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DEMOGRAPHIC CHARACTERISTICS AND REPRODUCTIVE PROFILE OF PREGNANT WOMEN IN JAMNAGAR DISTRICT

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ABSTRACT

Introduction: Many of the health problems of Indian women are related to or exacerbated by high levels of fertility. The poor health of Indian women is a concern on both national and individual levels. It affects the children who will be India's next generations of citizens and workers. The current study was aimed to see the impact of demographic characteristics on reproductive profile of pregnant women.

Material and Methods: It was a community based cross-sectional study conducted among 300 pregnant women using pretested questionnaire. Sample size was calculated using the proportion of pregnant women having one or more living children.

Results: Out of total 300 pregnant women studied, 6.00% of the total studied women were adolescents. Study revealed that 34.67% of the pregnant women were illiterate. More than three fourth i.e. 78.33% of the studied women got married by the age of 21 years and 16 % got married before legal age of marriage. Considering the age at first conception, 59 % women of the study group had their first pregnancy by 21 years of age and 5.00% of the study women conceived for the first time before 18 years of age. For 27.33% of the studied women, it was their third or more conception, while 17.33% of the studied pregnant women had two or more live children.

Conclusion: Study revealed significant impact of area of residence, literacy of the women and socio-economic class of the family over reproductive profile of women including interpregnancy interval and high parity.

Key words: Age at marriage, age at first conception, Inter Pregnancy Interval, parity.

INTRODUCTION

"Healthy mothers are children's first line of defence against death, malnutrition and a cycle of poverty and disease."

In past three decades many studies have demonstrated the importance of women's health. It is now accepted that women's health status has an important impact on the health status of their children, the family, the community and the environment. Issues of women's health were com-

monly equated with maternal health. Yet, the "Safety" of motherhood is now known to depend upon women's health from before birth through adult life and upon a number of social and economic factors related to the status of women. It is no longer possible to consider maternal health in isolation from the broader spectrum of women's health and development. Early marriage, as practiced in many areas, forces women into the reproductive cycle before they are physically and socially mature and set the

pattern for repeated pregnancies often at the risk of their lives. In many countries, women spend close to half of their adult lives pregnant or lactating.¹ The age at which a female marries and enters the reproductive period of life has a great impact on her fertility.² There are approximately 100 million girls between the ages of 10 and 19 years in India. More than half are married by the time they reach the legal age of marriage i.e. 18 years.³ Pregnancy is the time to educate the women to regulate their fertility and motivate them for acceptance of proper contraceptive method for spacing as well as limiting the future conceptions which will eventually improve maternal and child health. Present study was undertaken among pregnant women to obtain the base line data regarding their reproductive profile, to find out the difference in reproductive profile among urban and rural pregnant women as well as to see the impact of several demographic indicators like literacy of women and socio-economic class of family over their reproductive profile.

MATERIALS AND METHODS

It was a community based cross sectional study conducted among pregnant women in Jamnagar district during the year 2009-10. A pilot study was conducted which showed that 57.7% pregnant women were having one or more living children. This proportion was used to determine the sample size using formula $n=(1.96)^2pq/L^2$, where n=sample size, p is the positive character; here p=57.7%, q=100 - p and L is the allowable error which was taken as 10% of the p. The sample size derived from above formula was 281.62 which was rounded up to 300. To represent both rural and urban population, it was decided to study 150 pregnant women from rural and urban areas each. Three blocks were selected by simple random sampling. To achieve the sample size of 150, fifteen pregnant women were studied each from 10 randomly selected villages from three blocks. For urban expectant mothers, desired number of pregnant women were studied from two wards of Jamnagar city. A pre-designed and pre-tested proforma was used for the study. The women were interviewed individually using the predesigned questionnaire, which elicited information about their age, level of education, occupation, education and occupation of husband, type of family etc. To get the reproductive profile of pregnant women, age at marriage, age at first conception and detailed past & present obstetric history were recorded. Kuppuswami classifica-

tion⁵ was used to determine the socio-economic status in which husband's education and occupation was considered. To assess the impact of socio-economic class on reproductive profile, upper & middle socio-economic class women were clubbed during analysis.

Statistical analysis: Data entry and analysis was done in epi info software version 3.3.2. Test of significance used were standard error of difference between two means, chi-square test and logistic regression.

OBSERVATIONS

RESULTS

Table 1: Demographic characteristics of pregnant women

	Urban (n =150) (%)	Rural (n = 150) (%)	Total (n = 300) (%)
Age group			
18-21	50 (33.34)	43 (28.67)	93 (31.00)
21-24	41 (27.33)	40 (26.67)	81 (27.00)
24-27	42 (28.00)	35 (23.33)	77 (25.67)
27-30	11 (07.33)	18 (12.00)	29 (09.67)
>30	06 (04.00)	14 (09.33)	20 (06.66)
Literacy			
Illiterate	39 (26.00)	65 (43.33)	104 (34.67)
< 7 years	52 (34.67)	45 (30.00)	97 (32.33)
7-10 years	44 (29.33)	34 (22.67)	78 (26.00)
> 10 years	15 (10.00)	6 (04.00)	21 (07.00)
Socio-economic class			
Upper	8 (5.33)	4 (2.66)	12 (4.00)
Upper-Middle	30 (20.00)	16 (10.67)	46 (15.33)
Lower-Middle	42 (28.00)	21 (14.00)	63 (21.00)
Upper-lower	22 (14.67)	48 (32.00)	70 (23.33)
Lower	48 (32.00)	61 (40.67)	109 (36.34)
Gravida			
1	60 (40.00)	59 (39.33)	119 (39.67)
2	57 (38.00)	42 (28.00)	99 (33.00)
3	27 (18.00)	30 (20.00)	57 (19.00)
> 3	06 (04.00)	19 (12.67)	25 (08.33)
No. of living children			
0	68 (45.33)	65 (43.33)	133 (44.33)
1	65 (43.34)	50 (33.33)	115 (38.33)
≥ 2	17 (11.33)	35 (23.33)	52 (17.33)

Nearly one third of the studied pregnant women i.e. 31.00% belonged to 18-21 years of age followed by 27.00% who belonged to 21-24 years of age. Twenty women (i.e. 6.66%) were 30 years of age or more. Age wise distribution was almost similar in rural and urban areas. Distribution according to literacy status showed that 34.67%

women were illiterate. This proportion was higher in rural area (i.e. 43.33%) compared to urban area (i.e. 26.00%). As per modified Kuppuswamy classification for socio-economic status, 121 pregnant women (40.33%) belonged to upper and middle socio-economic class while rest of the 179 (i.e. 59.67%) belonged to lower class. (Table - 1)

Two fifth of the pregnant women (i.e. 39.67%) were primigravidae. This proportion was found almost equal in rural and urban areas. Twenty five pregnant women (i.e. 8.33%) had conceived for more than three times and this proportion was higher among rural women (12.67%) as compared to urban women (4.00%). Similarly 17.33% pregnant women had two or more living children with higher rate among rural women (23.33%) than urban women (11.33%).

Studying the reproductive profile of pregnant women, table - 2 shows that, more than three fourth (i.e. 78.33%) got married on or before 21 years of age and 16% women got married before

the legal age i.e. before 18 completed years. Similarly more than half of the studied women (59.33%) had their first conception on or before 21 years of age. Both these proportions were found higher among rural women as compared to urban women.

Table 2: Distribution of women according to age at marriage and age at first conception

	Urban (n=150)(%)	Rural (n=150) (%)	Total (n=300) (%)
Age at marriage (in years)			
< 18	19 (12.67)	29 (19.33)	48 (16.00)
18 to 21	90 (60.00)	97 (64.67)	187 (62.33)
22 to 25	39 (26.00)	23 (15.33)	62 (20.67)
> 25	2 (1.33)	1 (0.67)	3 (1.00)
Age at first conception (in years)			
< 18	6 (4.00)	9 (6.00)	15 (5.00)
18 to 21	77 (51.33)	86 (57.33)	163 (54.33)
22 to 25	57 (38.00)	49 (32.67)	106 (35.33)
> 25	10 (6.67)	6 (4.00)	16 (5.34)

Table 3: Impact of some demographic variables on Reproductive profile of pregnant women

Demographic Characteristics of Women	Mean age at Marriage (in years)±SD	Mean age at first conception (in Years) ±SD	Mean duration between marriage and 1 st conception (in months) ±SD	Two or more live Children (%)
Residence				
Urban (n=150)	20.20 ± 2.51	21.66 ± 2.70	19.76 ± 12.65	17 (11.33%)
Rural (n=150)	19.31 ± 2.33	21.07 ± 2.47	19.59 ± 15.60	35 (23.33%)
p value	0.002	0.048	0.916	0.006
Literacy status of women				
Illiterate (n=104)	19.13 ± 2.77	21.02 ± 2.97	22.67 ± 17.52	30 (28.85%)
Literate (n=196)	20.09 ± 2.20	21.55 ± 2.36	18.08 ± 11.77	22 (11.22%)
p value	< 0.001	0.095	0.007	P < 0.001
Socioeconomic Class				
Upper and Middle (n=121)	20.39 ± 2.29	21.90 ± 2.34	18.84 ± 9.80	13 (10.74%)
Lower (n=179)	19.32 ± 2.47	21.00 ± 2.71	20.23 ± 16.49	39 (21.79%)
p value	P < 0.001	0.003	0.405	0.013

Table 3 shows the impact of some demographic characteristics over reproductive profile of the studied women. It was found that mean age at marriage was 20.20 ± 2.51 years and 19.31 ± 2.33 years among urban and rural women respectively and this difference was statistically significant. Mean age at marriage was significantly lower among illiterate women and those who belong to lower socio-economic class (19.13 ± 2.77 years and 19.32 ± 2.47 years respectively). Mean age at first conception was also found lower among rural women (21.07 ± 2.47 years) than urban women (21.66 ± 2.70 years), illiterate women (21.02 ± 2.97 years) than literate women (21.55 ± 2.36 years) and those belonged to lower socio-economic class (21.00 ± 2.71 years) than upper and middle class women (21.90 ± 2.34 years).

Proportion of pregnant women with two or more live children was significantly higher among rural women (23.33%) compared to urban women (11.33%); among illiterate women (28.55%) than literate women (11.22%) and among those from lower socio-economic class (21.79%) than upper & middle class (10.74%). (Table - 3)

Table 4: Distribution of pregnant women according to Interpregnancy interval (n=181)

	Urban(n=90)	Rural(n=91)	Total(n=181)
Interpregnancy interval			
< 12 months	4 (4.44)	5 (5.49)	9 (4.97)
12-24months	16 (17.78)	27 (29.67)	43 (23.76)
24-36months	31 (34.44)	33 (36.26)	64 (35.36)
≥ 36 months	39 (43.33)	26 (28.57)	65 (35.91)
Mean ± SD	33.33 ± 20.05	29.04 ± 20.03	31.90 ± 19.78
Median	27 months		

Inter pregnancy interval was calculated for pregnant women having more than one conception. More than one fourth (28.73%) had interpregnancy interval less than 24 months with higher proportion among rural women (35.16%) as compared to urban women (22.22%). Median interpregnancy interval was found to be 27 months. (Table - 4)

Out of 181 studied women with more than one conception, 71 (i.e. 39.22%) had interpregnancy interval less than median i.e. 27 months. Table -

4 shows the impact of different demographic variables over interpregnancy interval. Higher proportion of women with interpregnancy interval less than median was found in rural areas (50.55%), illiterate women (54.93%) and among those who belonged to lower socio-economic class (48.62%) compared to urban, literate and upper & middle socio-economic class women respectively. This difference was statistically highly significant. (Table 5)

Table 5: Impact of demographic characteristic on interpregnancy interval

Demographic Characteristics of Women	Inter Pregnancy Interval (in months) (Primigravidae excluded)			P value
	< Median (n=71) (%)	≥ Median (n=110) (%)	Total (n=181)	
Residence				
Urban	25 (27.78%)	65 (72.22%)	90	< 0.001
Rural	46 (50.55%)	45 (49.45%)	91	
Literacy status of women				
Illiterate	39 (54.93%)	32 (45.07%)	71	< 0.001
Literate	32 (29.09%)	78 (70.91%)	110	
Socioeconomic class				
Upper and Middle	18 (25.00%)	54 (75.00%)	72	< 0.001
Lower	53 (48.62%)	56 (51.38%)	109	

Table 6: Association between higher parity and socio demographic profile of pregnant women

Variables	Odds Ratio	95% C.I.	Z statistics	P-Value
Area (Rural/Urban)	1.9767	1.7393-2.2464	10.44	< 0.001
Socio-economic Class (Lower/Upper)	1.3192	1.1323-1.5370	3.55	< 0.001
Women's education (Illiterate / Literate)	2.6750	2.3383-3.0602	14.33	< 0.001

(High parity i.e. pregnant women already having two or more live children is the dependent variable which is compared with residential area, socio-economic class of family and education of women which are independent variables)

Logistic regression analysis was done to study the impact of residential area, socio-economic class and education of the women (which are independent variables) on high parity i.e. pregnant women already having two or more live children (which is dependent variable). After making adjustment for age, odds ratio showed that high parity was found significantly more among rural, illiterate and lower socio-economic class women. (Table-6)

DISCUSSION

Overall fertility has been declining in India; however there are large differences in fertility levels by state, educational level, socio-economic class, place of residence etc. The poor health of Indian women is a concern on both national and individual levels. Woman is psychologically more receptive to advice on family planning and birth spacing during antenatal period than any other time, and educational and motivational

efforts must be initiated during this period. So the current study was conducted among pregnant women.

Out of total 300 pregnant women studied, more than half of the women i.e. 58.00% were less than 24 years of age while 6.66% of the total studied women were adolescents, i.e. 19 years of age or younger. This distribution pattern was almost similar in both the rural and urban areas. Similar age distribution was shown by Patel VD et al in their study in which 5.1% pregnant women were adolescent and 55.1% belonged to 20-24 years of age.⁶ Present study revealed that 34.67% of the pregnant women were illiterate. Thus literacy rate of the study group was found to be 65.33% and it was higher among urban women (74.00%) than the rural women (56.67%). District Level Household Survey-3 (DLHS-3) found female literacy level up to 57.8% for Gujarat state and 56.9% for the district of Jamnagar.⁷ Thus present study showed comparable figure of literacy. More than half of the total women belonged to lower socio-

economic class i.e. 59.67% as per modified Kuppuswamy classification. DLHS-3 data for Gujarat state showed that 21.4% ever married women from 15-49 years age group belonged to lower wealth index group while for Jamnagar district this percentage was found to be 20.1%.⁷ These might be due to the fact that in current study socio-economic class was obtained only considering the Kuppuswamy socio-economic scale considering income, education and occupation of husband.

In current study 62.33% women got married between 18-21 years of age and 16.00% got married before legal age of marriage i.e. 18 years. District level household survey - 3 reported that, in the state of Gujarat, 18.7% women got married before 18 years of age while in Jamnagar district 16.4% of currently married women aged 20-24 years got married before 18 years of age.⁷ National Family Health Survey-3 data revealed that median age at first marriage was 18 years among the women belonged to 20-49 years of age group while 39% women belonged to 20-24 years got married by the age of 18.⁸ Anita Raj et al in her study published in lancet reported that, 44.5% young adult Indian women being married prior to 18 years of age.⁹ Place of residence, literacy and socio-economic status showed positive impact over age at marriage. Mean age at marriage was higher among urban, literate and those belonged to upper and middle socio-economic class pregnant women as compared to rural, illiterate and lower socio-economic class women. This difference was statistically significant. Mean age at marriage for girls was reported at 19.6 years for the state of Gujarat and it was 21 years in Jamnagar district by District Level Household Survey - 3.⁷ Anita Raj et al and some previous Indian researchers also found that rural, poor and less educated women are most vulnerable to get married before 18 years of age.^{9,13-19} Gupta, R.B. and Khan, M.E in their study also showed a very positive correlation between female literacy and the mean age at marriage (- 0.76) in the districts surveyed in Uttar Pradesh.¹⁰

Considering the age at first conception, nearly one fourth i.e. 21.33% women of the study group had their first pregnancy at 19 years of age or before. Mean age at first conception among urban women was found to be statistically higher than rural women. According to National Family Health Survey-3 median age at first birth for women 25-49 years of age was 20.6 year (21.2 years for urban women and 20.2 years for rural women)⁸ Similarly literacy and socio-economic

class revealed positive impact on mean age at first conception.

Ten to fifteen percentage of all births occur within 1-5 years and 50-55% of all births within 5-15 years of married life. This suggests that family planning efforts should be concentrated in the first few years of married life.³ In current study, mean duration between marriage and first conception was found to be 19.76 ± 12.65 months among urban pregnant women while for rural women it was found to be 19.59 ± 15.60 months. Inverse relation between age at marriage and duration between marriage and first conception was seen in the study. Education is the prime catalyst in this process because increases in educational attainment are likely to significantly affect both age at marriage and the duration to first conception-in particular increasing both the age at marriage and the time to first child.¹¹

Evidence confirms the danger to health presented by pregnancies that come too early, too late, too often and at intervals that are too closely spaced in women's reproductive lives.¹² Present study revealed that out of total 181 pregnant women who had conceived before, more than one fourth had their last pregnancy within 24 months and 4.97% women had become pregnant again within a year. Median Inter Pregnancy Interval (IPI) was calculated as 27 months. Rural, illiterate and those from lower socio-economic class women were more prone to have Inter Pregnancy Interval less than median and these findings were statistically significant.

Impact of socio-demographic profile over high parity (two or more living children) among pregnant women was studied and it was found that place of residence, education and higher socio-economic class were protective and significantly associated with high parity. In District Level Household Survey mean surviving children were found to be less with increase in the years of schooling and socio-economic class.⁷

CONCLUSION

Nearly one fifth of the studied women got married before the legal age of marriage i.e. 18 years of age and 5.00% conceived for the first time before 18 years. If we consider two child family norm, about 10.00% of the women had two or more living children by the age of 25 years and they were pregnant. Literacy of women and socio-economic class were found to have positive impact to bring down the fertility rate as age at

marriage, age at first conception and Inter Pregnancy Interval were appreciable with improvement in both the variables.

REFERENCES

1. WHO. Women's health: Across age and frontier; World Health Organization, Geneva; 1992.
2. K.Park. Park's Text Book Of Preventive and Social Medicine. M/s Banarasidas Bhanot, Jabalpur. 22nd edition. page 449, 488.
3. Bezbaruah S, Janeja MK. Adolescents in India: a profile. New Delhi: UNFPA; 2000
4. Das, N.P.; Dey, Devamoni.: Female Age at Marriage in India: Trends and Determinants. *Demography India*. 27(1). Jan-June 1998. (Sp. Issue on the Golden Jubilee Years of India's Independence). p. 91-115.
5. Rahul Sharma: Kuppuswamy's Socioeconomic Status Scale - Revision for 2011 and Formula for Real-Time Updating. *Indian J Pediatr* (July 2012) 79(7):961-962.
6. Patel VD, Puwar BT, Sheth JK. Utilization of Antenatal Care Services in the Gandhinagar (Rural) District, Gujarat. *National Journal of Community Medicine* 2013; 4(1): 104-8.
7. International Institute for Population Sciences (IIPS), 2010. District Level Household and Facility Survey (DLHS-3), 2007-08:India. Gujarat: Mumbai: IIPS.
8. International Institute for Population Sciences (IIPS) and Macro International. 2008.National Family Health Survey (NFHS-3), India, 2005-06: Gujarat. Mumbai: IIPS
9. Anita Raj; Niranjana Saggurti; Donta Balaiah; and Jay G. Silverman. Prevalence of Child Marriage and its Impact on the Fertility and Fertility Control Behaviors of Young Women in India. *Lancet*. 2009 May 30; 373(9678): 1883-1889
10. Gupta, R.B.; Khan, M.E.: Teenage Fertility: Some Results From a Baseline Survey in Uttar Pradesh. *The Journal Of Family Welfare*. June 1996. 42(2).p.14-20.
11. Gangadharan L, Maitra P: The effect of education on the timing of marriage and first conception in Pakistan. Provided by University of Melbourne in its working paper series no. 742, Year 2000.
12. R. J. Cook: Women's health and human rights; World Health Organization, Geneva; 1994.
13. Audinarayana N. Determinants of female age at marriage in rural Andhra Pradesh: multivariate analyses. *Demography India* 1993;22(3):169-74.
14. Bhagat, RB. Early Marriages in India: A Sociodemographic Study. Rajat Publications; New Delhi, India: 2002.
15. Surender, S. New Times. IIPS; Bombay, India: 1993. Importance of increasing the female age at marriage; p. 5
16. Richard J, Sunder Rao PSS. Influence of age at marriage and family planning on fertility. *Demography India* 1997;24(1):81-6.
17. Rama Rao G, Surender S. Factors associated with female age at marriage in Pondicherry. *Demography India* 1998;27(2):401-18.
18. Thenmozhi N, Audinarayana N. Raising age at marriage of girls in India: future policy interventions. *Indian Journal of Public Administration* 1992;38(3):341-53.
19. Sivaram M, Richard J, Rao PSS. Early marriage among rural and urban females in south India. *Journal of Biosocial Science* 1995;27(3):325-31.