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Research Article

A study on fertility pattern and its proximate determinants among eligible couples in an urban slum area, Hyderabad

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ABSTRACT

Background: Fertility is not totally dependent on the biology of the couple, but there are several other factors that affect the fertility of a couple, particularly in India with the varied cultural and religious practices across the country. India was the first country to initiate an organized family planning program and even after 63years of program we have not achieved the desired results. Studies show that women in towns or in urban slums are more likely to marry early and have children. So, this study was planned in an urban slum area, to understand the fertility trend and factors affecting it.
Methods: A community based cross section study was conducted in an urban slum area among eligible couples. House to house visit was done and 174 eligible females were interviewed. Data was analysed using epi-info software.
Results: In the present study it was found that 40.2% (n=70) of females were married before the legal age of marriage i.e. 18years. Teenage pregnancy was found in 38.9% of the females. It was seen that socio-economic condition and female literacy had an impact on the age at marriage, and fertility pattern. Number of children was more for poor and lower middle class family, Muslims and couples living in joint families.
Conclusions: Early marriage and teenage pregnancies are the major problem. Female literacy and employment can give them the power to bargain for issues like marriage and fertility.

Keywords: Fertility, Proximate determinants, Eligible couples

INTRODUCTION

Fertility is the actual bearing of children. A female who is married at 15 years of age and living with her husband till 45th years is exposed to the risk of pregnancy for 30 years. However, this duration is truncated when age at marriage or entry into sexual union is postponed or exit from marriage is advanced due to divorce, separation or death of a spouse. Fertility is not totally dependent on the biology of the couple, but there are several other factors that affect the fertility of a couple, particularly in India with the varied cultural and religious practices across the country. The factor such as age at marriage, duration of marriage, spacing of children, education status of the female and her husband, economic status, caste and religion, cultural factors, widow remarriages etc. has been studied in various parts of India.[1-4] Female education may assist in achieving the planned number of births, especially by facilitating knowledge of and access to contraception and by enhancing women's bargaining power within the family.[5] Also, the survival status of the previous child seems to have a very strong effect on subsequent birth spacing.[6] In India some demographers have estimated that if the marriage were postponed from the age of 16 years to 20-21 years, the number of births would decrease by 20-30%.[7]

India was the first country to initiate an organized family planning program in 1952. Even after 63 years of the program the results are not satisfactory. According to

NFHS 3, four states i.e. 25% of total population of India is reporting total fertility rate between 3.7-4.8. The proportion of urban population has increased from 10.84% in 1901 to 25.72% in 1991 and was 27.8% in 2001. Studies show that women in towns or in urban slums are more likely to marry early and have children earlier.[4]

Keeping in view the wide differences in the fertility trends across the country and the different factors influencing this trend, the present study was planned in an attempt to understand the current trend in fertility in urban slum area.

The objectives of the study were to study the fertility pattern among the eligible couples and to study the factor affecting the fertility pattern.

METHODS

Place of the study

Study was conducted in an urban slum area under the field practice area of Department of Community Medicine, MRIMS, Hyderabad. There are a total of 916 eligible couples in this area. For the study purpose, we consider 20% of the total eligible couples. So, 183 eligible females were to be included in the study.

Study design

Community based cross sectional study.

Study period

1st Nov 2013 to 15th June 2014.

Study sample

Simple random sampling technique was used select study population to achieve the desired sample size. Out of the 183 females in the target group, 7 refused to participate in the study and remaining 2 discontinued during the interview for some reason. A total of 174 married females in the reproductive age (15-45 years) were included in the study.

Ethical clearance

Ethical clearance was obtained from the institutional ethical committee of the Medical College.

Data collection

House to house data collection was done. First oral informed consent was taken and those who agreed to give information were interviewed personally. A pre-designed pre-tested questionnaire was used to collect data related to general identification, fertility pattern and factors associated with the fertility pattern. B.G. Prasad's socio-economic status scale[9] was used to classify the socio-economic status of study subjects. Updated for per-capita income according to All India Wholesale Price Index (AIWP) 10 for Dec 2013 were used.

Processing and analysis of data

The data were entered and analyzed by using Epi-info software version 7.0. Chi-square test was used to determine the statistical significance of the differences observed.

RESULTS

A total of 174 married females in reproductive age (15-45 years) were studied. Out of which maximum were in the age group of 26-30 years (n=58, 33.3%), followed by 21-25 years (n=55, 31.6%). Majority were Hindus (n=134, 77%) and 45.4% (n=79) of females had completed their secondary education.

It was observed that 38.9 % (n= 61) of the females had delivered their first child at or before the age of 18 years and 9.65% (n=15) delivered even before 15 years of age.

Age at marriage

In the present study, it was observed that 70 females (40.2%) were married below 18 years of age and 50% (35) of them were married below 15 years of age. The difference in the relation of age at marriage to religion is not statistically significant ($\chi2=4.042$, df=9, p=0.909). Table1 and table 2 show the relation of the age at marriage with socio- economic class and education of the females. It is clear that the age of marriage was less in very poor, poor and lower middle class ($\chi2=36.973$, df=15, p=0.001). It was also observed that females with low literacy marry early ($\chi2=36.064$, df=12, p=0.000).

Type of marriage

Consanguineous marriage was seen in 75 (43%) of the total females. Among Muslims the percentage of consanguineous marriage was high i.e. 53.8% as compared to Hindus i.e. 41%, but the difference was statistically not significant ($\chi2= 3.203$, df=3, p=0.361).

Number of children

51.7% (n=90) of females had 2 children, 21.8% (n=38) had one child and 16.1% (n=28) had 2-5 children. Table 3 shows that Muslims had more number of children as compared to other religion people. 65.4% of Muslim females had 3 to 5 children, whereas majority of other religion females have 2 or less than 2 children. This difference was statistically significant ($\chi2=67.016$, df=9, p=0.000). It is seen from table 4 that majority of females with 3- 5 number of children belong to poor and lower middle class family, whereas females from upper middle class and high class had 2 or less than 2 children ($\chi2=$

51.703, df=15, p=0.000). There was also relation between number of children and type of family as depicted in table 5, 36.7% of females living in joint family had more number of children i.e. 2-5 children, whereas 79.1% of females in nuclear family had less than 2 children and only 10.9% had 3-5 children. This difference was statistically significant ($\chi2$=14.586, df=6, p=0.024). The association between number of children and education of female was not statistically significant ($\chi2$=19.918, df=12, p=0.069). 46.4% of the females having 3-5 children were educated up to intermediate and 45.3% of females having children less than 2 had completed their intermediate.

Table 1: Relation between marriage age and socio-economic status.

Socio-economic class	Age at marriage				Total
	<15 years	16-18 years	18-22 years	>23 years	
I Upper High	0 (0%)	0 (0%)	2 (100%)	0 (0%)	2 (1.1%)
II High	0 (0%)	0 (0%)	2 (40%)	3 (60%)	5 (2.9)
III Upper Middle	6 (24%)	5 (20%)	13 (52%)	1 (4%)	25 (14.4%)
IV Lower Middle	13 (20.3%)	12 (18.8%)	36 (56.3%)	3 (4.7%)	64 (36.8%)
V Poor	15 (20.3%)	16 (21.6%)	41 (55.4%)	2 (2.7%)	74 (42.5%)
VI Very Poor	1 (25%)	2 (50%)	1 (25%)	0 (0%)	4 (2.3%)
Total	35 (20.1%)	35 (20.1%)	95 (54.6%)	9 (5.2%)	174 (100%)

χ^2 = 36.973, df=15, p= 0.001

Table 2: Relation between marriage age and education of the female.

Education	Age at marriage				Total
	<15 years	16-18 years	18-22 years	>23 years	
Illiterate	12 (41.4%)	4 (13.8%)	13 (44.8%)	0 (0%)	29 (16.7%)
Primary	6 (24%)	4 (16%)	15 (60%)	0 (0%)	25 (14.4%)
Secondary	17 (21.5%)	19 (24.1%)	41 (51.9%)	2 (2.5%)	79 (45.4%)
Intermediate	0 (0%)	6 (25%)	15 (62.5%)	3 (12.5%)	24 (13.8%)
Degree & above	0 (0%)	2 (11.8%)	11 (64.7%)	4 (23.5%)	17 (9.8%)
Total	35 (20.1%)	35 (20.1%)	95 (54.6%)	9 (5.2%)	174 (100%)

χ^2 = 36.064, df=12, p= 0.000

Table 3: Relation between number of children and religion.

Religion	Number of children				Total
	0	≤ 2	3-5	>5	
Hindu	12 (9%)	112 (83.6%)	10 (7.5%)	0 (0%)	134 (77%)
Muslim	2 (7.7%)	6 (23.1%)	17 (65.4%)	1 (3.8%)	26 (14.9%)
Christian	2 (16.7%)	9 (75%)	1 (8.3%)	0 (0%)	12 (6.9%)
Others	1 (50%)	1 (50%)	0 (0%)	0 (0%)	2 (1.1%)
Total	17 (9.8%)	128 (73.6%)	28 (16.1%)	1 (0.6%)	174 (100%)

χ^2 = 67.016, df=9, p=0.000

Age at first delivery

It was observed that 38.9 % (n=61) of the females delivered their first child at or before the age of 18 years and 9.65% (n=15) delivered even before 15 years of age. Majority of females i.e. 41.4% (n=64) delivered their first child between 19-21 years. 17.8% (n=28) had their first delivery between 22-25 years of age and 1.9% had above 25 years of age.

It was also observed that 58.6% (92) of females delivered their first child within 1 year of marriage, 21.7% (34) in 2nd year, 4.5% (7) in 3rd year, 5.1% (8) in 4th year and 10.1% (16) delivered in 5th year and beyond. There was

no association between ages at first delivery to number of children ($\chi 2=14.646$, df=8, p=0.066).

52.9% (83) had male child while 47.1% (74) were having female child. 68.2% (107) had normal delivery whereas 31.8% (50) had caesarian section. Place of delivery for 33.8% (53) was government hospital, 51% (80) was in private hospital and 13.8% (24) had home delivery.

Table 4: Relation between number of children and socio-economic status.

Socio-economic class	Number of children				Total
	0	≤ 2	3-5	>5	
I Upper High	1 (50%)	1 (50%)	0(0%)	0 (0%)	2 (1.1%)
II High	4 (80%)	1 (20%)	0(0%)	0 (0%)	5 (2.9%)
III Upper Middle	4 (16%)	19 (76%)	2 (8%)	0(0%)	25 (14.4%)
IV Lower Middle	7 (10.9%)	48 (75%)	9 (14.1%)	0 (0%)	64 (36.8%)
V Poor	1 (1.4%)	58 (78.4%)	14 (18.9%)	1 (1.4%)	74 (42.5%)
VI Very Poor	0 (0%)	1 (25%)	3 (75%)	0 (0%)	4 (2.3%)
Total	17 (9.8%)	128 (73.6%)	28 (16.1%)	1 (0.6%)	174 (100%)

χ^{2} = 51.703, df=15 p=0.000

Table 5: Relation between number of children and type of family.

Type of family	Number of children				Total
	0	≤ 2	3-5	>5	
Nuclear family	12 (9.3%)	102 (79.1%)	14 (10.9%)	1 (0.8%)	129 (74.1%)
Joint family	2 (6.7%)	17 (56.7%)	11 (36.7%)	0 (0%)	30 (17.2%)
Extended family	3 (20%)	9 (60%)	3 (20 %)	0 (0%)	15 (8.6%)
Total	17 (9.8%)	128 (73.6%)	28 (16.1%)	1 (0.6%)	174 (100%)

χ^{2} = 14.586, df=6, p=0.024

Table 6: Preference to number of children and sex of the child.

Preference for		By females	By husband	By mother-in-law
Number of children	1	13 (7.5%)	12 (6.9%)	2 (1.1%)
	2	132 (75.9%)	127 (73%)	130 (74.7%)
	3	16 (9.2%)	19 (10.9%)	26(14.9%)
	4 or more	13 (7.5%)	16 (9.2%)	16 (9.2%)
	Total	174 (100%)	174 (100%)	174 (100%)
Sex of the child	Male	16 (9.2%)	15 (8.6%)	15 (8.6%)
	Female	21 (12.1%)	19 (10.9%)	7 (4%)
	No preference	137 (78.7%)	140 (80.5%)	152 (87.4%)
	Total	174 (100%)	174 (100%)	174 (100%)

Abortions

22 (12.6%) females had one abortion, 5 (2.9%) had two abortions and 1 (0.6%) had three abortions.

Preference to number of children and sex of child: From table 6 it was observed that most of them preferred two children, i.e. 75.9% of females, 73% of husbands and 52.9% of mother-in-law. Very few of them preferred one child. It was also seen that 7.5% of females, 9.2% of husbands and 9.2% of mother-in-law prefer 4 or more children. It can also be seen that most of them 78.7% of females, 80.5% of husbands and 87.4% of mother-in-law do not have any preference for sex of the child, whereas 9.2% of females, 8.6% of husbands and 8.5% of mother-in-law have preference for male child.

DISCUSSION

According to " The Prohibition of Child Marriage act 2006", the legal age at marriage is 18 years for female and 21 years for male.[11] In present study it was found that 40.2% (n=70) of females married before the legal age i.e. 18 years. Even worse finding was that 35 females out of these 70, married before 15 years of age. Similar study done in Varanasi by A Mohapatra et al revealed that 65.4% of the interviewed women had been married before 18 years of age.[12] in three present studies, there was no statistical difference in the age at marriage according to the religion of the female. But the difference with socio-economic status was statistically significant with lower class and poor class females marrying at early age. Also the females with low literacy married early. In South Asia, 45 per cent of women aged 20–24 years were married as children. Worldwide there are 60 million women aged 20-24 years who were married before the age of 18 years. Of these women around 50 percent of them live in South Asia (UNICEF 2007).[4] Here we can say that by improving the education status of females we can delay their marriage and also empower them to take decisions regarding their fertility.

In present study 51.7% (n=90) of females had 2 children, 21.8% (n=38) had one child and 16.1% (n=28) had 2-5 children. Majority of females with 3- 5 number of children belong to poor and lower middle class family, whereas females from upper middle class and high class had 2 or less than 2 children (p=0.000). 46.4% of the females having 3-5 children were studied till intermediate and 45.3% of females having children less than 2 were intermediate. This shows that female literacy has a negative impact on their fertility. In states like Kerala, with high female literacy rate have shown decline in fertility. It has been routinely noticed in India that the regions with high female literacy are forerunners in fertility decline. Female literacy exerts a significantly negative impact on fertility variation as described by Manisha Chakrabarty and Christophie Z in their analysis of determinants of fertility behavior in south India.[13]

In this study, 36.7% of females living in joint family had more number of children i.e. 2-5 children, whereas 79.1% of females in nuclear family had less than 2 children and only 10.9% had 3-5 children. This difference was statistically significant (p= 0.024). This can be due to the family support that is added if it is a joint family in terms of division of responsibilities, whereas in nuclear family there is no such family support so limiting their family size. Similar observation was made by G.A. Kumar and M Danabalan in their study to find the determinants of delayed first birth, with couples in nuclear family delayed their first child as compared to couples in joint families.[14]

In present study teenage pregnancy was seen in 38.9 % (n= 61) of the females and 9.65% (n=15) delivered even before 15 years of age. Majority of females i.e. 41.4% (n=64) delivered their first child between 19-21 years. According to NFHS 3, 2005-06 The proportion of women age 15-19 years who have begun childbearing is more than twice as high in rural areas (19 percent) as in urban areas (9 percent). The level of teenage pregnancy and motherhood is 9 times higher among women with no education than among women with 12 or more years of education.[8]

In this study, 58.6% (92) of females delivered their first child within 1 year of marriage, 21.7% (34) in 2nd year, 4.5% (7) in 3rd year, 5.1% (8) in 4th year and 10.1% (16) delivered in 5th year and beyond. In a study done by G A Kumar, women in nuclear families reported the highest average duration of age at first live birth (1.91 years) and those from extended family with the lowest (1.27 years). Non-Hindu women reported a higher average duration of first live birth (1.69 years) as compared to Hindu women (1.64 years) though the differential was very low.[14]

In present study, most of them prefer two children, i.e. 75.9% of females, 73% of husbands and 52.9% of mother-in-laws. Very few prefer one child. It is also seen that 7.5% of females, 9.2% of males and 9.2% of mother-in-law prefer 4 or more children. It can also be seen that most of them 78.7% of females, 80.5% of husbands and 87.4% of mother-in-law do not have any preference for sex of the child, whereas 9.2% of females, 8.6% of husbands and 8.5% of mother-in-law have preference for male child. This finding can also be a result of their hesitation to reveal their preference for a particular sex of the child. According to NFHS-3, 2005-06, a strong preference for sons is evident from the responses of women with different numbers of sons and daughters. For every number of children, the percentage of women who want to stop childbearing is lowest if the woman does not have any sons. For example, among women with two living children, 90 percent want to stop childbearing if both their living children are sons and 87 want to stop childbearing if they have one son and one daughter. The proportion of women who do not want any more children decreases to 61 percent for women with two daughters and no sons. Nevertheless, the proportion of women with two daughters and no sons who want no additional children increased rapidly from 37 percent in NFHS-1 to 47 percent in NFHS-2 and 61 percent in NFHS-3.[8]

CONCLUSION

i. Early marriage and teenage pregnancies are the major problems.

ii. From this study it can be concluded that female autonomy plays a major role in determining her fertility which can be achieved by educating females and empowering them.

iii. By improving the literacy among females, we can give them the power to bargain with their parents, their husband and in-laws regarding the issues related to their marriage and fertility.

iv. Providing employment to females can also help in improving their economic status and also achieve small family norm.

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