Contraceptive Use and Unmet Need for Family Planning among Tribal Women in India and Selected Hilly States

Abstract:

The paper provides a comprehensive picture of knowledge and contraceptive use among Scheduled Tribes of India and selected central hilly states, where tribal population contributes more than 30% of the total population of the country. An attempt is also made to know how far scheduled tribes differ from non-tribes in these states namely Jharkhand, Madhya Pradesh and Chhattisgarh using information collected in the third round of District Level Household Survey (DLHS-RCH III: 2007-08). Bivariate analysis is used to understand level knowledge, use and unmet need for contraception among different tribal and non-tribal groups. Binary Logistics regression is used to understand the factors associated with contraception use among tribal women. Knowledge of temporary contraceptive method is considerably lower among tribal women as compared to their non-tribal counterparts. The result shows that contraceptive use among tribal women is lower than the non-tribal women in these states. The unmet need for family planning among them is quite high especially in the state of Jharkhand. Multivariate analysis substantiates the role of women and husband's education, age of women and number of boys surviving in use of any modern method of contraception. Strengthening free supply of modern contraceptives and educating women as well as their husband may solve the problem of high unmet need for family planning among these tribal women.

Key words: *Contraceptive Use, Unmet Need, Scheduled Tribes, Central India.*

Introduction

Ever since the family planning programme was introduced, India's demographic and health profile has changed radically (Pachauri 2004). In the 1965-2009 period, contraceptive usage has more than tripled (from 13% of married women in 1970 to 56% in 2006) and the fertility rate has more than halved (from 5.7 in 1966 to 2.7 in 2006), but the national fertility rate is still high enough to cause long-term population growth. The United Nation estimated world population grew at an annual rate of 1.23 percent during the year 2001-2010 whereas India's population grew at 1.64 percent per annum during 2001-2011 (Census of India 2011). Moreover, there exist large-scale variations and diversities in the demographic situation and socio- economic and cultural milieu between and within the states and regions of the country. The fertility remains very high in most of the north and central states. The contraceptive use among these states is relatively lower than the southern and western states (IIPS & ORG Macro 2006). There is also high differential in contraceptive use among different socioeconomic groups in the country.

Among the social groups in India, the tribes are the most socio-economically deprived groups in India with low literacy and poor economic and living condition (Ranjan 2004). The tribal population known as 'Scheduled Tribes' by constitution of India are one of the lowest and traditionally poorest castes of the Hindu caste system. The scheduled tribes refer to various aboriginal ethnic minorities who are basically concentrated in hilly lands-Himalayas, Eastern Ghats, Western Ghats, Deccan Plateau and other hilly regions of India. India covers almost half of the total tribal population of the world which constitutes 8.2 percent of the total population of the country (Census of India 2001). According to the National Family Health Survey (2005-06), schedule tribes in India have very high total fertility rate (3.12) than other social groups (IIPS & ORG Macro 2006). In fact there is a marginal increase in the total fertility rate which was 3.09 in the earlier round of the survey (1998-99). This increase has gone unnoticed. Moreover, the tribes have a very low contraceptive use and high unmet need[1] for family planning than the other groups.

[1] Unmet need for contraception is the percentage of fertile, married women of reproductive age who do not want to become pregnant and are not using contraception

Although there have been a burgeoning literature on various aspects of population, fertility, and family planning. Unfortunately, there have been very few studies carried out among tribal. A prominent study of access to family-planning services among tribal revealed the misconceptions and the problems of access associated with the usage of various methods (Joshi et al. 2003). Another study carried out in three *talukas* of south Gujarat showed a dispersed pattern of attitude and acceptance in these regions (Dave 1996). A micro-level study conducted on tribes in south India found low contraceptive use and high unmet need for family planning among Adiya and Kattunayakan[2] women in Kerala (Sajitha 2007). The tribes have a very low rate of education which makes them vulnerable to low contraceptive use and high unmet need than other social groups. There is also ample literature at national and international level which substantiates the role of education in enhancing contraceptive rate (Martin 1995; Laya 2012; Chatterjee 1991; Sathar and Kazi 1990). The NFHS survey (2005-06) reveals 52 per cent of illiterate women do not use any contraceptive method, while about a third of illiterate fecund women not wanting a child do not use any contraceptive method.

Therefore, the present paper tries to understand the contraceptive behavior among tribes in India and some of the selected high fertility and low literate tribal states in mid-Indian tribal belt[3,4]. The mid-Indian belt constitutes around seventy percent of the total tribal population, out of which three states from central India namely, Jharkhand, Madhya Pradesh, and Chhattisgarh together comprises of thirty percent of the tribal population of the country. These states have a high fertility rate and low literacy among women (table 1). They are also lagging behind in many socio-economic and demographic indicators than other states of the country. So the present study focuses differential in knowledge and use of contraceptives among tribal and non-tribal women. The study also examines several socio-economic factors affecting use of contraception among tribal.

[2] Adiya and Kattunayakan are two tribal groups found in Kerala.

[3] Indian tribes are broadly classified into three main groups on the basis of race- Negrito, Proto-Australoid and Mangoloid. The tribes belonging to Negrito group are negligible and are found in Andaman and Nicobar Islands and in the isolated pockets of Nilgiri district in South India. Mongoloid tribes are found in the north-eastern states. They comprise of only one-tenth of the total tribal population of the country and are socio-economically better-off than the proto-Australoid groups.

[4] The Proto-Austroloid groups are mostly distributed in the mid-Indian belt.

Table 1: Demographic profile of Scheduled Tribes (ST) population in selected states.

Population/Women	Jharkhand	Chhattisgarh	Madhya Pradesh
Scheduled Tribes (STs)	7087068 (26.3)	6616596 (31.8)	12233474 (20.3)
Non-Schedule Tribes (Non-STs)	19858761 (73.7)	14217207 (68.8)	48114549 (79.7)
% of India's Tribal Population	8.4	7.8	14.5
Total Fertility Rate	3.30	3.10	3.12
Sex ratio (ST)	987	1013	975
Literacy rate (Tribal Female)	27.2	39.4	28.4
Total Population	**26945829**	**20833803**	**60348023**

Data and Methods

The information collected in third round of District Level Health and Facility Survey (DLHS-RCH III: 2007-08) is used to examine the level of knowledge, use of contraception, unmet need and factors associated use of contraception among tribal and non-tribal women of India and selected states. DLHS is a nationwide large scale survey under Reproductive and Child Health (RCH) programme of Government of India which collects information about maternal and child health, family planning and other reproductive health indicators. This survey collected information from 7, 20, 320 households, 6, 43,944 ever-married women aged 15-49 years and 1, 66,620 unmarried women aged 15-24 years covering 601 districts of 34 states and union territories of India. The data set provides information about awareness and use of family planning methods- Female Sterilization, Male Sterilization, Intra Uterine Device (IUD), Pills, Emergency Contraceptive Pills (ECP), Injectables, Condoms, Female Condoms, Rhythm method and Withdrawal method specified by currently married women 15-49 years.

For the present analysis, the four social groups namely scheduled castes, scheduled tribes, other backward classes and other castes from the data sets were categorized into two groups scheduled tribes are considered as tribes and other caste groups are considered as non-tribes. The word scheduled tribes and tribes are used interchangeably in this study.

Table 2: Sample distribution of Currently Married Women aged 15-49 in India.

Women	Jharkhand	Chhattisgarh	Madhya Pradesh	India
Currently Married Women aged 15-49 (DLHS-3 RCH 2007-08)				
Scheduled Tribes (%)	8364(32.5)	6582(38.9)	10488(23.7)	**103,835**
Non-Scheduled Tribes (%)	17411(67.5)	10337(61.1)	33701(76.3)	**500,969**
Total Women	**25775**	**16919**	**44189**	**604,804**

Dependent Variables

Information collected on contraceptive knowledge and current use of contraception has been used as dependent variables in the study. The major dependent variables used are:

1. *Any method of contraception:* Those women using not any of these methods are considered as non-user of method whereas any women using any of these methods are separated as current user of any contraceptive method.
2. *Any modern method of contraception:* A dichotomous variable (0=non-user/1=user) is created using different modern method of contraception- male sterilization, female sterilization, pill, IUD, condom, injectibles. Those women using not any of these modern methods are considered as non-user of modern method whereas any women using any of these methods are separated as current user of modern method.
3. *Unmet need for Family Planning*: Unmet need for family planning includes the proportion of currently married women who are neither in menopause nor had hysterectomy nor are currently pregnant and who want more children after two years or later and are currently not using any permanent or temporary method of family planning. The women who are not sure about whether and when to have next child are also included in unmet need for family planning. Unmet need is further categories into ‘unmet need for spacing’ and ‘unmet need for limiting’ on the basis of temporary and permanent method respectively.

Independent variables

Different social, economic and demographic characteristics of women are used as explanatory in the study. Socio-demographic variables taken into account are age group (15-19/20-34/35+), religion (Hindu/Christian/Others), place of residence (Rural/Urban), women and husband's education in years (Non-literate/ less than 5/5-9/ more than 10 years), Age at marriage in years (>18/<18 years), Marital duration in years (Less than 5/5-9/10-15/More than 15 years), and number of boys and girls surviving. Economic indicator 'wealth index' constructed from household assets was used as an independent variable.

Bivariate technique- cross tabulation is used to understand differential level knowledge and use of contraception among currently married tribal and non-tribal women age 15-49 years by different socio-economic characteristics in India and selected states. Differentials in unmet need for spacing and limiting by different socio-economic and demographic factors are also examined through bivariate analysis. Binary Logistics regression model is used to understand the net effect of different socio-economic and demographic factors on current use modern contraception among tribal women.

$$Log\ (P/1\text{-}P) = A0 + A1X1 + A2X2 + A3X3 \ldots\ldots\ldots\ldots\ldots\ldots AnXn$$

Where Xi's are covariates and Ai's are coefficients. Dependent variables in the model used are current use any modern method of contraception. P and 1-P provides the odds ratios with respect to reference category.

Results

Knowledge of Family Planning Methods

The knowledge of at least one contraceptive method is almost universal throughout the country. But among all methods of family planning the awareness is little lower among the tribes than the non-tribes. The analysis reveals that knowledge of at least one method of contraception among both tribal

and non-tribal women. However, the *knowledge of temporary contraceptive method is considerably low among tribal women* as compared to their non-tribal counterparts in India and all the states (Table 3). Only 60 percent tribal women were aware of condom as comparison of 78 percent of non-tribal women. Similar pattern is observed in all the selected states about awareness of different temporary methods-IUD, Pills, ECP, Injectibles and both male and female condoms. Among official sponsored temporary methods, contraceptive oral pills (76%) were most popular modern temporary method among tribal women followed by condoms (60%) and IUD (56%). However, the knowledge of Pills, IUD, condoms are low among tribes in selected states than the national figures. *In Jharkhand, the level of knowledge about contraceptives is very poor among tribes*. Only 31 percent women are aware of male condoms and 27 percent knows about IUD. Other traditional methods such as rhythm and withdrawal were relatively less popular among tribal women than non-tribal women. Over all, the knowledge of modern temporary contraceptive methods is considerably lower as compared to that of permanent methods.

Table 3: Knowledge of different contraceptive methods (in percent) of among currently married tribal and non-tribal women (15-49 years) in India and selected states.

	Jharkhand		Chhattisgarh		Madhya Pradesh		India	
Methods	**Tribe**	**Non-tribe**	**Tribe**	**Non-tribe**	**Tribe**	**Non-tribe**	**Tribe**	**Non-tribe**
Any Method	88.6	95.5	99.3	99.7	97.3	99.3	97.0	99.4
Any Modern Method	86.5	95.2	99.2	99.6	97.2	99.2	96.5	99.3
Permanent Method								
Female Sterilization	84.7	94.0	98.9	99.3	96.8	98.9	94.6	98.6
Male Sterilization	55.4	70.5	88.6	91.9	78.3	87.9	68.8	85.6
Modern Temporary Method								
IUD	26.9	41.4	35.6	60.6	33.6	63.6	56.3	77.4
Pills	55.8	69.2	75.0	86.6	62.0	84.6	76.1	88.0
ECP	8.9	16.8	7.3	19.9	15.0	33.1	20.8	33.3
Injectables	14.0	27.7	16.2	33.8	30.2	56.0	31.4	56.9
Condoms	30.7	45.7	56.6	74.2	41.5	71.5	60.2	77.8
Female Condoms	5.0	10.1	3.5	16.4	3.7	10.3	8.3	13.1
Traditional Methods								
Rhythm/Abstinence	21.4	24.9	23.9	36.7	27.9	43.1	40.1	55.8
Withdrawal	11.9	13.7	20.6	28.9	19.1	32.6	33.3	41.8
Other	12.0	3.7	11.8	6.3	1.8	1.1	3.3	1.8

Note: ECP= Emergency Contraceptive Pills

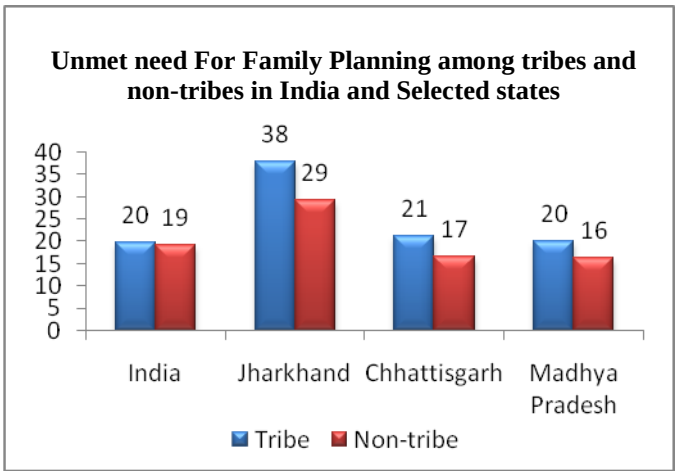
Current Use Family Planning Methods

Although all women knew at least one contraceptive method but only a half of them are using any contraceptives in India. *Current contraceptive prevalence among currently married tribal women was relatively lower - only 45 and 39 percent than 53 and 47 percent of the non-tribal women using any method and any modern method of contraception respectively*. But the difference in the selected states is wider (Table 4). *In Jharkhand, only 17 percent of the tribal women use any modern method of contraception than 39 percent of non-tribe*. Majority of these tribal like there non-tribal counterpart are using female sterilization (28 percent), i.e. around three-fourth of the total contraception use among tribes in India. Only two percent tribal couples uses condom against 5 percent non-tribal couples. The condom use is low among tribes and non-tribes in the selected states. In all the states the condom use is less among tribal. A wide gap between knowledge and practice of family planning is noticed both among scheduled tribes and non-tribes women. But the gap was relatively wider for tribal women, as about 97 percent tribal women were aware of female sterilization but less than one-third of them were using female sterilization.

Table 4: Current use of different contraceptive methods (in percent) of among currently married tribal and non-tribal women (15-49 years) in India and selected states.

Contraceptive Methods	Jharkhand		Chhattisgarh		Madhya Pradesh		India	
	Tribe	Non-tribe	Tribe	Non-tribe	Tribe	Non-tribe	Tribe	Non-tribe
Any Method	22.8	41.8	43.5	56.2	50.2	60.2	44.6	53.3
Any Modern Method	17.2	38.8	40.1	54.2	48.0	57.0	39.5	46.8
Female Sterilization	11.6	32.5	33.8	48.5	44.3	48.0	27.8	34.2
Male Sterilization	0.3	0.5	3.8	1.3	1.5	0.9	1.9	0.8
IUD	0.6	0.5	0.2	0.8	0.1	0.6	1.8	1.5
Pills	3.0	2.8	1.6	1.4	0.8	1.9	4.3	3.2
ECPs	0.3	0.2	0.1	0.1	0.1	0.2	0.2	0.1
Condoms	1.3	2.2	0.5	2.0	1.1	5.2	1.8	5.1
Rhythm	2.6	1.9	1.1	0.9	1.4	2.3	3.4	4.6
Withdrawal	0.5	0.5	0.4	0.4	0.6	0.8	1.5	2.0

Unmet Need for Family Planning



Unmet need for family planning is important for achieving demographic goals of below replacement fertility. Results prove that for unmet need for family planning, there is little difference between tribes and non-tribes in India. The tribal women have 11 and 17 percent of unmet need of spacing and limiting as compared to 8 and 13 percent of unmet need of spacing and limiting respectively among non-tribal women. Among the tribal women, total unmet need is higher among less educated, rural, women from poorest wealth quintile households than higher educated, urban, women from richer wealth quintile households. The unmet need spacing is higher among younger (15-19), recently married (marital duration less than 5 years), and non-literate tribal women whereas limiting method is higher among older, women married for more than 10 years and higher educated tribal counterpart. Overall, unmet need for limiting methods is much higher than spacing method of family planning (Table 5).

Table 5: Unmet need for Spacing and Limiting methods among currently married tribal and non-tribal women (15-49 years) in India and selected states.

	India		Jharkhand		Chhattisgarh		Madhya Pradesh	
Unmet Need	**Tribe**	**Non-tribe**	**Tribe**	**Non-tribe**	**Tribe**	**Non-tribe**	**Tribe**	**Non-tribe**
Spacing	7.5	6.6	13.2	11.7	8.9	7.1	9.3	6.8
Limiting	12.3	12.5	24.8	17.5	12.4	9.6	10.8	9.5

Socio-economic Differential in Contraceptive Use and Unmet Need for Family Planning

By most socio-economic groups, more non-tribal women use any modern method than the tribal women. The tribal and non-tribal differentials in use of any modern contraceptives by different socio-economic categories have been shown in table 6. Among the tribal women there is high differential among different socio-economic groups. For instance, only 36 percent of Christian tribal women use as compared 45 percent Hindu tribal women in India. Moreover, just 34 percent women belonging to poorest categories of wealth quintile use any modern contraceptive than 54 percent women belonging to richest categories of wealth quintile. The differences are wider in the state of Jharkhand by almost all socio-economic grouping. *In Jharkhand, only 15 percent tribal women without any education use modern contraceptives 35 percent of women with ten or more years of education.* By economic strata, merely thirteen percent of women from poorest stratum use modern contraceptives as compared to fifty-two percent of women belonging to richest stratum.

Unmet need for spacing and limiting among tribal and non-tribal by socio-economic characteristics is shown in table 7 and 8. Unmet need for family planning is very high among tribal women than the non-tribes by almost all socio-economic indicators. Wide differences in unmet need for both spacing and limiting is observed between different socio-economic categories like age of women, marital duration, age at marriage and number of boys surviving.. Among the tribal women, total unmet need is higher among less educated, rural, and Hindu than higher educated, urban, Christian women. The unmet need spacing is higher among younger (15-19), recently married (marital duration less than 5 years), and non-literate tribal women whereas limiting method is higher among older, women married for more than 10 years and higher educated tribal counterpart. Overall, unmet need for limiting methods is much higher than spacing method of family planning in the selected states.

Multivariate Analysis

Contraceptive use of modern method among the India and selected states are affected by many factors like age of women, religion, education of both the couples, marital duration, number of boys and girl surviving, and economic status. Table 8 describes the odds for use of any modern contraceptive

methods for tribal women for India and study states. Results reveal that higher aged, higher educated, women with number of child, women with higher duration of marriage are more likely to use any modern method of contraception than the younger women (15-24), non-literate, women with no surviving children and women recently married (less than 5 year duration). Moreover, *the women with two or more boy children surviving have 5 times more likely to use any modern method of contraception than women with no boy children alive.* However, in case two or more girl children surviving the chances as low as 1.4 times more than with no girl children alive. This can be attributed to son preference among tribal society in India.

Use of any modern contraceptive methods are found more likely among older aged women than younger aged women for all the states except Jharkhand but it is not showing a significant relationship. Higher educated women were more likely to be use of any modern contraceptive methods for the states of Jharkhand and Chhattisgarh and significant at 90 and 95 percent level of confidence interval. Those women reporting of having more than two surviving boy children were more likely to be use of any modern contraceptive methods than that woman does not have any surviving boy child. And women reporting of having more than two surviving girl children were less likely to be use of any modern contraceptive methods and both of the cases shows a significant relationship with use of modern contraceptives. With the increasing of wealth quintile the use of any modern contraceptive is also increasing from poorest to the richest group. Increasing wealth quintile has a significant interrelationship with increasing use of modern contraceptive methods among tribal women for all the selected states.

Discussion and Conclusion

The three states cover almost 30 percent of tribal population in the country and therefore are considered as one of the biggest tribal region in the country. The region has inaccessible terrain and settlements are scared over a vast area, which posses several formidable problem to family planning and reproductive health delivery system (Dey 2003). There are only few surveys, which provide

information on the differential level of family planning practices among the tribes of the country. DLHS-RCH survey which covers all districts of the country provides a unique opportunity to know the family planning behaviour of these groups and to learn whether and to what extent their behaviour differs from other caste groups.

Awareness plays an important role in motivating females to have a favourable attitude towards family planning. The study revealed that almost all tribal women know at least one family planning methods (modern or traditional), however, the knowledge of temporary methods is relatively poor among them. The findings of the study are similar to many other micro level studies carried out among tribes of India (Pandey 2002; Saha et al. 2007). The poor literacy status and limited availability of mass media, such as radio and T.V. in tribal areas also play a role in impoverished awareness of temporary contraceptive methods (Jain 2006). The Government higher reliance on female sterilization and its endorsement promote higher knowledge and use of sterilization. ICRW study in Madhya Pradesh also illustrate that though the Government has recently shifted away from its long standing policy of promoting female sterilization as the primary form of family planning, the reality is that Government health service providers offers very little information about and access to temporary methods of contraception (ICRW 2004). The main reason being sterilization requires one time motivation which vigorously promoted by health workers and was independent of educational attainment of the acceptors, whereas the motivation for the spacing methods requires sustained efforts (Basu, Kapoor and Basu 2004).

The wide gap between knowledge and use of contraception is observed and the gap was significantly wider for tribal women than that for non-tribal women. The present study showed that almost all women of the three states knew at least one contraceptive method, but only about half of them were using any contraceptive method. The contraceptive prevalence among tribal women is relatively lower - only 45 and 39 percent than 53 and 47 percent of the non-tribal women using any method and any modern method of contraception respectively. The gap is very much wider in the state of Jharkhand than Madhya Pradesh and Chhattisgarh.

Among users of family planning, more than eighty percent tribal couples are using a non-reversible method. The female sterilization alone contributed for more than three-fourth of total contraception uses which suggest that tribal women are mainly using family planning methods to limit their family size and spacing of children is quite neglected. The higher acceptance of sterilization among tribes is due to their poor economic condition and the financial incentives associated with sterilization. Unsystematic ways of motivation for spacing methods by health workers and lack of awareness about various family planning methods among the tribal could be contributing factors for their heavy reliance on sterilization. Many micro level studies conducted among most backward primitive scheduled tribes of central India also revealed that despite of Government ban on sterilization among primitive tribes in 1979, monetary reasons are most important reasons for higher acceptance of sterilization in these groups (Pandey 2002).

Although the National Population Policy insists the government's commitment to the provision of quality service, information and counselling, and expanding contraceptive method choices in order to enable people to make voluntary and informed choices (GoI 2000). But still there is very high unmet need for family planning and it is very much higher among the tribal women than the non-tribal women. Among the states the gap is very much evident in Jharkhand both in terms of unmet need for spacing and limiting methods. Moreover, there are intra-tribal inequalities by socio-economic indicators. Rural and women belonging to poorest and poorer have a very high unmet need as compared to the urban and richest and richest women. Younger women have very high unmet need for spacing method whereas older women have very high unmet need for limiting method. The question again can be emphasised on access to different contraceptive method. Most rural and poor tribal women are confined underdeveloped region where health facilities are still in underprivileged states.

From the multivariate result, it can summarized that education of both tribal women and their husband, number of boys and girl surviving and economic characteristics of the household the women belonging to, is significantly and positive impact on use of both any method and modern method of contraception. The higher educated tribal couples (considering both women education and husband's

education which are independently used in the logistic regression model) are more likely to use any method of contraception than the non-literate couples which has been proved in many researches on general population. The analysis also proves that women having two or more male children have very high odds of using contraception than women having two or more girl child. So it can be concluded that tribal women in the three states have very high son preferences which is louder among tribal women from the state of Madhya Pradesh and Chhattisgarh. This needs further research as more studies as most studies shows that tribal have low son preferences. The Christian tribal women are less likely to use any method as well as any modern method of contraception than the Hindu in the state of Jharkhand. Religion shows no significant association with contraception in both the central Indian states- Madhya Pradesh and Chhattisgarh.

Therefore, it can be concluded that the unmet need for contraception remains substantially high among tribal women in all selected states. In Jharkhand, very high difference in contraceptives use among tribal and non-tribal currently married women is observed. It is important to focus on high unmet need for family planning and contraceptive among tribal women in the state. If the goal is to create a demand for adoption family planning and services, a check in the potential future unmet category is needed. The strategies should be devised so that the present and potential unmet need is minimized and eliminated.

Improvement in the contraceptive prevalence rate and addressing the unmet need for contraception requires sustained efforts by health workers to ensure quality care to the beneficiaries. The most important is improving literacy among the tribal couples that would significantly contribute to these efforts. Focus on improving information, education and communication (IEC) activities are the key to address the unmet needs for contraception along with easily accessible, convenient and good quality methods of family planning.

References

1. Basu, S., Kapoor, A., Basu, S. (2004). Knowledge, attitude and practice of family planning among tribes. *The Journal of Family Welfare.* Vol. 50 (1).PP 24-30.
2. Census of India (2001). Provisional population tables, Series 1. Registrar General and Census Commissioner, India.
3. Census of India Provisional (2011). Size, growth and Distribution of Population Available at : http://www.educationforallinindia.com/Final%20PPT%202011_chapter3-size-growth-rate-and-distribution-of-population-census-2011.pdf.
4. Chatterjee, M. (1991). Indian women: their health and economic productivity. World Bank Discussion Paper Number 109, The World Bank, Washington DC Commissioner, India.
5. Dave, H (1996) *Shodh Nibandh* – Adivasi Mahilao Ane Vikas, Ahmedabad: Gujarat Vidyapith.
6. Dey, A.S. (2003). A comprehensive study of fertility and contraceptive practice among scheduled tribes of Madhya Pradesh. In: D.K. Adak, B.N. Bhattacharya, R. Ghosh, M. Pal, P. Bharati, T.S. Vasulu (Eds.) Demography and Health Profile of the Tribals. New Delhi: Anmol Publications Pvt. Ltd.
7. Government of India (2000). National population policy 2000. New Delhi: Ministry of health and family welfare, Government of India.
8. International Center for Research on Women (2004). The impact of unmet family planning needs on women's health: Evidence from a research study in Madhya Pradesh, India. Information bulletin, December 2004. Washington: International Center for Research on Women.
9. International Institute for Population Sciences (IIPS) & ORC Macro (2007). National Family Health Survey, India 2005-06: All India. Mumbai: International Institute for Population Sciences, Mumbai.
10. International Institute for Population Sciences (IIPS), 2010. *District Level Household and Facility Survey (DLHS-3), 2007-08: India.* Mumbai: IIPS.

11. Jain, D.C. (2006). Family Planning use and its determinants among Tribes of Madhya Pradesh: A case study of Gonds of Jabalpur District. Paper presented at National Symposium on Tribal Health, 19-20 October 2006 at Regional Medical Research Centre for Tribals, Jabalpur.
12. Joshi, K, Dave B. and Konkani K (2003) 'Family Planning – Exploring the Tribals' Attitude of Surat District', Working Paper No. 1/03, Lakhtar (Surendranagar), Gujarat: CDRS.
13. Laya K.S. (2012). Prevalence and Determinants of Unmet Need for Family Planning among Women in India. *Research and Social practices in Social Science. Vol. 7(2) 59-70*
14. Martin, T. C. and Juarez, F. (1995), 'The Impact of Women's Education on Fertility in Latin American: Searching for Explanations', *International Family Planning Perspectives*, vol. 21, pp. 52-57 & 80.
15. Pachauri, S (2004). Expanding contraceptive choice in India: Issues and evidence. The Journal of Family Welfare, Vol. 50. Special Issue. 2004.
16. Pandey G.D. (2002). Fertility and family planning in primitive tribes. New Delhi: Serials Publication.
17. Ranjan, A (2004). Studies in population of Madhya Pradesh. Bhopal: Shyam Institute
18. Roy, T.K., Paswan, B. (1995). Demand for family planning among scheduled castes and scheduled tribes. In: Hari Mohan Mathur (ed). The family welfare programme in India. New Delhi: Vikas Publishing. PP 157-175.
19. Saha, K.B., Singh, N., Chatterjee, U.S., Roy, J. (2007). Male involvement in reproductive health among scheduled tribe: experience from Khairwars of central India. Rural and Remote Health 7: 605. (online), 2007.
20. Sajitha O G (2007) Unmet Need for Contraception among Tribal Women in Kerala, Southern State of India. Population Association of America annual meeting 2007, New York. Assessed http://paa2007.princeton.edu/abstractViewer.aspx?submissionId=72135
21. Sathar, Z.A., Kazi, S. (1990). Women, work and reproduction in Karachi. International Family Planning Perspectives 16 (2), 66–69 and 80.

Table 6: Current use any modern method of contraception (in percent) of among currently married women (15-49 years) in selected states by background characteristics, 2007-08.

Background Characteristics	India		Jharkhand		Chhattisgarh		Madhya Pradesh	
	Tribe	Non-tribe	Tribe	Non-tribe	Tribe	Non-tribe	Tribe	Non-tribe
Age group								
15-19	6.1	7.0	3.1	4.3	3.9	3.0	3.1	6.2
20-34	36.1	43.9	14.4	33.4	32.7	46.9	41.6	49.4
35+	55.6	63.0	25.5	56.6	58.8	72.3	67.2	75.1
Religion								
Hindu	45.2	51.1	18.1	42.8	40.2	54.4	48.0	57.2
Christian	36.5	53.7	15.9	15.0	41.0	55.4	46.6	72.5
Other	38.1	41.2	16.9	18.4	21.1	44	71.0	53.6
Residence								
Rural	40.6	46.9	16.1	35.7	39.9	53.1	47.7	56.4
Urban	51.7	54.0	36.8	52.7	45.8	57.5	53.0	58.5
Education								
Non-literate	42.3	47.1	15.2	36.0	42.5	57.6	49.9	60.7
Less than 5	41.4	54.5	16.3	37.1	42.1	58.9	49.5	61.1
5-9 years	41.1	50.8	19.6	41.4	31.7	48.0	37.4	51.3
10 or more year	43.2	50.0	35.3	47.7	40.0	52.1	41.7	53.4
Husband's Education								
Non-literate	40.9	45.5	14.1	33.2	40.1	55.5	48.2	57.1
Less than 5	43.9	52.8	15.2	32.4	44.7	58.2	53.7	63.2
5-9 years	40.8	49.2	17.1	37.0	37.9	51.0	44.9	56.8
10 or more year	44.6	51.0	27.2	48.0	40.8	55.6	49.9	55.9
Marital Duration								
Less than 5	11.0	16.0	4.5	7.3	6.7	10.5	5.6	13.5
5 to 10	29.8	40.0	11.0	23.7	21.2	37.7	27.3	38.6
10 to 15	47.9	56.5	18.7	44.0	43.8	61.5	53.9	61.9
15 & above	57.4	62.9	26.1	56.1	58.4	72.1	66.1	74.8
Age at marriage								
>18 Years	46.0	50.4	18.0	40.7	44.7	60.1	50.5	61.0
<18 Years	38.7	48.4	16.4	36.1	33.9	45.8	41.9	49.8
No. of Boy Surviving								
0	13.8	18.7	4.8	8.0	7.2	11.4	8.2	12.9
1	43.3	52.7	16.2	37.2	40.3	54.9	42.0	56.2
2+	57.4	65.3	27.2	57.4	63.1	79.0	70.2	79.9
No. of Girl Surviving								
0	27.2	36.0	10.4	26.5	24.6	35.7	28.3	40.5
1	48.5	57.4	19.8	45.0	44.3	61.0	56.5	65.4
2+	48.7	53.9	21.0	43.7	50.6	64.0	55.3	64.1
Wealth Index								
Poorest	33.6	34.2	12.9	27.7	33.5	43.8	44.2	50.0
Second	39.8	41.0	20.2	35.6	45.5	52.0	49.8	54.4
Middle	44.1	49.3	29.1	42.7	48.6	55.7	54.8	58.2
Fourth	51.2	53.1	37.3	49.6	49.8	60.3	55.3	59.0
Richest	54.6	56.5	52.6	56.6	52.3	61.5	65.4	62.7
Total	**42.0**	**49.4**	**17.2**	**38.8**	**40.1**	**54.2**	**48.0**	**57.0**

Table 7: Unmet need for Family Planning (in percent) of spacing method among currently married women (15-49 years) in selected states by background characteristics, 2007-08

Background Characteristics	India		Jharkhand		Chhattisgarh		Madhya Pradesh	
	Tribe	Non-tribe	Tribe	Non-tribe	Tribe	Non-tribe	Tribe	Non-tribe
Age group								
15-19	24.2	26.0	31.5	29.0	24.8	26.0	24.0	20.4
20-34	11.4	9.8	17.6	15.7	12.8	10.0	13.0	9.8
35+	1.0	0.4	1.8	0.8	0.4	0.4	0.6	0.3
Religion								
Hindu	8.0	7.0	12.7	11.3	8.9	7.2	9.3	6.8
Christian	8.8	4.8	13.2	10.6	8.6	3.2	9.4	3.2
Other	7.3	7.5	13.6	13.8	14.3	4.2	3.2	6.0
Residence								
Rural	8.2	7.9	13.4	12.5	9.1	7.7	9.4	7.2
Urban	6.9	5.4	9.5	8.1	6.5	5.1	7.1	5.7
Education								
Non-literate	7.0	6.6	12.3	10.6	7.2	5.0	8.0	4.9
Less than 5	8.3	6.0	18.3	13.9	8.8	4.8	11.6	6.9
5-9 years	9.7	7.5	16.1	14.2	15.0	11.5	14.9	9.3
10 or more year	9.2	7.5	12.4	11.6	10.2	6.5	16.9	8.0
Husband's Education								
Non-literate	7.2	6.9	12.2	10.4	6.7	5.2	8.2	5.5
Less than 5	7.3	5.8	12.7	13.4	7.8	5.0	7.6	5.1
5-9 years	9.0	7.5	15.5	13.3	11.7	9.0	11.4	7.4
10 or more year	8.4	6.9	12.1	10.9	10.8	6.9	10.9	7.3
Marital Duration								
Less than 5	22.6	22.1	32.8	31.9	25.9	25.2	26.2	22.4
5 to 10	13.1	10.7	20.9	20.5	18.2	11.5	17.8	12.4
10 to 15	5.3	4.4	9.6	7.7	6.5	4.3	8.6	4.7
15 & above	1.2	.9	2.0	1.7	0.8	0.8	1.4	0.8
Age at marriage								
>18 Years	7.4	6.5	12.3	10.6	7.4	5.1	7.9	5.1
<18 Years	8.7	7.5	14.0	13.4	11.1	9.9	12.5	9.8
No. of Boy Surviving								
0	13.6	14.3	19.2	21.3	13.6	13.5	17.5	16.4
1	10.9	8.2	18.8	16.3	12.3	9.2	14.5	8.0
2+	2.7	1.3	4.2	2.7	2.7	1.1	1.8	0.6
No. of Girl Surviving								
0	10.1	9.7	14.7	14.6	9.3	9.1	12.3	9.5
1	9.0	7.1	16.6	13.4	10.6	7.8	10.3	6.8
2+	5.4	4.2	8.8	7.5	7.0	4.5	6.2	4.0
Wealth Index								
Poorest	9.5	9.9	13.9	13.2	10.0	8.4	9.6	7.0
Second	8.5	9.2	12.5	12.5	7.8	7.4	9.1	7.5
Middle	7.6	7.5	11.6	11.8	8.8	8.3	9.5	7.1
Fourth	6.6	6.6	10.5	10.4	5.9	6.9	7.3	6.8
Richest	5.8	4.9	7.0	7.4	7.4	3.2	7.2	5.2
Total	8.1	7.0	13.2	11.7	8.9	7.1	9.3	6.8

Table 8: Unmet need for Family Planning (in percent) of limiting method among currently married women (15-49 years) in selected states by background characteristics, 2007-08

Background Characteristics	India		Jharkhand		Chhattisgarh		Madhya Pradesh	
	Tribe	Non-tribe	Tribe	Non-tribe	Tribe	Non-tribe	Tribe	Non-tribe
Age group								
15-19	2.5	2.5	2.4	2.4	1.5	2.1	1.9	2.0
20-34	12.4	13.1	23.1	18.2	12.0	10.4	12.1	10.6
35+	16.0	14.9	31.8	19.6	15.0	9.7	10.7	9.0
Religion								
Hindu	12.5	12.6	23.4	15.9	12.1	9.5	10.8	9.3
Christian	13.6	11.3	24.5	21.2	17.0	7.7	15.3	10.2
Other	15.6	16.4	26.1	25.9	23.8	16.7	3.4	11.5
Residence								
Rural	13.5	13.9	25.0	18.3	12.3	9.4	10.8	9.3
Urban	11.3	12.0	21.7	13.8	14.2	10.4	11.3	9.9
Education								
Non-literate	15.4	16.5	26.0	20.4	13.6	10.6	11.5	10.1
Less than 5	13.6	11.4	24.4	14.7	11.2	5.8	8.5	8.8
5-9 years	10.5	11.1	22.4	13.2	8.3	8.5	8.5	8.6
10 or more year	8.9	10.6	16.6	13.1	16.2	11.9	7.8	9.5
Husband's Education								
Non-literate	15.4	16.8	26.3	21.1	14.2	10.4	11.8	10.4
Less than 5	13.8	13.0	27.0	20.5	12.0	9.5	9.6	8.9
5-9 years	12.5	12.5	22.9	16.3	10.5	8.9	9.5	8.8
10 or more year	10.8	11.9	22.7	14.4	11.8	10.0	10.7	9.8
Marital Duration								
Less than 5	3.6	4.9	3.6	3.5	2.5	4.1	3.1	3.6
5 to 10	12.2	13.6	19.2	16.8	11.1	13.5	12.4	12.8
10 to 15	16.3	15.2	32.6	22.7	15.1	10.7	13.0	12.2
15 & above	16.3	15.5	33.3	20.9	15.3	9.8	11.8	9.3
Age at marriage								
>18 Years	14.1	14.8	26.8	18.5	12.7	9.5	11.4	10.0
<18 Years	12.6	11.8	23.0	16.0	12.1	9.8	9.4	8.5
No. of Boy Surviving								
0	4.2	5.0	4.3	4.0	3.6	4.3	1.9	2.7
1	13.8	14.5	24.1	19.3	13.5	12.4	13.2	13.5
2+	18.1	17.2	40.8	23.9	17.9	10.5	13.6	10.0
No. of Girl Surviving								
0	6.7	7.6	11.3	7.8	6.0	5.5	5.5	5.5
1	13.2	13.3	25.8	18.3	13.3	10.3	10.7	9.8
2+	19.1	18.9	36.3	25.5	17.7	12.8	14.8	13.0
Wealth Index								
Poorest	16.4	20.1	26.3	21.5	14.1	12.0	12.2	12.5
Second	13.5	16.2	23.5	18.5	11.0	9.9	9.6	9.6
Middle	12.1	12.8	20.3	15.3	8.8	8.2	9.2	8.6
Fourth	10.4	11.3	20.9	13.4	11.8	7.3	9.8	8.4
Richest	9.4	11.0	13.4	12.9	14.4	10.9	5.9	8.6
Total	**13.2**	**13.2**	**24.8**	**17.5**	**12.4**	**9.6**	**10.8**	**9.5**

Table-9: Logistic regression showing odds ratios for any modern method of contraception by different socio-economic and demographic variables of currently married tribal women in the selected states.

Background Characteristics	Any Modern Method of Contraception			
	India	Jharkhand	Chhattisgarh	Madhya Pradesh
	Exp(B)	Exp(B)	Exp(B)	Exp(B)
Age Group				
15-19®				
20-34	2.04**	1.36	1.83**	1.96***
35+	1.86**	1.26	2.02**	2.09***
Religion				
Hindu®				
Christian	0.39*	0.52***	0.81	0.70
Other	0.52	0.85**	0.42	3.31**
Residence				
Rural®				
Urban	1.17***	1.17	0.84	0.81*
Education				
Non-literate®				
Less than 5	1.08**	1.09	1.36***	1.45***
5-9 years	1.32***	1.43***	1.37***	1.22**
10 or more year	1.51***	2.45**	1.62**	1.44*
Husband's Education				
Non-literate®				
Less than 5	1.09	1.09	1.22**	1.25***
5-9 years	1.09**	1.28***	1.22**	1.32***
10 or more year	1.07	1.41***	1.15	1.33***
Marital Duration				
Less than 5®				
5 to 10	1.79***	1.39**	1.58***	2.60***
10 to 15	3.34***	2.28***	3.28***	6.43***
15 & above	4.76***	3.30***	5.13***	9.00***
Age at marriage				
>18 Years®				
<18 Years	0.92	0.99	0.93	1.26***
No. of Boy Surviving				
0®				
1	3.22***	2.92***	5.90***	5.01***
2+	4.91***	5.17***	12.77***	12.54***
No. of Girl Surviving				
0®				
1	1.74**	1.52***	1.75***	2.22***
2+	1.44*	1.39***	1.81***	1.48***
Wealth Index				
Poorest®				
Second	1.41***	1.64***	1.89***	1.43***
Middle	1.89***	2.43***	2.33***	1.84***
Fourth	2.83***	3.11***	2.47***	2.04***
Richest	3.18***	4.50***	2.29***	3.41***
-2 Log Likelihood	114872.53	6530.20	6558.89	10632.62

®: Reference Categories *** 1% level of significance level ** 5% significance level *10% significance level.