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A Study on the Association of Socio-Demographic Variables with Contraception Usage among Married Women of Reproductive Age group In Rural Areas of Nellore District, Andhra Pradesh

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Abstract
Context: India was the first country in the world to launch National Family Planning Program (NFPP) in 1952 to stabilise population and reduce birth rate, since then the program has undergone various changes in its philosophy as well as scientific approaches. Although the fertility rates are declining in our country, the extreme contrasting and complex demographic landscape with variations in contraceptive behaviour differs not only in state but also between administrative blocks within the state. The state of Andhra Pradesh was among the earliest states to reach Total Fertility (TFR) of 1.79 by the year 2005-06. Hence this was carried out to study the association of socio demographic variables with the contraceptive practices among the Married women in the reproductive age group(15-45 years) in rural areas of Nellore Distrcit, Andhra Pradesh.
Aims: To study the association of socio-demographic variables with contraceptive usage among the married women in reproductive age group of rural areas of Nellore District.**Material and Methods:**This is a cross sectional study done in the community for a period of one year at three randomly selected Primary Health Centers (PHC) of Nellore district. Considering 71% of prevalence of contraception in the National Family Health Survey(NFHS-4), sample size was calculated with 5% level of significance with allowable error of 10% to 179 (assuming a non response rate of 10%) , which was rounded to 200. A multistage sampling method was adopted whereby '1' PHC from each of the revenue divisions of the district was selected and it was decided to interview 200 married women in each of the "3" PHCs (n=600). From each PHC , "5" sub centres were randomly selected wherein "40" subjects were interviewed using systematic random sampling. **Statistical analysis used:**Univariate analysis using χ^2 test and stepwise logistic regression analysis (method = forward) was done to determine significant differences and associations of various parameters with contraceptive usage. **Results:**Contraceptive prevalence was 56% (n=338). Among whom 74.5% of the women were between the age group of 20-29 years. The usage of contraceptives increased with the age of women(28% of 20-24 years to 38% at 25-29 years of age group ($p < 0.0001$). We observed a high statistical significance in women (% usage) with 2 children (73%) and 1 male child(57%). The usage of birth spacing has seen a decline with the number of girl children ($p < 0.0001$) .**Conclusion:**Formal education has shown to increase contraceptive usage. Region and socio-economic status has shown no relation with the usage of contraception. The contraceptive usage was largely determined by the gender of the child and its relation to birth spacing needs to be studied further.
Keywords: Contraceptive Practices, Reproductive age group Women,Family size

Introduction

India is the second most populous country in the world with nearly a fifth of world's population. According to the2019 revision of World's Population Prospects, it stood at 1,352,642,280[1].India is projected to surpass china to become the world's most populous country by 2024[2].Its population growth rate is 1.13% in 2017[3]. Therefore stabilizing population is essential requirement for promoting sustainable development with more equitable distribution. India was the first country in the world to officially launch a National family planning programme (NFPP) in 1952 to reduce birth rate and to stabilize the population. "National Population Policy 2000" (NPP2000) provides frame work for achieving goals to meet the reproductive and child health needs of the people of India and to achieve net replacement level of fertility rate by 2012, stabilizing

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population by 2045[4]. fertility rates have been declining across the country. The decline appears well established in four southern states and reasonably well established. Maharashtra in west and Odisha, West Bengal in East. Total Fertility Rate (TFR) 1.79 at its lowest in the state of Andhra Pradesh in 2005-6[5].Owing to extremely contrasting demographic landscape, variations in contraceptive behavior are observed not only in the state but also between administrative blocks within a single state. In such scenario, acceptance of contraceptives in a community and the factors responsible for varied picture may operate at individual, family and community level with their root in the socioeconomic and cultural milieu of Indian society[6].Using socio-demographic or socio-economic determinants as factors in determining what is associated with contraception use is because those are the factors that allow for insight into the current family planning programs that are in place. The most commonly studied typically fall into the community level and individual level as those are often the best areas for opportunity to change. Factors such as age , literacy, occupation, type of family, decision maker in the family, number of sons or daughters in the family accounts for most in the practice of contraception[7]. Hence

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this study was initiated to see the association of the above said socio-demographic factors and usage of family planning methods.

Objectives: To study the association of the socio-demographic variables with contraception usage among married women in reproductive age group of the rural areas of Nellore District.

Material and methods

This is a cross sectional study done in the community for a period of one year at three randomly selected Primary Health Centers of Nellore district. Taking 71% as prevalence of contraceptive practice (NFHS-IV Andhra Pradesh data) sample size was estimated at 5% level of significance with an allowable error of 10% and we arrived at sample size of 179 (including a non-response rate of 10%), which was rounded off to 200 women of reproductive age group.8 This sample of 200 was collected from each of the three PHCs and therefore the sample size in our study is 600. (200 from each PHC).

A multistage sampling method was adopted according to which at the first stage one PHC (Primary Health Centre) was selected randomly from each of the three revenue divisions of the district. Then five sub-centers were selected randomly from each PHC. From each sub-center a sample of 40 was collected using systematic random sample after calculating the sampling interval. The first household was selected randomly using currency note method. From this house every fifth house was selected till the desired sample size was achieved. In case of locked houses and where there was no reproductive age, women the next house on the right side were selected.

Institutional Ethical Committee of the college accorded clearance for this study. A pretested, semi structured questionnaire pertaining to the socio-demographic profile, contraception practices and reasons for not practicing contraception was used to collect the data from the study subjects after obtaining their informed consent.

Data analysis

Collected data was fed into Microsoft Excel spread sheets and analysis was made with help SPSS version 17.0. Descriptive data are presented as frequency. Univariate analysis using χ^2 test and stepwise logistic regression analysis (method = forward) was done to determine significant differences and associations of various parameters with contraceptive usage. A P value < 0.05 was considered significant.

Results

Among the 600 women interviewed 338(56%) were using contraceptive users. 41.2% of the women are in the age group of 20-24 years, followed by 33% of them in the age group of 25-29 years. Thus 74.5% of the women are between 20 and 29 years of age. 71.7% of the women had a formal education of five or more years and 21.8 % of individuals were illiterate. Majority of the women belong to poor and BPL in 40%, followed by lower middle class in 37.2 %. Around 52% of the women belong to schedule tribe and schedule caste. Majority of the women are Hindu (91%) followed by Muslim (5%). Majority (69.5%) of the women are married above their legal age. Around 48.8% of the women have two children, followed by one child in 36.2% of the women. Majority (46.7%) of the women have borne at least one girl child. 2.2 % of women have three or more girl children. More than half (50.8%) of the women have at least one living son. About 1.2 % of the women have three or more male children. 71.8% of the women live in nuclear family.

Table 1: Socio-demographic factors associated with usage of contraception

Variable	Contraception usage (%) (n=338)	χ^2 value	p-value
Age in years			
15-19	01(0.29)	136.303	p<0.0001
20-24	96 (28.4)		
25-29	129(38.1)		
30-34	62 (18.3)		
35-39	47 (13.9)		
40-45	03 (0.88)		
Education(yrs)			
Illiterate	81(24)	9.888	0.020
<5 YEARS	28(8.3)		
5-9	129(38.2)		
10 or >	100(29.6)		
Social economic status			
Poor	113(33.4)	8.534	0.129
Lower middle	115(34)		
Upper middle	38(11.2)		
High	36(10.7)		

Table:2 Socio-demographic factors associated with usage of contraception

variable	Contraception usage (%) (n=338)	χ^2 value	p-value
Caste group(n=338)			
OC	22(6.5)	1.618	0.655
BC	140(41.4)		
SC	113(33.4)		
ST	63(18.6)		
Religion(n=338)			
Hindu	309(91.4%)	0.863	0.834
Muslim	16(4.7)		
Christian	13(3.8)		
Type of family(n=338)			
Nuclear	269(79.6)	22.992	p<0.0001
Joint	69(20.4)		

Table 3: Socio-demographic factors associated with usage of contraception

Variable	Contraception usage (%) (n=338)	χ² value	p-value
No. of children			
1	43(12.7)	284.641	p<0.0001
2	248(73.4)		
3	45(13.3)		
>3	2(0.6)		
No. of living sons			
0	74(21.9)	104.109	p<0.0001
1	192 (56.8)		
2	66 (19.5)		
≥3	06 (1.8)		
No. of girl children			
0	85 (26)	63.850	p<0.0001
1	176 (52)		
2	68 (20)		
≥3	09 (2.6)		

Table 4: Stepwise Logistic regression analysis showing the association of factors with contraception usage(n=338)

Variable	B	S.E.	Wald	df	Sig.	Exp (B) (OR)	95% C.I.for EXP(B) Lower	95% C.I.for EXP(B) Upper
Occupation of husband			14.989	6	.020			
Un Employed(1)	-1.427	1.512	.891	1	.345	.240	.012	4.648
Un Skilled (2)	-.544	1.058	.265	1	.607	.580	.073	4.619
Semi Skilled (3)	.209	1.057	.039	1	.843	1.233	.155	9.791
Skilled (4)	-.647	1.224	.280	1	.597	.523	.048	5.761
Clerical(5)	.258	1.044	.061	1	.805	1.295	.167	10.026
Professional(6)	1.746	1.150	2.304	1	.129	5.733	.601	54.644
No of children			14.800	4	.005			
No of children(1)	-17.219	6639.796	.000	1	.998	.000	.000	.
No of children(2)	2.094	1.092	3.679	1	.055	8.116	.955	68.953
No of children(3)	3.025	1.053	8.258	1	.004	20.585	2.616	161.990
No of children(4)	3.295	1.226	7.225	1	.007	26.979	2.441	298.198
Completed family(1)	4.383	.403	117.997	1	.000	80.082	36.314	176.602
Constant	-4.245	1.466	8.382	1	.004	.014		

Among the variables those which showed association with statistical significance are occupation of the husband, no. of children and completed family

Discussion

In our study age of the women has shown statistical significance with the current usage. The users of contraception have increased gradually with the increase in the age from 28.4% of the users in 20-24 years followed by 38.2% of users in the age group 25-29 years(P<0.0001). Most women opted for permanent method of contraception as soon as they achieve their desired family size, especially among the 25 to 29. FransWillekens&Sabu S. Padmadas[8] made similar observation and opined a compression of women's reproductive spans in Andhra Pradesh in their paper presented at European Population Conference-2010 held at Vienna, Austria. Similar observation was made by Pushpa et al.[9],Kansal A Chandra R, Kandpal SD, Negi KS[10] and Mohanan P et al[11]reported in their studies that acceptors of contraception were more among higher age groups.In our study about 78.2% were literates. Literacy status of the women has shown a statistically significant relation with the current usage of contraception (p=0.02). Percentage of users of any contraceptive methods increases with the years of formal education. Murarkar SK, Soundale SG reported a rise in of acceptors was seen with 48.83% at primary level of education to 82.76% at graduation and above. Similar findings were reported by Manna N, Basu [13]Varma GR, Bhavani PSV, Rohint A, Babu BV[14] reported in their studies. However, Mohanan P et.al[11] reported that education of the respondents was not an influencing factor for acceptance of family planning method. In the present study, majority of the current users were BPL and Poor , 41.2% of the non-users were from lower middle class, however this observation has shown no statistical significance among the current usage of contraception (P=0.129).

Walvekar PR, MasoodA ,Patro BK[16] in their studies reported statistical significance between socio economic status and contraceptive usage. The probable reason for this observed difference could be a nearly universal knowledge regarding contraceptives in our study area.In our study majority of the current users belong to backward caste (41.4%) followed by schedule caste (33.4%). However, statistically no significance was found, between caste of the women and current usage of contraception in our study (P=0.655). Similar results were reported by Varma GR, Bhavani PSV, Rohint A, Babu BVand Manna N, Basu G. This may be attributed to better diffusion of knowledge and easy availability of contraceptives to both the privileged and underprivileged sections of the community.In our study religion has shown no statistical significance with the current usage of contraception (P=0.834). In a study by Pushpaet al, reported that the contraceptive usage was same among Hindus and Muslims inspite of majority (84.18%) of their study women being Hindu. Walvekar PR reported similar observations. This similarity in the observations may be due to wide spread acceptance of contraception by all religions, through diffusion of social ideas such as reducing the opportunity cost of pregnancy and bringing down cost of rearing a number of children.Our study has shown no statistical significance between age at marriage of the women and current contraceptive usage (P=0.111). However, Murarkar SK, Soundale SG[12] reported an increase in percentage of family planning adopters increased from 46% to 65% as the womens' age at marriage increased from less than 20 years to 20 years and above respectively. Masood A et al reported a similar finding. Contrary to this popular belief about positive association of age at

marriage on contraceptive usage, the observed insignificance in our study may be partly explained by better information through health personnel in 92% of the women regarding contraceptives.

A statistically significant (p<0.0001) relation between type of family and current usage of contraception is observed in our study i.e. women living in nuclear families are seen favoring contraception more. Many studies have reported similar findings. The reason could be that women in nuclear families may be more concerned with the economic burden of supporting children. Secondly women in nuclear families are free to take their decisions with a lesser interference than in case of joint families.In our study 73.4% of the current users had one or two children. This observation is statistically significant (P<0.0001). Mohanan P et al[11]reported in their study that 70.7% of the women with 3 or more children were among the acceptors of permanent methods of contraception as against 29.3% with 1 or 2 living children. Among the possible reasons could be, majority of illiterate women and overlying non acceptance of two child norm in their study group. Similarly, Pushpa et al reported Permanent methods of contraception were used by 94.52% of women with 3 to 4 living children to that of 44.50%with 1 to 2 living children. Masood A et al, Saini et al reported only 10% and 27% of the women with two children who had accepted contraception. However, in our study 48.8% of the women have two children and 36.2% had one child. This finding is similar to that of reported in DLHS-III[12-18] (A.P) survey of Nellore District which reported a majority of women (46.1%) with a birth order of two followed by birth order of one in 41.3%.   In our study, the relation with number of living sons and contraceptive usage is statistically significant.   About 57.9% of the women have at least one living son. The acceptance of permanent methods of family planning was higher in subjects having 1or 2 male children. Only 19.4% of those who were tubectomised hand no male children (P<0.0001). Similarly, Girdhar S, Chaudhary A, Gill P, Soni RK, Sachar RK[19] reported only 1.2% couples accepted sterilization without having a male child while the acceptance of sterilization was 52.9% among subjects having two living sons. The acceptance for permanent methods of family planning was higher in subjects having 1or 2 male children. It is also observed from our study that among the majority who opted for birth spacing has at least one male child.In our study, 53.1% of the women with at least one living girl have opted for Tubectomy. The usage of birth spacing has seen a decline with number of girl children (p<0.0001). Thus it can be implied from the above observations that, women in our study favor one daughter and one son in their families. However, this inference cannot completely rule out the preference for a male child in the community.

Conclusion

It can be concluded that users of contraceptive methods increased with the years of formal education. There was no significant statistical association between religion, caste and socio-economic status with contraception usage. However, there was statistically significant association between no. of children, no. of living sons and the no. of girl children with the usage of contraception.

Recommendations: Health education regarding contraception and small family norm irrespective of the gender of the children should be done extensively as it was observed that contraception usage was largely determined by the gender of the children as it was observed that people preferred a male child and are deferring contraception for the same.

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References
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1. Park K.Parks's Textbook Of Preventive And Social Medicine, 21st ed. M/s BanarsidasBhanot Publishers, Jabalpur,India, 2011.
2. Census. Retrieved May 3, 2011, from "www.censusindia.gov.in /2011-prov-results", 2011.
3. World Population Prospects: The 2008 Revision, "http://esa.un.org/unpp, 2011.
4. Narain, Govind. "India: The Family Planning Program since 1965." Studies in Family Planning.1968; 1(35):1, 5, 7–9.
5. LalS. Textbook Of Community Medicine Preventive And Social Medicine, 3rd ed., CBS publishers, New Delhi, 2011,76p.
6. Chakrabarty, Manisha, Christophe ZGuilmoto. An analysis of the determinants of fertility behaviour in South India at the village level. In: Fertility Transition in South India, edited by Christophe Z. Guilmoto and S. IrudayaRajan, SAGE, New Delhi, 2005.
7. Rourke T. Association between socio-demographic factors and knowledge of contraceptive methods with contraception use among women of reproductive age: a cross-section study using the 2013 Liberia DHS [Internet] [Dissertation], 2015. Available from: http://urn.kb.se/resolve?urn=urn:nbn:se:uu:diva-256717
8. Padmadas SS, Hutter I, Willekens F. "Compression of women's reproductive spans in Andhra Pradesh, India," International Family Planning Perspectives. 2004; 30(1):12-19.
9. Pushpa SP, Venkatesh R,Shivaswamy MS. Study of fertility pattern and contraceptive practices in a rural area-A cross-sectional study. Indian J.Sci.Technol. 2011; 4(4):429-431.Retrieved from http://www.indjst.org.
10. Patro BK, Kant S, Baridalyne N, Gowsami AK. "Contraceptive practice among married women in a resettlement colony of Delhi," Health and population-perspectives and issues. 2005; 28(1):9-16.
11. Mohanan P, Kamath A, Sajjan BS. Fertility Pattern and Family Planning Practices in a Rural Area in Dakshin Kannada: Ind J Com Med. 2003; XXVIII(1):15-18.
12. MurarkarSK, Soundale SG. Epidemiological correlates of contraceptive prevalence in married women of reproductive age group in rural area. National Journal of Community Medicine. 201; 2(1):78-81.
13. Manna N, Basu G. "Contraceptive methods in a rural area of West Bengal, India", Sudanese Journal of Public Health. 6(4):164-169.
14. Varma GR, Bhavani PSV, Rohini A, Babu BV. Birth Spacing Among Rural Population of West Godavari District, Andhra Pradesh. Anthropologist. 2002; 4(4):265-268.
15. Walvekar PR, Determinants of contraceptive use among married women residing in rural area of Belgaum, J Med Allied Sci. 2012;2(1):07-11.
16. Masood A, Dwivedi S, Singh G, Gupta S, Misra P. "A study on distribution of permanent methods of contraception acceptors by selected variables", Health and Population: Perspectives and issues. 2009; 32(1):54-58.
17. Saini NK, Bhasin SK, Sharma R, Yadav G. "Study of unmet need for family planning in a resettlement colony of East Delhi", Health and Population Perspectives and Issues. 2007; 30(2):124-133.
18. International Institute for Population Sciences (IIPS). District Level Household and Facility Survey (DLHS-3), 2007-08: India. Andhra Pradesh: Mumbai: IIPS 2010.
19. Girdhar S, Chaudhary A, Gill P, Soni RK, Sachar RK. Contraceptive practices among married women in a rural area in Ludhiana. The Internet Journal of Health. 2010; 12(1):12.