching								
Not at all®								
Less than once/at least once a week	1.34***	1.15-1.55	1.430***	1.23-1.66	1.29	0.95-1.75	1.473***	1.26-1.73
Almost everyday	1.56***	1.27-1.91	1.798***	1.46-2.21	1.18	0.81-1.72	1.934***	1.55-2.41
FP message from Media								
No®								
Yes	1.54***	1.35-1.76	1.353***	1.18-1.55	1.874***	1.43-2.45	1.169*	1.01-1.35
Final say on healthcare								
Respondent alone®								
Respondent & husband/partner	0.83*	0.72-0.95	0.905	0.79-1.04	1.098	0.81-1.49	0.838*	0.72-0.97
Husband/partner/someone else	0.86	0.75-0.99	0.949	0.82-1.09	1.584**	1.17-2.14	0.852*	0.73-0.99
Household size								
Less than 5 members®								
5 or more members	1.1	0.97-1.24	1.131*	1.00-1.28	1.261*	0.98-1.63	1.145*	1.00-1.31
Wealth index								
Poorest/poorer®								
Middle	1.30**	1.10-1.54	1.379***	1.16-1.64	1.053	0.74-1.50	1.443***	1.20-1.73
Richer/richest	1.61***	1.28-2.03	1.558***	1.23-1.97	1.4	0.94-2.08	1.472**	1.15-1.89
Place of residence								
Urban®								
Rural	1.1	0.89-1.36	0.937	0.75-1.16	0.61**	0.44-0.85	1.117	0.89-1.40
Region								
North®								
Central	1.36**	1.12-1.66	1.371**	1.12-1.67	0.304***	0.20-0.47	1.576***	1.28-1.94
East	1	0.82-1.22	0.739**	0.60-0.91	1.014	0.71-1.45	0.655***	0.53-0.81
Northeast	0.84	0.66-1.08	0.519***	0.40-0.67	1.202	0.80-1.80	0.376***	0.28-0.50
West	2.7***	2.19-3.33	2.889***	2.34-3.56	0.349***	0.23-0.53	2.915***	2.35-3.62
South	3.29***	2.61-4.15	3.956***	3.12-5.01	0.071***	0.03-0.16	5.920***	4.62-7.59
Constant	0.03***	0.02-0.05	0.020***	0.01-0.03	0.043***	0.02-0.08	0.006***	0.00-0.01
Pseudo R2	0.2234		0.2499		0.1561		0.2857	

*p<0.10; **p<0.05; ***p<0.001.