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Social Determinants of Family Planning Practices in Bihar, India

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Abstract

Background: The unmet need of family planning is 21 percent among the currently married women in Bihar according to NFHS-IV (2015-16), which is much higher compared to other states in India. We aimed to study the social determinants of family planning practices in the state of Bihar. The study used descriptive analytical research design. **Methods:** The study used data of National Family Health Survey (NFHS-4), conducted in the state of Bihar. The study includes the 35,443 married women of the reproductive age group (15-49 years) from Bihar.

Results: The findings reveals that only 24 percent of women in the state in the reproductive period are using any method of family planning measures, about 0.9 % women are practicing traditional methods while 23% are using modern methods. The study found that age, religion, caste, and wealth status are significantly associated with contraceptive prevalence rate. The analysis again indicates that among the women in the age group 35-44 years were more likely to use contraception compared to women in the age group 45-49. It is also observed that rural women are more likely to use contraceptives compared to women residing in urban settings. **Conclusion:** The awareness on family planning methods among currently married women were almost universal in the state, but their practising was lacking. There is a need of proper counselling for eligible couples on importance of small families; remove misconceptions on family planning methods and assisting them in making suitable choice can minimize the obstacles in using family planning methods.

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Keywords: Family planning, NFHS, Maternal mortality, CPR, Reproductive health, Unmet need

INTRODUCTION:

Contraceptive use, as a proximate determinant of fertility, plays an important role in reducing fertility; and at times contraceptive prevalence has been used to evaluate the effect of family planning programs¹. The best option to check population growth is by lowering the fertility levels². The choice of contraceptive methods is influenced by a host of interdependent demographic, cultural, economic and social factors³. Family planning through contraception tries to achieve two main objectives; firstly, to have only the desired number of children and secondly, to have these children by proper spacing of pregnancies⁴.

India was the first country in the world to have launched a National Programme for Family Planning in 1952. Over the decades, the programme has undergone transformation in terms of policy and actual programme implementation. Several factors account for sterilization's widespread use in India. The extent of acceptance of contraceptive methods and choices varies within the country as well as state and districts. It is currently being repositioned to not only achieve population stabilization goals but also to promote reproductive health and reduce maternal, infant & child mortality and morbidity. Nationwide, the small family norm is widely accepted and the general awareness of contraception is almost universal.

In the last decade Bihar recorded the highest population growth rate of 25.1 percent and adds over 20 million people to its population. This is almost similar to the size of population of Mexico.

Rationale of the Study

Bihar is the focus of study for several reasons. It is the third most populated state in India with approximately nine percent (about 10 billion as of 2011 Census) of the total population⁵. It is the poorest state of the country, with the exception of Orissa, and ranked among slowest growing regions of the country until recently. High maternal mortality and infant mortality, low life expectancy at birth, high unmet need of contraception, low literacy, low immunization coverage and high child malnutrition were reported in Bihar.

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The low rate of contraceptive use and high fertility in Bihar are concern to the Indian Government. As per the National Family Health Survey (NFHS-IV) state fact sheet, the total fertility rate (TFR) in Bihar is 3.4 children per woman, among the highest in any state in India ⁶. Fertility decreased by 0.6 children in the 10 years between NFHS-3 and NFHS-4. According to NFHS-IV (2015-16), 21 percent of the currently married women in Bihar had the unmet need of family planning, which is much higher compared to other states. Based on above factors, the present study opts to find the social determinants of family planning practices among currently married women in the state of Bihar.

METHODOLOGY

The present study with descriptive and analytical research design uses data from fourth round of the National Family Health Survey (NFHS-4) . The NFHS-4 sample is a stratified two-stage sample. Primary Sampling Units (PSUs) were villages in rural areas and Census Enumeration Blocks (CEBs) in urban areas. Within each rural stratum, villages were selected from the sampling frame with probability proportional to size (PPS). For the analysis of present study, considered 35,443 currently married women (aged 15-49 years) from 1778 cluster (PSU) in 38 district of Bihar ⁶.

The data has been analyzed by using IBM SPSS v20. Distributions of the family planning practices of currently married women were estimated in percentages. Cross tabulations were applied to analyze the variations of determinants, viz., age group, religion, caste, place of residence and wealth status, on the family planning practices. Chi-square test was applied to find out the association between family planning practices with back ground characteristics. To identify the factors associated with the family planning practices, binary logistic regression has been deployed.

RESULTS

Socio-Economic Profile of Women

The study includes the 35,443 married women of the reproductive span from 38 districts of Bihar. The socio-economic and cultural background plays major role in knowledge, opinion and family planning practices among women. Table 1 indicates that the proportion of women were more in the age group of 30-39 years (31.74%) and less in the age group of 15-19 years (6.8%). More than 50% of them were never gone to school and only 8% have completed 12 years of schooling. The women were

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predominantly from the Hindu religion (85%) and regarding social category, majority of them belong to OBC (60%) followed by SC (20%). Majority of the women were residing in rural areas (88%).

Table 1: Socio-Economic Profile of Women

Background characteristic		Number of women (n=35,443)	Percent
Age group	15-19	2,426	06.84
	20-24	6,428	18.13
	25-29	7,453	21.02
	30-39	11,250	31.74
	40-49	7,886	22.24
Education	No schooling	19,878	56.08
	<5 years complete	2,026	05.71
	5-9 years complete	7,115	20.07
	10-12 years complete	2,903	08.19
	>12 years complete	3,521	09.34
Religion	Hindu	30,063	84.82
	Muslim	5,337	15.0
	Others	29	0.08
Caste/Tribe	Schedule caste	7,039	20.0
	Schedule tribe	1,237	3.49
	Other backward class	21,109	60.0
	Others	5,861	16.53
	Don't know	197	0.55
Place of Residence	Rural	31,047	88
	Urban	4,396	12

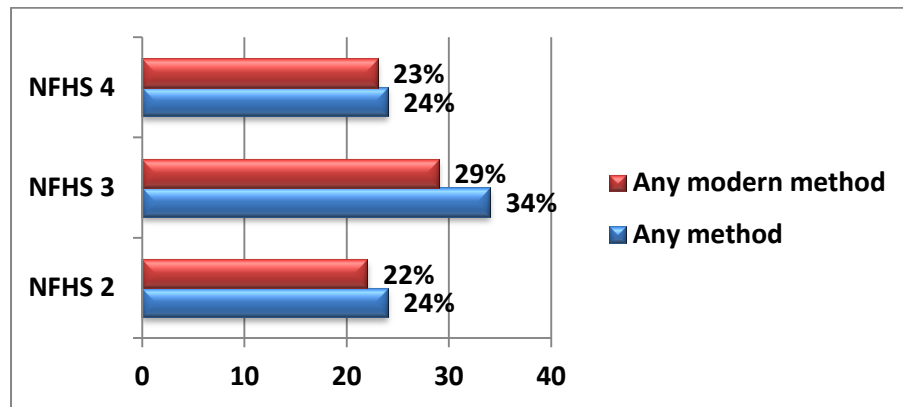
D
istribution of women according to

family planning Methods

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Fig. 1 shows the distribution, 24 percent of the women are currently using any family planning methods and 76 percent are not using any methods according to NFHS-4. The contraceptive prevalence rate (CPR) declined to 24 percent (NFHS-4) from 34 percent reported in NFHS-3. Modern method use (23%), also declined from its level in NFHS-3 (29%) in Bihar.

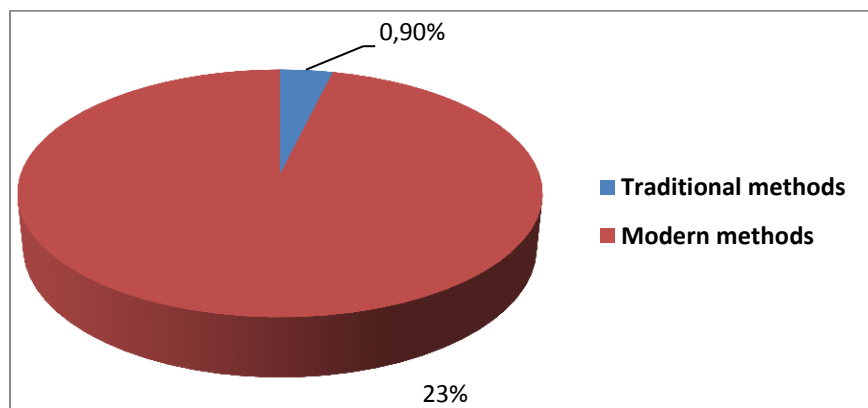
Fig. 1: CPR any method and modern method in Bihar



Source: NFHS-II, NFHS-III & NFHS-IV

Among the women 23 percent were using modern methods while about 0.9 percent were still using traditional method (Fig.2).

Fig .2: Percent distribution of women using traditional and modern methods in Bihar



Source: NFHS-IV, Bihar (2015-16)

The detailed analysis shows that 21 percent of the women in Bihar is going for female sterilization and in NFHS-3 it is reported as 24 percent. The negative trend among the female population towards sterilization is may be because of the awareness of other available family planning

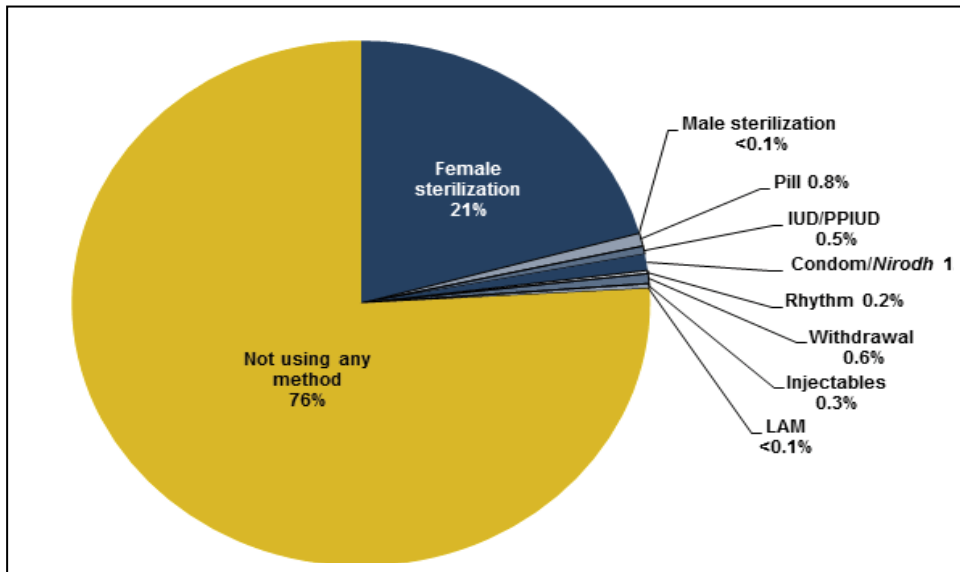
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methods and they don't want to lose their fertility permanently. But taking pill is reported only by 0.8 percent women of Bihar as per NFHS-4 where NFHS-3 reported 1.3 percent.

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Fig.3: Percent distribution of women using various Family Planning Methods in Bihar



Source: NFHS-IV, Bihar (2015-16)

Still using of pills is the second most prevalent method by women followed by female sterilization. The reason for high acceptability of pill are it is easy to take and reversible. It can be used as emergency method after unprotected sex. It is safe for almost all women. Serious side effects are very rare. It can be use by any women of any age, whether or not she has children. So, there shows a negative trend from NFHS-3(1.3) to NFHS-4(0.8). Other methods including IUD (0.5%), Injectables (0.3%), Condom/Nirodh(1.0%), LAM(<0.1%), Rhythm(0.2%) and Withdrawal(0.6%) reported as given in fig. 3.

Among the contraceptive users, 23 percent of the currently married women were using modern family planning method and only 0.9 percent using traditional method in Bihar. Wide variations in the performance of family planning is noticed among different regions which may be due to the differential influence of various socio-economic, demographic, cultural, ecological, health and other input factors (fig. 4). Bihar has a low contraceptive prevalence rate of 34 percent. In the state, district Rohtas has the

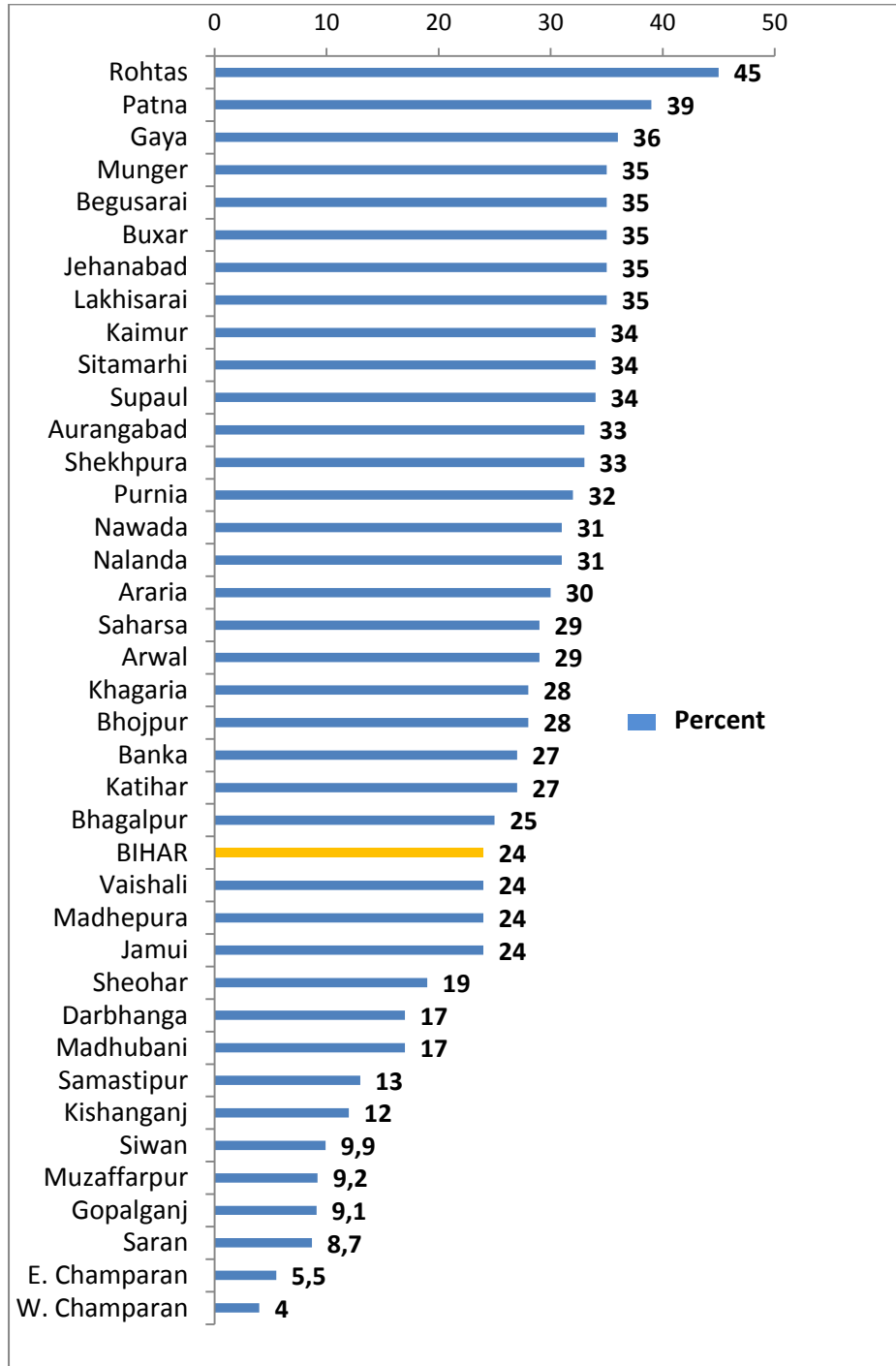
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highest CPR with 45% and West Champaran district reported the lowest in the state with 4 percent (NFHS-4, 2015-16).

Fig. 4: District level Contraceptive Prevalence Rate among currently married women in Bihar

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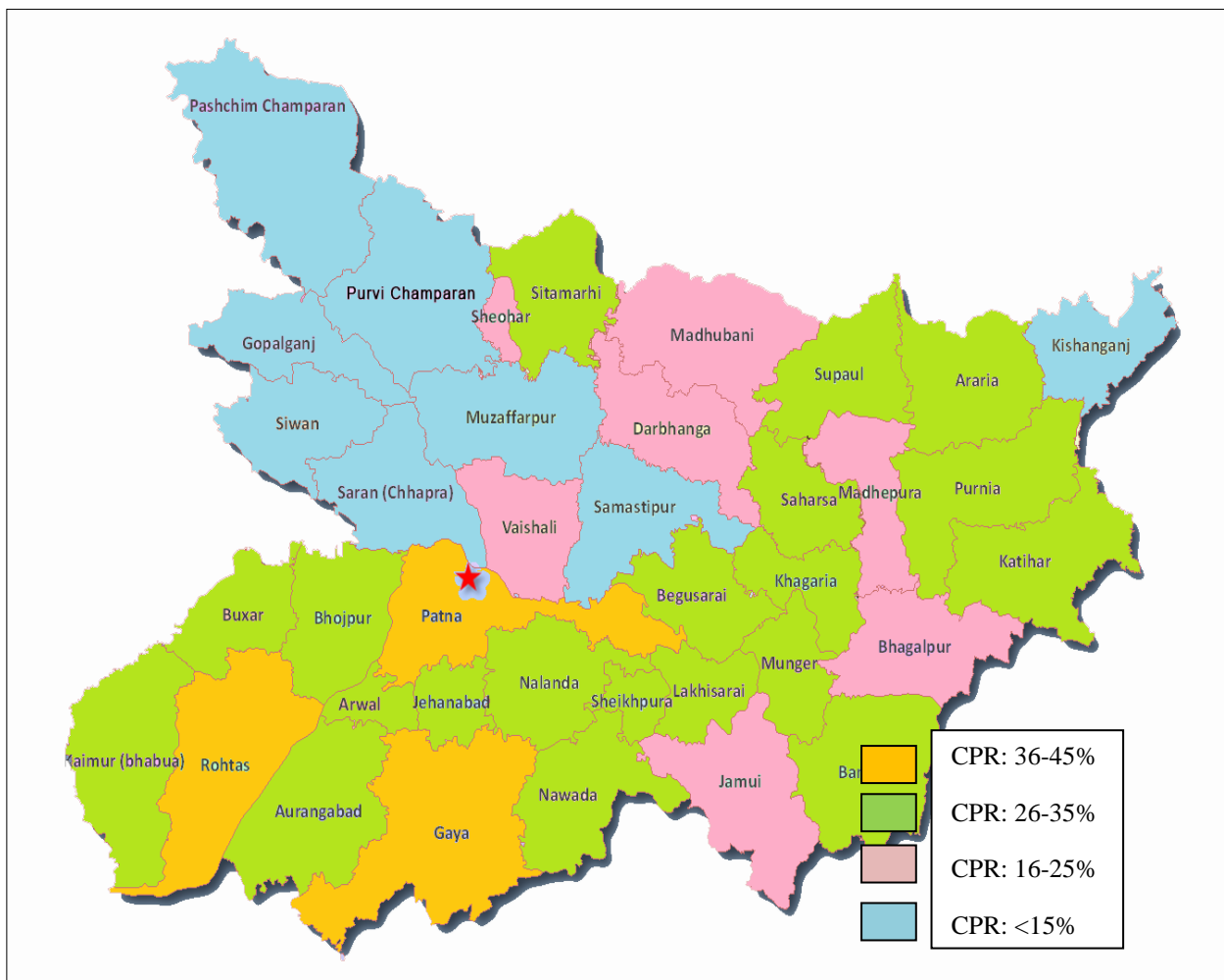


Source: NFHS-IV, Bihar (2015-16)

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The fig. 4 shows that only 3 districts that are located in South-west region of Bihar have CPR more than 35%. Twenty districts in South-east region have contraceptive prevalence in the range of 26%-35%. Few districts located in central region have CPR between 16%-25% while North-west region including 8 districts reported CPR less than 15% in the state.

Fig. 5: Regional Variations in Contraceptive use among currently married women in Bihar



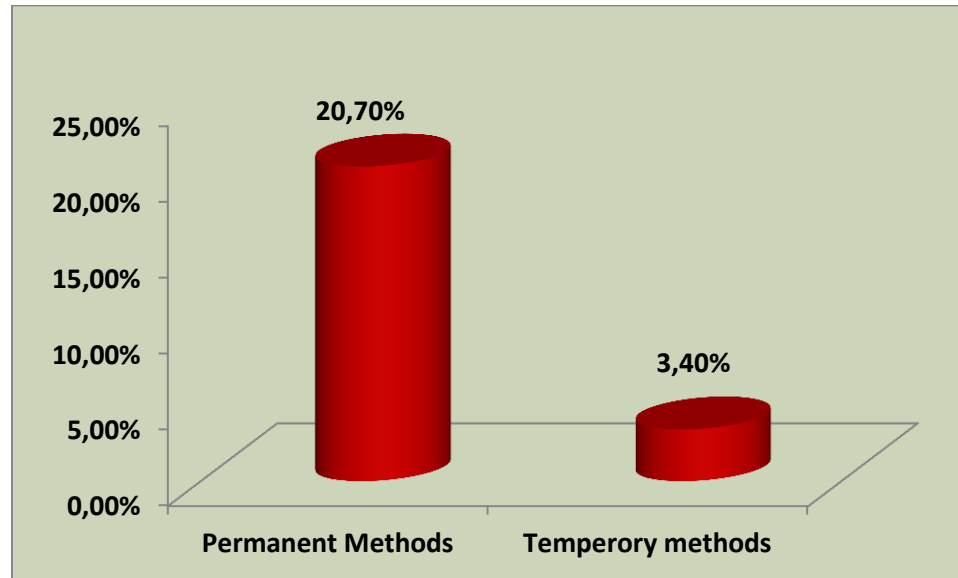
Permanent methods versus Temporary methods

Permanent method (limiting methods) of family planning includes female and male sterilization. Temporary methods (spacing method) includes pill, IUD/PPIUD, injectables, male condom, female condom, Foam/ Jelly, diaphragm and lactational amenorrhoea method (LAM) and traditional methods like rhythm, withdrawal, and other traditional methods. About 21 percent of the

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mothers accepted permanent methods of family planning in Bihar and only 3.4 percent were following temporary methods (fig. 6).

Fig. 6: Percent distribution of women using permanent methods versus temporary methods



Family Planning Practices and its Association with Socio-economic Factors

This section examines correlates of contraceptive use among currently married women in Bihar. Bivariate logistic regression analyses were used to establish the relationships between socio-economic variables and current use of contraception.

Table 2: Percent distribution of Contraceptive use any method with back ground characteristics

	Categories	Any Method		No Method		Significance Level
		No.	Percent	No.	Percent	
Age Group	15-19	43	0.5	750	8.8	P<0.001
	20-24	452	5.3	1893	22.2	
	25-29	1535	18	1876	22.0	
	30-34	1986	23.3	1270	14.9	
	35-39	1893	22.2	1066	12.5	

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	40-44	1458	17.1	844	9.9	
	45-49	1151	13.5	827	9.7	
Religion	Hindu	7945	93.2	22118	82.2	P<0.001
	Muslim	574	6.7	4763	17.7	
	Others	5	0.1	37	0.1	
Caste	SC	1643	19.3	5396	20.3	P<0.001
	ST	149	1.8	1088	4.1	
	OBC	5267	61.9	15842	59.5	
	General	1444	17.0	4118	15.5	
Place of Residence	Rural	7005	82.2	24042	89.3	P<0.001
	Urban	1520	17.8	2876	10.7	
Wealth Index	Poor	5727	67.2	20515	76.2	P<0.001
	Middle	1313	15.4	3452	12.8	
	Rich	1485	17.4	2951	11.0	
Education	No education	4738	55.6	15027	55.8	P>0.05
	Primary	920	10.8	3139	11.7	
	Secondary	2489	29.2	7600	28.2	
	Higher	378	4.4	1152	4.3	

Age of the women is an important demographic variable that influences contraceptive behaviour. As the age of the women increases, use of contraception also increases. The reason may be that by the age between 30- 39 years, most of the couple or family completed their desired family size. Highest contraceptive use has been observed in 30-39 age groups of women (45.5%) for any method. Lowest CPR has been observed in 15-24 years of age. The statistical analysis indicates there is a highly significant association ($P < 0.001$) between CPR any method and age group.

The analysis indicates that there is a significant association between contraceptive prevalence rate (CPR) and religion. CPR is highest among Hindu women (93.2%) followed by Muslim women (6.7%) compared to other religious group. The statistical analysis indicated there is a highly significant association ($P < 0.001$) between religion and CPR any method. The acceptance of family planning methods among different social groups may vary due to their perception regarding control of fertility.

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Across the social groups, it is seen that among OBC the acceptance of contraceptive for any method much higher (61.9%) than the other social groups followed by SCs (19.3) and General (17.0%). Chi-square test result shows that there is a highly significant association ($P < 0.001$) between CPR any method and caste (Table 2).

Place of residence is another important factor affecting the CPR. The analysis (table 2) indicates women residing in rural areas were using contraception much higher than (82.2%) compared to women residing in urban (17.8%). The statistical analysis indicates there is a highly significant association ($P < 0.001$) between CPR any method and place of residence. The use of any method is high at the low wealth group as compared to high wealth group. From table 2, it has been observed that more than 60 percent of the female population belongs to low socio-economic group are currently using any method rather than women with middle (15.4%) and high socio-economic group (17.4%). Thus, wealth status is another factor affecting the CPR and has significant association ($P < 0.001$) between the two. The study also found that CPR is highest among women who have never gone to school (55.6%) followed by women with secondary education (29.2%) rather than women with higher education (4.4%). So, the education has not a positive impact on the use of family planning methods in Bihar.

Logistic regression analysis of CPR any method with socioeconomic and demographic characteristics

To get the net influence of various variables on contraceptive practices, logistic regression was employed. Only the variables significant at 5% level with chi-square test were included in the logistic regression analysis.

Table 3: Logistic regression analysis of CPR any method with socio-economic characteristics

		P value	Exp(B)
Age group	15-19	.000	0.040***
	20-24	.000	0.172***
	25-29	.000	0.590***
	30-34	.002	1.149**
	35-39	.000	1.335***
	40-44	.000	1.254***

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	45-49®		
Caste	Schedule caste ®		
	Schedule tribe	.000	0.438***
	OBC	.046	1.071*
	General	.016	1.120*
	Don't know	.000	0.145***
Wealth status	Poor ®		
	Rich	.000	0.785***
	Middle	.601	0.974
Religion	Hindu ®		
	Muslim	.000	0.309***
	Others	.035	0.327*
Place of residence	Urban®		
	Rural	.000	1.615***

® Reference category, *P<0.05, **P<0.01, *** P<0.001

The logistic regression analysis (table 3) indicates that use of contraception increases with age of women. Women in the age group 30-34, 35-39 and 40-44 were 15 percent, 33 percent, 25 percent more likely to use contraception respectively compared to the women in 45-49 age group. With respect to the caste of the women, the chance of adopting contraceptives is higher among the women belong to general category and OBC compared to women belong to SC category. Especially among the STs, the likelihood of contraceptive use were 57 percent lesser in the State, while it was 12 percent and 7 percent higher among general and OBC women respectively compared to SC women. When we consider wealth status, women belong to rich and middle wealth status group have lesser chance of adopting contraception than women with poor wealth status. In the state, rich and middle wealth group were 22 and 3 percent less likely to use contraception compared to poor wealth group (table 3). As far as the religion is concerned, Muslim women and other religious groups women were less likely to use contraceptives compare to Hindu women in the state. The likelihood of adopting contraceptives were 70 percent lesser among Muslim women compared to Hindu women in the state. It is also observed that rural women are more likely to use contraceptives compared to women residing in urban settings.

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The odds ratio indicates that the likelihood of contraceptive 61 percent higher among rural women than its counterparts.

Reason for not using any contraception

This section presents the main reasons for not using contraceptives by currently married women in the 15-49 year age group in the state of Bihar.

The reasons for not using contraception among women have been classified into five sub-groups: (a) fertility related issues (b) opposition to use (c) lack of knowledge (d) methods related reasons, and (e) others, given in table 4.

Table 4: Percent distribution of women by reasons for not using any contraception

Fertility related issues	Percent
Not having sex	8.4
Infrequent sex	1.1
Sub-fecund/infecund	1.1
Hysterectomy	6.0
Menopause	7.5
Post-partum amenorrhoea	1.4
Breastfeeding	3.2
Sub total	28.7
Opposition to use	Percent
Respondent opposed	1.6
Husband opposed	5.9
Others opposed	0.3
Religious prohibition	0.4
Sub total	8.2
Lack of knowledge	Percent
Knows no method	0.5
Knows no source	0.3

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Fatalistic	4.3
Sub total	5.1
Method related reasons	Percent
Health concern/fear of side effects	1.1
Lack of access/too far	0.2
Cost too much	1.4
Inconvenient to use	0.3
Interference with body's normal process	0.3
Don't like existing methods	2.6
Sub total	6.0
Others	2.8
No response/missing data	23.8
Total	76

The study reveals that 76 percent women not using any contraceptive method where the fertility related issues are the substantial reason for not using contraception in Bihar (28.7%) such as not having sex, menopause, hysterectomy, breastfeeding etc. Opposition to use is another reason (8.2 %) for not using contraception and were reported that their husband or others or religious belief opposed to use contraception. A small percent reported that the reason as lack of knowledge among non-users regarding family planning method (0.8%). Among the non-users, health and method related reasons were negligible. Health and method related reason includes health concerns (1.1%), inconvenient to use (0.3%), interference with body's normal process (0.3%) or do not like existing method (2.6%). These were the health and method related prime reasons among the women in the state.

DISCUSSION

Age of the mother is an important demographic variable that influences contraceptive behaviour. Highest contraceptive use has been observed among the women in the age group of 35-49 years for any method and lowest was in the age group 15-24. Another Indian study concluded that after crossing 40 years, women lose their reproductive ability so that contraceptive use becomes redundant.

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Therefore CPR levels falls beyond this level ⁷. Similar conclusion has been derived in the study conducted in Odisha by Sahoo ⁸. Acknowledging the deep-rooted custom of child marriages in the state, the latest data of annual health survey (AHS, 2012) indicates that nearly 13.8 percent of the girls are getting married before reaching the age of 18 years and about half of the currently married women aged 20-24 years married before legal age (18 years) in Bihar ⁹.

There is substantial gap between rural and urban CPR (any method) in the state. Study done by Chaurasia using DLHS-3 supports our finding. These variations are mainly due to the differentials in availability and accessibility of the facilities and services. The pattern of family planning methods varies among different social groups due to their own perception regarding control of fertility. Across the social groups, it is seen that among STs, the contraceptive for any method much lower than the other social groups. The reason may be due to the traditional knowledge and practices. Women from OBC category have the highest prevalence (61.9%) of contraceptive use for any method followed by women from SC and General category ³.

Analysis of the National Family Health Surveys (NFHS-III, 2005-06) in India for Muslim and Non-Muslim differentials in Family Planning showed that Muslim women have greater opposition to family planning. Also, Muslims tend to utilize private-sector services due to better privacy but the family planning program rely on public-sector ¹⁰. Though more and more educated class among Muslims opting for small family, but the belief that Islamic law prohibiting contraception was as seen as the major obstacle among the masses ¹¹. Our study also support these findings, the CPR among Muslim women was only 6.7 percent, while among Hindu women, it was 93.1

Education of women plays a crucial role in the utilization of family planning methods ^{3,12}. Female education, particularly completion of primary and secondary schooling strongly related to lowering fertility ^{13,14}. Another study by Singh et al., 2003 revealed that there is significant association between family planning practices and educational level ¹¹. But, the findings of present study are exception from the above studies. It shows that the education has not a positive impact on the use of family planning methods in Bihar.

Rich groups have high CPR for any method and modern method in all regions and CPR is lowest among poor wealth index groups. In the state, middle and poor wealth group were 30 and 28

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percent less likely to use any modern method of contraception compared to rich group. Similar conclusion has been drawn by other studies ^{3,15, 16,17}. An analysis of NFHS-III Uttar Pradesh found that contraceptive use was strongly associated with wealth index ¹⁸.

The use of contraception is a mutual understanding and agreement between the spouses, but there may possible opposition from the partner or others or some religious prohibition. The present study also shows great deal of variations in degrees of concerns related to reasons behind the non-use of contraception in the state. It reveals that 76 percent women not using any contraceptive method where fertility related issues are the substantial reason in Bihar (28.7%) like not having sex, menopause, hysterectomy, breastfeeding etc. In the state nearly 8.2 percent of the non-users were reported that their husband or others or religious belief opposed to use contraception which is the second most common reason for not using any contraception. A study conducted in rural Maharashtra found that more than 16 percent were not using contraceptives due to fear of side effects ¹⁹. Another research indicated that nearly one-third of the users were reported about the fear of side effect ²⁰. While in this study only 1.1 percent women were not using contraception due to fear of side effects.

CONCLUSION

The study reveals that only 24 percent of women in the state in the reproductive period are using any method of birth control measures. It is also noticeable that 0.9 percent women are practicing traditional methods while modern methods users are 23%. Female sterilization is most common method (21%) as compared to all other methods. Wide variations in the performance of family planning is noticed among different regions which may be due to the differential influence of various socio-economic, demographic, cultural, ecological, health and other input factors. Among the 38 districts of Bihar, 14 districts have CPR less than state average (24%) and 24 districts have CPR above average. It also has been observed that only 3 districts that are located in South-west region of Bihar have CPR more than 35%. Twenty districts in South-east region have contraceptive prevalence in the range of 26%-35%, while the analysis by districts indicates that Rohtas holding the highest users of contraceptives with 45percent followed by Patna (39%), Gaya (36%). West and east Champaran reported the lowest contraceptive prevalence rate i.e., 4% and 5.5% respectively.

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The statistical analysis shows that age, religion, caste, and wealth status are significantly associated with contraceptive prevalence rate. The logistic regression analysis indicates that among the women in the age group 35-44 years were more likely to use contraception compared to women in the age group 45-49. As far the social category is concern, women belonging to general and OBC categories were more likely to use contraception than women belong to SC. When we consider wealth status, women belong to rich and middle wealth status group have lesser chance of adopting contraception than women with poor wealth status. As far as the religion is concerned, Muslim women and other religious groups women were less likely to use contraceptives compare to Hindu women in the state. It is also observed that rural women are more likely to use contraceptives compared to women residing in urban settings.

It can conclude as awareness about family planning methods among currently married women were almost universal i.e. 98% (NFHS-4, 2015-16) in the state, even among many of those who are aware of family planning measures, but their practising was lacking. There is a need of proper counselling for eligible couples on importance of small families; remove misconceptions on family planning methods and assisting them in making suitable choice can minimize the obstacles in using family planning methods. With better information and motivation campaigns and providing good quality family planning services, it may be possible to persuade a large proportion of these women to adopt contraception. Male participation is very less in Bihar, programmes required to motivate men to adopt family planning. Provide good quality health services and supply of adequate contraceptive should be considered. Actions required to reduce the unmet need of contraceptives by increasing accessibility of contraceptives. Special attention is required for West and east Champaran regions.

Conflict of interest statement:

Nil

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