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TRENDS AND PATTERNS OF FAMILY PLANNING METHODS IN HIMACHAL PRADESH: AN ANALYSIS

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ABSTRACT
In the present study an attempt has been made to analyse the trends and patterns of family planning methods in Himachal Pradesh. The study is based upon secondary data, which was gathered from DHS, GoHP. The data related to using any method and any modern methods have been compiled from the NFHS-5 report. The exponential growth function is used to analyze the growth trends in the uses of family planning methods. The study reveals a decline in the use of sterilization, oral pills, UID, and CC in Himachal Pradesh, with the highest negative growth rate observed in sterilization and lowest in CC. Couple protection rates also showed negative growth rates, with the highest in Kullu and lowest in Bilaspur districts. No significant socio-economic differences were found in contraceptive methods use. The findings suggest a concerning trend of decreasing contraceptive methods, particularly in sterilization and couple protection rates. Disparities between districts suggest areas for targeted intervention.
KEY WORDS: *Trends, Patterns, Family Planning Methods*

1. INTRODUCTION

Family planning is the ability to predict family size, spacing, and birth timing. It has significant benefits for maternal and child survival and health due to fertility, population growth, and poverty. India has introduced new contraceptives and provided a range of services to all segments of the population. Modern methods of contraception include the pill, injectable, condoms, emergency contraception, implants, intrauterine contraceptive devices (IUCD), sterilization, and locational amenorrhea (LAM). However, traditional methods, such as withdrawal and abortion, have significant drawbacks, such as ineffectiveness, unintended pregnancies, unsafe procedures, and increased risks to maternal health and well-being. Modern methods can also cause psychological distress, sexual dissatisfaction, and increased vulnerability to sexually transmitted infections. Both contemporary and conventional methods of contraception play a role in the overall usage of contraceptives, but their individual contributions are relatively modest.

Female sterilization is the most common method of birth control in India, but it has negative psychological effects, including anxiety and depression, and lacks protection from sexually transmitted diseases. The average age for sterilization is 26 years, with most women opting for it at a young age in rural areas. Temporary spacing methods are less common, and women's decisions to undergo sterilization are influenced by lack of awareness and unaffordability of modern methods. The average age for sterilization remains consistent, with little change since the last NFHS survey i.e. NFHS-5.

The National Family Health Survey shows that 7 percent of women regret sterilization, highlighting the need for the use of temporary contraceptives like condoms. These contraceptives offer protection from cervical cancer and STDs, and the World Health Organization states that condoms are the only method that can prevent both pregnancy and STDs.

2. OBJECTIVES

- **i.** To analyse the trends and patterns of family planning methods in Himachal Pradesh.
- **ii.** To examine the differential in uses of family planning methods among women on the basis of residence location, social category, and religion in Himachal Pradesh.

3. HYPOTHESIS

- **i.** Null (H_0): There is no there is no significant difference in uses of family planning methods among women on the basis of age, residence location, education, religion, and social category in Himachal Pradesh.
- **iii.** Alternate (H_1): There is significant difference in uses of family planning methods among women on the basis of age, residence location, education, religion, and social category in Himachal Pradesh.

4. DATA SOURCE & RESEARCH METHODOLOGY

The present study is based upon secondary data, and the same has been collected from the Directorate of Health Services, GoHP. The data related to sterilization, IUD, CC users, and oral pill users has been compiled for four years (2018-19 to 2020-21); however, the data for the couple protection rate was for ten years (2011 to 2020). The data related to uses of any methods and any modern methods has been compiled from NFHS-5 report. In order to examine the growth trends in fertility, the exponential growth function

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has been used. The formula for the exponential growth function used in this study is y = a * e^(bx), where y represents the growth rate, a is the initial value, e is the base of the natural logarithm, b is the growth rate, and x is the time period. This analysis will provide valuable insights into the effectiveness of family planning programs and the overall reproductive health status in the region. The Chi Square test of significance has been apply to analyse the significant on the socio economic characteristics of women in Himachal Pradesh. This analysis will provide valuable insights into the effectiveness of family planning programs and the overall reproductive health status in the region.

5. RESULTS AND DISCUSSION

5.1 Growth trends and patterns of family planning methods in Himachal Pradesh

The data shows a significant decrease in the number of sterilizations done in Himachal Pradesh from 2018-19 to 2020-21, with a compound growth rate (CGR) of -35.62%. Similarly, there has been a decline in the number of I.U.D. and C.C. users as well, with CGRs of -15.19% and -14.64%, respectively. The number of oral pill users also decreased with a CGR of -16.45%. The t-stat values indicate a statistically significant difference in the numbers over the years, as confirmed by the p-values being less than 0.05 and the t-critical values for the one-tailed test.

Table 1. Growth trends and patterns of family planning methods in Himachal Pradesh

Particulars	No. of Sterilization done	No. of I.U.D.	No. of C.C. Users	No. of Oral Pill Users
2018-19	11710	15021	62518	24776
2019-20	11714	13569	52859	21707
2020-21	2718	11247	46780	16985
2021-22	4390	9233	38422	14770
CGR	-35.62	-15.19	-14.64	-16.45
t Stat	3.206612	9.615227	9.877987	8.646504
P(T<=t) one-tail	0.024542	0.001194	0.001103	0.001627
t Critical one-tail	2.353363	2.353363	2.353363	2.353363

Source: DHS, GoI H.P.

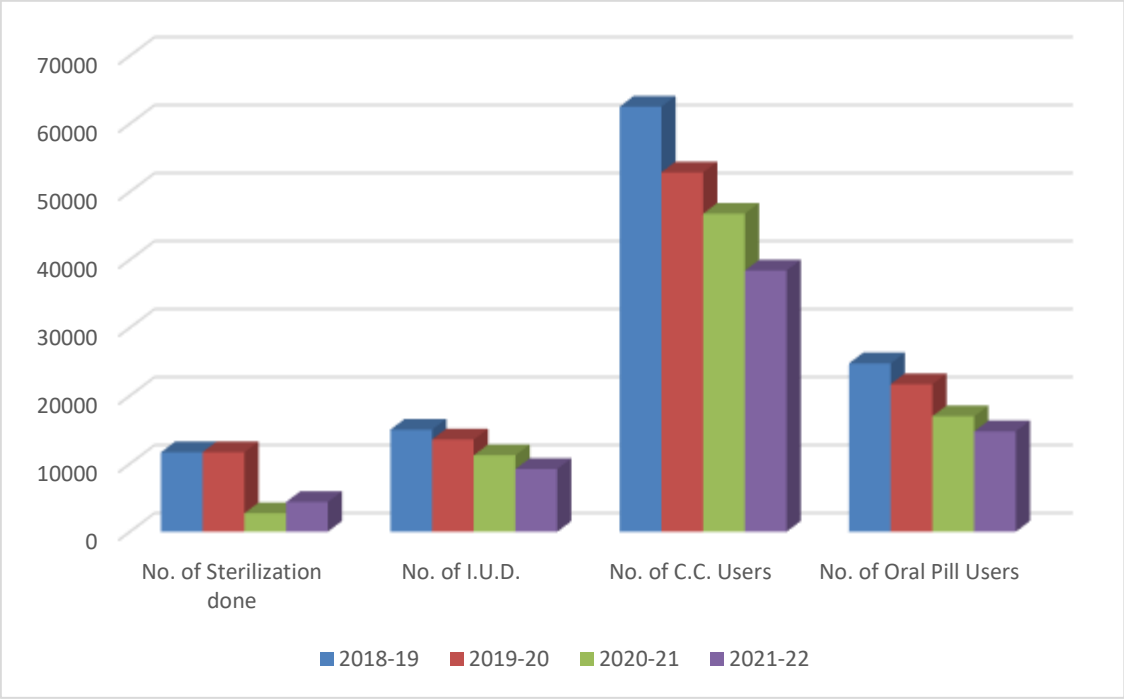


Figure 1. Growth trends and patterns of family planning methods in Himachal Pradesh

5.2 District-wise Couple Protection Rate in Himachal Pradesh

The district wise percentage of couple protection rate in Himachal Pradesh is presented in Table 2. The data in the table shows that during the year 2011 the couple protection rate was 62.04 percent in Bilaspur district, 38.04 percent in Chamba district, 52.35 percent in Hamirpur district, 32.60 percent in Kangra district, 36.15 percent in Kinnaur district, 50.82 percent in Kullu district, 44.89 percent in Lahaul-Spiti district, 46.84 in Mandi district, 47.71 percent in Shimla district, 35.47 percent in Sirmaur district, 44.43

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percent in Solan district and 31.68 percent in Una district. Whereas during the year 2020 the couple protection rate was 48.90 percent in Bilaspur district, 22.44 percent in Chamba district, 34.09 percent in Hamirpur district, 19.60 percent in Kangra district, 23.53 percent in Kinnaur district, 26.61 percent in Kullu district, 26.96 percent in Lahaul-Spiti district, 27.95 percent in Mandi district, 27.36 percent in Shimla district, 22.84 percent in Sirmaur district, 28.10 percent in Solan district, 20.10 percent in Una district. During the years 2010 to 2020 the compound growth rate (CGR) in couple protection rate has been worked out -3.01 in Bilaspur district, -5.26 percent in Chamba district, -4.72 percent in Hamirpur district, -5.34 percent in Kangra district, -3.67 percent in Kinnaur district, -6.92 percent in Kullu district.

Table 2. District-wise Couple Protection Rate in Himachal Pradesh

(In percent)

District	Bilaspur	Chamba	Hamirpur	Kangra	Kinnaur	Kullu	L-Spiti	Mandi	Shimla	Sirmaur	Solan	Una	H.P.
2011	62.04	38.04	52.35	32.60	36.15	50.82	44.89	46.84	47.71	35.47	44.43	31.68	**42.00**
2012	58.57	35.96	50.13	32.36	33.11	48.40	42.41	45.47	42.19	33.97	42.48	30.95	**40.30**
2013	56.44	35.85	47.89	31.57	27.82	45.44	56.95	43.69	40.53	32.25	40.53	29.34	**38.77**
2014	55.62	34.90	46.12	29.38	31.45	43.18	38.07	39.99	40.04	31.33	39.43	28.09	**37.01**
2015	54.79	33.39	45.13	28.96	28.53	42.56	37.33	37.46	38.39	31.86	39.20	26.85	**35.98**
2016	55.23	34.22	42.03	28.01	27.54	40.19	35.40	37.61	37.31	32.23	39.26	26.87	**35.41**
2017	50.50	31.22	39.57	26.24	28.54	35.03	34.13	36.02	35.29	30.22	37.12	24.92	**33.08**
2018	46.81	27.32	37.85	24.12	27.74	32.46	32.77	33.02	32.57	28.14	33.58	24.08	**30.53**
2019	46.10	25.16	35.54	21.82	24.99	28.80	29.85	29.88	30.02	25.13	30.31	22.09	**27.96**
2020	48.90	22.44	34.09	19.60	23.53	26.61	26.96	27.95	27.36	22.84	28.10	20.10	**25.98**
CGR	-3.01	-5.26	-4.72	-5.34	-3.67	-6.92	-5.99	-5.48	-5.24	-4.07	-4.51	-4.62	-4.98
t Stat	25.1202	13.8616	17.1253	12.8670	15.4177	12.1504	11.2438	14.4667	14.7908	15.8632	16.6884	13.7869	15.1889
P(T<=t) one-tail	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
t Critical one-tail	1.7613	1.7613	1.7709	1.7459	1.7396	1.7959	1.7959	1.7709	1.7709	1.7396	1.7613	1.7396	1.7613

Source: DHS, GoI Himachal Pradesh.

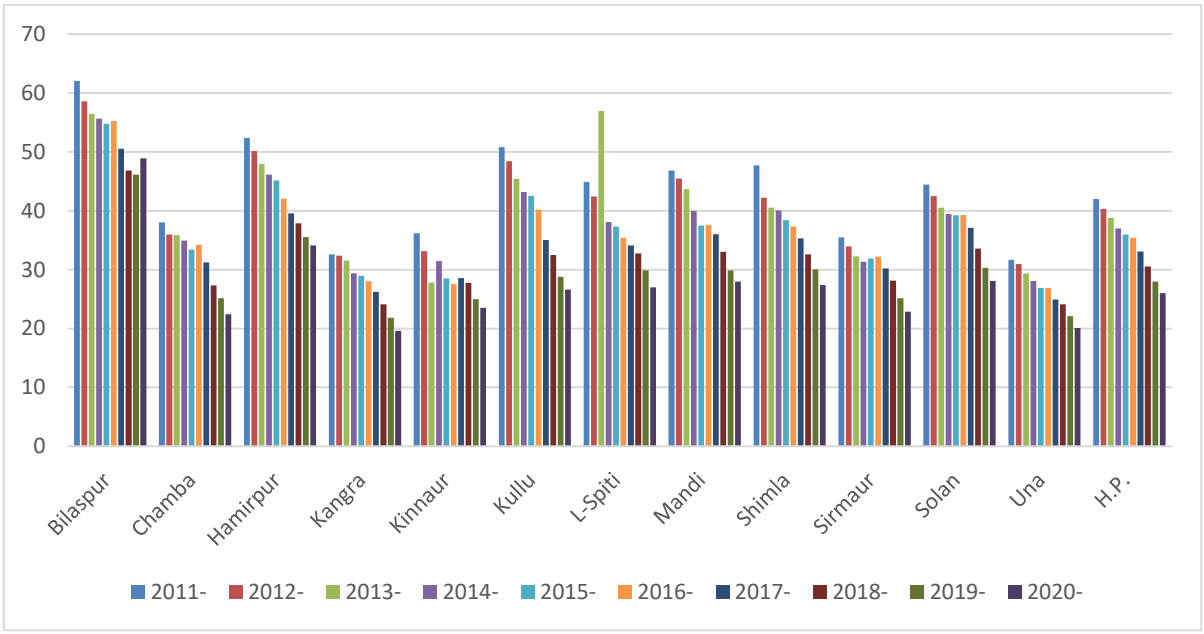


Figure 2. District-wise Couple Protection Rate in Himachal Pradesh

-5.99 percent in Lahaul-Spiti district, -5.48 percent in Mandi district, -5.24 percent in Shimla district, -4.07 percent in Sirmaur district, -4.51 percent in Solan district and -4.62 percent in Una district. At Himachal level during the year 2010 the couple protection rate was 42.00 percent and it declined to 25.98 percent with a compound growth rate of -4.98 percent per annum. The 't' value is statistically significant at 0.05 percent level of significance for all district in couple protection rate. Thus it can be concluded that there is significant difference in the couple protection rate in different districts of Himachal Pradesh.

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5.3 Current use of Contraceptive by married women in Himachal Pradesh

The current use of contraceptive by married women in Himachal Pradesh on the basis of their socio economic characteristics is presented in Table 3. The results shows that that the use of contraceptive among married women in Himachal Pradesh increases with age, with the highest percentage of women using any method and any modern method in the 40-49 age group. The Chi Square value of 1.3682 there is significant difference in the use of contraception among married women in Himachal Pradesh on the basis of age.

Table 3. Current use of Contraceptive by married women in Himachal Pradesh

Particulars	Any Method	Any Modern Method
Age		
15-19	41.5	33.2
20-24	49.4	33.8
25-29	61.0	45.6
30-39	80.5	69.3
40-49	80.8	72.9
X^{2*}	1.3682	
Residence		
Urban	75.2	59.3
Rural	74.1	64.0
X^{2*}	0.1406	
Education		
Illiterate	83.2	76.2
<5 years complete	82.4	75.1
5-9 years complete	78.0	69.3
10-11 complete	75.3	63.6
12 years complete	68.3	55.4
X^{2*}	0.3756	
Religion		
Hindu	74.6	64.1
Other	74.8	67.6
X^{2*}	0.0510	
Social Category		
SC	75.6	65.0
ST	68.2	58.6
OBC	63.5	55.0
Other	77.5	65.8
X^{2*}	0.0068	

Source: NFHS-5. **= Non significant at 0.05 percent level of significance.*

The data further shows that the current use of contraceptive among married women in Himachal Pradesh is slightly higher in urban areas (75.2%) compared to rural areas (74.1%). However, when it comes to the use of modern methods of contraception, there is a larger gap with 59.3 percdent of urban women using modern methods compared to 64.0 percent of rural women. The Chi Square value of 0.1406 indicates that there is no statistically significant difference between the use of any method of contraception in urban and rural areas in Himachal Pradesh.

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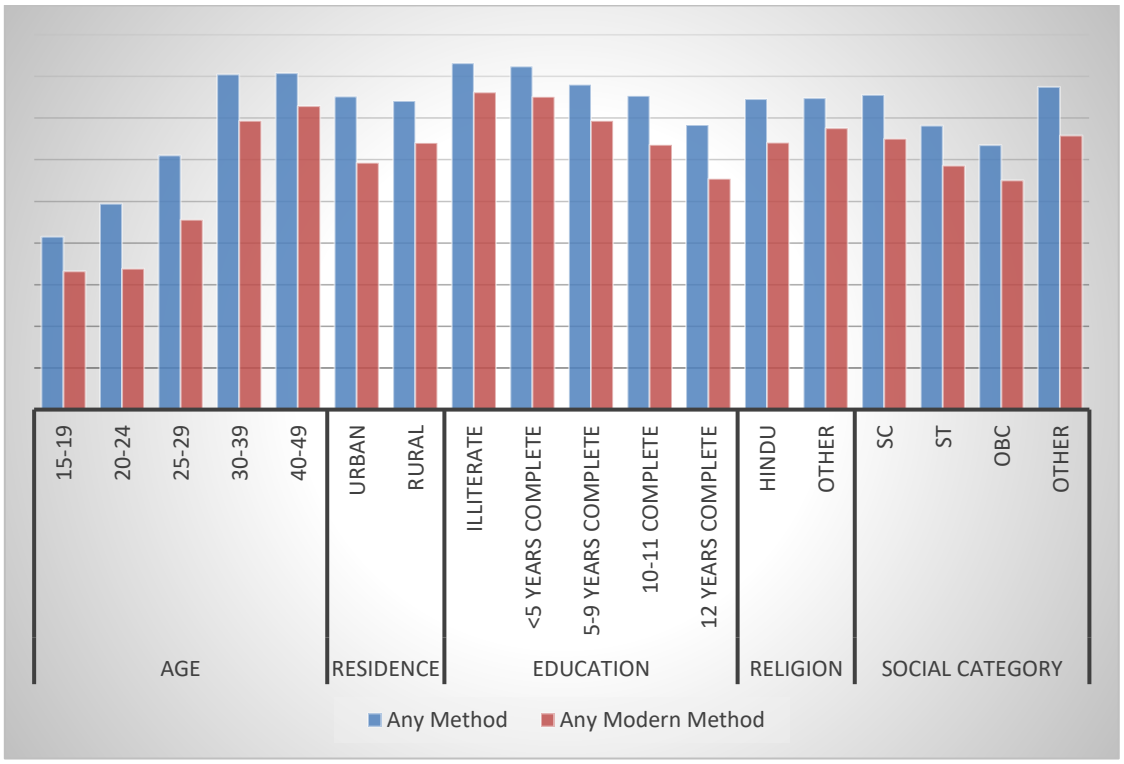


Figure 3. Current use of Contraceptive by married women in Himachal Pradesh

As per the data provided, the current use of contraceptives by married women in Himachal Pradesh varies based on their level of education. It is observed that a higher percentage of educated women are using any method of contraception, with the numbers decreasing as the education levels decrease. Similarly, the usage of modern methods of contraception follows a similar trend, with a difference between illiterate women and those with at least 12 years of complete education. But this difference in uses of contraceptives on the basis education is not statistical significant at 0.05 per cent level of significance. The use of modern methods of contraceptives is slightly lower among Hindu women compared to those of other religions. The difference in usage rates between the two religion groups is not significant, as indicated by the Chi-Square value i.e. 0.0510. Overall, the data shows a positive trend in the adoption of contraception among married women in the region.

The data further reveals that SC and Other categories have higher rates of contraceptive use compared to ST and OBC categories, with SC having the highest usage rates. However, the Chi-Square test results indicate that this variation is not statistically significant at the 0.05 level. This suggests that the differences in contraception use among social categories may be due to random chance rather than actual disparities in access or knowledge.

5.4 Testing Hypothesis: The Chi-Square test value for use of contraceptive methods on the basis of socio economic characteristics in Himachal Pradesh is not statistically significant at 0.05 percent level of significance. Thus, the Null Hypothesis (there is no significant difference in uses of family planning methods among women on the basis of age, residence location, education, religion and social category in Himachal Pradesh) and alternate hypothesis (there is significant difference in uses of family planning methods among women on the basis of age, residence location, education, religion and social category in Himachal Pradesh) is rejected. This suggests that the differences in contraception use among social categories may be due to random chance rather than actual disparities in access or knowledge.

6. CONCLUSION AND SUGGESTIONS

From the above results and discussion, it has been found that in Himachal Pradesh the uses of sterilization, oral pills, UID, and CC show negative growth rates, but this negative growth was highest among sterilization and lowest in the uses of CC. Further in the couple protection rate, a negative growth rate has also been observed, this negative growth rate was highest in the Kullu district and lowest in the Bilaspur district of Himachal Pradesh. It was also observed that there is no significant difference in uses of contraceptive methods on the basis of socio-economic characteristics among the women in Himachal Pradesh. Overall, the findings suggest that there is a concerning trend of decreasing use of contraceptive methods in Himachal Pradesh, particularly in terms of sterilization and couple protection rates. The disparities between districts, such as the higher negative growth rate in Kullu compared to Bilaspur, indicate potential areas for targeted intervention and improvement. Despite the lack of significant differences in

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contraceptive use based on socio-economic characteristics, it is clear that efforts are needed to address the declining trend and ensure access to effective family planning methods for all women in the region.

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