

Contraceptive practices and associated social covariates: an experience from two districts of West Bengal, India

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Abstract

Background

Contraceptive practice acceptable to Indian society is said to be associated with socio-economic status, education, practice of the area and other factors. Population stabilization and a gradual lowering of population growth is the basic aim behind contraceptive practice.

Objectives

The study was conducted to assess current status of contraceptive practice and social covariates (age, type of family, religion, socio-economy, education, etc).

Materials and Methods

A community based cross-sectional study was conducted among four thousand eligible couples in Howrah and

Paschim Midnapore districts of state of West Bengal, India from March to September 2009. By stratified multistage random sampling technique, 32 areas were selected from two districts; villages of sub-centre zone and wards of municipality; from each selected area; 125 eligible couples were interviewed by house to house survey.

Results

The contraceptive acceptance (prevalence) rate (CAR) by any method was 65.3 percent and couple protection rate (CPR) by approved methods was 58.4 percent in these two districts of West Bengal. In Paschim Midnapore district CAR was higher (67.4%) than Howrah district (63.3%). Similarly in Howrah district CPR was less (54.3%) than Paschim Midnapore district (62.6%). Type of family, age and literacy status of female partners, religion and social class were associated with adoption of family planning methods by the eligible couples with inter-district variation.

Conclusion

Area specific multipronged tailor-made interventions are needed through Behaviour Change Communication (BCC) for promotion of acceptance of both the temporary & permanent methods of contraception at the appropriate time to achieve small family norm.

Keywords: Couple, Couple Protection rate, Contraceptive, Eligible.

Introduction

Family planning is a process of thinking and a life style. Attitude is an important factor in choosing suitable contraceptive methods¹. A small family infrastructure is preferred and encouraged in our middle class society as it is considered to promote happiness and well-being.

It is universally accepted that family planning services are essential for promoting birth spacing to reduce maternal and infant mortality. If these services were more widely available, up to 42 percent of maternal deaths could be prevented in developing countries. The mean proportion of maternal deaths that could have been averted was 24 percent^{2,3,4}.

Family planning services are given from indoor and also from outdoor camp services. It was seen that these camps expanded the availability and accessibility to sterilization services without jeopardizing the quality of sterilization services. Yet there is a need to reinforce access to information about other contraceptive methods and to make them available⁵.

Family planning is regarded as a significant achievement of public health and worldwide acceptance has risen to three-fifths of exposed couples. However, acceptance of modern contraception is constrained by limited access and weak service delivery in many developing countries and the burden of unwanted pregnancy is still large. Another crucial issue is that of adolescent women who are at a high risk of unwanted pregnancy. Currently, there is little data available to them concerning their choice to initiate long-acting reversible contraception⁶. Contraceptive measures are highly relevant to the adolescent age group and researches are going on their preference for specific methods to prevent pregnancies and their health burden⁷. A related review to identify the most effective measures to save newborn lives also concluded with an integrated approach to safe motherhood and newborn health and emphasized the importance of health systems research and evaluation.⁸

Although India has the distinction of initiating an official family planning programme way back in 1952, most couples in India adopt a terminal method only after they have had three or more children. Current users of family planning are by and large those who have achieved their desired family size and do not want any additional children. Furthermore, due to emphasis on sterilization, spacing methods have not been actively promoted nor are they easily available to those who are willing to adopt them⁹. So temporary methods should be promoted to space or limit births¹⁰. There is a need to promote different spacing methods by policy and decision makers and field workers in order to motivate couples to accept these methods for themselves and for overall national development¹¹. Side effects, religious or spousal objections, or desire to conceive are found as reasons for stoppage of contraception in area with poorer health indices¹². This should be taken care of.

Many women may like to use contraceptives, but they are not aware of its availability, thus there may be unplanned

pregnancies and women may seek abortion. Women of necessity and health care providers are poorly educated about contraception and the availability of legal and safe abortion services. Women need better access to safe abortion and post-abortion services. Desperate women, facing the financial burdens and burden of unwanted pregnancy and believing they have no other option, continue to risk their lives by undergoing unsafe illegal abortions¹³. To reduce the number of repeated unsafe abortions, high-quality contraceptive service counseling can induce women to use contraception after having had an unsafe abortion¹⁴.

Easy accessibility to good quality family planning services is basic right of all women to prevent pregnancy, unsafe abortions, child birth related deaths and long term morbidity¹⁵. The extent of acceptance of contraceptive methods still varies within and between societies and also among different religion groups. The factors responsible for such a varied picture operate at the individual, family and community levels with their roots in the socio-economic and cultural milieu of Indian society¹⁶. Factors such as older ages, education of husband and subject, and the number of male children were observed and these were positively related to use of any methods and also permanent methods of contraception¹⁷. Adoption of policies for a low fertility rate, the control of timing and spacing of pregnancies, and greater access to family planning can help to reduce the maternal mortality rate. These generally reduce the number of unwanted pregnancies. Hence women need access to medical and social services available at an easy reach¹⁸. Mothers adopt contraceptive methods after completion of family or birth of male children. Low usage rates of long term methods are mostly due to fear of side-effects, lack of proper knowledge about methods, followed by husbands' objection, desire for more children and health reasons¹⁹.

With the above perspectives the present study was undertaken to assess the current status of contraceptive practice among the eligible couples, to determine social covariates influencing it, and to recommend suggestive measures for promotion of contraceptive acceptance.

Material and Methods

Study design and the participants

A community based cross-sectional observational study was carried out in two districts of West Bengal in Eastern India during the month of March to October 2009. Two districts were Howrah and Paschim Midnapore. Female members of eligible couples were the participants in the study.

Data collection

Data was collected from a total of four thousand eligible couples by interview technique from the participating respondents through a predesigned and pretested schedule, by house to house survey. Faculty members and interns of the Department of Community medicine from different medical colleges participated in the survey. A two-day workshop was held for hands-on-training of 30 surveyors

for data collection by interview technique. This was done to ensure uniformity in data collection throughout the study. The primary and co-investigators actively supervised the data collection by the surveyors in the field.

Inclusion criteria

Consenting members of eligible couples, physically and mentally fit persons, and only residents of the surveyed locality were taken as inclusion criteria for the study population.

Exclusion criteria

Physically and mentally unfit persons, those not giving consent and visitors in the area surveyed were the exclusion criteria of the selected population.

Sample size calculation

The sample size was calculated from the present national data of Couple Protection Rate of 46 percent²⁰. The sample size came up to 1879 considering an allowable error of 5 percent at 95% confidence limit²¹. For the two districts, four thousand eligible couples were considered (two thousand from each district) adequate sample size in order to overcome a non-response rate of five percent.

Sampling design:

By stratified multistage random sampling, the villages and municipality wards of Howrah & Paschim Midnapore districts were selected for the study. From nineteen districts in West Bengal, two districts were randomly selected; out of total blocks in each district, three blocks were selected randomly. From each rural block two sub-centers and from each sub centre area two villages were selected randomly. Among the total municipalities of each district, two municipalities were selected randomly; from each municipality two municipal wards were selected randomly. So, altogether sixteen areas were selected from and within each district (twelve villages and four municipal wards) for the purpose of the study. The urban and rural population was in the ratio of 1:3, thus 16 clusters selected from each district were also distributed in the same ratio, i.e. 4 urban wards from Municipality areas and 12 villages from rural blocks.

Outcome Variables

Contraceptive prevalence, Couple protection rate and proportion of different contraceptive methods were the response or outcome variables in this study.

Explanatory variables

Religion, type of family, age-group of female partners, educational status, socio-economic status were the independent or explanatory predictors.

Ethical committee approval

Calcutta National Medical College Ethics committee had been contacted through proper channels prior to

commencement of the study and the team was permitted to conduct the study.

Data management and statistical analysis

Data for all parameters were analyzed manually and by computer using Epi-Info. χ^2 and p value have been calculated to see the statistical association among the variables²².

Few terms had been used in the study as defined below:

*Eligible Couples – Currently married couples with wives aged between 15-49 years who were in need of Family Planning services are referred to as eligible couples⁷.

*Couple protection Rate – Percent of eligible couples effectively protected against child birth by one or the other approved methods of family planning viz. – sterilization, IUCD, Condom or Oral pills²³.

*Contraceptive acceptance rate (prevalence rate) - Percent of eligible couples protected against child birth by any method of family planning (modern methods and traditional methods)²⁴.

Results

Our study revealed that 76.9% of our study population were Hindus (comparable to national demography), more than two thirds (69.8%) were members of a nuclear family, more than half (56.2%) were in the age group of 29 years, about half of them (40.1%) had no formal education and a sizeable proportion lived below the poverty line (BPL).

In Howrah district, acceptance of contraceptive rate was more among Hindus (64.9%) than Muslims (59.9%) and the difference was statistically significant ($p < 0.05$). But in Paschim Midnapore district, acceptance rate of contraceptives was higher in case of Muslims (74.6%) than Hindu (66.3%) which was also statistically significant. Acceptability of contraceptive methods in relation to type of family was higher among the couples of nuclear families in both the districts ($p < 0.05$). Age of wives, literacy also influenced the acceptance of contraceptives ($p < 0.05$ in both the districts). Acceptability of contraceptive was not influenced ($p > 0.05$) by different social class [Table-1&2].

The literacy status of female partners was inversely proportional to contraceptive acceptance (contraceptive prevalence) by any method (modern and traditional methods) and couple protection rate. This was statistically significant. The reason might be explored here [Table -3].

In Howrah district, 40 percent contraceptive acceptors used to consume oral contraceptive pill (OCP), 29.3 percent adopted permanent family planning methods (vasectomy and tubectomy), but contrary to this in Paschim Midnapore district most of the couples (57.7%) adopted permanent family planning methods (tubectomy and vasectomy) followed by OCP (28.7%) [Figure 1].

Table 1: Table 1: Current Contraceptive Practices in relation to social covariates [Howrah (n=2000)]

Variables	Howrah (n=2000)			
	No of E.C.	No. of Acceptors	Percent	Test of significance
Religion				
Hindu	1336	868	64.9	$\chi^2 = 4.8$ $p < 0.05^*$
Muslim	664	398	59.9	
Type of family				
Nuclear	1400	912	65.1	$\chi^2 = 6.8$ $p < 0.05^*$
Joint	600	354	59.0	
Age groups of female partners (wives)				
< 18 yrs	21	6	28.6	$\chi^2 = 47.9$ $p < 0.05^*$
18-23 yrs	491	257	52.3	
24-29 yrs	632	423	66.9	
30-35 yrs	573	394	68.9	
≥ 36 yrs	283	186	65.7	
Educational status (Institutional)				
No(JL,ILL)	667	399	59.8	$\chi^2 = 5.2$ $p < 0.05^*$
Yes	1333	867	65.0	
Socio-economic status				
Upper high & high	33	23	69.7	$\chi^2 = 2.5$ $p > 0.5^x$
Upper middle	33	23	69.7	
Lower middle	191	119	62.0	
Poor	1070	683	63.8	
BPL	673	418	62.1	
Total E.C.	2000	1266	63.3	

* Statistically significant, x statistically not significant

Fig. 1: Bar diagram showing the practice of different family planning methods by eligible couples in two different districts

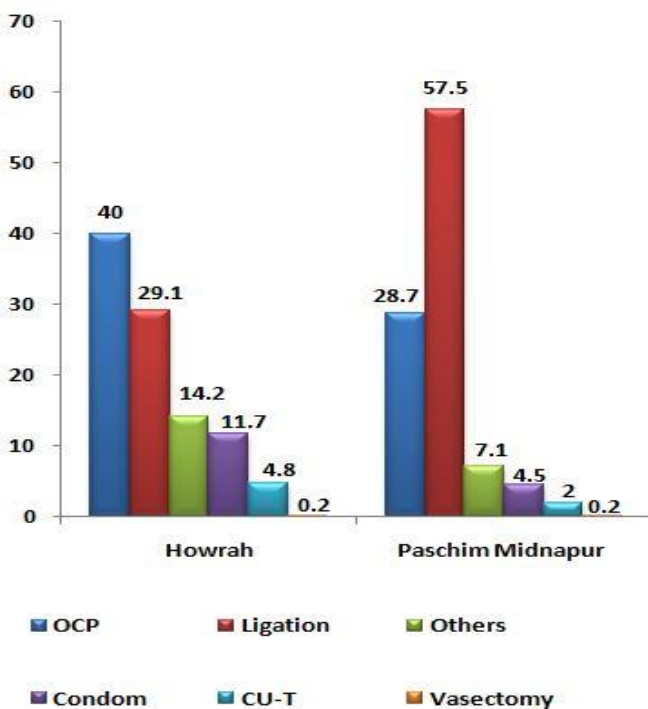


Table 2: Table 1: Current Contraceptive Practices in relation to social covariates [Paschim Midnapore (n=2000)]

Variables	Paschim Midnapore (n=2000)			
	No of E.C.	No of E.C.	No of E.C.	Test of significance
Religion				
Hindu	1740	1740	1740	$\chi^2 = 4.8$ $p < 0.05^*$
Muslim	260	260	260	
Type of family				
Nuclear	1394	1394	1394	$\chi^2 = 6.8$ $p < 0.05^*$
Joint	606	606	606	
Age groups of female partners (wives)				
< 18 yrs	23	23	23	$\chi^2 = 47.9$ $p < 0.05^*$
18-23 yrs	452	452	452	
24-29 yrs	630	630	630	
30-35 yrs	526	526	526	
≥ 36 yrs	369	369	369	
Educational status (Institutional)				
No(JL,ILL)	939	939	939	$\chi^2 = 5.2$ $p < 0.05^*$
Yes	1061	1061	1061	
Socio-economic status				
Upper high & high	11	11	11	$\chi^2 = 2.5$ $p > 0.5^x$
Upper middle	21	21	21	
Lower middle	90	90	90	
Poor	745	745	745	
BPL	1133	1133	1133	
Total E.C.	2000	2000	2000	

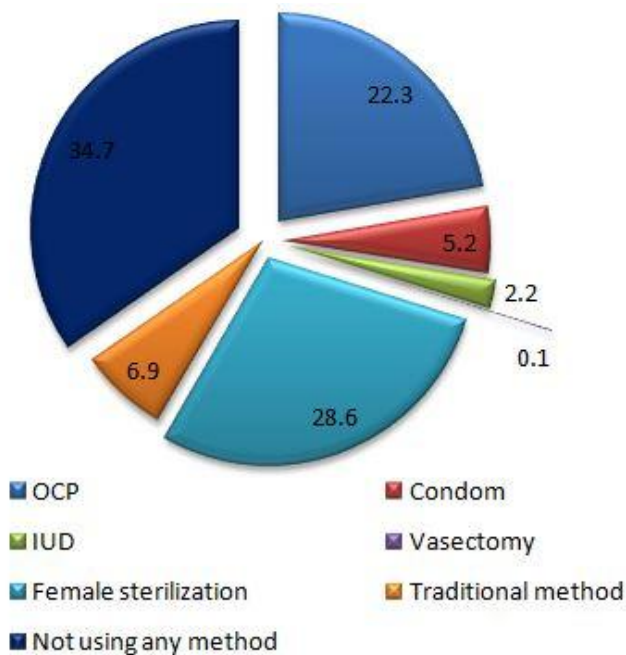
* Statistically significant, x statistically not significant

Table 2: Comparison of indicators in respect of two districts

Indicators	Howrah District (n = 2000)	Paschim Midnapore District (n = 2000)	Test of significance	Total (n = 4000)
			χ^2 / p value	
Literacy rate	66.7%	59.9%	78.72, < 0.05*	63%
Contraceptive acceptance by any method (modern and traditional methods)	63.3%	67.4%	9.89, < 0.05*	65.3%
Couple protection rate	54.3%	62.6%	25.18, < 0.05*	58.4%

* Statistically significant, x statistically not significant

Figure 2: Pie chart showing distribution of total eligible couples according to family planning practice methods



Contraceptive prevalence rate, approved methods and traditional methods all inclusive here, among currently married women (aged 15–49 yrs) was 65.3 percent. Traditional methods were found among 6.9 percent couples. So couple protection rate was less than 60.0 percent [Figure 2].

Discussion

The current status of contraceptive practice by the eligible couples and social covariates which may influence the contraceptive practice have been taken care of in this study.

Contraceptive prevalence rate:

In our study, contraceptive practice by any method among currently married women was less than in NFHS-3 of West Bengal (71.2%), but higher than NFHS-3 national data (56.3%) and other studies^{16,19,24,25}. Contraceptive acceptance rate was higher among higher income groups in both districts; but this was contrary to the findings of the earlier studies^{17,26}.

Couple protection rate:

The couple protection rate in the present study (58.4%) was higher than that for NFHS-3 of West Bengal (50 %) and national figure (48.5%)^{24, 25}. The couple protection rate was found to be less (43.4%) in Sharma AK et al study (1997)²⁷. Again this was found higher (82.55%) by Chankapa YD et al (2010)¹². The contraceptive acceptance rates, the couple protection rates and fertility rates were higher in Paschim Midnapore district than in Howrah district. This may be due to adoption of permanent methods after completion of family size in Paschim Midnapore district. Similar findings

were observed in earlier studies that might be due to male dominance in Indian society (which prevailed in the study area) and was corroborated by observations of Sharma A K et al (1997) and Shobha J (1990)^{27,28}.

Contraceptive methods:

Our study noted that oral contraceptive pill use was higher (22.3%) than the national figure (3.1%)⁸. This usage was lower than what was seen in a study by Chankapaet al (43.41%)¹², and higher than found by Kumar et al (7.5%)^{29, 15}. Acceptance of Copper-T (2.2%) and rate of condom use (5.2%) in the present study was more or less similar to the findings of NFHS 3 of India²⁷ but less than that of previous references^{12, 29}. In comparison to West Bengal figures (32.3%) of NFHS 3, female sterilization (28.7%) was lower. But this was higher than what was reported by Sharma et al²⁷ and lower in comparison with studies done by Chandhick N¹¹. Miscellaneous methods practiced by the eligible couples in our study were 6.9% whereas it was 21.3 percent in West Bengal in NFHS-3²⁴.

Socio-demographic variables:

Institutional education, nuclear family structure, religious values and higher ages of married women were found to have a significant positive influence on contraceptive practice by the eligible couples³⁰. There was inter-district variation of observation in two districts in the present study. Acceptance of contraceptive methods was significantly higher among nuclear families in both the districts, which did not corroborate with findings from an earlier study done by Bhattacharya M et al (1984)³¹. One Bangladesh study found no socio-economic difference among acceptors and non-acceptors of family planning method¹⁹. Adoption of family planning measures was significantly higher among those respondents who acquired education from institutions than illiterate and just literate group in both the districts. A similar observation was made by Sharma et al in South Delhi²⁵. All the findings were comparable with one study at Hyderabad by Shobha J²⁸.

Inter-district variation:

In Paschim Midnapore district, the literacy rate (59.9%) was lower than in Howrah district (66.7%). The total fertility rate (2.02) was higher in Paschim Midnapore district in spite of higher couple protection rate (62.6%) and contraceptive acceptance / prevalence rate (67.2%) than Howrah district. It might be due to adoption of permanent methods (57.7%) in Paschim Midnapore which is nearly double than in Howrah (29.3%). Similar observations were also noted by the previous Chankapa YD et al (2010), Mohanan P et al (2003) and Oni GA et al (1991)^{12,32,33}. In Paschim Midnapore, the reason for adoption of permanent method may be due to wanting more children like in Punjab³⁴.

Conclusion:

From the present study it can be concluded that couple

protection rate as well as contraceptive acceptance (by any method) was far better in both the districts of West Bengal than National averages. Due to more emphasis on permanent methods, adoptions of temporary methods are neglected in Paschim Midnapore district. Awareness about small family norm, adoption of both temporary and permanent methods at the appropriate time as well as improvement of literacy status is indispensable for reduction of population growth. Area specific sustained and coherent Behavior Change Communication (BCC) efforts are needed for better utilization of both temporary and permanent family planning services, as recommended in the Hyderabad study done by Shobha J²⁸. The countrywide aspiration of achieving population control, which even now is considered a distant dream, can be achieved only through proper utilization of contraception³⁵.

Limitation of the study:

The findings of our study have limited external validity as the sample size and geographic area of the study population in the context of eastern India was restricted.

Future scope of study:

Inter-district variation was noted; broader scope is relevant at the state or the national level.

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Authors' contributions

All the authors were associated with conception & design of the study, acquisition, analysis and interpretation of data; drafting the article revising it critically for important intellectual content; and final approval of the version.

Conflict of Interests:

The authors do not have any conflict of interest arising from the study.

What this study adds:

By means of this study one is expected to acquire an idea concerning inter-district variation of acceptance in contraceptive methods and one can modify the programme accordingly.

References:

1. Ehsanpour S, Mohammadifard M, Shahidi S, Nekouyi NS. A comparative study on attitude of contraceptive methods users towards common contraceptive methods. *Iran J Nurs*

Midwifery Res. 2010 Dec;15(Suppl 1):363-70.

2. Yeakey MP, Muntifering CJ, Ramachandran DV, Myint Y, Creanga AA, Tsui AO. How contraceptive use affects birth intervals: results of a literature review. *Stud Fam Plann.* 2009 Sep;40(3):205-14.

3. Sai FT. Family planning and maternal health care: a common goal. *World Health Forum* 1986; 7(4): 315-39.

4. Thapa S, Short RV, Potts M. Breast-feeding and birth spacing save lives. *J Obstet Gynaecol East Cent Africa.* 1988;7(2):51-3.

5. Thapa S, Pandey KR, Shrestha H. Female sterilization acceptors at permanent and temporary service delivery settings in Nepal. *JNMA J Nepal Med Assoc.* 1994 Jul-Sep;32(111):144-53.

6. Tsui AO, McDonald-Mosley R, Burke AE. Family planning and the burden of unintended pregnancies. *Epidemiol Rev.* 2010 Apr;32(1):152-74. doi: 10.1093/epirev/mxq012. Epub 2010 Jun 22.

7. Mestad R, Secura G, Allsworth JE, Madden T, Zhao Q, Peipert JF. Acceptance of long-acting reversible contraceptive methods by adolescent participants in the Contraceptive CHOICE Project. *Contraception.* 2011 Nov;84(5):493-8. doi: 10.1016/j.contraception.2011.03.001. Epub 2011 Apr 27.

8. Bhutta ZA, Darmstadt GL, Hasan BS, Haws RA. Community-based interventions for improving perinatal and neonatal health outcomes in developing countries: a review of the evidence. *Pediatrics.* 2005 Feb;115(2 Suppl):519-617.

9. Thiagarajan BP, Adhikari R. The level of unmet need and its determinants in Uttar Pradesh. *J Fam Welf* 1995; 41(4): 66-71.

10. De Silva WI. Do fertility intentions and behaviour influence sterilization in Sri Lanka? *Asia Pac Popul J.* 1992 Dec;7(4):41-60.

11. Chandhick N, Dhillon BS, Kambo I, Saxena NC. Contraceptive knowledge, practices and utilization of services in the rural areas of India (an ICMR task force study). *Indian J Med Sci.* 2003 Jul;57(7):303-10.

12. Chankapa YD, Pal R, Tsering D. Male behavior toward reproductive responsibilities in sikkim. *Indian J Community Med.* 2010 Jan;35(1):40-5. doi: 10.4103/0970-0218.62552.

13. Haddad LB, Nour NM. Unsafe abortion: unnecessary maternal mortality. *Rev Obstet Gynecol.* 2009 Spring;2(2):122-6.

14. Rasch V, Massawe S, Yambesi F, Bergstrom S. Acceptance of contraceptives among women who had an unsafe abortion in Dar es Salaam. *Trop Med Int Health.* 2004 Mar;9(3):399-405.

15. Rao AP, Somayajulu VV. Factors responsible for Family Planning acceptance with single child: findings from a study in Karnataka. *Demography India* 1999; 28(1): 65-73.

16. Agarwal A. Social classification: the need to update in the present scenario. *Indian J Community Med.* 2008 Jan;33(1):50-1. doi: 10.4103/0970-0218.39245.

17. Girdhar S, Chaudhary A, Gill P, Soni RK, Sachar RK. Contraceptive Practices And Related Factors Among Married Women In A Rural Area Of Ludhiana. *Internet J Health* 2010;12(1). DOI: 10.5580/961

18. Takrouri MSM. Reproductive Health: The issues of

- maternal morbidity and mortality. *Internet J Health* 2004; 3(2). DOI: 10.5580/c8a
19. Nayer I, Akter SF, Hossain S, Luci RH. Acceptance of long-term contraceptive methods and its related factors among the eligible couples in a selected union. *Bangladesh Med Res Counc Bull.* 2004 Apr;30(1):31-5.
20. Park K. Demography and Family Planning. In: Text book of Preventive and Social Medicine. 20th edition. Jabalpur: Banarasidas Bhanot; 2009. 414-44.
21. Sathian B. Reporting dichotomous data using Logistic Regression in Medical Research: The scenario in developing countries. *Nepal Journal of Epidemiology* 2011;1(4):111-113.
22. Sathian B. Methodological Rigors in Medical Journals From Developing Countries: An Appraisal of the Scenario in Asia. *Nepal Journal of Epidemiology* 2011; 1(5): 141-43.
23. Patro BK, Kant S, Baridalyne N, Goswami AK. Contraceptive practice among married women in a resettlement colony of Delhi. *Health and Population Perspectives and Issues* 2005; 28(1): 9-16.
24. Bhatia S. Contraceptive users in rural Bangladesh: a time trend analysis. *Stud Fam Plann.* 1983 Jan;14(1):20-8.
25. Singh NKR, Devi IT, Devi BTh, Singh MY, Devi NT, Singh SN. Acceptability of contraceptive methods among urban eligible couples of Imphal, Manipur. *Indian J Community Med* 2004; 29 (1): 13-7.
26. Lala MK, Purohit CK. Fertility and family planning status in a village of district Ahmedabad (Gujarat). *Indian J Public Health.* 1991 Jul-Sep;35(3):89.
27. Sharma AK. Grover V, Agarwal OP, Dubey KK, Sharma S. Patterns of Contraceptive Use by Residents of a Village in South Delhi. *Indian J Public Health* 1997; 41(3): 75-8.
28. Shobha J. Fertility and child survival: a study of selected slums of Hyderabad. *Indian J Soc Work* 1990; 1: 134-40.
29. Kumar S, Priyadarshni A, Kant S, Anand K, Yadav BK. Attitude of women towards family planning methods and its use--study from a slum of Delhi. *Kathmandu Univ Med J (KUMJ).* 2005 Jul-Sep;3(3):259-62.
30. Chankapa YD, Tsering D, Kar S, Basu M, Pal R. Sociodemographic variables of contraceptive practice in Sikkim. *J Pharm Bioallied Sci.* 2011 Jul;3(3):368-74. doi: 10.4103/0975-7406.84439.
31. Bhattacharya M, Joshi PL, Raj B. Socio-economic correlates of fertility and contraceptive practices amongst target couples of a rural community. *Indian J Public Health.* 1984 Jul-Sep;28(3):139-46.
32. Mohanan P, Kamath A, Sajjan BS. Fertility pattern and family planning practices in a rural area in dakshina Kannada. *Indian J Community Med* 2003; 28(1): 15-8.
33. Oni GA, McCarthy J. Family planning knowledge, attitude and practices of males in Ilorin, Nigeria. *Int Fam Plann Perspective* 1991; 17(2): 50 -4.
34. Malhi P, Singh S. Son preference and reproductive behaviour in rural Punjab. *Guru Nanak J Sociol.* 1995 Oct;16(2):31-40.
35. Mukhopadhyay SP, Halder AK, Das KK. Dr. P. C. Sen Memorial Oration. A study of utilisation of family planning services through MCH package care in rural areas of West Bengal. *Indian J Public Health.* 1990 Jul-Sep;34(3):147-51.

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