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Exploring Disparities in Modern Spacing Contraceptive Use among Tribal and Non-Tribal Women in India: Evidence from NFHS-5

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ABSTRACT

Background: Girls in tribal communities get married immediately after attaining menarche in India. Most tribal women do not opt for modern spacing contraceptive use, as there is a lack of adequate knowledge and awareness to make an informed choice regarding the same. As a consequence of this, tribal women often face several problems related to their reproductive health. The present study examin the use of modern spacing contraceptive with socio-demographic factors affecting its usage among tribal and non-tribal and spatial variance at state and district level in India

Methods: We included 5,12,408 married women (tribal and non-tribal) in the 15 to 49 years from National Family Health Survey -5, which was conducted during the years 2019 to 2021. Descriptive statistics were used to compute the prevalence of modern spacing contraceptive use along with a 95% confidence interval (CI) as a measure. The association between various socio-demographic predictors and modern spacing contraceptive usage was assessed by logistic regression.

Results: The overall prevalence of modern spacing contraceptive practices was found to be low among tribal compared to non-tribal women, which was below the national average. Age of the respondent, level of education, religion, number of children, exposure to media, place of residence and regions were significantly associated with the use of modern spacing methods among tribal women in India. Across regions, the usage of modern methods for tribal women tends to be higher in the northeastern and western states of India, with Sikkim being the highest.

Conclusion: There is an immediate need to improve access to modern spacing contraceptive methods and reduce unmet needs for contraceptives among tribal women. There is a requirement for sustained and targeted efforts from healthcare workers towards tribal communities to create awareness and better access to modern spacing methods.

Keywords: Modern Spacing Method, Tribal and Non-tribal, Socio-economic

INTRODUCTION

Contraception is a means of preventing pregnancy and is a crucial determinant of fertility. There are various methods of contraception that can be broadly categorized under reversible methods and permanent methods. These include but are not limited to Hormonal contraceptive methods, intra-uterine devices, Emergency contraception, condoms, and Lactational amenorrhea methods (WHO, 2020). Modern spacing methods include pills, IUDs, injectables, diaphragms, condoms, LAM (Lactation Amenorrhea method), foam and jelly (Nayak *et al.*, 2021).

The choice of contraceptive methods is dependent on a number of factors, such as demographic, cultural, economic, and social factors (Chaurasia, 2014). The usage of contraceptives is fundamental to family planning and plays an important role in deciding the desired number of children required and ensuring proper spacing between the births of children. Hence, it is very crucial to have knowledge and information about various contraception methods and services as it is fundamental to the health and human rights of all the people in the world. Worldwide cases of delayed pregnancies, unwanted pregnancies, teenage pregnancies, and several other related problems have always been an issue. To address these, family planning plays an important role and provides several health benefits, as contraception is one of the ways of reducing unintended pregnancies and unsafe abortions. As per the report by WHO, according to 2017 estimates, about 214 million women within the reproductive age group have unmet contraceptive needs.

Improvements in reproductive health are essential for reducing maternal and child mortality and achieving the Millennium Development Goals on the same (Cleland *et al.*, 2006). Safe access to effective contraceptive methods for women is crucial for ensuring the same, along with the promotion of family planning methods so as to avoid unwanted pregnancies, which is central to improving maternal health (WHO, 2008). It is also known that the proper usage of contraceptives like condoms helps in preventing not only pregnancy and related issues but also sexually transmitted infections, including HIV. Therefore, it is important that people in their reproductive age have access to preferred contraceptive methods, which leads to advancements of fundamental human rights like the right to life and liberty, freedom of opinion and expression and right to work and education, as well as ensuring that they live a healthy life.

The decades between 1950-55 to 2005-10 witnessed a sharp fall in family size from an estimated average of 5 to 2.5 (Darroch, 2013). Since the 1960s, the use of contraceptives has increased from 67% -72% in developed countries to 9%-61% in developing countries (Geoffrey, 2006). While the average number of children continues to be higher in developing countries, the steepest decline in family size has actually taken place in developing countries. Along with the increase in the use of contraceptives, the type of methods being used have also undergone a dramatic change. (Weinberger, 1994) The types of methods and patterns of change are also different between the developed and the developing countries. While the most commonly used modern method among married women in developed countries is the use of oral contraceptives and condoms, in developing countries, the use of female sterilization and IUDs is more common (Mauldin & Segal, 1988; Singh, 2009).

Similarly, in India, in 2005, the use of modern contraceptive use was 70%, and there was heavy dependence on female sterilization rather than other reversible contraceptive methods (Ewerling *et al.*, 2018). However, the use of modern spacing methods was very low in India. Around 2005-06, only about 10% of women were using modern spacing methods with massive variation across socio-economic groups (IIPS, 2016). Not only is the adoption of the modern spacing methods low, but its continuation remains a huge concern. Almost

50 % of pill and condom users and 20% of IUD users discontinue within the first year of adoption (IIPS, 2005-06). This stems from the fact that family planning policies in India have always been targeted towards population control rather than making women's reproductive health needs accessible (Maru, 1986; Chatterjee & Riley, 2001). This has led to the promotion of sterilization targeted almost exclusively towards women. While Government policy has undergone a change in recent decades with the introduction and promotion of injectable contraceptives, non-hormonal weekly pills and progesterone-only pills for lactating mothers, the use of reversible contraceptive methods as well as male sterilization is still very low in India. At present, in India, most of the people are aware of the various methods of contraception. As per NFHS–5 data, more than 99% of currently married women and men in their reproductive years are aware of at least one method of contraception. As per the survey data, female sterilization continues to be the dominant method of contraceptive use among women in India (Ewerling et al., 2021; NFHS-4, 2016). While there is substantial demand for reversible contraception among young married women, very few have access to the same (Ghule *et al.*, 2015). Barriers to contraceptive use can be largely attributed to problems in accessing the service centres. Additionally, it also includes a whole host of economic, administrative and psychosocial factors (WHO, 2020). Studies on NFHS-4 (2015-16) documented that there is huge geographic variation in the uptake of modern contraceptives, ranging from 23.6% in Manipur to 93.6% in Andhra Pradesh.

Tribal or Indigenous populations are vulnerable groups in society who have low awareness about family planning and various methods of contraceptives and their usage. Tribal people live in poor communities with low educational attainment and limited access to healthcare. As per Census 2011, 104 million people belong to a tribal group known as Schedules Tribes, which are known to remain marginal geographically, socio-economically, and politically. Tribal in India have many spatial and socio-cultural differences, and therefore, they have their own cultural practices (Mitra, 2006), which lead to high fertility; the previous studies it is found a high number of children are found among tribal women compared to non-tribal women (Maharatna, 2000). Therefore, it is important to understand disparities and factors that affect the use of modern spacing contraceptives among tribal and non-tribal women in India.

MATERIALS AND METHODS

Data

The present study utilized the fifth round of the National Family Health Survey which is conducted during 2019-21 and its cross-sectional data. NFHS-5 provides information on population, maternal and child health, and family planning for India, each state/union territory (UT), and 707 districts. NFHS-5 fieldwork was conducted in two phases: Phase-I from 17th June 2019 to 30th January 2020, covering 17 states and 5 UTs and Phase-II from 2nd January 2020 to 30th April 2021, covering 11 states and 3 UTs. The NFHS-5 sample is stratified into two stages. The Census 2011 assisted as the sampling frame for the collection of primary sampling units (PSUs). The PSUs were villages in rural areas and Census Enumeration Blocks (CEBs) in urban areas. If PSUs with fewer than 40 households were merged with the closer PSU. On the hand, within each rural stratum, villages were selected from the sampling frame using probability proportional to size (PPS). In each stratum, six approximately equal sub-strata were created by combining three sub-strata based on the estimated number of households in each village, and with two sub-strata is based on the the population belonging to scheduled castes and scheduled tribes (SCs/STs). Therefore, PSUs were arranged by the literacy rate of women aged six and above within each sampling stratum. The final sample PSUs were selected using PPS systematic sampling. In urban areas, CEB

information was sourced from the Office of the Registrar General and Census Commissioner. CEBs were sorted by the SC/ST population percentage in each block, and sample CEBs were selected through PPS systematic sampling. For more information about the sample size, design, and sample weights in NFHS-5 are freely available on the respective websites (http://rchiips.org/nfhs/) and can be accessed without any official requests. NFHS-5 surveyed a total of 636,699 households, 724,115 women and 101,839 men, with a response rate of 97 percent. Therefore, for the present study, the sample size is 512,408, which includes currently married women. Out of 512408 samples, 91,976 women belong to the Schedule tribe, and 4,20,432 belong to other castes.

Measures

Dependent variable

The dependent variable in this study is "modern spacing contractive use". Two questions were used to determine the women using modern spacing methods: (1) Are you currently using any method to delay or avoid getting pregnant? if yes said by women: (2) which method are you using? The modern methods listed which include sterilization, intrauterine devices (IUDs/PPIUDs), injectables, contraceptive pills, implants, the standard day's method, condoms, diaphragm, foam/jelly, the lactational amenorrhea method, and emergency contraception. We further split modern contractive into the traditional and permanent contractive and Spacing/temporary contractive methods. Whereas women utilizing the modern spacing contraceptive methods were coded as' 1', otherwise' 0'.

Explanatory variable

Various explanatory characteristics related to the women, their husband's, and households were included in the analysis. Women's characteristics included age of the women (*15-24 years, 25-34 years, 35-49 years*); Relation to husband (*Uncle-niece, First cousins, Second-cousins, Other blood relative, Non-consanguineous*); Type of marriage (*Monogamy and Polygamy*); Respondent's educational status (*No education, Primary, Secondary, Higher*), Occupation (*Employed, Unemployed*); Religion (*Hindu, Muslim, Other*); Number of children (de Jure) (*No-child, 1-2 child, 3 or more child*); Husband's characteristics include educational status (*No education, Primary, Secondary, Higher*); Exposure to mass media (*Not exposed, Exposed to media*); place of residence (*Urban, Rural*); Household characteristics consists of wealth index (*Poorest, Poorer, Middle, Richer, Richest*), Region of India (*North, Central, East, Northeast, West, South*).

STATISTICAL ANALYSIS

We used sample descriptions and cross-tabulation to examine the association between socio-economic correlates and modern spacing methods. We gave appropriate sample weights during the analysis. A chi-square test was used to observe the statistical significance of associations between outcome variables and each independent variable. Whereas logistic regression analysis to study the socio-economic correlates of the modern spacing contraceptive method by the background characteristics among tribal and non-tribal women with statistical significance at $P<0.05$ for the study. Analysis was carried out using Stata 14 (statistical software package). In order to look at the special disparity between tribal and non-tribal women, the present study used the ArcGIS 10.5 software package for the special analysis.

RESULTS

Figure 1. Usage of Contraceptive Methods across Social Groups

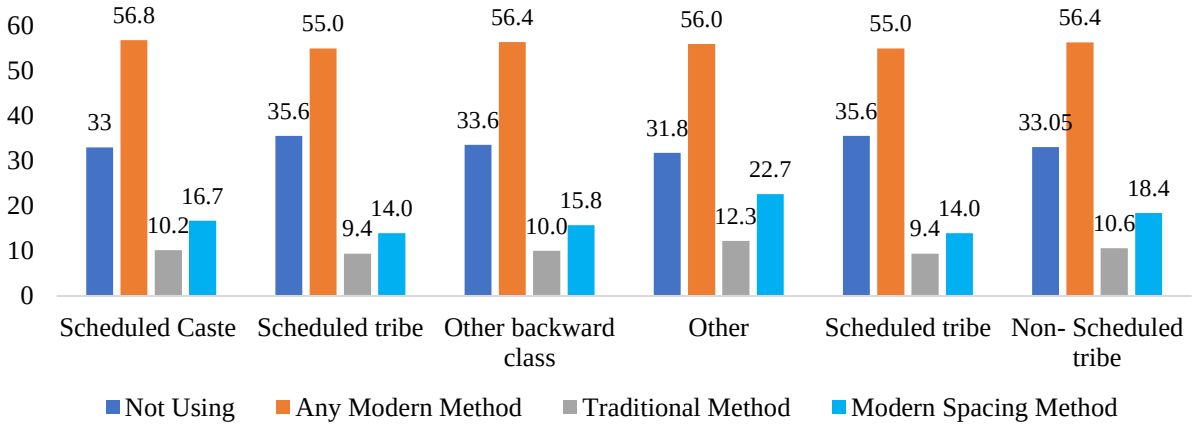

Figure 1 shows the prevalence of modern spacing methods among women in social groups. The use of the modern spacing method is low among women belonging to scheduled tribes (14%) compared to other caste group categories (18.4%). Among women belonging to the scheduled tribe not using the modern spacing method is 35.6%, which is high compared to scheduled caste, Other backward classes and other caste groups.

Figure 2. Shows the use of the modern spacing contractive method among non-tribe women in India

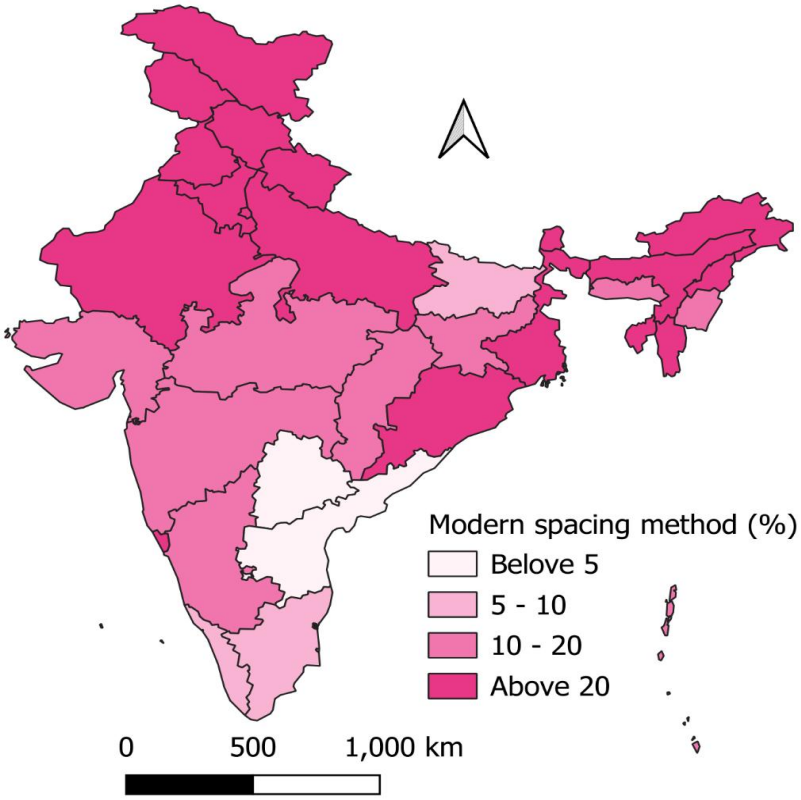

Figure 2 shows the state-wise distribution in the usage of modern spacing contraceptive methods among non-tribal women in India. From the figure, it can be seen that the usage

of modern contraceptives tends to be the highest in the National capital Region of Delhi (38.84%) followed by Tripura (37.31%), Assam (36.74%) and Chandigarh (36.29%) and lowest in Andhra Pradesh (0.79%) closely followed by Telangana (2.81%) and thereafter Kerala (5.63%) and Tamil Nadu (7.43%). Broadly, the usage of modern contraceptives is higher in the North Eastern states and Delhi and Chandigarh. However, it used to be lower in the Southern region.

Figure 3 shows the use of modern spacing contraceptives among tribal women in India.

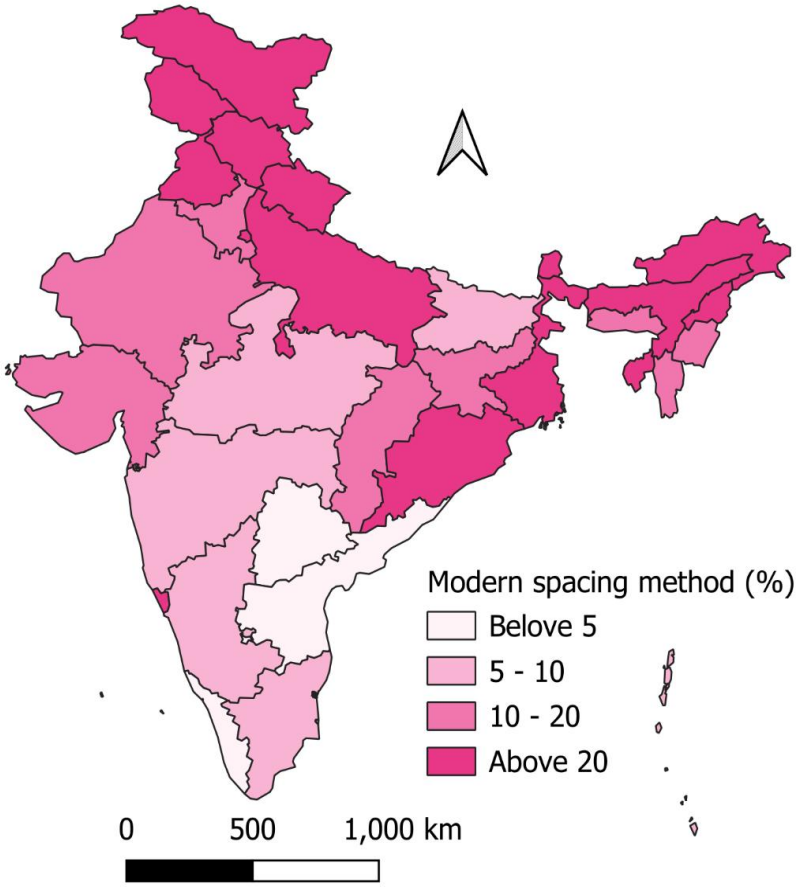

Figure 3 shows the state-wise distribution of modern spacing contraceptive usage among tribal women in India. From the figure, it is evident that the usage of modern methods is the highest in the North Eastern and the North Western states, with Sikkim recording the highest (40.12%) followed closely by Tripura (39.89%), Uttarakhand (36.7%) and National Capital Region of Delhi (36.08%). The lowest usage of Modern Contraceptive methods among tribal is recorded in the Southern states and UTs of Andhra Pradesh (0.74%), followed by Puducherry (2.3%), Telangana (2.32%) and Kerala (3.28%). There are states such as MP, Maharashtra, Karnataka, Tamil Nadu, and Bihar which come under the categories 5-10 per cent use of modern spacing contraceptive use.

Figure 4 shows the district-wise concentration of usage of modern contraceptive methods among non-tribal women in India.

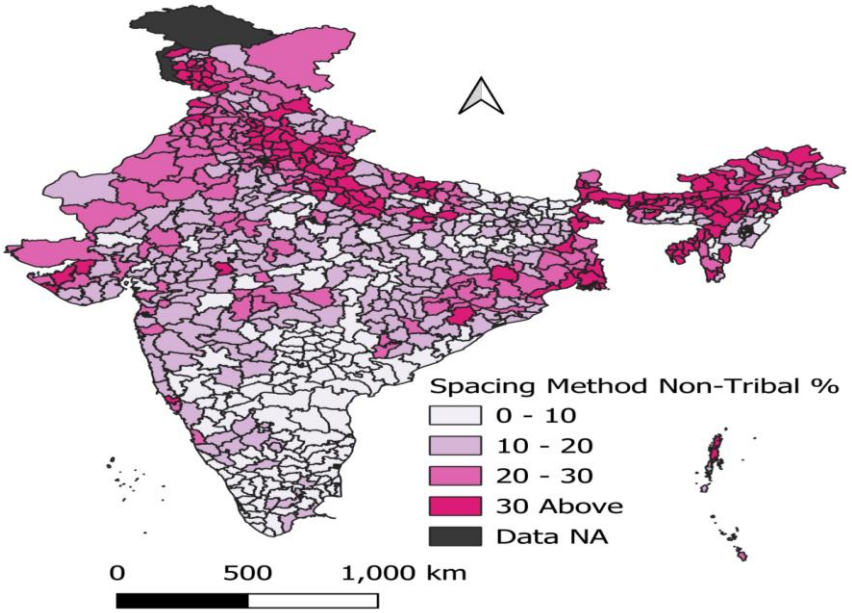

Figure 4 shows the district-wise distribution in the prevalence of modern spacing methods among non-tribal women. The figure shows that the number of districts where the usage of modern methods is more than 20% is less than half of the total number (296) of districts, with over 115 districts recording over 30% usage of modern spacing contraceptives. Contrarily, the prevalence of modern spacing contraceptives is less than 10% among 182 districts.

Figure 5 shows the district-wise concentration of the usage of modern contraceptive methods among Non-Tribal women in India.

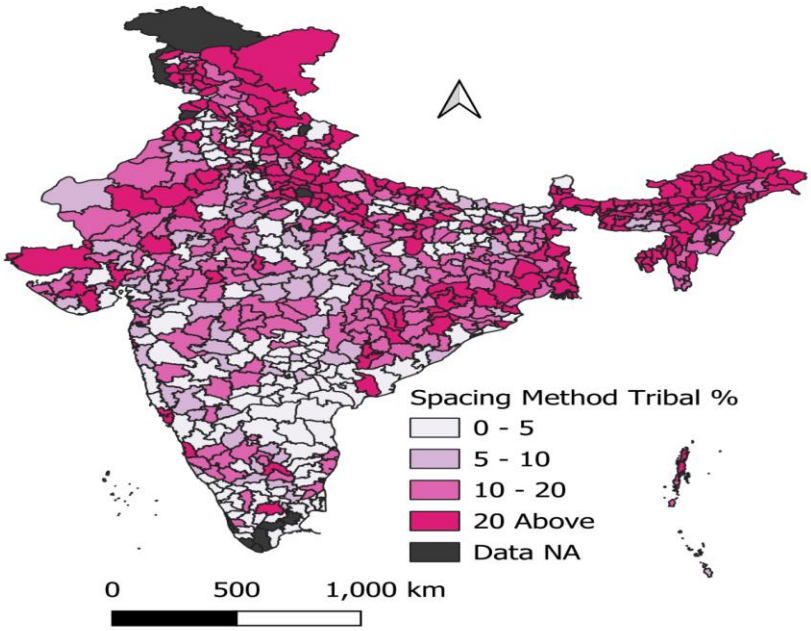

Figure 5 shows the district-wise concentration of the usages of modern spacing methods among tribal women. There are about 223 districts where the usage of modern spacing contraceptives among tribal women is more than 20%, with 149 districts reporting the usage of more than 30% among tribal women. The share of usage is less than 5% in 117 districts.

Table 1 shows the present use of modern spacing contraceptives among tribal and non-tribal women by their background characteristics. However, according to the age of the respondents, between the age groups of 15-49, the maximum use of the modern spacing method was in the age group of 15-29 years. As far as relation to husband is concerned, the proportion of women married to other blood relatives is higher among tribals, and those married to second cousins is higher among non-tribals. Monogamous marriages constitute the higher share, 14.1% and 18.5% among tribals and non-tribals, respectively, compared to polygamy. The share of unemployed women is higher among tribal and non-tribal categories compared to employed women, which constitute 17.4% and 21.4%, respectively. Among religious groups, Muslims constitute a higher share, 20% and 25.2%, respectively, among tribal and non-tribal women. The share of women with 1-2 children is the highest across both the categories, 21% and 25.4% for tribal and non-tribal women, respectively. Among currently married women using modern spacing contraceptives, the share of husbands with higher education is highest compared to all the other categories, 21.6% for tribal and 27.4% for non-tribal women, respectively. The share of women exposed to mass media also seems to be higher, 16.4% and 21.1% for tribal and non-tribal women compared to those with no exposure to mass media. Across the wealth index categories, the share of women falling within the richest quintile is highest both for tribal (19.1%) and non-tribal (24.1%). The usage of modern spacing contraceptives seems to be higher among women in urban areas for both tribal (16.7%) and non-tribal (21.9%) women compared to those in rural areas. Across regions, women from the North Eastern region constituted the highest share of using modern contraceptives, both among tribals (27.7%) and non-tribals (35.6%).

Table 1. Percentage tribal and non-tribal currently married women using modern spacing methods by background characteristics, India, 2019-21

Background Characteristics	**Tribal**			**Non-tribal**		
	Weight %	**Number**	**Chi**	**Weight %**	**Number**	**Chi**
Age of Respondent			0.001			0.001
15-29	20.1	32,784		24.3	1,49,279	
30-39	13.5	33,467		20.2	1,51,026	
40-49	5.2	25,725		8.9	1,20,127	
Relation to Husband			0.001			0.001
Uncle-niece	7.6	174		14.5	1177	
First cousins	9.6	4544		14.1	29657	
Second Cousins	14.3	351		20.3	2426	
Other blood relative	16.4	1552		18.3	7572	
non-con	14.3	85355		18.8	379600	
Type of marriage			0.001			
Monogamy	14.1	89,202		18.5	414586	
Polygamy	9.5	2,642		12.6	5611	0.001
Education			0.001			
No education	9.3	32,426		11.3	1,14,497	
Primary	12.3	14,501		15.6	57,406	
Secondary	18.5	39,881		20.2	1,96,693	
Higher	23.7	5,168		28.6	51,836	
Occupation			0.001			0.001
Employed	11.1	6,754		14.3	19,342	

Unemployed	17.4	7,253		21.4	43,467	
Religion			0.001			
Hindu	13.2	53,849		17.3	3,39,224	
Muslim	20.0	2,829		25.2	59,000	
Other	19.3	35,298		18.1	22,208	0.001
Number of Children			0.001			
No Child	8.7	50,335		13.6	2,42,829	
1-2 child	21.0	38,447		25.4	1,61,152	
3 or more	15.2	3,194	0.001	22.6	16451	
Husband Education						0.001
No education	10.5	3,279		12.4	9,749	
Primary	12.6	2,356		16.8	8,541	
Secondary	16.0	7,085		19.3	34,472	
Higher	21.6	1,258		27.4	9,943	
Media Exposed			0.001			0.001
Not exposed	11.5	47,804		13.4	1,47,491	
Exposed to media	16.4	44,172		21.1	2,72,941	
Wealth Index			0.001			0.001
Poorest	13.4	37,442		16.3	70,482	
Poorer	13.8	25,449		17.0	87,399	
Middle	13.2	15,853		15.7	90,432	
Richer	15.5	9,379		17.6	88,881	
Richest	19.1	3,853		24.9	83,238	
Place			0.001			0.001
Urban	16.7	11,123		21.9	1,10,923	
Rural	13.6	80,853		16.7	3,09,509	
Regions			0.001			0.001
North	17.3	8,373		25.7	93,721	
Central	12.0	16,729		23.4	1,00,399	
East	17.4	13,384		19.4	74,347	
Northeast	27.7	37,515		35.6	33,081	
West	9.0	9,703		16.5	42,889	
South	5.9	6,272		6.1	75,995	

Table 2 shows the logistic regression estimates of using modern spacing contraceptives among tribal and non-tribal women based on their background characteristics. According to logistics regression analysis findings, the modern spacing method correlated with the demographic and socio-economic backgrounds of ST and non-ST women. The adjusted odds ratios (ORs) for the outcome variable of 95% (CI). Respondents in the age group 40-49 are less likely to use the modern spacing method compared to age 15-29 years among both ST and non-ST women. According to the type of marriage, marriage within second cousins were considerably more likely to use the modern spacing method (OR:1.7; 95% CI:0.45-6.45) than those who were married with uncle-niece among tribal women. Women with higher levels of education had a higher likelihood of using modern spacing methods than women with no education (tribal women OR: 1.47; 95% CI:1.17-1.85; non-tribal women OR:2.03; 95% CI:1.86-2.23). Following this, across both categories, women with exposure to mass media (tribal women OR: 1.18; 95% CI 1.08-1.30; OR: 1.40; 95% CI 1.33-1.47) were more likely to use modern spacing methods compared to those with no exposure. The results found that there is a statistically significant connection between religion and the modern spacing method, even though the probability of using the modern spacing method is higher among Muslim women both across tribal and non-tribal categories (tribal women OR:1.3; 95% CI:0.98-1.72; non-tribal women OR:1.62; 95% CI:1.53-1.71). According to the number of children, women having 1-2 children are

more likely to use the modern spacing method compared to women with no children, both in the case of tribal and non-tribal women. Also, the study revealed that women from the richest (ST women OR:1.3; 95% CI:1.00-1.69; non-ST women OR:1.25; 95% CI:1.25-1.50) wealth quintiles were more likely to use modern spacing method than the poorest wealth categories. Both tribal and non-tribal women residing in rural areas were less likely to use modern spacing methods than their counterparts in urban areas. Across regions, both tribal and non-tribal women from the North East (tribal woman OR: 1.63; 95% CI 1.36-1.96; OR: 1.69; 95% CI 1.56-1.83) were more likely to use modern spacing methods compared to those residing in other regions.

Table 2. Logistic regression estimates for modern spacing method among tribal and non-tribal women by background characteristics, India, 2019-21

	Tribal			**Non-tribal**		
Background Characteristics	**Odds Ratio**	**[95% Conf. Interval]**		**Odds Ratio**	**[95% Conf. Interval]**	
		Lower	**Upper**		**Lower**	**Upper**
Age of Respondent						
15-29 ®						
30-39	1.02	0.92	1.13	1.07**	1.02	1.13
40-49	0.45***	0.39	0.52	0.48***	0.45	0.52
Relation to Husband						
Uncle-niece ®						
First cousins	1.25	0.40	3.89	1.08	0.68	1.72
Second Cousins	1.71	0.45	6.45	1.00	0.59	1.69
Other blood relative	1.13	0.35	3.64	0.97	0.60	1.58
non-con	1.22	0.40	3.73	0.98	0.62	1.56
Type of marriage						
Monogamy ®						
Polygamy	0.77*	0.58	1.02	0.82*	0.66	1.02
Education						
No education ®						
Primary	1.12	0.96	1.30	1.15***	1.06	1.24
Secondary	1.28***	1.12	1.46	1.49***	1.39	1.59
Higher	1.47***	1.17	1.85	2.03***	1.86	2.23
Occupation						
Employed ®						
Unemployed	1.04	0.95	1.14	1.11***	1.05	1.16
Religion						
Hindu ®						
Muslim	1.30*	0.98	1.72	1.62***	1.53	1.71
Other	0.83**	0.74	0.94	1.18***	1.08	1.29
Number of Children (de Jure)						
No Child ®						
1-2 child	1.45***	1.31	1.60	1.67***	1.59	1.75
3 or more	0.91	0.70	1.18	1.39***	1.25	1.55
Husband Education						
No education ®						
Primary	1.02	0.87	1.20	1.12*	1.02	1.22
Secondary	1.06	0.92	1.22	1.10*	1.02	1.19
Higher	1.17	0.95	1.44	1.19***	1.08	1.31
Media Exposed						
Not exposed ®						
Exposed to media	1.18***	1.08	1.30	1.40***	1.33	1.47
Wealth Index						
Poorest ®						
Poorer	1.09	0.97	1.22	1.01	0.94	1.09

Middle	1.09	0.94	1.25	0.91*	0.84	0.98
Richer	1.00	0.83	1.20	1.05	0.97	1.14
Richest	1.30*	1.00	1.69	1.37***	1.25	1.50
Place						
Urban ®						
Rural	0.96	0.83	1.11	0.80***	0.76	0.84
Regions						
North ®						
Central	0.60***	0.50	0.73	0.91**	0.86	0.97
East	0.88	0.73	1.07	0.72***	0.67	0.77
Northeast	1.63***	1.36	1.96	1.69***	1.56	1.83
West	0.37***	0.29	0.46	0.61***	0.57	0.66
South	0.27***	0.20	0.36	0.19***	0.18	0.21

Notes: ® Reference, CI: Confidence Interval; Significance level: * <0.01, ** <0.005, * <0.001**

DISCUSSION

The acceptance of a contraceptive method is influenced by myriad factors, which include but are not limited to the social and cultural practices prevalent in a community, the attitudes towards family planning, level of awareness and knowledge, access and availability of family planning services and prevalence of traditional methods (Singh & Srinivasan, 2000). Previous studies of choice of method use across social groups have documented that the prevalence of traditional methods of contraception was the highest among tribal communities. This may be mainly owing to the limited accessibility to health services among tribal communities (Raj, Tiwari & Singh, 2018). District-level analysis of modern contraceptive usage between women of tribal and non-tribal communities shows that there is not much variation in pattern. The variations in usage closely follow differences across district-level patterns rather than across the communities. Take, for instance, the cases of districts with the highest prevalence of modern methods among women.

Similar trends in modern method use among women of tribal and non-tribal communities prompt a deeper analysis of the other factors affecting the prevalence of modern methods. Across age groups, both tribal and non-tribal, women prefer other methods of contraception than modern methods. The usage of modern contraceptive methods seems to be the highest among the middle age group of 30-39 years across both categories compared to the youngest or the oldest age groups of 15-29 years and 40-49 years, respectively. This could be attributed to the lack of accessibility, greater degree of male control and greater reliance on traditional methods by the youngest age group compared to the women falling in the middle or older age group (Campbell *et al.,* 2006; Gage, 1998; Eaton *et al.,* 2003).

Education has emerged as a crucial factor affecting the usage of contraceptives. As shown in the analysis, women with secondary and higher levels of education were seen to have a higher prevalence rate of modern methods compared to women with no education. Women with higher levels of education were found to have better awareness regarding contraceptive use as compared to women with low or no education (Singh & Joshi 2014; Raju 1987). Women who have completed more than ten years of schooling were seen to have the highest contraceptive prevalence rate, both modern and traditional (Jain & Nag, 1986; Jejeebhoy, 1995; Raj, Tiwari & Singh, 2018). Similarly, both for tribal and non-tribal women, it can be seen that women who are working have a higher prevalence rate of modern methods compared to non-working women. This may be attributed to greater awareness, accessibility, affordability and agency in choosing contraceptive methods compared to non-working women (Takkar *et al.,* 2005; Kumar *et al.,* 2011). The husband's education is another significant factor that contributes to the choice of modern methods. While for non-tribal women, the preference for modern methods increases with the

higher educational attainment of their husbands, for tribal women it does not seem to have much of an effect on their choice of modern methods. The overall lower levels of literacy among tribal communities compared to non-tribal communities are assumed to be the reason behind the same (Rana *et al.*, 2017). The preference for modern methods is seen to increase with the rise in wealth index among tribal women. This is similar to findings in other studies wherein the affordability of modern methods is seen to increase for women as they move up the wealth quintiles (Bandhi *et al.*, 2014; Zavier & Padmadas, 2012). Among religious groups, the usage of modern methods is the highest among Hindus compared to other religions. This is mainly attributed to greater social-economic status, wherein accessibility to contraceptives becomes much easier among Hindus compared to other religious groups (Iyer, 2002).

CONCLUSION

The greater influence of the age of the women, educational status, working status and place of residence as major determining factors shows that preference for modern methods hinges more upon awareness and accessibility. Easier access, better affordability and more awareness are crucial factors which determine a woman's choice of contraceptive methods. There is an immediate need for targeted family planning interventions wherein modern methods are made more easily accessible and affordable for women across social groups. Efficient implementation of such targeted interventions by the government of India may help reduce the inequalities in contraceptive prevalence rate, improve maternal mortality, and achieve India's developmental goals.

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REFERENCE

1. Bandhi, G., Bhawnani, D., Verma, N., & Soni, G. P. (2014). Assessment of contraceptive knowledge and practices among reproductive age group of women in urban slums of Raipur City, Chhattisgarh, India. *National Journal of Community Medicine*, *5*(04), 349-354.
2. Campbell, M., Sahin-Hodoglugil, N. N., & Potts, M. (2006). Barriers to fertility regulation: a review of the literature. *Studies in family planning*, *37*(2), 87-98.
3. Chatterjee, N., & Riley, N. E. (2001). Planning an Indian modernity: The gendered politics of fertility control. *Signs: Journal of women in culture and society*, *26*(3), 811-845.
4. Chaurasia, A. R. (2014). Contraceptive use in India: a data mining approach. *International Journal of Population Research*, *2014*(1), 821436.
5. Cleland, J., Bernstein, S., Ezeh, A., Faundes, A., Glasier, A., & Innis, J. (2006). Family planning: the unfinished agenda. *The lancet*, *368*(9549), 1810-1827.
6. Darroch, J. E. (2013). Trends in contraceptive use. *Contraception*, *87*(3), 259-263.
7. Eaton, L., Flisher, A. J., & Aarø, L. E. (2003). Unsafe sexual behaviour in South African youth. *Social science & medicine*, *56*(1), 149-165.
8. Ewerling, F., McDougal, L., Raj, A., Ferreira, L. Z., Blumenberg, C., Parmar, D., & Barros, A. J. (2021). Modern contraceptive use among women in need of family planning in India: an analysis of the inequalities related to the mix of methods used. *Reproductive health*, *18*(1), 173.
9. Ewerling, F., Victora, C. G., Raj, A., Coll, C. V., Hellwig, F., & Barros, A. J. (2018). Demand for family planning satisfied with modern methods among sexually active women in low-and middle-income countries: who is lagging behind?. *Reproductive health*, *15*, 1-10.
10. Gage, A. J. (1998). Sexual activity and contraceptive use: the components of the

decisionmaking process. *Studies in family planning*, 154-166.
11. Ghule, M., Raj, A., Palaye, P., Dasgupta, A., Nair, S., Saggurti, N., ... & Balaiah, D. (2015). Barriers to use contraceptive methods among rural young married couples in Maharashtra, India: qualitative findings. *Asian journal of research in social sciences and humanities*, *5*(6), 18.
12. International Institute for Population Sciences (IIPS). National Family Health Survey (NFHS-4), 2015–16. IIPS. Mumbai, India; 2017.
13. International Institute for Population Sciences. (2016). National Family and Health Survey, 2015–15 (State Fact Sheet). Ministry of Health and Family Welfare, Government of India.
14. Iyer, S. (2002). Religion and the decision to use contraception in India. *Journal for the Scientific Study of Religion*, *41*(4), 711-722.
15. Jain, A. K., & Nag, M. (1986). Importance of female primary education for fertility reduction in India. *Economic and Political Weekly*, 1602-1608.
16. Jejeebhoy, S. J. (1995). *Women's education, autonomy, and reproductive behaviour: Experience from developing countries*. Oxford University Press.
17. Joint United Nations Programme on HIV/AIDS. (2008). *2008 report on the global AIDS epidemic*. World Health Organization.
18. Maharatna, A. (2000). Tribal fertility in India: Socio-cultural influences on demographic behaviour. *Economic and Political Weekly*, 3037-3047.
19. Maru, R. M. (1986). Incentives and disincentives in the Indian family welfare program. *Studies in family planning*, *17*(3), 136-145.
20. Mauldin, W. P., & Segal, S. J. (1988). Prevalence of contraceptive use: trends and issues. *Studies in Family Planning*, *19*(6), 335-353.
21. McNicoll, G. (2006). United nations department of economic and social affairs, population division: Population, resources, environment and development database, version 4.0. *Population and Development Review*, *32*(4), 790-791.
22. Nayak, S. R., Mohanty, S. K., Mahapatra, B., & Sahoo, U. (2021). Spatial heterogeneity in discontinuation of modern spacing method in districts of India. *Reproductive Health*, *18*(1), 137.
23. Raj, S., Tiwari, V. K., & Singh, J. V. (2018). Regional Variation in Contraceptive use in Rajasthan: Demographic and Socio-Economic Challenges. *Health and Population: Perspectives and Issues*, *41*(1), 37-56.
24. Raju, S. S. (1987). *Regional development and family planning*. Daya Books.
25. Rana, S. U. M. A. N., & Devi, W. P. (2017). A review on educational status of scheduled tribes of Rajasthan. *Journal of Indian Education*, *43*(3), 49-68.
26. Singh, L. P., & Srinivasan, K. (2000). Family planning and the scheduled tribes of Rajasthan: Taking stock and moving forward. *Journal of Health Management*, *2*(1), 55-80.
27. Takkar, N., Goel, P., Saha, P. K., & Dua, D. (2005). Contraceptive practices and awareness of emergency contraception in educated working women. *Indian Journal of medical sciences*, *59*(4), 143-149.
28. Weinberger, M. B. (1994). Recent trends in contraceptive use. *Population bulletin of the United Nations*, (36), 55-80.
29. World Health Organization, "Family Planning and Contraceptive Methods", 2020. Accessed on June 15th, 2023 https://www.who.int/news-room/fact-sheets/detail/family-planning-contraception
30. Zavier, A. F., & Padmadas, S. S. (2012). Postabortion contraceptive use and method continuation in India. *International Journal of Gynecology & Obstetrics*, *118*(1), 65-70.

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