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A Cross-Sectional Observational Pilot Study Regarding Status of ContraceptivePrevalence Ratein Family Planning Programme in Rural Practice Area of Government Medical College Patiala

Dr Puneet Gambhir[1], Dr Ravinder Khaira[2],Dr Amarjit Singh[3],Dr Hans Raj[4]
[1,2]*Assistant Professor, Department of Community Medicine, Government Medical College and Rajindra HospitalPatiala (Punjab) India*
[3]*Professor& Head of department, Department of Community Medicine, Government Medical College and Rajindra HospitalPatiala (Punjab) India*
[4]*Senior Medical Officer, In charge Community Health Centre Bhadson Block, Patiala (Punjab) India*
Corresponding Authors: Dr Ravinder Kharia and Dr Puneet Gambhir

Abstract : *The growing population has set off alarm bells in developing nations including India. Inspite of a well-conceived and implemented family planning programme since 1952, the reduction in population growth has still not reached the desired levels. This study is a pilot study for designing an operational research study in the field of family planning programme with the focus on the contraceptive prevalence rate and its associateddeterminant factors among the rural population which may have an impact on the utility of services provided by government family planning programmes. A cross-sectional observational study was conducted on 300 eligible couples residing in the rural practice area of Government Medical College Patiala. The results showed the modern contraceptive prevalence rate of 58.7% with range of 46% to 72% in various blocks of the practice area This was dependent upon factors like religion, beliefs, age at marriage, type of family, number of living children,literacy status of female partner and the socioeconomic status.*

Keywords: *Contraception practice, Contraceptiveprevalence rate, eligible couple*

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I. Introduction

The growing population especially in developing nations has set up alarm bells throughout the world. The governments are putting in huge resources to control the growth rate. While the developed nations have succeeded in controlling the growth rate in their countries and some even having negative growth rates; this is an effort offset by the rapid growth in developing nations. India is the second most populous country in the world only after China and with present growth rate is likely to surpass China by 2050s.

This situation is when India was the pioneer nation to start a national family planning programme way back in 1952 (with its inception in 1951). The successive governments have utilized large proportions of the health budget and manpower on controlling the population growth. Even the programme had resulted in serious overtones in the country's politics in 1970s. but Inspite all these efforts currently, is still facing serious problems resulting from huge population growth currently (according toCensus 2011 decadal population growth rate of 17.64%) with a crude birth rate of 21.6 (census 2011) and current totalfertility rate (TFR) 2.2 (NFHS-4). Although the efforts succeeded to increase the use of modern contraceptive methods from 42.8 to 48.5% between NFHS-2 to NFHS-3 but has declined to 47.8% in NFHS-4, resulting a contraceptive prevalence rate decline from 56.3% in NFHS-3 to 53.5% NFHS-4; way below the desired target. (1)

The government has changed policies of family planning from time to time, from forced to target oriented to target free approach to cafeteria approach keeping in mind the modern technology, quality services and desires of the end users. Under the National Health Mission this programme is being given priority with highest allocation of funds and manpower. Lately internationally the FP2020 Initiative waslaunched in 2012 to coordinate global efforts to expandaccess to family planning services. It is a partnership ofcountries, donors, researchers, and developmentorganizations to accelerate action and address the mostpressing reproductive health needs. (2)

It is not only the programme implementation but other factors are also known to affect contraceptive use. These extend from the attributes of the individual through resources ofthe household and community in which person lives to the sociocultural mores and institutions that affectautonomy, behavior and lifestyle, and access to healthcare services.

The present study is a part of background pilot studies to frame up a larger operational research study in the Family planning programme. This cross-sectional observational study focusing on the contraceptive prevalence rate and its association risk factors in the present scenario of rural population which may have an impact on the utility of services provided by government family planning programmes.

II. Material and Methods

Aims& Objectives: To find contraceptive prevalence rate (CPR) and non-programmatic risk variables that affect contraceptive practice among eligiblecouples

Study Design: Cross-sectional observational study.

Setting: Study has been conducted the field practice area of Rural Health Training Centre (RHTC) (Bhadson) under the Department of Community Medicine, Government Medical College Patiala

Subjects: Eligible couples residing in the field practice area of RHTC (Bhadson) randomly selected were included in the study.

Sample Size: The RHTC Bhadson caters to a rural population of approximately 1,24,000. Sample size was estimatedtaking contraceptive prevalence of 56.3% (NFHS—3) with allowable error 10% at 99.9% confidence interval. Accordingly, estimated sample size was 266. With the presumption that 10% of subjects will be non-responsive, the study was conducted with a sample size of 300 eligible couples.

Methodology: A pretested structured questionnaire was used. To ensure uniformity of data collection the PHC was divided into six blocks from which 2 sub-centres were randomly selected. From each of these sub-centres 25 eligible couples were randomly selected and interviewed. All the study participants were explained the purpose of the study and were ensured strict confidentiality. Written informed consents were taken from the participants prior to the study.

Inclusion Criteria:Only residents and consentingeligible couples (in which the age of females is between 15-45 years of age and are still having menstrual cycles) in the study rural area.

Exclusion Criteria: Nonresidents of the area, non-consenting and those eligible couples where the female partner does not fulfil the above criteria.

Usage of Contraceptives:

1. Only those couples were considered using the modern temporary contraceptive if they were using it regularly for minimum six months period
2. In case of couple using two or more contraceptive methods the most effective contraceptive was taken as the primary contraception method.

Analysis: All information thus obtained was entered and analyzed using CDC Atlanta analytic software Epi info version 7.2.2.2 and Microsoft Excel Office software 2016.

III. Observations

All the 300 randomly selected eligible couples cooperated in the study and there were no non-responsive couples.

Majority of eligible couples (as per present age of females) belonged to 30-35 years age group (32.6%), followed by 25-30 years age group (26%) and the 20-25 years age group (21.3%). There were only 1.1% of eligible cases were below 20 years of age. None of the eligible couples in the study the present female age was less than 18 years of age.

Age Groups according to present age of female	Number of eligible couples (n=300)	Percentage (%)
<20 years	3	1.1
20-25 years	64	21.3
25-30 years	78	26
30-35years	98	32.6
35-40 years	42	13.9
40-45 years	15	5

Table 1 Distribution of study population according to present age of female.

66% of the eligible families were nuclear families while the remaining 34% were a part of joint families. 48% of the females were educated below or had Middle school certificate while only 12% were graduate and postgraduate. 23% of husbands were educated below or had Middle school certificate while only 23% were graduate and postgraduate.

LiteracyStatus	**Number of Females/ Wives (n=300)**	**Percentage (%)**	**Number of Males/ Husbands (n=300)**	**Percentage (%)**
Illiterate	23	8	10	3
Literate- < Middle School	41	14	23	8
Middle school certificate	79	26	35	12
High school certificate	91	30	74	25
Higher secondary certificate	32	11	91	30
Graduate degree	23	8	44	15
Post graduate degree	11	4	23	8

Table 2: Literacy status of Wives and Husbands of eligible couples

Among the eligible couples 18 % had no children, 25% had one child, 35% had 2 children while 22% had 3 or more children

The modern contraceptive prevalence rate varied from 46% to 72% among the different blocks of the RHTC Bhadson with average of 58.7% which is more than 47.8% (national) while less than 67.1% reported for the state of Punjab for rural areas in NFHS-4, but it is comparable to estimates for 2015 of 60.3 % (range 49.7% to 69.9%) for Punjab by Jin Rou New et al (2017).(1-3)

Permanent methods which included esp.tubectomy (67 cases) and vasectomy (only 4 cases) were the preferred method of contraception with 71 (40.3%) followed by IUCD users 52(29.5%), contraceptive pills 30 (17%) and at last was condoms 23(13.1%)out of a total of 176 current contraceptive users. No other modern method like injectables were reported in the study.

Number of children	**Eligible couples Not using Contraception**	**Usage of different contraceptive methods by eligible couples**				**Total eligible couples using contraception**
		Condoms	**Contraceptive Pills**	**IUCD**	**Permanent Methods**	
0	47	3	4	0	0	7
1	36	9	11	17	1	38
2	22	9	11	30	34	84
3 or more children	19	2	4	5	36	47
Total	124	23	30	52	71	176

Table3: Contraceptive Usage by Eligible couples

43.1% of eligible couples were not using any method of contraception and one third of these had 2 or more children.

The contraceptive usage was more in eligible couples with 2 children (79.2%), followed by 3 or more children (71.2%), with one child (51.4%) while majority of eligible couples with no children did not opt for contraceptive methods. 7 (18%) of 54 eligible couples with no children used contraception for spacing of their first child.

Religion	Not ever used contraceptive	Number of children of couples not ever used contraceptive				Ever Used Contraceptive	Total
		0	1	2	3 or more		
Hindu	21	15	2	1	2	92	113
Sikh	34	23	3	1	8	132	166
Muslim	12	2	1	2	7	9	21
	67	40	6	4	17	233	300

Table4: Distribution religion wise for ever used Contraceptive by Eligible couples

55.3% of the eligible couples were Sikhs while 37.7% and 7% belonged to the Hindu and the Muslim communities respectively. 81.4% of Hindu community have ever used some contraceptive for family planning followed by the Sikh Community (79.5%) and the least by the Muslim Community (42.9%)

BG Prasad Socio Economic Scale	Not using Contraception	Using Contraception	Total	Class Percentage (% out of 300)	Usage percentage among class (%)	Not ever used contraceptive	Used Contraceptive	Never used percentage among class (%)	Total
I (upper class)	12	35	47	16	74.5	7	40	14.9	47
II (upper middle class)	34	48	82	27	58.5	13	69	15.9	82
III (middle class)	33	45	78	26	57.7	21	57	26.9	78
IV(lower middle class)	33	41	74	25	55.4	20	54	27.0	74
V(lower class)	12	7	19	6	36.8	6	13	31.6	19
Total	124	176	300	100	58.7	67	233	22.3	300

Table5: Distribution of Contraceptive usage by Eligible couples on basis of BG Prasad Socio Economic Scale[4-6]

22.3% of the couples never used any contraceptive method. While 40 couples among them were having no children; 27 couples had one or more children and 17 couples of the latter had 3 or more children. Among these 17 couples, 8 (47.5%) belonged to Sikh community and 7 (41.2% belonged to Muslim community. In context of ever using contraceptive, 17 couples who had more than one or more children and never used contraceptive and did not belong to Muslim community majority informed (through open ended question) that they were followers of different sect and their religious leader disapprove the use of contraception.

On the socioeconomic front (on the basis of BG Prasad Socio Economic Scale)(5, 6), the maximum current usage was in Class I (74.5%) with least in Class V (36.8%); while the never used contraceptive group of eligible couples was maximum in class V with 31.6% and least in Class I with 14.9%. (Table 5).

The usage of contraception increased with the increase in marriage age from 34.8% to 69.2% which was found to be statistically significant. A similar trend was seen in contraceptive usage with literacy status of females. The contraceptive usage increased from 39.1% among illiterates to high of 90.9% among postgraduates.The usage was found to be significantly higher among nuclear families than joint families. (Table 6)

S.no	Correlates	Present contraceptive usage (n=300)		Total	Percentage	Statistical analysis		
		Yes	No			χ^2	df	p- value
1	**Age of females at time of marriage in Years**							
	<18*	8	15	23	34.8	9.22	3	0.0265
	18-21	33	26	59	55.9			
	21-24	81	59	140	57.9			
	>24	54	24	78	69.2			
	Total	176	124	300	58.7			
	* 23 females were below the age of 18 years at time of marriage among which 8 females never used contraception							
2	**Type of Family**							
	Nuclear	130	68	198	65.7	11.73	1	0.0006138
	Joint	46	56	102	45.1			
	Total	176	124	300	58.7			
3	**Literacy Status of Females**							
	Illiterate	9	14	23	39.1	31.57	6	0.00001972
	Literate- < Middle School	13	28	41	31.7			
	Middle school certificate	43	36	79	54.4			
	High school certificate	59	32	91	64.8			
	Higher secondary certificate	22	10	32	68.8			
	Graduate degree	20	3	23	87.0			
	Post graduate degree	10	1	11	90.9			
	Total	176	124	300	58.7			

Table 6: Correlates of contraceptive practices and different variables of study participants

IV. Discussions

There has been a vast development over the decades but this development has been offset by the population growth. The government has placed huge percentage of health budget in financing family planning programmes and issues.Inspite of theseefforts, several issues continue to daunt the programme and many goals remain underachieved, such as asignificant proportion of pregnancies continue to be unplanned, contraceptive needs of millions of womenremain unmet, and several subpopulation groups including adolescents and men continue to beunderserved and neglected.

We have planned to do an operational research study on the family planning programme in the rural areas of field practice area of Rural Health Training Centre (RHTC) (Bhadson) under the Department of Community Medicine, Government Medical College Patiala. In doing so in the initial stages this pilot study has been done to understand the contraceptive prevalence rate and its association risk factors in the present scenario which may have an impact on the utility of services provided by government family planning programmes.

Majority of the factors known to affect contraceptive use are complex and interrelated. Among indicators of that have a prominent role include level of education, employment, mobility, and political/ religious activity.Greater autonomy for women and better resources are also shown to lead greater contraceptiveuse.

Majority of couples were presently from the age group of 30-35 years in age followed by 25-30 years age group together constituting 58.6% of the sample size. While 69 percent of couples had a per capita monthly income less than Rs. 3250. While 9% of the couples were below poverty line which was more than 7.4% estimated for Punjab as per Rangarajan Poverty report in rural areas. (7)

In the current study 66% of eligible belonged to nuclear families; among which 65.7% were using contraceptive measures which was significantly higher than contraceptive usage in Joint family setup (45.1%). The study results were supported by similar findings reported by different authors Gupta A. et al (2014), Bisoi et al (2012) and Halder et al (2012). (8-10)

The contraceptive usage statistically significantly increased with the increase in literacy status of the female. Only 39.1 percent of illiterates were using contraceptives which increased to 90.9 percent among postgraduates. This is in contrast to the findings of NFHS-4 which have documented Contraceptiveprevalence decreases gradually as number of years of schooling increases; interestingly, 60percent of currently married women with no schooling use female sterilization, comparedwith 19 percent of women with 12 or more years of schooling.(3)Overall literacy rate of the females was 92.33% which is much higher than the national average of 65.50% as per census 2011 and NFHS-4 figures of 78.4% for rural Punjab.

The average age of marriage 21.8 years which is much higher than the national average of 19.3 years for girls of rural areas as per DistrictLevel Household and Facility Survey (DLHS)-III data.23 females (7.67% of study population were below the age of 18 years at time of marriage which is comparable to 8.1% reported for rural areas (7.6% overall) for the state of Punjab in NFHS-4.(3) The contraceptive prevalence rate increased significantly with the age of marriage.

18 % of couples had no children while 57% of couples had 2 or more children.Present study reveals that contraceptive prevalence varies with the number of living children ofstudy population. The contraceptive prevalence statistically significantly increased from 13 to 79.2 percent upto 2 children followed by an insignificant dip to 71.2 percent for 3 or more children. Gupta A et al (2012) reported 77.5 percent of acceptor rate is in study population who had three or more living children. In a study conducted by Chaco E (2001) observed that number of living children was animportant determinant of contraceptive use.(8, 11)

The use of contraceptives was less among Muslim community; a fact which has been documented in NFHS-4 that Muslim women (68%) are lesslikely to use contraception than Sikh (76%) and Hindu women (75%).(3)

In the present study; among 300 eligible couples, 176 accepted any or more than one modern method ofcontraceptives (58.7%) which is less 67.1% reported for the state of Punjab in NFHS-4 for rural areas.(3)This difference can be attributed to the fact that the study considered only minimum six month regular user as contraceptive user and in NHFS-4 for Punjab it is documented that More than two-fifths (43%) of users of modern spacing methods discontinueduse within the first year after they adopted the method.(3)

Among acceptors of contraceptives, 40.3% (23.7% of total) couples adopted permanentmethod and currently 59.7%(35% of total) couples were using temporary methods including IUCDs. 17.3% of total eligible couples (i.e.29.5% of the contraceptive users) preferred IUCD which is much higher than the 1.1% national and 6% for Punjab in NFHS-4.(3)38% (i.e. 22.3% of total eligible couples) of the contraceptive users preferred tubectomy as method of choice while 2.3% (i.e. 1.33% of total eligible couples) of adopters preferred vasectomy, which is higher than thenational figures of 0.3% and state figures of 0.7% reported in NHFS-4.(3)Study by Gupta et al (2012) showed 49% couples adopting permanent method and only 18.50% using temporary methods; the study population showed no IUCD users due to non-availability of services. (8)

The prevalence of temporary spacing methods is 35% of total eligible couples which is higher than reported fornational 9.3% in rural areas (overall 11.2%) and for Punjab state 25% in rural areas (overall 28.2%)

in NHFS-4, 18.5% by Gupta A et al and Kansal et al. (3, 8, 12)OCP use was reported to be 10% of total eligible couples (i.e.17% of the contraceptive users). This rate was higher than the 4.3 % for rural areas (4.1% overall) reported by NHFS-4, 7.5% by Rao et al. and Kumar et al. but was lower than 15.5% reported by Gupta A et al, 22.3% by Halder et al, and 43.41% reported byChankapa et al. (2010). (8, 10, 13)The use of condom as a primary contraceptive device was 7.7 percent of total eligible couples. This was more than 3% reported by Gupta A et al and 3.9% for rural areas (5.6% overall) national reported by NFHS-4 but less than 16.2 % reported by Chankapa et al. (2010).(3, 8, 13)

V. Conclusions

The pilot study concluded that CPR was 58.7% which ranged from 46% to 72% in various blocks of the practice area.Female literacy rate and mean age of marriage are exceptionally higher than the national average. Various factors especially age at marriage, type of family, number of living children, literacy status of female partner, religion andsocioeconomic status significantly affect contraceptive behavior of the study population which will also affect their family planning services seeking behavior which in turn will have an impact on the utility of these services.

This pilot study was designed to understand the non-programmatic issues related with Family planning services. The attempt has brought forth many issues and their magnitude of influence on service seeking behavior of eligible couples which will form a significant portion of the operational research study being designed.

This study was limited by issues which arose during the collection of data like that of local sect leaders and their role in influence of family planning seeking behavior etc. which were not included during pretesting of proforma. The comparison of data had also restricted value since the study considered only minimum six-month regular user as contraceptive user i.e.it did not take in account irregular users and those who have started using temporary methods of contraception in past 6 months

VI. Declarations

a. Funding: Nil
b. Conflict of interest: Nil

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