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A study of contraceptive use among the Oraon women of Purbi Singhbhum District, Jharkhand

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ABSTRACT- *The state of Jharkhand has been chosen for the present study which provides a comprehensive picture of contraceptive use and its knowledge among the selected villages of Oraon women in its Purbi Singhbhum district. The information on awareness as well as the usage of contraceptives was probed from ever married women in the age group of 15-49 years. Knowledge of temporary contraceptive method is considerably lower among women of higher age group as compared to younger counterparts. The study also shows that the availability of contraceptives is mostly by government health worker. The use of traditional family planning methods and male sterilization is seen negligible in the area. Contraceptive use among women is seen to be positively correlated with educational level, preference of child and birth interval (significant at p<0.01) and negatively correlated with family type significant at p<0.0. Bivariate analysis substantiates the role of women's education, current age, son preference, birth interval, parity and family type in the use of any contraceptive method.*

Keywords- Fertility, contraceptive use, unmet need, met need, Oraon

INTRODUCTION

A radical change in India's demographic and health profile has been observed ever since there was an introduction of family planning programme. In a period of six and half years between NFHS-2 & NFHS-3, an increase of 48 percent to 56 percent in the contraceptive prevalence was observed (IIPS and ORG Macro, 2000). Data from the National Family Health Survey 2 and 3 (NFHS-2 and NFHS-3) show that 82 percent of women sterilized had never used any other method before they underwent sterilization indicating that female sterilization has continued to dominate the method-mix contraceptives in India. 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 2.3 in 2011), 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). 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 conditions (Panchauri, 2004). Moreover, the tribes have a very low contraceptive use and high unmet need for family planning than the other groups. Currently married women who are not using any method of contraception and who does not want any more children have an unmet need for limiting and those who are not using contraception but want to wait two or more years before having another child have an unmet need for spacing. The sum of the unmet need for limiting and the unmet need for spacing is the unmet need for family planning. 61.8 percent of currently married ST women have a demand for family planning, of which only 77.5 percent have a met need for contraception. The unmet need for family planning among them is quite high especially in the state of Jharkhand. 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). 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; 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.

Complex and inter-related factors is known to affect contraceptive use extend from the attributes of the individual, through resources of the household and community in which she lives, to socio-cultural mores and institutions that affect autonomy, behaviour and lifestyle, and access to health care services. For instance, the use of birth control had a clear association with parity (Dang, 1995; Shah et al., 1998) women wanting more children spaced their pregnancies despite of limiting them. This measure in turn is influenced by culture and societal expectations of which son-preference is integral to the culture of most societies in India is evident in the findings of ethnographic and demographic analyse (Clark, 2000; Khanna, 1997; Deshpande, 1994; Stash, 1996). Many Indians show a strong preference for sons. About one in five women and men want more sons than daughters, but only 2-3 percent want more daughters than sons (NFHS-3).Therefore, an attempt has been made in the present study to understand the use of various contraceptive methods among the Oraon women.

Objectives

The present study aims to understand the knowledge, source of family planning methods among the ever married Oraon women of Purbi Singhbhum, Jharkhand. An attempt has also been made to find out the correlation between various social and economic variables and to identify the best predictor for the use of contraceptive methods among the studied groups.

MATERIALS AND METHODS

The data for the present study was collected from 440 households, 500 ever-married women aged 15-49 years from 12 villages, 2 blocks of Purbi Singhbhum district of Jharkhand, India (Table 1). The data set provides information about awareness and use of family planning methods- Female Sterilization, Male Sterilization, Intra Uterine Device (IUD), Pills, Condoms and Withdrawal method. Villages were chosen on the basis of predominant distribution of the tribal group under study followed by random selection of the households. The quantitative data were entered, sorted and analyzed by using statistical package for social sciences version 20.0. First descriptive analyzes were carried out for each of the variables. In order to examine the factors determining the use of any modern contraceptive method and sterilization among the tribal women, a bivariate regression analysis has been carried out with use of any contraceptive method as the dependent variables and a set of independent variables have been employed.

Table 1: Distribution of ever married tribal women by their households and selected villages

S.No	Name of village	Block	No.of Household	No. of Ever married women
1	Dalapani	Golmuri cum Jugsalai	40	45
2	Banamghutu	Golmuri cum Jugsalai	30	35
3	Manpita	Golmuri cum Jugsalai	35	38
4	Hitku	Golmuri cum Jugsalai	35	40
5	Chotabanki	Golmuri cum Jugsalai	40	45
6	Pipla	Golmuri cum Jugsalai	40	45
7	Potka	Potka	50	56
8	Hurlung	Golmuri cum Jugsalai	30	34
9	Bango	Potka	30	35
10	Chandpur	Potka	30	35
11	Sundarnagar	Potka	35	42
12	Chapri	Potka	45	50

Outcome Measurement- The study measures outcome variable namely contraceptive use as the indicator of family planning services utilization. A dichotomous variable (0=non user/1=user) was created using different methods of contraception like –female and male sterilization, pill, IUD, condom, injectable, withdrawal, rhythm abstinence. Women not using any of these contraceptive methods were considered as non-user of modern method whereas women using any of these methods were separated as user of modern method.

Predictor variable Definition- Socio-economic and demographic predictors such as current age, family type, son preference, age at 1st conception, parity, birth interval, education, working status were included as predictor variables in the study. The age group of ever married women were divided into groups one that of an older age group (30-49 years) coded as 0 and a younger age group (15-29 years) coded as 1. The educational level was grouped into two categories which were literate (1) and illiterate (0). The family structure of the women's household was coded into two categories nuclear type (1) and Joint type (0) of Household. A nuclear household is defined as the one that consists of parents and their unmarried children. The parity among women was categorized into less than and equal to two

children (1) and more than two children (0). Birth interval among women was coded 1 for an interval of more than 24 months and 0 for an interval of less than 24 months. Women with son preference and with no son preference were coded as 1 and 0 respectively. Code 1 was given to women with age at first conception more than 20 years and code 0 was given to women with age at first conception less than 20 years. For the variable working status, 1 was given yes whereas 0 was given to a non-working status.

RESULTS

Unmet need for family planning is important for achieving demographic goals of below replacement fertility. Results shown in Figure 1 indicate that there is little difference in the frequency of unmet and met needs of family planning between the state of Jharkhand and Purbi Singhbhum district. The unmet need for family planning in Rural Jharkhand and Rural Purbi Singhbhum is 24.8 percent and 20.7 percent respectively (AHS Jharkhand 2011-12). The tribal women of present study have 43.8 and 28.1 percent of met need and unmet need for family planning as compared to 69.1 and 12.8percent of met need and unmet need for family planning among tribal women in India (GOI, 2013). Currently, the available family planning methods in India may be broadly divided into two categories, spacing methods and permanent methods (NIFHW, 2011-12). The analysis also reveals that knowledge of at least one method, particularly a permanent method is evident among the women belonging to Oraon tribe. However, 43 percent of tribal women are familiar with the use of any contraceptive method which doesn't accounts for half of the studied sample (Table 2). Among official sponsored temporary methods, contraceptive oral pills (47.72 percent) were most popular modern temporary method among tribal women followed by condoms (40.15 percent) and IUD (12.12 percent). On the other hand, other traditional methods such as rhythm/abstinence and withdrawal were relatively less popular among tribal women. Only 10 percent of tribal women practiced traditional methods. Over all, the knowledge of modern temporary contraceptive methods is considerably lower as compared to that of permanent methods among tribal women.

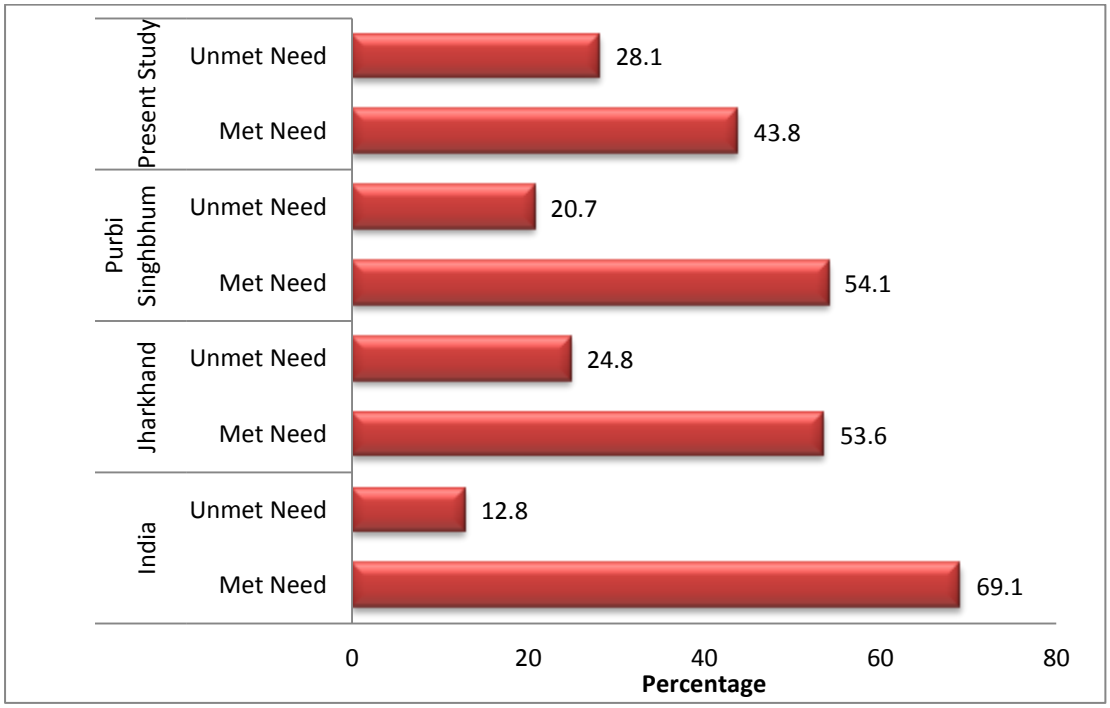

Figure1: Percentage of currently married women age 15-49 with unmet need and met need for family planning.

Table 2: Knowledge of different contraceptive methods among tribal women

	Tribal Women (N=500)	
Methods	N	%
Any Method	219	**43.8**
Any Permanent Method	64	**29.2**
Female Sterilization	64	29.2
Male Sterilization	0	0
Any Modern Temporary method	132	**60.27**
IUD/ Loops/Cu-T	16	12.12
Condom	53	40.15
Pills	63	47.72
Any Traditional method	23	**10.50**
Rhythm Abstinence	17	7.8
Withdrawal	6	2.7

Among official sponsored temporary methods, contraceptive oral pills (47.72 percent) were most popular modern temporary method among tribal women followed by condoms (40.15 percent) and IUD (12.12 percent). On the other hand, other traditional methods such as rhythm/abstinence and withdrawal were relatively less popular among tribal women. Only 10 percent of tribal women practiced traditional methods. Over all, the knowledge of modern temporary contraceptive methods is considerably lower as compared to that of permanent methods among tribal women.

Sources of Family Planning Methods

The access to quality contraceptive products and services in India are provided primarily through a network of Government Hospitals and Urban Family Welfare Centres in urban areas and Primary Health Centres (PHC) and Sub Centres in rural areas. The oral contraceptives and condoms are made available to women by ANHWS in each Anganbadi centres of a village. Sterilization and IUD insertions are carried out mostly in Government Hospitals and PHCs (IIPS & ORC Macro, 2000).

Table 3: Source of Knowledge of Family Planning methods

S.No.	**Source**	**Any method**		**Sterilization**	
		N	%	N	%
1	Media	12	5.47	3	1.36
2	Friends	10	4.56	2	0.9
3	Relatives	25	11.41	8	3.6
4	Neighbours	4	1.82	2	0.9
5	Private Doctors	2	0.91	1	0.45
6	Government Health Worker	166	75.83	48	28.9
	Total	219	100	64	29.2

The table 3 gives the various sources of knowledge of family planning methods. A low contraceptive use is observed among the tribal women and same accounts for the use of sterilization which is only common among the female. Male involvement in sterilization was observed to be rare (Table 2) .Almost 76 percent of Oraon women user reported that they

received contraception from government health worker whereas only 29 percent of women went for permanent method (Table 3). Sources like media, friends, neighbours and relatives are found to have fewer roles in educating the women regarding family planning methods. To examine the various factors affecting the knowledge of contraceptive method among tribal women bivariate correlation and regression analysis as statistical test were carried out. Women's current age plays a significant role in utilisation of family planning services. The study reveals the use of contraceptive method was observed to be high among the women in the age group of 20-24 years (53.1 percent) followed by women in the age group of 15-19 years (52 percent) whereas contraceptive use was seen to be low among older women in the age group of 45-49 years (18 percent) (Figure 2) .

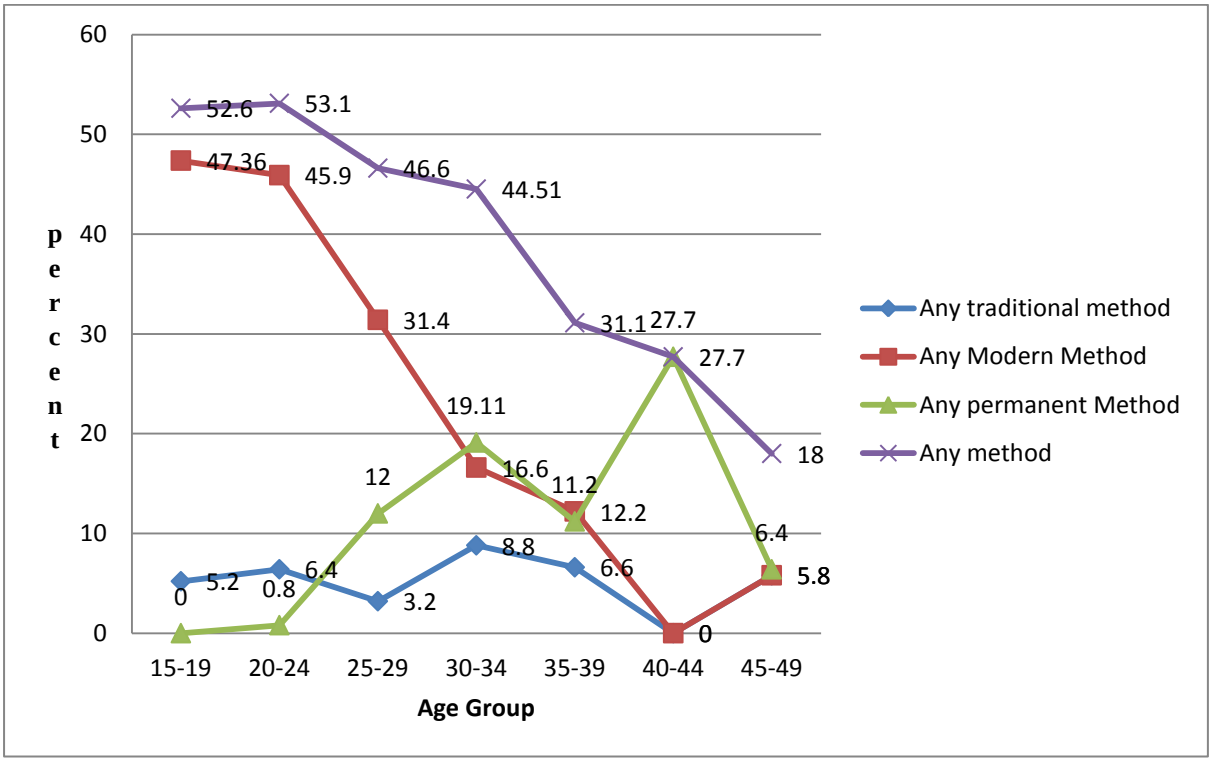

Figure 2: Knowledge of contraceptive methods by age of tribal women

Use of traditional method of contraception was high in the age group of 30-34 years (8.8 percent) and low among women in the age group of 25-29 years (3.2 percent). 47 percent of women in the age group of 15-19 years practiced modern methods of contraception like condoms, pills and IUDs. Women in the age group of 40-44 years were among the frequent users of permanent methods of contraception or sterilization methods like vasectomy and

tubectomy. A complete absence in the use of permanent methods of contraception was seen among younger women in the age group of 15-19 years.

Social and economic characteristics of tribal women

According to the Annual Health Survey 2011-12, Contraceptive prevalence rate (CPR) which is the proportion of women of reproductive age using (or whose partner is using) a contraceptive method at a given point of time is 43.9 per cent for any modern method (AHS, 2011–12) in Jharkhand. Table 4 presents percentage distribution of use of any contraceptive method and sterilization method by interviewed tribal women by selected background characteristics.

The study reveals use of any contraceptive method high for women with marital duration of less than five years, whereas sterilization was high for women with a more marital duration. Only 5.2 % of women marrying at a younger age used contraceptives when compared to 17 % of women marrying at an age between 16 and 19 years. Though the use of contraception is high among literate than illiterate tribal women, however more illiterate women (10percent) adopted sterilization as compared to literate women (2percent). Contraceptive prevalence increased steadily from 4 percent among women having one child to 14 percent among women having two children. A contraceptive prevalence was seen among women having more than four children and also for women who stayed in joint family type. The contraceptive prevalence and use of sterilization increase more rapidly with the increase in birth interval and birth order. The components of Fertility including various socio-demographic variables have been inter-correlated using Pearson method. Table 5 depicts an analytical picture of the inter-correlation matrix of the variables. Inter-correlated matrix reveals the variable contraceptive use to be correlated with many variables. The various fertility differentials considered are age at marriage, age at first conception, educational women, working status, parity, contraceptive use, birth interval, family type, preference of child and current age. There seems to be a strong negative correlation between contraceptive use among women and fertility variables like age at first conception, educational level, parity, current age and family type.

Table 4: Use of contraception and sterilization by selected background characteristics of Tribal women in the age group of 15-49 years

S.No	Background Characteristics	Contraceptive use				No Method	
		Any contraception		Any Sterilization			
		No.	%	No.	%	No.	%
1	Marital Duration						
	<5	47	9.4	4	0.8	55	11
	6-9	45	9	10	2	49	9.8
	10-14	21	4.2	12	2.4	58	11.6
	15-19	7	1.4	16	3.2	44	8.8
	20^{+}	6	1.2	21	4.2	81	16.2
2	Age at marriage						
	≤15	13	2.6	8	1.6	44	8.8
	16-19	84	16.8	40	8	170	34
	>20	26	5.2	15	3	64	12.8
3	Age at 1^{st} conception						
	≤16	17	3.4	11	2.2	24	4.8
	17-20	87	17.4	36	7.2	200	40
	>21	16	3.2	16	3.2	54	10.8
4	Education of women						
	Illiterate	12	2.4	12	2.4	166	33.2
	Literate	110	22	51	10.2	112	22.4
5	Occupation of women						
	Labourer	4	0.8	0		11	2.2
	Private	6	1.2	7	1.4	4	0.8
	Government Service	0		0		3	0.6
	Housewife	113	22.6	56	11.2	260	52
6	Parity						
	1	20	4	5	1	42	8.4
	2	69	13.8	14	2.8	50	10
	3	15	3	20	4	90	18
	4^{+}	17	3.4	24	4.8	96	19.2
7	Family Structure						
	Nuclear	155	31	49	9.8	130	26
	Joint	59	11.8	14	2.8	148	29.6
8	Birth Order & Interval						
	B.O.=1	35	7	5	1	18	3.6
	B.O=2/3, Interval<=12	27	5.4	18	3.6	93	18.6
	B.O.=2/3, Interval>12	77	15.4	27	5.4	19	3.8

Table 5: Rank order correlation matrix between various components of fertility.

s.no	Variables	1	2	3	4	5	6	7	8	9	10
1	Contraceptive use	**1**									
2	Age at first conception	-0.128**	**1**								
3	Educational level	0.498**	0.125**	**1**							
4	Parity	-0.128**	-0.074	-0.194**	**1**						
5	Current age	-0.183**	-0.021	-0.121**	0.381**	**1**					
6	Preference of Child	0.456**	-0.119**	0.308*	-0.086	-0.109*	**1**				
7	Birth Interval	0.419**	-0.082	0.137	0.267**	0.035	0.200*	**1**			
8	Family type	-0.270**	0.096*	-0.090	0.056	-0.047	-0.132**	-0.145	**1**		
9	Working Status	0.048	0.038	0.104*	-0.201**	-0.238**	0.032	-0.058	0.072	**1**	
10	Age at marriage	0.032	0.649**	0.030	-0.178**	-0.055	-0.116**	-0.028	0.001	0.066	**1**

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).
N=500

Contraceptive use among women is seen to be positively correlated with educational level, preference of child and birth interval (significant at $p<0.01$) and negatively correlated with family type significant at $p<0.01$. The variable age at first conception is positively correlated with educational level and age at marriage significant at $p<0.01$ and negatively correlated with preference of child (significant at $p<0.01$). Educational level is negatively correlated with parity, current age, working status (significant at $p<0.01$) and positively correlated with preference of child and working status (significant at $p<0.001$). Parity is positively correlated with current age and birth interval (significant at $p<0.01$) and negatively correlated with working status and age at marriage (significant at $p<0.01$). Current age is positively correlated with parity (significant at $p<0.001$) and negatively correlated with preference of

child (significant at $p<0.05$) and working status (significant at $p<0.05$). Preference of child is correlated with contraceptive use and education ($p<0.001$) and negatively correlated with current age and working status significant at $p<0.01$ and birth interval significant at $p<0.05$. It is seen to have negative correlation with current age, working status, age at first conception (significant at $p<0.01$), family type and age at marriage significant at $p<0.005$. Birth interval is negatively correlated with preference of child and positively correlated with preference of child both significant at $p<0.01$. Working status is negatively correlated with parity and current age (significant at $p<0.01$) and positively correlated with educational level (significant at $p<0.01$). The variable age at marriage is positively correlated with age at first conception ($p<0.01$) and negatively correlated with parity and preference of child significant at $p<0.01$.

Table 6: Predictor variables for Dependent variables (contraceptive use) with their beta coefficient and goodness of fit, R2 in Bivariate Regression Analysis for women in the age group (15-49) years.

S.No.	independent variable	ODDS	R^2	95% for C.I.
1	Current age of Women	1.8***	0.3	1.3-2.7
2	Age at marriage	1.2	0.4	0.7-1.4
3	Age at 1st conception	1	0.2	0.6-1.6
4	Education	3.15***	0.83	2.0-4.7
5	Occupation	1.4	0.2	0.7-2.8
6	Parity	2***	0.38	1.4-2.9
7	Family Type	3.2***	0.3	2.2-4.8
8	Birth Interval	2.8***	0.61	2-3.7
9	Preference of Son	7.6***	0.63	5-11.3

N=500 $p<0.001^{***}$ $p<0.01^{**}$ R2 reference value (0-1.0)

Bivariate results for contraceptive use presented in the Table 6 reiterate that some important factors like son preference, birth interval, education, family type, parity and current age of women were found to be statistically significant determinants in the use of any contraceptive method among the ever-married women of Oraon tribe. Findings for the analysis showed literate women were three times more likely to use any contraceptive method than illiterate women (OR=3.15,CI=2.0-4.7). Women with three or more children were twice less likely to use any contraceptive method than women with one or two children (OR=2,CI=1.4-2.9). The odds of using any method was high among women of younger age group rather than women who were in older age group(OR=1.8,CI=1.3-2.7). Moreover odds of utilizing any

contraceptive method were three times more for women staying in nuclear family when compared to women staying in joint family structure(OR=3.2,CI=2.2-4.8). Women with less birth interval were less likely to use any contraceptive method rather than women who spaced between two consecutive births. Women with a birth interval of more than 24 months were almost three times more likely to use any contraceptive method than women with a birth interval of less than 24 months (OR=2.8,CI=2-3.7). Preference of son was considered as one of the most important predictor variable for utilisation of any contraceptive method. Women with a strong son preference were seven times more likely to use any contraceptive method than women having no son preference (OR=7.6, CI=5-11.3).All the above discussed independent variables where statistically significant at $p<0.001$. The independent variables like age at marriage, working status of women and age at first conception had no significant effect on the use and awareness of any contraceptive method.

DISCUSSION AND CONCLUSION

Jharkhand constitutes 8.3 % of the total ST population in India and 26% of total state population and thus ranks sixth as a tribal state. 22.6 per cent currently married women in Jharkhand have an unmet need for family planning (AHS 2011-12). The national figures for unmet need are 21.3 per cent (DLHS-3).The findings suggest that there exists significantly high proportion of ever married Oraon women who do not use any method of contraception in Purbi Singhbhum district. The proportion of women who used modern contraceptive methods was high than traditional method users. The high proportion of non-use of contraceptives raises concerns but explains the high unmet need for contraception that persists among the studied villages of Purbi Singhbhum district. Awareness plays an important role in motivating females to have a favourable attitude towards family planning and it is seen evident that majority of currently married women prefer to get contraceptives from government health worker relative to other sources. This was made possible by the efforts made by the state government in increased counselling of young women by Accredited Social Health Activists (ASHA), Auxiliary Nurse Midwives (ANM), and other door-to-door and mass media campaigns and ensuring that the methods are accessible with limited financial constraints. As expected, women's educational level, birth interval and son preference showed positive association with contraceptive use. The knowledge of traditional methods is also lower among tribal women. The female sterilization alone contributed for more than three-fourth of total contraception use which suggested that tribal women were mainly using family planning methods to limit their family size and spacing of children was

neglected. Many other studies carried out among different tribes reported similar observations of contraceptive use to be influenced by son preference (Murthy, 2012; Padmadas et al, 2004). Many other studies carried out in tribal communities showed that most of sterilized women adopt sterilization after completing 40 years (Basu, 2004). The present study shows that fifty percent of women adopt sterilization in order to limit their pregnancy. Sterilization was high for women with a more marital duration, women having an early marriage and more number of children. Contraceptive use was also generally higher among women pertaining to younger age group than older age group. Also the relatively high contraceptive use was seen among nuclear family than women living joint family. The variable parity of ever-married women is positively correlated with current age and birth interval and influences contraceptive use as women with more children tend to use more contraception than women with one or two children. The bivariate logistic regression suggests that the dependent variable is influenced by various predictor variables. For instance, the findings show that women with higher education are more likely to use contraceptives relative to their counterparts with no education. Some previous studies have also established significant association between preference of son and contraceptive use among women (Akhtar *et al.* 2014, Curtis and Neitzel, 1996). Women with a birth interval of more than 24 months were almost three times more likely to use any contraceptive method than women with a birth interval of less than 24 months. The analysis also proves that women having one or two children have very high odds of using contraception than women having more than two children. A high unmet need for family planning is prevalent among the tribal women in the presence of various provisions of quality service provided by National Population Policy (GoI 2000). Among all the states the gap is very much evident in Jharkhand both in terms of unmet need for spacing and limiting methods (Census of India, 2011). Therefore it can be concluded that the overall contraceptive use among the tribal women is observed to be very low and the unmet need for family planning is very high. A wide gap in the knowledge of contraceptive use is seen among the educated and uneducated women. The preference and use of modern contraceptives decreases with an increasing age. Present study highlights sterilization method mostly practiced among the tribal women. Preference of son among tribal women should be discouraged as a strong preference will be an obstacle to fertility decline. More emphasis should be given on the use of temporary methods in order to achieve an ideal family size by each woman. State departments should increase access to quality contraceptive products and services through door-to-door delivery. Involvement of male in

sterilization should be encouraged. Initiatives like Family Planning week celebrations, health education at the community level and save girl child at village level should be undertaken.

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