

Trends and Correlates of Contraceptive Use in India

An Analysis of NFHS-4 & NFHS-1 Data

Paper Submission: 15/10/2021, Date of Acceptance: 23/10/2021, Date of Publication: 24/10//2021

Abstract

The most frequent proximate determinant of fertility is contraceptive use. Over the decades, there has been a substantial increase in contraceptive use in India. The direction, emphasis and strategies of the Family Welfare Programme have changed over time. However, meeting the contraceptive needs of considerable proportions of women and men and improving the quality of family planning services continue to be a challenge. It seems that contraception in India is predominantly a sterilization programme and the couples tend to accept it only after completing the desired family size and give little emphasis for spacing purposes. This work reviews and synthesises evidence from surveys conducted by NFHS on contraceptive use dynamics and discusses some of the barriers that hindered the success of the programme and sheds light on new initiatives to address these, and assesses their impact if any. Contraceptive prevalence is lowest for the age group 15-19, increases gradually to reach a maximum at the age group 35-39, after which it decreases consistently to the age group 45-49. This pattern has been found almost everywhere. Logistic regression analysis of current contraceptive use show that age, region, woman's education and number of surviving children emerges as important determinants of contraceptive prevalence rate.

Keywords : Contraceptive Prevalence, Family Welfare Program, Knowledge of Contraception

Pravat Kumar Sarangi

Associate Professor,
Dept. of Statistics,
Ravenshaw University,
Odisha, India

Introduction

In 1952, the Indian Government was one of the first in the world to formulate National Family Planning Programme, which was later expanded to encompass maternal and child health & Family Welfare and Nutrition. Though the programme was traditionally sought to promote responsible and Planned Parenthood through voluntary and free choice of family planning methods, in reality, it has been heavily dominated by sterilization and the quality of services and care, provided by the programme has been poor. The excessive emphasis on sterilization, which a couple tends to accept only after completing the desired family size has adversely affected the objective of the programme in promoting a small family norm and supporting population control and development programmes.

In 1944, the ICPD, held in Cairo and the world conference on women, which took place in Beijing, generated additional pressure from global communities for changes in the focus and approach of the Indian Family planning programme, towards providing better quality services. As a major step the government removed family planning targets since 1996 and identified human development as the main focus, with health and population stabilization as the two most priority objectives. This resulted in a shift in implementation from centrally fixed targets to target free dispensation through a decentralized participatory approach. In October 1997, India reoriented the national programme and radically shifted its approach to launch the reproductive and child health programme (RCH). The programme espouses the principle of client satisfaction in delivering comprehensive and integrated high quality health services to meet the health needs of women and children more completely. In the year 2000, the national population policy advocated a holistic multisectoral approach towards population stabilization with target free promotion of contraceptive use among eligible couples with assurance of a high quality care. An important component of

the programme is the encouragement of adequate spacing, with at least three years between births (Ministry of Health and Family welfare).

Despite reorientation of programme and formulation of new strategies, the family welfare programme is yet to achieve the desired change in family size and in the family planning behaviour of the country.

Objective of the Study

In this paper an attempt has been made to evaluate different family welfare programs on contraception between 1992-93 and 2015-16 using NFHS data. It begins with an appraisal of women's knowledge of contraceptive methods and discusses various socio-cultural, economic and demographic aspects of the contraceptive acceptors. Broadly the specific objectives are

1. To analyse region wise differences in acceptance of Contraceptive methods.
2. To study the effect of socio-cultural, economic and demographic aspects on use of contraceptives

Review of Literature

Family planning as a strategy for population stabilisation received real attention only after 1971 ^[1]. Research shows that adequate attention to family planning can reduce a significant proportion of maternal and childhood deaths, There would be additional significant contributions to women's empowerment, access to education and long-term environmental sustainability ^[3]. After the launch of the National Rural Health Mission in 2005, the official family planning programme has been subsumed in the program reproductive and child health ^[2]. However, universal adoption of small family norm remains a distant dream in India. During 2015-16, only 54 percent of the currently married women aged 15–49 years or their husbands were using a contraceptive method to regulate their fertility [6] and the contraceptive prevalence rate appears to have stagnated after 2004 [14]. Moreover, contraceptive practice in India is known to be very heavily skewed towards terminal methods which means that contraception in India is practised primarily for birth limitation rather than birth planning

Situation Analysis

1. General awareness of contraception is universal (99% awareness).
2. There is a societal preference in India for early marriage, soon followed by childbearing.
3. Modern contraceptive use in India is below 50% and is characterized by :
 - A. The predominance of non- reversible methods, particularly female sterilization.
 - B. Limited use of male/ couple dependent methods.
 - C. High discontinuation rate(13%) in 2015-16.
 - D. Negligible use of contraceptives by both married and unmarried adolescents.
 - E. Programmatic constraints, which includes lack of an integrated multisectoral approach and a weak health management information system.

Given this background, this paper is an attempt to analyse various characteristics of users of contraceptives. Information about knowledge and use of contraceptive methods provided are designed to be of practical relevance to programme administrators and policy makers, responsible for monitoring existing programmes and formulating new strategies to meet the health and family planning needs of the population.

Methodology

The study adopts a simple way of presenting data using simple percentage tables. To find out the factors, affecting contraceptive use in India significantly, Logistic Regression Analysis is used. Logistic Regression is a part of a category of statistical models, called generalized linear models. It is useful for situations in which , we want to predict the presence or absence of a characteristic or outcome based on a value of a set of predictor variables, that may be continuous, discrete, dichotomous or a mix of these. In a situation, where the standard multiple regression analysis becomes inappropriate as the response and the predictors cannot be related through a linear relationship, Logistic Regression is used. It is also used to estimate

odd ratios for each of the independent variables in the model. To accomplish this goal, a model is created which includes all predictor variables that are useful in predicting the response variable.

Analysis and Finding

At the outset, it will be relevant to state NFHS findings on knowledge of contraceptive methods and contraceptive use status by different methods to provide a backdrop for the subsequent findings of the present analysis. Knowledge on contraceptive methods is nearly universal in India with 99% of currently married women recognizing at least one method of contraception in 2015-16 compared to 95.8% in 1992-93. Female sterilization is the most widely known method (99 %) in India followed by male sterilization (94.3%). The respective values for 1992-93 being 94.6% and 84.5% respectively. Knowledge of the officially sponsored spacing methods (pills, IUD & Condom) is much less wide spread although the results indicate that the knowledge of spacing method has increased since 1992-93. Comparison of NFHS-4 result for current contraceptive use with NFHS-1 result reveals a 13% increase in contraceptive prevalence since NFHS-1 (when prevalence rate was 40.7%). The share of female sterilization in contraceptive prevalence decreased slightly from 67.32% to 66.67% . compared to this male sterilization has significantly decreased from 8.6% to .5% over the period showing the percentage of non-reversible method has decreased within this 20 year span.

Table-1
Contraceptive Use Status by Different Methods

Contraceptive Use	Percentage	
	NFHS-4	NFHS-1
Not using any method		
Currently using any method		
Total	46.5	59.3
	53.5	40.7
	100	100.
Current use of contraceptives by Different Methods		
Pill	7.66	2.95
IUD	2.80	4.67
Condom	10.65	5.90
Female Sterilization	67.28	67.32
Male Sterilization	0.5	8.60
Withdrawal	4.29	3.44
Other Methods	6.82	7.12
Total	100	100.00

Source : computed from NFHS4 and NFHS-1 data

The above results indicate that despite the increased emphasis on contraceptive choice on spacing methods in the reproductive and child health programme, female sterilization continues to dominate the method mix in India and despite improvement in the knowledge of spacing methods it accounts for only a small fraction of contraceptive use.

Background Characteristic and Contraceptive Use Woman's Age

The major thrust is to find out relationship between use of contraceptives according to woman's age and the result shows that the relationship is significant. As the woman's age increases preference for female and male sterilization increases and majority of the respondents above 40 years of age prefer sterilization to spacing methods. In addition, current contraceptives use increases from 14.9% for women aged 15 to 19 years, to a peak 67.2%, for 35 to 39 years and then decreases for older women.

- Residence** The relationship between types of residence and use of contraception reveals a significant relationship between type of contraceptives use and residence. In urban areas, spacing methods are more popular compared to the rural areas. Though sterilization method is the most dominating of all other methods, the preference for the method is more in rural areas compared to urban areas. The pattern of variation by residence is same in NFHS-1 and NFHS-4.
- Women's Education** Contraception use among women generally increases with increase in level of education (23.1% for illiterates to 28.2 % with at least high school education). Also, there is an indication of a significant relationship between woman's education and types of contraceptive use. Modern spacing methods account for 6% of contraceptive use by illiterate woman and 16.5 % by women with at least high school education. It may be due to the fact that respondents with high school and above level of education were well aware of spacing methods and felt competent to use spacing methods more confidently. On the other hand, use of female sterilization declines sharply with education, (12.4%)prevalence for illiterate women compared to 6.5% for at least high school education)
Contraceptive use increased between NFHS-1 and NFHS-4 among women of every educational level. The increase was much more rapid among illiterate women than among literate women. Various studies based on NFHS-1 data have shown that even after controlling the effect of other factors education is a key factor influencing contraceptive use. (Rutherford& Ramesh, 1996: Ramesh et al, 1996).
- Number of Children** It reveals differences in current use of different types of contraceptives according to number of living children. Contraceptive use increases sharply from 8.1% for women with no living children to 68.2% with three living children. As far as types of contraceptive are used, there exists significant relationship with number of surviving children. For respondents having no surviving child majority of them preferred spacing or some traditional methods and respondents with two or more living children majority preferred female sterilization method. It has increased from 0.5% with no surviving child to 48.7% with two surviving children.
Analysis of NFHS-1 data indicates the same pattern except a little change in percentage.
- Caste** The prime intention is to find out how far caste system plays an important role in use of contraceptives. Contraceptive prevalence is highest among other caste (57.5%) followed by (54.9%) for the scheduled caste. Since NFHS-1, contraceptive prevalence has increased for all castes.
With respect to types of contraceptives, the higher proportion of respondents from other caste categories reported using spacing methods compared to respondents from SC/ST category. Given higher level of education among other caste group and there by a better sense of competence, perhaps induces a higher use of spacing methods among other caste group.
- Religion** Religion wise there does exist difference between the two prominent groups Hindus and Muslims Contraceptive prevalence among Hindus (54.4.2%) is higher than Muslims (43.2.0%) but is lower than among women belonging to the other religions (Sikhs & others). As far as spacing methods (condom, pills and withdrawal) are concerned, Muslims are ahead of others. Perhaps it is due to the religious beliefs among Muslims, which restrict them to accept sterilization method. Compared to NFHS-1 the pattern is almost same.

Remarking An Analisation

Table -2
Region & Use of Contraceptive

Region	% using any method		Types of Contraceptives												Total	
			Pill		IUD		Condom		Female Sterilization		Male Sterilization		Other Methods			
	NFHS4	NFHS1	NFHS4	NFHS1	NFHS4	NFHS1	NFHS4	NFHS1	NFHS4	NFHS1	NFHS4	NFHS1	NFHS4	NFHS1	NFHS4	NFHS1
North	61.91	51.4	3.88	2.99	5.52	6.63	15.85	10.95	55.61	61.05	.67	10.92	18.47	7.46		100
South	53.63	52.3	.81	1.09	1.85	4.29	5.9	2.65	78.96	80.42	.48		8.39	11.9	3.16	100
East	48.13	38.9	12.64	5.04	3.32	2.56	2.99	2.77	71.69	72.73	.21	8.19	9.15	8.71		100
West	52.05	50.3	5.29	2.24	1.70	4.9	9.31	4.29	71.11	76.39	.31	7.6	12.28	4.58		100
Central	51.5	26.1	8.12	4.45	1.91	4.18	10.32	9.7	61.82	67.1	.43	9.5	17.40	5.04		100
North East	38.06	35	11.08	3.64	2.75	3.15	5.01	1.2	58.46	27.25	.07	2.75	22.63	62.02		100
Total	53.5	40.6	7.66	2.95	2.80	4.67	5.9	10.65	67.28	67.32	.50	8.6	11.11	10.56		100

Source : computed from NFHS4 and NFHS-1 data

Regions

Region wise, female sterilization continues to be the main stay of family planning programme in all regions with southern region on the top (86.96%) and North Eastern region at the bottom (53.11%). The pattern is same for NFHS-1 data except the percentage, which has increased to 53.11% in NFHS-2 from 27.25% in NFHS-1.

Regarding the modern spacing methods, it is most popular in northern region (19.73%) followed by central region 15.54%. Traditional method including withdrawal method is mostly used in north eastern region (21.91%) followed by eastern region (13.55%). The pattern has not changed since NFHS-1 except that the percentage in north-eastern region has decreased to 21.91% from 62.02%.

The reason why traditional method is reported high in northeast or why condom use is reported by substantial portion of respondents in northern region needs further investigation.

Results of Logistic Regression Analysis

Previous analysis reveals that there exists a considerable difference among the contraceptive users with reference to their background characteristics. Now it remains to be investigated the influence of background factors on the contraceptive use after controlling for other variables. A logistic regression analysis has been carried out to examine the effect of major factors on contraceptive use in a comprehensive manner.

The dependent and independent variables considered for the present logistic model are as follows. The dependent variable is contraceptive use, which consists of pills, IUD, condom, female sterilization, male sterilization & other traditional methods including withdrawal method. It is a dichotomous variable taking value zero in case of no use and value one in case of use of any contraceptive method. The independent variables are region, woman's education, number of surviving children, woman's age, caste, religion and standard of living.

Table-3 presents the results of logistic regression analysis for contraceptive use. From the analysis, the region emerges as an important variable in determining use of contraceptives. The odd ratio of contraceptive use in southern region compared to central region is 2.04, where as the corresponding figures for North, West and east are 1.95, 1.76 & 1.65 respectively. With respect to NFHS-1 data, the corresponding figures are 2.45, 2.13, 1.89 & 1.76 respectively.

**Table -3 Summary Results of Logistic Regression Analysis
Determinants of Contraceptive Use**

Variables	Reference	NFHS -4		NFHS -1	
		B	Exp (B)	B	Exp (B)
Region	Central				
North		.671	1.956**	.756	2.131**
South		.713	2.040**	.898	2.455**
East		.501	1.650*	.569	1.766**
West		.569	1.766**	.641	1.897**
Caste	Other				
S.C.		-.0425	.9583	-.0731	.9295
S.T.		-.0964	.9081	-.0731	.9083
O.B.C.		-.0440	.9569	-	-
Standard of Living	High				
Low		-.3970	.6728*		
Medium		-.2740	.7603*		
Religion	Other				
Hindu		-.2090	.8114*	-.1909	.8262
Muslim		-.3876	.6793**	-.4723	.6235**
Christian		.0148	1.0150	.0246	1.0249
Education	High School & Above				
Illiterate		-.6121	.5422**	-.8096	.4450**
< Middle School		-.2935	.7457**	-.3364	.7144**
Middle School		-.0166	.9836	-.0147	.9845
Number of Children	No child				
One		.1679	1.1828		
Two		.210	1.234*		
Three & More		.641	1.897**		
Age	Continuous	.635	1.888**	.5398	1.7157**

* Significant at 5%**

Significant at 1%

Source : computed from NFHS4 and NFHS-1 data

Woman's education is another important variable, which is found to be a significant factor in use of contraceptives. The odds of contraceptive uses is 46% less in case of illiterates and 26% less in case of women who have not passed middle school standard. The figures for NFHS-1 are 56% and 29% respectively showing the same pattern for the two periods.

Age is another significant factor and the analysis reveals that older women, aged between 30 to 44 years prefer to use contraceptives compared to the younger ones. The odd ratio is 1.888 on a continuous scale. The situation was similar in 1992-93 (NFHS-1) with odds ratio 1.715.

Surviving number of children is another important factor which has significant effect on contraceptive use. Contraceptive prevalence rate increases with number of living children and the pattern is same for NFHS-1.

In addition to the above factors, religion also plays an important role in contraceptive use. The odds ratio in contraceptive use for Muslims is .68, which is 32% less compared to the other religion. The corresponding figure for NFHS-1 is .62

Conclusion

The present analysis shows wide variation in use of contraceptive prevalence rate and use of different type of contraceptive methods, across region and across several demographic, social and economic characteristics. The result confirms that age, education, religion, standard of living etc. play significant roles in contraceptive prevalence rate as well as use of different types of contraceptives. Higher level of education, high standard of living and urban experience lead to higher use of spacing methods such as condom and pills.

There remained some relationship unexplained requiring further studies. In both the surveys, the share of female sterilization remains almost same at 67%. The share of male sterilization declined from 8.6% in NFHS-1 to 0.5% in NFHS-4. This brings us to the fact as to why men do not accept sterilization methods. The major reasons may be as follows:

1. Failure of male sterilization causes embarrassment for wife and creates tension in the family.
2. Side effect.
3. Misconception regarding their post-surgical sexual ability.

The present study gives an overall prevalence of contraceptive use and region wise results. It shows that the most preferred method is female sterilization and contraceptive prevalence rate is highest in the south region. Modern spacing methods are mostly followed by the educated persons with high standard of living in the northern region.

Determinants of contraceptive use show that region, woman's age, religion, woman's level of education, numbers of surviving children are the major factors, which affect the acceptance of contraceptive use.

The limitations of Indian family welfare programme may be attributed to the following reasons.

1. Indian Family welfare programme is a predominantly sterilization programme and the couples tend to accept it only after completing the desired family size of 2 or 3 children.
2. Men are not coming forward for use of family planning, and as a result, the share of vasectomy has gone down substantially during the two periods, NFHS -1 & NFHS -4.
3. Spacing methods and other traditional methods are given very little emphasis. These methods have low level of continuation rates as well as use effectiveness.
4. To make the Indian family welfare programme more result oriented, due emphasis must be given on the following points.
5. Same emphasis must be given to other programme and for female sterilization the couples need to be motivated at low parity.
6. Motivate couples for spacing methods and with continuous follow up raise the level of continuation rate as well as use effectiveness.
7. The programme must be an integrated multi sectoral approach with an efficient health management system.

References

1. A. R. Chaurasia and S. C. Gulati, *India: The State of Population 2007*, Government of India, National Population Commission and Oxford University Press, New Delhi, India, 2008
2. A. R. Chaurasia and R. Singh, "Forty years of planned family planning efforts in India," in *Proceedings of the 2013 IUSSP International Population Conference, Bussan, Republic of Korea, 2013*. View at: [Google Scholar](#)
3. Cleland J, Bernstein S, Ezeh A, Faundes A, Glasier A, Innis J, et al. *Family planning: The unfinished agenda*. *Lancet*. 2006;368:1810–27. [[PubMed](#)] [[Google Scholar](#)]
4. *Family Welfare Programme in India: Year Book 1981-82 and 1990-91*
5. IIPS, Mumbai: *National Family Health Survey-I (1992-93)*,
6. IIPS, Mumbai: *National Family Health Survey-4 (2015-16)*.
7. Operations Research Group, Baroda: *Family planning practices in India, The first all India survey report*.
8. Operations Research Group, Baroda: *Family planning practices in India, The third all India survey report (1988)*
9. Ramesh B. M ;S. C Gulati and Robert D. Retherford :*Contraceptive use in India. National Family Health Survey Subject Report No. 2 , Mumbai; International Institute of Population Sciences and Honolulu : East-West Centre (1996) .*
10. Retherford Robert D. and B. M. Ramesh: *Fertility and Contraceptive use in Tamil Nadu , Andhra Pradesh and Uttar Pradesh ; National Family Health Survey Bulletin No. 3, Mumbai ; International Institute of Population Sciences and Honolulu : East-West Centre (1996) .*
11. *United Nations : Level and Trends of Contraceptive use, as assessed in 1988.*
12. UNFPA :*India towards population and Development Goals (1997)*.
13. *United Nations Population Division , Dept. of Economics and Social Affairs : World Contraceptive Use (2003)*.
14. *United Nations, Update for the MDG Database: Contraceptive Prevalence, Department of Economic and Social Affairs, Population Division, New York, NY, USA, 2012.*