

FACTORS INFLUENCING THE CHOICE OF THE USE OF TEMPORARY AND PERMANENT METHODS OF CONTRACEPTION IN NORTHERN INDIA

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Abstract

Improving the reproductive health of young women in developing countries requires access to safe and effective methods of fertility control. Contraception is a single most important intervention of fertility control which reduce burden of unwanted pregnancy and promote healthy living among young women. India is a vast country and has socio-cultural and behavioral diversities. To access the impact of type of modern contraceptives, the study has been carried out for the state Uttar Pradesh and a large influence on fertility and mortality of the country have been explained by this state only. The current study contains the influence of socio-cultural, demographic and behavioral factors on the use of temporary and permanent method of contraception which explains the current scenario of contraceptive use. The comparative study between the use of temporary method and permanent method of contraception has been carried out by controlling socio-economic, cultural and demographic characteristics. The study reveals that the permanent method of contraception is more popular method than the temporary method of contraception among the females of Uttar Pradesh. As educational status and wealth status of the female increases the use of temporary method of contraception increases significantly. Females with higher marital duration and the females who have crossed their ideal family size have significantly higher chance of using permanent method of contraception. The study looks at data from the NFHS-III conducted from 2005-06 in Uttar Pradesh, the most populous state of India. The data contains 7510 currently married females of age-interval 15-49 years.

Key Words: Contraception, Spacing Method, Limiting Method, Family Size, Mass Media Exposure

1. Introduction

The world population will likely to increase by 2 billion over the next 35 years, passing from the current 7 billion to 9 billion in 2046 (UNCB, 2013). In contrast, the population of more developed regions is expected to remain largely unchanged at 1.2 billion. The United Nation World Population report 2006 (DESA, 2007) version has suggested that now decline is observed in most Asian countries including the current giants India, Pakistan and Bangladesh.

Berelson (1977) mentioned numerous ways of fertility decline in which he has clearly shown that the government interventions can largely influence the fertility levels. These include access to contraceptive methods of population control including sterilization and abortion. Later, Bongaart (1983) has suggested that contraceptive use explains the total fertility rate (TFR) and have clearly showed that contraceptive use is one of the most important proximate determinants of fertility. Further, Mauldin and Ross (1991) have demonstrated that contraceptive prevalence rate (CPR) alone can explain 85 to 87 percent of the variance in TFR. For India, due to this factor only i.e. the increasing level of CPR caused reduction in TFR. The TFR was 3.4 children per woman at the time of NFHS-I (1992-93) and currently it is observed as 2.7 in NFHS-III (2005-06).

Increasing the use of family planning methods and decreasing fertility levels are important components of the development strategies of countries like India. Reproductive health is central goal to achieve the Millennium Development Goals which can be achieved by improving maternal health, reducing child mortality and eradicating extreme poverty (UNFPA, 2004; Cleland, 2006). This certainly requires that the women have access to safe and effective methods of fertility control. Thus, the promotion of family planning programs, so that women can avoid unwanted pregnancy, is the central focus of the World Health Organization (WHO) by which the maternal health may be improved and which is core to achieve the Millennium Development Goal (2008).

In India, knowledge of contraception is nearly universal. About 98 percent of women and 99 percent of men age 15-49 know one or more methods of contraception (NFHS-III). It is observed from NFHS-III data that ever use of any method among currently married women has increased by 11 percentage points than the NFHS-II survey data. The CPR for currently married women in India was observed 56 percent in NFHS-III which was observed as 48 percent in NFHS-II.

Further, the level of unwanted pregnancy too has been quite high in India among all among married young women. Contraception has been the single most important intervention to reduce burden of unwanted pregnancy as well as to promote healthy living among young adults. As per the NFHS-III estimates, the unmet need for family planning for the country as a whole is about 12 percent and remaining 88 percent of the total demand for family is satisfied. The unmet need for family planning is alarmingly high among married adolescent women aged 15-19 years (25 percent for spacing and 2 percent for limiting) and among those aged 20-24 years (15 percent for spacing and over 6 percent for limiting).

Several types of modern contraceptive methods have been practiced by the females in the society. Modern contraceptive method is again classified into permanent methods (female and male sterilization) and temporary methods (pill, IUD, injectables, male and female condoms, and emergency contraception). Also some females are using traditional methods which are generally rhythm and withdrawal method. From the NFHS-III reports, over 94 percent of women and men know about female sterilization, whereas, by contrast, male sterilization is known only by 79 percent of women and 87 percent of men. Ninety-three percent of men know about condoms, compared with 74 percent of women. Qualitative studies also report that in many cases, men and women who were aware of contraceptive methods did not have timely knowledge, especially during the initial years of their married life (Haberland et al., 2001; Levine et al., 1992).

Female sterilization, with a prevalence of 37 percent, accounts for 66 percent of all contraceptive use in NFHS-III and it came down from 71 percent of all contraceptive use from the time of NFHS-II. Socioeconomic factors, however, have been shown to be of greater importance in determining health service utilization than demographic factors (Obermeyer & Potter, 1991). India is a very vast country and has cultural diversity. Thus, there is too much variation in the use of contraceptives due to behaviour and socio-economic status as well as demographic characteristics and it is not easy to obtain the explanation of such variations. Uttar Pradesh is most populous state of India and the variation of fertility, MMR, IMR and other such factors in the country is highly influenced and explained by the variation in this state only. This study gives a general idea about behavioral, cultural and demographical variation in the use of modern contraceptive method in the state Uttar Pradesh. Further, the study also provides the relevance and significance of socio-cultural, economic and demographic variables to know the influence on choice of temporary contraceptive methods and permanent contraceptive methods.

2. The Data

The reliable data on this study has been taken from the most recent round of National Family Health Survey (NFHS-III). This is a large scale sample survey conducted under the stewardship of the Ministry of Health and Family Welfare, Government of India, with the International Institute for Population Sciences, Mumbai. The first such survey was conducted in 1992-93 (NFHS-I). In the current study the brief information of females on their place of residence, marital duration, educational status, number of children above ideal family size, at least one child is son, religion, caste, type of modern contraceptive use, mass media exposure, and wealth status has been explored. The present study takes into account the 7510 currently married females of age-interval 15-49 years from the state Uttar Pradesh, India.

3. Methodology

In the present study, initially the distribution of different background characteristics and behavior has been studied for the females of Uttar Pradesh, India. In this study independent variables have been categorized as type of place of residence (urban, rural), marital duration (15 years and above and below 15 years), educational attainment (no formal education, primary, secondary and higher), children above ideal family size (yes, no), at least one son (yes, no), religion (Hindu, Muslims), mass media exposure (yes, no) and wealth index (poor, moderate, rich).

Univariate logistic model has been applied to find out the factors significantly affecting the use of different types of modern contraceptive methods like permanent or temporary; by taking different background characteristics as independent variable one by one. For better understanding and to know the combined effects of independent variables, multivariate logistic regression analysis has been also utilized to access the variation in current modern contraceptives user to non users and how they are affected by different independent variables such as demographic, socio-cultural and behavioral characteristics. For the comparative study between temporary modern methods and permanent modern method again multivariate regression technique has been applied.

4. Results and Discussion

The analysis provides the information on the distribution of the currently married females of the state Uttar Pradesh which is included in this study according to their different demographic characteristics. Further the analysis for the type of use of modern contraceptives i.e. permanent methods and temporary methods have been carried out on the basis of cultural, behavioral and demographic dividend. The objective is fulfilled by comparing these two types of modern contraceptives by taking all the factors which explain above as independent variables.

Table 1 describes the percentage distribution of currently married females of Uttar Pradesh according to socio-cultural, demographic and behavioral factors. The total sample size in this study is 7510. The distribution is categorized by place of residence, marital duration within 15 years and above, educational status of female, number of children above ideal family size, at least one child is son, religion, caste, type of modern contraceptive use, mass media exposure, and wealth status.

Almost two-fifth of the females in the sample belongs to urban area and remaining three-fifth females were from rural area. In the total sampled females, 43.2% females having their marital duration 15 years or more. From the table it is clear that 57% females have no formal education, whereas, 34% were primary/secondary educated, and less than 10% females were highly educated. About 38% females belong

to the family with low income group and 44% females came from the family with high income group. Three-fifth of the total females who have their total children below or equal to ideal family size and remaining two-fifth females have their total number of children above their ideal family size. About four-fifth of the females were having at least one male child. If we compare the data according to religion then Hindu religion was dominant and the females having their proportion 79%, whereas, the remaining 21% females belong to Muslim religion. If the sample population is categorized according to caste then 22.6% females belong to SC/ST household, 49.5% females belong to OBC group and remaining 27.9% females belongs to general category. About three-fourth females have mass media exposure. Out of total females, 22% females are using permanent method of contraception, whereas, 17.6% females are using temporary method of contraception and rest more than 60% females are non users.

Table 2 explains the results of univariate logistic regression analysis which captures the influence of different socio-cultural and demographic factors on the different type of contraceptives. Place of residence has significant effect on the use of temporary as well as permanent method of contraception. The females who are living in urban areas have higher risk of use of both temporary as well as permanent method of contraception. Urban females have 4.5 times higher chance to use of temporary method as well as 1.86 times higher chance to use permanent method with respect to the females who are residing in rural areas. It is worthwhile to mention that the difference between the uses of temporary method of contraception is higher for the females belonging to urban areas than the rural areas. This clearly indicates that higher proportion of females who are living in urban area like to use temporary method of contraception than the females who are living in rural areas.

Marital duration differential has also significantly effect on both type of contraception. There is about 15 percent less chance of use of temporary method of contraception and 4.6 times higher risk of use of permanent method of contraception for the females whose marital duration is 15 years and above than the females whose marital duration is less than 15 years. The result shows that if the marital duration is high there is higher risk of use of permanent method of contraceptives with respect to temporary methods. This may be due to the fact that the females with marital duration 15 years or more have attained their desired family size and thus they want to choose permanent method of contraception.

Education level plays an important and significant role in the use of temporary methods of contraception. A positive relationship has been observed between the use of temporary method of contraception and the education of the female. As the education of the female is increasing, the temporary method of use of contraception is also increasing significantly. It is worthwhile to mention that the females who are highly

educated have 10 times higher risk and the females who are secondary educated have 3.3 times higher risk to use of temporary method of contraception in comparison to the females who have no formal education. Use of permanent method of contraception is not much affected by the education of the females. This result clearly shows that education levels do not influence the use of permanent method of contraception.

The females who have already achieved their ideal family size have significantly higher risk of using both type of contraception. If the females have already achieved their ideal family size, there is 40 percent higher chance of use of temporary method and about 4 times higher chance of using permanent method of contraception than the females who have not achieved their ideal family size. The variable that female having minimum one male child positively and significantly affects the use of contraception. The females who already have one male child have three times higher chance to use temporary method of contraception and 27 times higher chance to go for permanent method of contraception. The results clearly indicate that the females who have at least one male child have very high chance that they will undergo for permanent method of contraception. This result indirectly indicates the son preference in the society.

The difference due to religion does not significantly affect the use temporary contraception. Only 4% higher risk has been observed for the females lives in Hindu family for use of temporary contraception than the females who belongs to Muslim family. There is clear cut significant difference for the use of permanent method of contraception if we consider it by religion. Females belonging to Hindu religion have 3.7 times higher risk of using permanent method of contraception with respect to the females who belong to the Muslim family. In the present study results shows that the religious customs and taboos influence the use of permanent method of contraception.

Mass media exposure also plays an important and significant role in the use of contraception by females. The females having mass media exposure have 3.8 times higher chance of use of temporary methods and 76 percent higher chance of use of permanent method of contraception than the females who have no mass media exposure. Definitely the females who have mass media exposure are using significantly more temporary method of contraception. Wealth Index (WI) differential also significantly affect the use of temporary as well as permanent method of contraception. If the females belong to middle class WI group, there is 68% and 18% higher chance that she will adopt temporary method and permanent method of contraception respectively in relation to females who belong to poor WI group. The females who belong to rich WI, about 7 times higher chance of use of temporary methods and 2 times higher chance of use of permanent method have been observed than the females

who belong to poor WI. The temporary method of contraception is more popular method of contraception among the females who belong to rich WI.

Table 3 represents the effect of some selected demographic and socio cultural factors on the use of temporary method of contraceptives with respect to the non user with the help of multivariate logistic regression model. Place of residence have significant effect on the use of temporary method of contraception after controlling some socio-demographic and economic variables. Urban females have 87 percent higher chance to use temporary method of contraception than their rural counterpart. The females whose marital duration is 15 years or more have 42% less chance to use temporary method of contraception .This may be due to the fact that they may have achieved their ideal family size and thus they prefer to undergo permanent method of contraception. If we consider the education of the females as an independent variable then it is observed that primary education of female does not play any significant role in increasing the use of temporary method of contraception but secondary and higher education of female both play a significant role in the use of temporary method of contraception. Female who belongs to primary educated group has 31 percent higher risk, secondary educated group has 2 times higher risk and higher educated group has 5 times higher risk for using the temporary contraceptives with respect to the females who have no formal education.

The couples, who have their family size more than the ideal family size, i.e., the females who have completed their family size have significant effect on the use of temporary method of contraception and this group has 63% higher chance to use temporary method of contraception than the females who have not achieved their ideal family size. The females who have at least one male child have 4 times higher risk of using temporary method of contraception than the females who do not have a male child. Mass media exposure also plays an important and significant role in the use of temporary method of contraception and the females who have mass media exposure have 45% higher chance to use of temporary method of contraception. In case of wealth index, there is no significant difference in the use of temporary method of contraception among the females who belong to low income and moderate income WI group but the females who are in high income WI group have significantly higher chance of using temporary method of contraception than the females who belong to low income group. The female who belongs to moderate WI group has 31 percent higher chance and the females who belongs to rich WI group has 2.5 times higher chance for using the temporary method of contraception than the females who belong to low WI group.

Table 4 represents the multivariate logistic analysis to have an idea about the effect of some demographic and socio cultural factors on the use of permanent method

of contraceptives with respect to the non user. From the table it is observed that the place of residence have significant effect on the use of permanent method of contraception. Urban females have 62% higher chance to use permanent method of contraception than the females who are living in rural areas. The females whose marital duration is 15 years or more have 2 times higher chance to use permanent method of contraception and the difference is statistically significant because most of the females have achieved their ideal family size. The education of the female does not play a significant role on the use of permanent method of contraception. Females in primary educated group and secondary educated group have same chance as the females who have no formal education for the use of permanent method of contraception, whereas, the females who are in high educated group has 12% less chance for using the permanent contraceptives. The females, who are highly educated, are using temporary method of contraception.

The couples, who have already achieved their ideal family size, also have significant effect on the use of permanent contraception and this group has 2 times higher chance to use permanent method of contraception than the females who have not achieved their ideal family size. The couples who have at least one male child have 16 times higher risk using permanent method of contraception than the females who do not have a male child. Religion plays a significant role for the use of permanent method of contraception. The females belonging to Hindu religion have 5 times higher chance for using permanent method of contraception than their counterpart, i.e., the females belonging to family with Muslim religion. Mass media exposure also plays a significant role in the use of permanent contraception and the females who have mass media exposure have 46% higher chance to use permanent method of contraception than the females who do not have any mass media exposure. In case of wealth index dividend, the females belonging to the household having moderate and higher WI have 24 and 75 percent higher chance of adopting permanent method of contraception than the females who belong to low WI household and the difference is statistically significant.

Table 5 gives the result of multivariate logistic analysis to observe the effect of some demographic and socio cultural variables between the use of temporary method and permanent method of contraception. In the current analysis, place of residence have no significant effect on the use of temporary method of contraception with respect to the permanent method of contraception. The females whose marital duration is 15 years or more have 74 percent less chance to use temporary method of contraception with respect to permanent method of contraception for the females whose marital duration is less than 15 years and the difference is statistically significant. The reason of choosing permanent method of contraception by the females whose marital duration

is 15 years or more may be due to the fact that these females have already achieved their desired family size and they want to limit their children and thus using permanent method of contraception. The educational of the females favor the use of temporary contraception relative to permanent method of contraception, i.e. educated females usually adopt temporary method of contraception to maintain the healthy spacing between their children. From the analysis it is clear that there is positive relationship between education of the female and temporary method of contraception. As the education status of female increases the use of temporary modern contraceptives also increases significantly. Primary educated females have 34% higher chance to use temporary method of contraception with respect to permanent method of contraception than the females who have no formal education. The females having secondary education and higher education have 2 and 5.5 times higher chance respectively for the use temporary method of contraception with respect to permanent method of contraception in comparison to the females who have no formal education.

The females who have attained their ideal family size go for the permanent method of contraception. Females who completed their ideal family size have 22 percent less chance to use temporary method of contraception relative to permanent method for the females who do not achieved their ideal family size and the difference is statistically significant. Females having at least one male child also significantly effect the use of temporary method of contraceptives relative to permanent method of contraception. The females having one male child have 75 percent less chance to use temporary method than the group who do not have a male child. Mostly females with one son moved on to the use of permanent method of contraception. Religious difference between the females plays a significant role between the use of temporary and permanent method of contraception. Females belongs to Hindu religion have 80% less likely to go for temporary method of contraception because they moved on to the permanent method of contraception relative to the females who belongs to Muslim religion. Muslim females are less likely to use permanent method of contraception due to some social taboos and customs. Mass media exposure does not show significant difference for the use of temporary contraception and permanent method of contraception. This means that due to mass media exposure higher proportion of females are using contraceptives but there is not much effect on the choice of contraceptive, i.e., temporary and permanent method of contraception. In case of wealth status, females belonging to moderate WI family do not significantly effect the choice of contraception but the females belonging to higher WI family play a significant role in choice of contraception and they have respectively 6% and 49% higher chance for using temporary method of contraception in place of permanent method relative to the females belonging to poor WI group.

Table 1: Percentage distribution of currently married females aged 15-49 by some demographic and socioeconomic characteristics, Uttar Pradesh, India.

Background Characteristics	Percentage
Type of place of residence	
Urban	40.9
Rural	59.1
Marital duration 15 years and above	
No	56.8
Yes	43.2
Educational Attainment	
No formal education	57.0
Primary	11.6
Secondary	22.4
Higher	9.0
No of child above ideal children	
Below	58.9
Above	41.1
At least One Male child	
No	23.3
Yes	76.7
Religion	
Hindu	79.1
Muslim	20.9
Caste Category	
SC/ST	22.6
OBC	49.5
General	27.9
Contraceptive type	
Non User	60.4
Other Modern Method	17.6
Sterilization	22.0
Mass media Exposure	
No	26.3
Yes	73.7
Wealth Index	
Low	38.3
Middle	17.7
High	44.0
Total Exposed Females (N)	7510

Table 2: Univariate Logistic Regression Analysis to assess the influence of some socio-cultural and demographic factors on the use of type of contraceptives

Background Characteristics	Temporary Methods of Contraception				Permanent Method of Contraception			
	Exp (B)	P-Value	95% Confidence Interval		Exp(B)	P-Value	95% Confidence Interval	
			Lower Limit	Upper Limit			Lower Limit	Upper Limit
Place of Residence¹								
Urban	4.55452	0.00000	3.99495	5.19245	1.86574	0.00000	1.66245	2.09388
Marital Duration 15 years and above²								
Yes	0.85588	0.01916	0.75139	0.97491	4.60966	0.00000	4.07432	5.21533
Educational Attainment³								
Primary	1.61732	0.00002	1.30037	2.01153	1.11627	0.22090	0.93602	1.33123
Secondary	3.29784	0.00000	2.82730	3.84669	1.21697	0.00643	1.05667	1.40159
Higher	9.79897	0.00000	8.06524	11.90539	1.12146	0.37322	0.87138	1.44332
Children Above Ideal family size⁴								
Ideal Above	1.40797	0.00000	1.24066	1.59784	4.26790	0.00000	3.78551	4.81175
At least One Male Child⁵								
Yes	2.83132	0.00000	2.40648	3.33114	27.29445	0.00000	18.92209	39.37129
Religion⁶								
Hindu	1.04214	0.57238	0.90301	1.20270	3.73995	0.00000	3.09387	4.52096
Mass Media Exposure⁷								
Yes	3.81664	0.00000	3.18186	4.57806	1.75801	0.00000	1.53934	2.00775
Wealth Status⁸								
Moderate	1.68072	0.00001	1.33764	2.11180	1.18166	0.04516	1.00361	1.39130
Rich	6.88618	0.00000	5.83410	8.12799	2.05797	0.00000	1.81367	2.33518

*Reference category: ¹Rural, ²Marital duration less than 15 years, ³No formal education, ⁴Children less than or equal to ideal family size, ⁵No, ⁶Muslim, ⁷No, ⁸Poor

Table 3: Multivariate logistic Regression analysis to assess the influence of some socio demographic characteristics on the use of Temporary Modern type of contraceptives Vs Non User

Variables	Exp(B)	P-Value	95% Confidence Interval	
			Lower Limit	Upper Limit
Place of Residence¹				
Urban	1.87200	0.00000	1.57318	2.22759
Marital Duration 15 years and above²				
Yes	0.58986	0.00000	0.50225	0.69274
Educational Attainment³				
Primary	1.30980	0.02623	1.03242	1.66170
Secondary	2.09625	0.00000	1.73327	2.53525
Higher	5.00983	0.00000	3.90172	6.43266
Children Above Ideal family size⁴				
Ideal Above	1.63512	0.00000	1.39186	1.92090
At least One Male Child⁵				
Yes	4.04204	0.00000	3.33251	4.90263
Religion⁶				
Hindu	1.06189	0.49331	0.89426	1.26096
Mass Media Exposure⁷				
Yes	1.45358	0.00056	1.17529	1.79776
Wealth Status⁸				
Moderate	1.31434	0.02607	1.03312	1.67212
Rich	2.61356	0.00000	2.08635	3.27399

* **Reference category:** ¹Rural, ²Marital duration less than 15 years, ³No formal education, ⁴Children less than or equal to ideal family size, ⁵No, ⁶Muslim, ⁷No, ⁸Poor.

Table 4: Multivariate logistic Regression analysis to assess the influence of some socio demographic characteristics on the use of Permanent Modern type of contraceptives Vs Non User

Variables	Exp(B)	P-Value	95% Confidence Interval	
			Lower Limit	Upper Limit
Place of Residence¹				
Urban	1.62870	0.00000	1.37602	1.92779
Marital Duration 15 years and above²				
Yes	2.28455	0.00000	1.97730	2.63955
Educational Attainment³				
Primary	0.97722	0.83066	0.79121	1.20697
Secondary	1.03130	0.74564	0.85608	1.24239
Higher	0.88070	0.42160	0.64605	1.20057
Children Above Ideal family size⁴				
Ideal Above	2.07706	0.00000	1.80141	2.39490
At least One Male Child⁵				
Yes	16.01326	0.00000	10.97971	23.35440
Religion⁶				
Hindu	5.36985	0.00000	4.34716	6.63314
Mass Media Exposure⁷				
Yes	1.46035	0.00001	1.24059	1.71904
Wealth Status⁸				
Moderate	1.23635	0.02809	1.02307	1.49409
Rich	1.74883	0.00000	1.43555	2.13048

* **Reference category:** ¹Rural, ²Marital duration less than 15 years, ³No formal education, ⁴Children less than or equal to ideal family size, ⁵No, ⁶Muslim, ⁷No, ⁸Poor.

Table 5: Multivariate logistic Regression analysis to assess the influence of some socio demographic characteristics on the use of Temporary method of contraceptives Vs Permanent method of contraceptives

Variables	Exp(B)	P-Value	95% Confidence Interval	
			Lower Limit	Upper Limit
Place of Residence¹				
Urban	1.14938	0.18198	0.93686	1.41011
Marital Duration 15 years and above²				
Yes	0.25819	0.00000	0.21577	0.30896
Educational Attainment³				
Primary	1.34033	0.03417	1.02210	1.75763
Secondary	2.03263	0.00000	1.63202	2.53158
Higher	5.68848	0.00000	4.17095	7.75814
Children Above Ideal family size⁴				
Ideal Above	0.78723	0.00893	0.65799	0.94185
At least One Male Child⁵				
Yes	0.25242	0.00000	0.16801	0.37923
Religion⁶				
Hindu	0.19775	0.00000	0.15541	0.25163
Mass Media Exposure⁷				
Yes	0.99536	0.97016	0.78017	1.26991
Wealth Status⁸				
Moderate	1.06308	0.66495	0.80600	1.40216
Rich	1.49446	0.00267	1.14984	1.94238

* **Reference category:** ¹Rural, ²Marital duration less than 15 years, ³No formal education, ⁴Children less than or equal to ideal family size, ⁵No, ⁶Muslim, ⁷No, ⁸Poor.

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