



RESEARCH ARTICLE

KNOWLEDGE AND USE OF CONTRACEPTIVE METHODS AMONG TRIBAL WOMEN: EVIDENCE FROM SOUTH-EAST RAJASTHAN, INDIA

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ABSTRACT

This paper aims to examine the knowledge and use of contraceptives among tribal women and also to investigate the impact of spatial, socio-economic and demographic variables on the knowledge and use of contraceptive methods. This study is based on the primary data, collected from the 800 ever married tribal women of ten districts of South-East Rajasthan. SPSS 19.0 has been employed for the analyses purpose. Bivariate analysis reveals that knowledge of various contraceptive methods varies across the socio-cultural and economic strata. The logistic regression results reiterate that highly educated women and women belonging to urban areas, service class, rich wealth status and Mina tribe are more likely to use temporary methods of contraception than their counterpart women. The permanent method of contraception i.e. sterilization, irrespective of any socio-economic strata, is significantly associated with higher no. of children ever born and the age of the women.

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INTRODUCTION

The rapid population growth during the last century is considered as the greatest hindrance in the human welfare and improvement in the living standard of the people world over. It is also seen as the major impediment to the contemporary effort to alleviate poverty of billions of the people in the third world (Donald, 1985). The increasing population during last century and especially after 1950s has led to enormous pressure on the available resources. Therefore, it has become imperative to slow down the growth of population in order to reduce the grave consequences of the "population explosion" (Domros, M., 1984, p. 74). As per the United Nations Population Divisions (UNDP), 2011, the world population has crossed 7 billion by adding one billion only in 11 years. This increase in population is the result of declining death rate and skyrocketing birth rates, taking migration as indifferent, during the last four-five decades. The harsh impacts of growing population was already assessed by the scholars during the early decades of twentieth century and therefore, several efforts have been made to stabilize the birth rates in the view of possible decline in death rates. Consequently, variety of responses have come up in the form of public policies and programmes world over for reducing fertility, maternal death and enhancing child survival (Ram, 2009). India, the world's second most populous country is experiencing severe consequences of increasing population. India after achieving the highest decadal growth rate i.e. 24.8

percent in 1971 has continuously declined its growth rate up to 17.5 percent in 2011. But the growing number is still a cause of concern. The probable growth of population in the country was already anticipated by the policy makers and therefore, the state sponsored family planning programme was launched in 1951 in order to reduce its high fertility. The family planning programme after its inception has made dramatic improvement in the demographic and health profiles of the country and a notable decline in fertility and mortality rates has been observed (Sharma and Rani 2009). The use of contraception has also increased over time, as in merely six and half years between NFHS-1 and NFHS-2 contraceptive prevalence increased from 41 to 48 percent from 1992-93 to 1998-99 (IIPS and ORC Macro, 2000). The current use of contraceptives has further increased to 64 percent during 1998-99 to 2005-06 (IIPS, 2005-06). Among the several methods of family planning, *female sterilization* is the most commonly opted one. But the minor use of spacing methods, particularly in rural areas and among tribal women is a major cause of concern (IIPS and ORC Macro, 2000). Moreover, in India, reproductive decisions are largely governed by the mother-in-law and upper generation and therefore the levels of unwanted fertility too have been quite high in India among all and particularly among married young women (Ram U., 2009). The situation is even worse among tribal communities or primitive societies where family elders and caste leaders reign supreme in the decision-making process and prehistoric practices and primitive rituals and customs are still very prevalent (Singh *et al.* 1985, Sharma, 1988, Sharma 1991, Sharma, and Sharma, 1992). Consequent

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upon this, such societies are typically characterized by uncontrolled fertility and very high maternal and infant mortality rates (Ramalingaswami 1987).

Tribals in India are also having many spatial and socio-cultural differences and therefore they have their own socio-cultural practices (Mitra, 2006) which lead to high fertility. Besides, the health conditions of tribals in India are also not so good because of their poor economic conditions and geographical isolation. Tribals also have poor awareness and accessibility to the family planning methods in comparison to other social groups because of educational backwardness and inaccessible locations (Mitra, 2006). Consequently, fertility as well as mortality among tribals is very high. In India, as the studies suggest, the use of contraceptives among the tribal population is very less and several efforts have also been synchronized to introduce and avail the methods to the poorer and uneducated mass but still very high unmet need of family planning has been observed in several studies. Through the present study, an attempt has been made to examine the knowledge and use of contraceptives among the tribal women in the study area.

### Objectives

The present study aims to meet the following objectives:

1. To ascertain the level of knowledge and adoption of various contraceptive methods among the tribal women.
2. To examine the impact of various spatial, socio-economic and demographic backgrounds such as place of residence, education, occupation, wealth status, tribal group and number of children born on the knowledge and use of contraceptive methods.

### MATERIALS AND METHODS

This study utilizes primary data collected from the ten districts of South-East Rajasthan carried out during 2010-11. The selections of primary sampling units were randomly selected one each from urban and rural areas. A total of 800 tribal women were interviewed, drawing 80 samples from each district, to elicit the required information. A well structured interview schedule was used to collect the information.

The women of the reproductive age group i.e. 15-44 years of age were selected for this study as this group of women is involved in childbearing. The analyses have been done with the help of statistical software SPSS-19. Bivariate as well as multivariate techniques have been done to analyse the knowledge and use of various contraceptive methods. Moreover, logistic regression analysis has been applied to examine the impacts of various background characteristics on knowledge and use of various methods of contraception. The explanatory variables in this study are place of residence, tribal group, educational status of the respondents and their husbands, occupation of the husbands, wealth status of the family and mean number of children ever born while the dependent variables in this study are the level of knowledge and use of contraceptive methods.

### RESULTS

#### Profile of the respondents

Table 1 shows the percentage distribution of ever married women of 15-44 years of age by age groups, educational status of the respondents and their husbands, occupation of the husbands, tribal group and mean number of children ever born. The proportion of respondents in the 15-19 years of age group is 8.38 percent which increases to 25.50 percent in 20-24 years of age group. In all next four age groups the shares of respondents are 21.38, 15.75, 19.63 and 9.38 percent. Among all respondents, roughly 71 percent are illiterate while 15.38 percent are educated up to primary level. The share of respondents who are educated up to High school, Intermediate and Graduation are 6.0, 3.13 and 5 percent respectively. In case of husbands' education, roughly 32 percent are illiterate and almost the same 33 percent are primary educated. Only 12.75 percent respondents' husbands are having high school education. Among the occupations of the respondents' husbands, majority of them are daily wage labourers (29.25 percent) and small cultivators (26.13 percent). Of the rest, 26.12 percent deals with business and other activities. Of the all respondents, 47.75 percent belongs to Bhils tribe, followed by Mina (43 percent) and Saharias (3.5 percent) and the remaining 5.75 percent is composed of others including Damor, Garasia and Bhil-Mina tribe.

**Table 1. Percentage distribution of respondents by background characteristics**

Background characteristics	Percentage (N=800)	Background characteristics	Percentage (N=800)
<i>Age groups</i>		<i>Occupation of respondents' husbands</i>	
15-19	8.38	Cultivation	26.13
20-24	25.50	Agricultural Labour	5.25
25-29	21.38	Daily wage labour	29.25
30-34	15.75	Business	3.13
35-39	19.63	Govt. & Pvt. Services	13.25
40-44	9.38	Self employment	17.38
<i>Education of the respondents</i>		others	5.63
No education	70.50	<i>Tribal group</i>	
Primary standard	15.38	Bhil	47.75
High school	6.00	Mina	43.00
Intermediate	3.13	Saharia	3.50
Graduation and above	5.00	Others	5.75
<i>Education of respondents' husbands</i>		<i>Mean number of children ever born</i>	
No education	31.75	0	11.00
Primary standard	33.00	1	15.75
High school	13.50	2	19.88
Intermediate	8.50	3	20.75
Graduation and above	12.75	4+	32.63

Source: Personal survey, 2010

Table 2. Percentage of women having knowledge about contraceptive methods by background characteristics

Background characteristics	Any method	pills	Condom/ Nirodh	IUD/ Loop	Female sterilization	Male sterilization	Rhythm/ Safe period	Withdrawal	Emergency contraception	Foam/Jelly	Injectables	traditional medicine
<i>Place of residence</i>												
Urban	98.60	90.67	64.33	40.67	97.60	68.00	62.33	16.67	21.00	2.67	35.67	1.67
Rural	98.33	84.00	47.80	29.80	97.20	60.00	56.40	15.00	13.60	1.60	28.00	1.20
<i>Age group</i>												
15-19	88.06	67.16	34.33	19.40	86.57	29.85	23.88	5.97	7.46	0.00	16.42	0.00
20-24	99.51	91.18	56.86	41.18	97.55	58.33	58.82	19.12	20.10	1.96	34.80	0.00
25-29	98.83	94.15	69.59	54.39	98.25	76.61	78.95	28.07	28.07	5.26	49.12	2.92
30-34	100.00	92.06	56.35	26.98	100.00	66.67	54.76	9.52	12.70	1.59	20.63	2.38
35-39	99.36	85.35	50.96	26.11	97.45	71.34	59.87	11.46	10.83	0.00	28.66	1.27
40-44	100.00	66.67	30.67	8.00	100.00	50.67	46.67	5.33	5.33	1.33	13.33	1.33
<i>Education of the respondents</i>												
No education	98.40	83.16	43.62	20.74	97.34	57.45	52.66	7.98	7.27	0.89	18.09	1.06
Primary	98.37	92.68	75.61	53.66	96.75	72.36	63.41	21.95	21.95	0.81	52.03	0.00
High school	100.00	99.51	70.83	62.50	100.00	64.58	72.92	37.50	35.42	0.00	64.58	2.08
Intermediate	100.00	100.00	96.00	92.00	100.00	88.00	92.00	52.00	68.00	20.00	68.00	8.00
Graduation & above	100.00	100.00	97.50	95.00	100.00	95.00	90.00	55.00	72.50	12.50	82.50	5.00
<i>Education of the respondents' husbands</i>												
No education	97.24	75.20	35.04	12.99	96.06	53.15	47.24	6.69	6.30	0.39	11.81	1.57
Primary	98.48	87.50	53.03	31.06	97.73	60.23	53.79	14.39	13.26	1.89	26.89	0.76
High school	100.00	93.52	63.89	43.52	97.22	62.96	64.81	12.04	14.81	0.93	42.59	0.00
Intermediate	100.00	100.00	70.59	45.59	100.00	79.41	72.06	14.71	22.06	4.41	36.76	2.94
Graduation & above	99.02	96.08	84.31	76.47	98.04	84.31	84.31	46.08	48.04	5.88	73.53	2.94
<i>Occupation of the husbands</i>												
Cultivation	100.00	88.04	53.11	33.49	99.04	63.64	57.42	12.92	11.96	0.00	33.01	0.96
Agricultural labour	95.24	66.67	33.33	11.90	95.24	50.00	47.62	4.76	0.00	2.38	14.29	0.00
Daily wage labour	97.01	79.06	38.46	15.38	95.30	51.28	49.57	8.55	6.41	0.85	14.53	0.85
Business	100.00	88.00	52.00	48.00	92.00	64.00	48.00	16.00	36.00	4.00	44.00	0.00
Govt. & Pvt. Services	100.00	95.28	78.30	65.09	99.06	86.79	78.30	36.79	40.57	7.55	63.21	3.77
Self employment	98.56	94.96	70.50	43.17	98.56	68.35	66.19	15.83	20.14	2.88	30.22	2.16
<i>Wealth status of the family</i>												
Poor	97.74	79.25	38.11	15.85	96.60	53.58	46.79	7.17	6.42	1.13	13.96	1.13
Middle	98.13	85.45	51.12	29.85	97.01	59.33	55.97	12.31	10.82	0.37	23.88	0.75
Rich	99.63	94.76	72.66	55.81	98.50	76.03	73.03	27.34	31.84	4.49	54.68	2.25
<i>Tribal group</i>												
Bhil	97.91	84.55	46.86	25.39	96.07	59.42	54.71	12.04	11.52	1.57	22.77	1.57
Mina	99.42	92.15	65.12	46.51	98.84	69.48	65.12	22.38	23.55	2.62	45.06	1.45
Saharia	100.00	71.43	42.86	17.86	100.00	35.71	46.43	0.00	10.71	0.00	14.29	0.00
Others	95.65	69.57	36.96	19.57	95.65	60.87	50.00	4.35	6.52	2.17	2.17	0.00
Total	98.50	86.50	54.00	33.88	97.38	63.00	58.63	15.63	16.38	2.00	30.88	1.38

Source: Personal survey, 2010

Table 3. Knowledge of contraceptive methods by districts

District	Any method	pills	Condom/Nirodh	IUD/ Loop	Female sterilization	Male sterilization	Rhythm/ Safe period	Withdrawal	Emergency contraception	Foam/Jelly	Injectables	traditional medicine
Bundi	96.25	90.00	45.00	17.50	96.25	70.00	41.25	11.25	12.50	1.25	17.50	1.25
Bhilwara	98.75	90.00	63.75	33.75	97.50	62.50	77.50	22.50	22.50	6.25	27.50	6.25
Rajsamand	96.25	86.25	63.75	28.75	96.25	67.50	81.25	21.25	12.50	3.75	26.25	0.00
Udaipur	98.75	77.50	41.25	22.50	97.50	51.25	43.75	7.50	10.00	0.00	11.25	0.00
Dungarpur	97.75	78.75	38.75	22.50	93.75	51.25	37.50	6.25	11.25	1.25	12.50	0.00
Banswara	98.00	81.25	27.50	31.25	98.75	56.25	42.50	12.50	11.25	1.25	12.50	0.00
Chittorgarh	97.50	90.00	53.75	37.50	96.25	58.75	63.75	22.50	18.75	0.00	41.25	0.00
Kota	100.00	95.00	73.75	61.25	98.75	72.50	78.75	27.50	17.50	1.25	60.00	0.00
Baran	100.00	86.25	63.75	38.75	100.00	65.00	52.50	12.50	28.75	2.50	45.00	3.75
Jhalawar	98.75	90.00	68.75	45.00	98.75	75.00	67.50	12.50	18.75	2.50	55.00	2.50
Total	98.50	86.50	54.00	33.88	97.38	63.00	58.63	15.63	16.38	2.00	30.88	1.38

Source: Personal survey, 2010

Table 4. Percentage of women currently using the contraceptive methods by background characteristics

Background characteristics	Sterilizations (Permanent methods)				Methods other than sterilization (Spacing methods)			
	Female sterilization	Male sterilization	pills	Nirodh	IUD/ Loop	Rhythm/Safe period	Injectables	Traditional medicine
<i>Place of residence</i>								
Urban	39.67	0.67	12.67	11.33	3.67	1.33	0.67	0.74
Rural	41.08	0.60	9.62	2.61	0.20	1.00	0.00	0.00
<i>Age group</i>								
15-19	4.48	0.00	5.97	10.45	0.00	0.00	0.00	0.00
20-24	10.34	0.49	12.81	7.39	4.43	1.48	0.00	0.00
25-29	37.43	0.00	17.54	7.60	0.58	2.92	1.17	0.58
30-34	61.11	0.00	10.32	6.35	1.59	0.79	0.00	1.59
35-39	62.42	2.55	7.01	2.55	0.00	0.00	0.00	0.64
40-44	81.33	0.00	2.67	0.00	0.00	0.00	0.00	0.00
<i>Education of the respondents</i>								
No education	46.99	0.35	8.16	1.24	0.71	0.89	0.00	0.71
Primary	28.69	2.46	14.75	9.84	1.64	1.64	0.00	0.00
High school	27.08	0.00	31.25	8.33	0.00	4.17	4.16	0.00
Intermediate	32.00	0.00	0.00	32.00	24.00	0.00	0.00	0.00
Graduation & above	7.50	0.00	17.50	40.00	0.00	0.00	0.00	0.00
<i>Occupation of respondents' husbands</i>								
Cultivation	51.20	2.39	11.96	1.91	0.00	1.44	0.00	0.96
Agricultural labour	38.10	0.00	4.76	0.00	0.00	0.00	0.00	0.00
Daily wage labour	33.91	0.00	8.15	0.43	0.43	1.29	0.00	0.86
Business	36.00	0.00	4.00	4.00	0.00	12.00	8.00	0.00
Govt. & Pvt. Services	40.57	0.00	13.21	22.64	2.83	0.00	0.00	0.00
Self employment	43.88	0.00	15.11	5.04	5.04	0.00	0.00	0.00
<i>Wealth status of the family</i>								
Poor	32.45	0.00	9.81	0.38	0.38	1.51	0.00	1.13
Middle	46.07	0.00	8.61	3.00	1.12	0.00	0.00	0.37
Rich	43.07	1.87	13.86	14.23	3.00	1.87	0.75	0.00
<i>Tribal group</i>								
Bhil	35.96	0.00	9.19	4.46	2.36	0.79	0.00	1.05
Mina	46.51	1.45	12.79	8.14	0.00	1.45	0.58	0.00
Saharia	53.57	0.00	3.57	3.57	0.00	0.00	0.00	0.00
Others	26.09	0.00	13.04	2.17	6.52	2.17	0.00	0.00
<i>Number of children ever born</i>								
0	3.41	0.00	7.95	15.91	0.00	0.00	0.00	0.00
1	1.60	0.00	19.20	11.20	4.80	0.80	0.00	0.00
2	40.88	0.63	11.95	6.92	3.77	3.14	1.26	0.00
3	52.41	1.20	11.45	2.41	0.00	1.20	0.00	0.00
4+	63.98	0.77	6.51	1.53	0.00	0.38	0.00	1.53
Total	40.55	0.63	10.76	5.88	1.50	1.13	0.25	0.50

Source: Personal survey, 2010

### Knowledge of contraceptive methods by background characteristics

Table 2 indicates the knowledge of contraceptive methods among ever married women of 15-44 years of age by various background characteristics. It is apparent from the table 2 that 98.50 percent women of the study area are aware that pregnancy can be delayed or avoided by the use of contraceptives. *Female sterilization* is the most commonly known (97.38 percent) method of contraception among tribal women, followed by *Pill* (87 percent). The other modern methods of family planning such as *Condom* and *IUD/Loop* among tribal women are not widely known as only 54 and 34 percent women respectively have reported to have known to these methods. Methods like *IUD*, *Injectables*, *Emergency contraception* and *Withdrawal* are known by roughly 34.0, 31.0, 16.38 and 15.63 percent respondents respectively. The knowledge of contraceptives is not uniformly known by every individual but it varies across the spatial, demographic, social and economic groups. It is evident from the table 2 that women of urban areas have better knowledge of family planning than to women residing in rural areas. The knowledge of *female sterilization* is slightly higher in urban areas (98.33 percent) than to rural areas (97 percent). Similarly, 91 percent women of urban area have knowledge about *Pill* against 84 percent women of rural areas. The knowledge of *Condom* and *IUD* are 64 percent and 41 percent in urban areas against 47 percent and 30 percent of rural women. The other methods of family planning are also known by more number of urban people than their rural counterpart. The younger women have slightly lower knowledge of family planning than the others. *Female sterilization* is the widely known family planning method by women of every age group ranging from 87 percent in youngest age group i.e. 15-19 years to 100 percent by all women above 30 years of age. The knowledge regarding the *Pill* (94.15), *Condom* (69.59), *IUD* (54.39), *Male sterilization* (77 percent), *Safe period* (79 percent) and *Injectable* (49 percent) is higher in the women of 25-29 years of age group. The better knowledge of these methods of family planning among women of this age group is due to the ten years of marital experience and easy interaction with the ASHA and ANM of same age groups. On the other hand women of lower and higher ages feel shy in discussing about contraceptives to the family planning workers. All the women with education up to high school have knowledge of at least one method against the 98.40 percent illiterate women.

The knowledge regarding *Pill* and *Female sterilization* are the common irrespective of educational differences. But the knowledge regarding the temporary methods like *Condom*, *IUD* and *Male sterilization* have wide differences among differently educated women. The proper knowledge of traditional methods such as *Rhythm /Safe period* and *Withdrawal* are also poorly known by illiterate women (53 and 8 percent) compared with highly educated women (90 and 55 percent). All the women except whose husbands are engaged in agricultural labour (95 percent) and daily wage labour (97 percent) have knowledge of at least one method of contraception. *Female sterilization* is widely known method among each occupational group. The knowledge regarding all other methods like *Pill*, *Condom*, *IUD*, *Male sterilization* etc.

are higher among the women whose husbands are in govt. and pvt. services. The knowledge of *Male sterilization* is also mostly known by women related with service class (87 percent). Methods like *Safe period*, *Withdrawal* and *Injectables* are poorly known by women of almost every occupational group but its conditions is worst among the labourers as only 5 and 9 percent women respectively are acquainted with these methods. The spatial, socio-psychological and economic differences among the tribal groups provide the differential exposure to the knowledge of the contraceptive methods and that is evident from the Table 1. Among the tribal groups, women belonging to Mina tribe have better knowledge of modern methods of contraception such as *Pill* (92.15percent), *Condom* (65.12 percent) and *IUD* (46.51percent) while the Saharias have poorer knowledge of the *Pill* (71.43 percent), *Condom* (42.86 percent) and *IUD* (17.86 percent). The knowledge of *Female* and *Male sterilization* is almost similar among all tribes with some minor variations. The traditional methods such as *Rhythm* and *Withdrawal* are better known by women of Mina tribe (65.12 and 22.38 percent) against the Bhils (54.71 and 12.04 percent) and Saharias (46.43 and 0.0 percent).

### District wise knowledge of contraceptive methods

Table 3 indicates the inter districts variations in knowledge of family planning methods. The knowledge about *Pill* has been reported highest in Kota (95 percent), followed by Bundi, Bhilwara, Chittorgarh and Jhalawar with 90 percent of the all women having reported to have known about it. The proportion of women having knowledge about *Condom* ranges from 28 percent in Banswara to 69 percent in Jhalawar. The knowledge of *IUD* is poorly known in almost every district from the lowest in Bundi (17.50 percent) to the highest in Kota (61.25 percent). *Female sterilization* is the most commonly known method of contraception in the study area with 96 percent women of each district is acquainted with this. Contrary to the *Female sterilization*, *Male sterilization* is poorly known in each district ranging from the lowest 51.25 percent in Udaipur and Dungarpur to the highest 75 percent in Jhalawar. The knowledge of *Safe period* has been reported the highest in Rajsamand (81 percent) to the lowest (38 percent) in Dungarpur. The *Withdrawal method* is known maximum by women of Kota district (28 percent) while the lowest corresponding figure is 6 percent in Dungarpur. *Emergency contraception* has been known by very few women of the study area (16.38 percent) with the highest from Kota (29 percent). Around 60 percent women of Kota district have knowledge about *Injectables* while Udaipur, with 11 percent women, has the poorest in the same.

### Use of contraceptive methods by background characteristics

The use of contraceptive methods varies across spatial, demographic, social and economic strata. A slightly higher percentage of women has been found sterilized in rural areas (41.08 percent) than the urban areas (39.67 percent) but the use of temporary methods like *Pill* and *Condom* is much higher among urbanite women (12.67 and 11.33 percent) than the rural women (9.62 and 2.61 percent).

*Female sterilization* is generally done either after attaining the desired number of living children or after having higher number of living children. So its prevalence increases with increasing age of women ranging from 4.48 percent among women of 15-19 years of age to 81 percent among 40-44 years of age. The highest cases of the use of *Pill* and *Condom* have been reported among the women of 25-29 years. None of the women of 40-44 years has been found using *Condom*. The prevalence of temporary contraceptive method is much higher among educated women than the uneducated. The use of *Pill* is found increasing with increasing education ranging from uneducated women (8.16 percent) to women with education up to high school (31.25 percent) but its use declines to 17.25 percent among women with education up to graduation and above. Unlike to the *Pill*, *Condom* is very much preferred method among the highly educated women and its use varies from 1.24 percent in uneducated women to 40 percent in highly educated women. *Female sterilization* is highest among the illiterate women and its occurrence decreases with education but the fact is that the proportion of illiterate women is very high and the highly educated women are of comparatively younger ages so it appears that they have not yet got their sterilization done. The use of contraceptives also varies across the occupational background of the respondents' husbands. The use of *Pill* is higher among the women with self employed husbands (15.11 percent), followed by service class (13.21) and cultivation (12 percent) while its use is found very less among agricultural labour (4.76 percent) and daily wage labour (8.15 percent). The highest use (22.64 percent) of *Condom* is made by service class, followed by self employed (5.04 percent) and business class (4 percent) with very small share of 1.91 percent women of cultivation and daily wage labour (0.43). *Female sterilization* is the most common method of contraception ranging from the highest among the women of cultivation group (51 percent) to the lowest among the daily wage labourers (34 percent). In the case of *Female sterilization*, the role of occupational difference is insignificant and the number of surviving children plays important role. The adoption of *Pill* (13.86 percent), *Condom* (14.23 percent) and *IUD* (3 percent) is higher among the women of rich wealth status than the women of middle and poor wealth status.

The adoption of *Female sterilization* has also been found lower among the poor wealth status (32.45 percent) than to middle (46 percent) and rich class (43 percent). The use of various contraceptive methods varies across the tribal groups. Minas appears to be the most forward tribal group as the table indicates that the highest use of *Pill* and *Condom* are done by Mina women (12.79 and 8.14 percent) while its lowest use is done by Saharia women (3.57 percent). Contrary to the above fact, the highest 54 percent of Saharia women have been found sterilized against the 46.51 percent of Minas and 36 percent of Bhils. The need and practice of contraceptives also depend upon the number of living children, desire to keep birth interval and intention to stop childbearing permanently. The use of *Pill* has been recorded maximum (19.20 percent) among the couple having one living child while *Condom* is highly practiced by the couple who has not got any living child. The practice of these two methods decreases further with increasing number of children. *IUD* is practiced by 4.80 and 3.77 percent women having one and two children respectively. The use of *Female*

*sterilization* is found significantly low among women having less than two living children (5.01 percent) and increases after attainment of two or more children.

### Districts wise use of contraceptive methods

Spatial variations have been observed in the use of contraceptives across districts. *Female sterilization* (40.55 percent) is the most commonly adopted method of contraception. But it varies from the highest in Kota (59.50 percent) to the lowest in Rajsamand (28.75 percent). *Pill* with 10.76 percent is the second most commonly used method of family planning which ranges from the highest (20 percent) in Banswara and the lowest (6.25 percent) in Rajsamand. The highest use of *Condom* has been reported in Bhilwara (12.50 percent) while the lowest of the same in Bundi, Bhilwara and Banswara (2.5 percent). *IUD* is seemed to be comparatively less trusted method as very low percentage of women (1.50 percent) of the study area practices it with 8.75 percent in Rajsamand. Other methods like *Rhythm/Safe method* (1.13), *Male sterilization* (0.63 percent), *traditional methods* (0.50 percent) and *Injectable* (0.25 percent) are practiced by a meager share of respondents.

### Logistic regression analysis

The results of the multivariate binary logistic regression model indicates that residence type, age of the respondents, women's education, husbands' education and occupation, wealth status of the family, tribal groups and children ever born to women are the important determinants of the use of spacing methods of contraception. The likelihood of the use of temporary methods of contraception is significantly ( $p < 0.05$ ) lower among rural women (OR=0.0139,). The probability of the use of these methods is almost four times more among women of 25-29 years of age than the women of 15-19 years of age. Women's education has emerged as the most significant determinant of the use of spacing methods of contraception. The women with primary education is roughly two times more likely (OR=2.293) to use temporary methods than the uneducated women. Further the likelihood of the use of temporary methods is seven times and nineteen times higher among women with education up to high school (OR=7.011) and intermediate (OR=19.333). The odds of use of temporary methods is lower among agricultural laborers (OR=0.201) and daily wage laborers (OR=0.453) in reference to the cultivators. But the use of temporary methods among women belonging to service class are significantly and nearly three and half times higher (OR=3.435) in comparison to the cultivators. The use of temporary methods of contraception also depends upon the wealth status of the family. The women belonging to rich wealth status are five and half times (OR=5.439) more likely to use spacing methods of contraception in comparison to poor wealth status. Regarding the children ever born, the use of temporary methods is significantly higher (2.358) among women experiencing giving birth to two children.

### Conclusion

The differential background characteristics such as residence, age, education, occupation, wealth status, caste and mean number of children born to women are seemed to have played

Table 5. Current use of contraceptive methods by districts

District	Sterilizations (Permanents methods)		Methods other than sterilization (Spacing methods)					
	Female sterilization	Male sterilization	pills	Nirodh	IUD/ Loop	Rhythm/ Safe period	Injectables	Traditional medicine
Bundi	32.50	0.00	10.00	2.50	0.00	1.25	1.25	0.00
Bhilwara	40.00	0.00	8.75	12.50	2.50	2.50	0.00	3.75
Rajsamand	28.75	0.00	6.25	1.25	8.75	2.50	0.00	0.00
Udaipur	42.50	0.00	6.25	2.50	0.00	0.00	0.00	0.00
Dungarpur	42.50	0.00	8.75	6.25	1.25	3.75	0.00	0.00
Banswara	32.50	0.00	20.00	2.50	1.25	1.25	0.00	0.00
Chittorgarh	35.00	1.25	17.50	10.00	0.00	0.00	0.00	0.00
Kota	59.49	3.80	11.39	3.80	1.27	0.00	1.27	0.00
Baran	52.50	0.00	7.50	7.50	0.00	0.00	0.00	0.00
Jhalawar	40.00	1.25	11.25	11.25	0.00	0.00	0.00	1.25
Total	40.55	0.63	10.76	5.88	1.50	1.13	0.25	0.50

Source: Personal survey, 2010

Table 6. Binary logistic regression showing the odds ratios (unadjusted) and confidence interval for current use of spacing methods of contraceptives across the background characteristics of respondents

Background characteristics	Exp(B)	95 % Confidence Interval	
		Lower	Upper
<i>Place of residence</i>			
Urban (ref)	1.000		
Rural	0.319**	0.212	0.478
<i>Age group</i>			
15-19 (ref)	1.000		
20-24	1.942	0.941	4.009
25-29	3.987**	1.877	8.472
30-34	4.077	1.721	9.659
35-39	1.606	0.651	3.963
<i>Tribal group</i>			
Bhil (ref)	1.000		
Mina	2.01**	1.325	3.049
Saharia	0.528	0.114	2.448
Others	1.262	0.569	2.8
<i>Respondent's education</i>			
No education (ref)	1.000		
Primary standard	2.293**	1.354	3.884
High school	7.011**	3.328	14.771
Intermediate	19.333**	5.372	69.579
Graduation & above	6.806**	3.294	14.062
<i>Occupation of the husbands</i>			
Cultivators (ref)	1.000		
Agricultural Labour	0.201*	0.045	0.907
Daily wage Labour	0.453*	0.245	0.837
Business	1.097	0.35	3.439
Govt. & Pvt. Services	3.435**	1.771	6.663
Self employment	1.909*	1.022	3.563
Others	2.146*	0.754	6.108
<i>Wealth status</i>			
Poor(ref)	1.000		
Middle	1.537	0.888	2.661
Rich	5.439**	3.274	9.035
<i>Total children ever born</i>			
0(ref)	1.000		
1	1.659*	0.895	3.075
2	2.358**	1.244	4.469
3	1.088	0.535	2.213
4+	0.97	0.484	1.944

Note: Significant at  $p < 0.05^*$  and  $p < 0.01^{**}$ , (ref) – Reference category

an important role in the knowledge and adoption of contraceptives among tribal women. Though the knowledge of at least one contraceptive method is almost universal among women, but the knowledge of temporary methods is much lower among tribal women. Temporary contraceptive methods allow women who want to keep birth interval between children and in attaining the desired number of children. In such situation, temporary contraceptive methods can play an important role to women achieving their goals for completed family size (Pathak *et al.*, 1998). The women of rural areas, poor wealth status, Bhil and Saharia tribal group, illiterate women and whose husbands engaged in labour activities have been found less likely in the use of temporary methods against the counterpart groups. These differentials are more widened in the practice of contraceptive methods. Female sterilization is the most commonly practiced method and little differences have been observed across the background characteristics but the scenario of the practice of methods other than sterilization or temporary methods is frightening. As the results depict, women associated with urban areas, highly educated and of service class, rich wealth status, Mina tribe are far better in the practice of temporary methods such as *Pills, Condom, IUD, Safe period, Injectable* etc. The multivariate (logistic regression) result also indicates that uneducated, rural and women belonging to labour class and poor economic status, Saharia and Bhil tribal groups and having more than two mean children ever born are less likely to use the temporary methods.

In view of the above analyses, it becomes imperative to evaluate family planning programme, the country has for the last six decades, and to take a serious note on its current programme. *Female sterilization* is the widely practiced method of contraception but the level of adoption of temporary or spacing methods is in poor state which is a grave sign for the demographic balance among the tribals in particular and the country in general. Since maternal and child health is very much associated with the practice of spacing or temporary methods, their availability must be ensured to everyone in the country. Thus, family welfare programme needs to do more to promote knowledge of modern spacing methods through educational campaigns in tribal areas and make serious efforts to fulfill the unmet need of spacing methods. It is the urgent need to make the serious efforts in this regards and bringing tribals under the coverage of full flagged family planning programmes.

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