

ORIGINAL RESEARCH

Comparative Evaluation of Socio-Demographic Aspects of Rural & Urban Infertile Women In A Tertiary Hospital

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ABSTRACT

Introduction: Infertility is one of the major problems in developed as well as many developing countries. About 10-15% of all marriages face the problem of infertility. Etiology of female infertility varies from region to region and from one population to another and even from one locality to another within the same population. The objectives of the present study were to assess & compare different socio demographic factors associated with female infertility in rural & urban area and also to find out the health care seeking behavior of the study population.

Material and Methods: 126 female infertile patients from urban areas were compared to 116 infertile female patients from rural areas of West Bengal. Female patients of age group 15-45 years were included following inclusion & exclusion criteria.

Results: Statistically significant difference was found regarding marital duration, education & family income between rural & urban infertile women. Urban infertile women sought infertility treatment earlier, were more educated & had higher family income than their rural counterpart.

Conclusion: Early age at marriage of women, delayed treatment seeking, lower socio-economic condition, less education of women are important risk factors associated with infertility in rural area whereas urbanization leading to modernization, higher literacy leading to delayed age at marriage of women play a significant role in lowering fertility in urban areas.

Keywords: female infertility

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INTRODUCTION

Infertility is defined as failure to conceive within one or more years of regular unprotected coitus.¹ Primary infertility denotes those patients who have never conceived. Secondary infertility indicates previous pregnancy but failure to conceive subsequently.² According to recent studies by the World Health Organization (WHO), approximately 8-10% of couples are facing some kind of infertility problem.³ Roughly 40% of cases involve male factors, 40% involve female factors and remainder involves both sexes.⁴ Etiology of infertility varies from region to region and from one population to another and even from one locality to another within the same population. There are differences related to female infertility for rural & urban groups. Some studies have shown that urban subjects experience more infertility because of increased pollution, stress, a competitive work environment. Before any treatment begins, the major causes of female infertility should be outlined as accurate diagnosis & appropriate management of infertility depend on them. Infertility treatments are currently widely used to help couples suffering from infertility. However, the use of infertility treatments also varies by age, education, household income and in some countries ethnicity. So there is a need to know if there is a difference in the demographic factors of female infertility in rural areas & urban areas as only a few studies have considered it.

MATERIALS AND METHODS

From February 2012 to September 2013, 126 urban infertile women attending Infertility clinic and OPD of Dept. of Obstetrics & Gynaecology of IPGME&R& SSKM Hospital, Kolkata were analyzed and compared to 116 rural infertile women. A complete history (regarding type of infertility, age, age at marriage, duration of marriage, education, and family income) was taken from all patients. Female patients of age group 15-45 years were included.

Inclusion criteria

1) Married & resident of West Bengal. 2) Couples willing to participate in the study. 3) Were trying to conceive for at least a year or more following an unprotected sexual intercourse.

Exclusion criteria

- 1) Couples who have not lived together for at least 12 months.
- 2) Couples who have stopped use of contraceptives less than 12 months.
- 3) Couples who have undergone sterilization.

STATISTICAL ANALYSIS

Statistical analysis were performed using the Graph Pad Prism Version 5 licensed software. Categorical data were expressed as numbers and percentages. The Chi-square test (or Chi-square test for trend) or Fisher-exact tests were used to demonstrate relationships between categorical variables.

RESULTS

In urban area out of 126 patients 94(74.6%) were with primary infertility & 32(25.4%) with secondary infertility; while in rural from 116 infertile women during the study period 84(72.41%) were with primary infertility, while 32 (27.59%) were with secondary infertility.

The mean age (\pm SD) of all infertile women was 30.1 ± 5.65 yrs. The mean age (\pm SD) of infertile women in rural area was 28.7 ± 5.42 yrs, whereas in urban area it was 31.3 ± 5.66 yrs. There was no significant difference regarding age between two groups (by independent t test). Mean (\pm SD) duration of marriage at the time of seeking advice was 7.6 ± 3.68 yrs and 5.2 ± 3.16 years respectively in rural and urban infertile women, the difference was statistically significant (by independent t test). Most of the infertile women (51.65%) in our study group had marital duration of more than 5 yrs. In rural, most (62.93%) of the infertile women had marital duration of more than 5 yrs compared to 41.27% in urban, so most of the urban infertile women (58.73%) had marital duration of less than or equal to 5 yrs compared to (37.07%) in rural. There was a statistically significant difference in the level of education between rural & urban infertile women ($p < 0.0001$) (by chi square test). Of 116 rural, 17(14.66%) had no formal education 8(6.9%) had up to primary education, 52(44.83%) had up to secondary education & 39(33.61%) had beyond secondary e.g. higher education whereas out of 126 urban infertile women, 4(3.17%) had up to primary education, 57(45.24%) had up to secondary education & 65(51.59%) had beyond secondary e.g. higher education.

Most couples (42.98%) belong to the group earning between Rs 5001-10000 followed by 35.12% earning >Rs 10000, 19.83% earning Rs 2501-5000 & only 2.07% of couples had family income/ month \leq Rs2500. Majority of the couples

(50%) in urban area had family income >Rs 10000 whereas majority of the rural infertile couples (45.69%) had the income of Rs. 5001 to Rs 10000. There was statistically significant difference in reported family income/month for rural & urban citizens in this sample ($p < 0.0001$). (by Chi-square test for trend).

DISCUSSION

The inability to conceive a child is most often viewed as a private matter but public health perspectives can contribute greatly to our knowledge about infertility and the development of effective and rational public policy for prevention. Though primary infertility was slightly higher in urban than rural areas (74.6% vs. 72.41%) in our study, there was no significant differences of primary & secondary infertility in between rural & urban areas ($p = 0.659$) (Table 1). But Samiha Mokhtar et al (2006)⁵ reported prevalence of primary infertility in urban area while William, et al in their study (1997) reported prevalence of primary infertility in rural areas.⁶ This slightly higher rate of primary infertility in urban area may be due to higher awareness in urban group.

The mean age of all infertile women in our study was $30.1 (\pm 5.65)$ yrs old ranged between 21 to 40 yrs (Table 2). Here also mean age at presentation was slightly lower in rural than urban women but not significantly lower ($p = 0.077$). The mean ages of both male & female infertile women are almost similar to those from developing countries.⁷ Maximum infertile women in our study were 21-26 yrs old (40.08%) followed by 27-32 yrs (28.93%), 23.97% women were 33-39 yrs old & 7.02 % women were 40-45 yrs age group. This is similar to a study conducted in Kashmir region of India (1997). Data from this study suggest that infertility in women peaks between the ages of 20 and 24, and slightly decreased until age 30 to 32 and more rapidly after age 40.⁸ Primary infertility is significantly determined by age of women according to NFHS-2. Women in the group of 25-29 years of age through each successive five year age group till 45-49 years of age are less likely to be infertile compared to women in the age group 20-24.⁹ Most of the infertile women in rural area were 21-26 yrs age group whereas most of the infertile women from urban area were 27-32 yrs in our study. This is probably due to early age at marriage of rural women.

There was significant difference regarding mean marital duration at the time of seeking advice between rural (7.6 ± 3.68 yrs) & urban infertile women (5.2 ± 3.16 yrs) ($p = 0.04$), most of the rural infertile women sought treatment after 5 yrs of their marriage & most of the urban infertile women within 5 yrs (Table 3). This signifies that urban female are more conscious of their infertility, so they seek treatment early than their rural counterpart.

There was significant difference regarding level of education between urban & rural infertile women (Table 4). Urban women were more educated than their rural counterpart. More urban infertile women had secondary & higher edu-

Type of infertility	Rural n=116	Urban n=126	P value	Total n=242
Primary	84(72.41)	94(74.6)	0.659	178(73.55)
Secondary	32(27.59)	32(25.4)		64(26.45)
Total	116(100)	126(100)		242(100)

Table-1: Distribution of type of infertility among rural & urban infertile women

	Rural Mean± SD	Urban Mean± SD	p value	Total Mean± SD
Age	28.7 ± 5.42	31.3 ± 5.66	0.077	30.1±5.65
Age group based division				
Age group	Rural n=116	Urban n=126		Total n=242
15-20 yrs	0(0)	0(0)		0(0)
21-26 yrs	64(55.17)	33(26.19)		97(40.08)
27-32 yrs	26(22.41)	44(34.92)		70(28.93)
33-39 yrs	21(18.1)	37(29.37)		58(23.97)
40-45 yrs	5(4.31)	12(9.52)		17(7.02)
Total	116(100)	126(100)		242(100)

Table-2: Comparison of mean age& age group between rural & urban infertile women

	Rural Mean± SD	Urban Mean± SD	p value	Total Mean± SD
Duration of marriage	7.6 ± 3.68	5.2 ± 3.16	0.04	6.4 ± 3.5
	Rural n=116	Urban n=126		
≤5 yrs	43(37.07)	74(58.73)		117(48.35)
>5 yrs	73(62.93)	52(41.27)		125(51.65)
Total	116(100)	126(100)		242(100)

Table-3: Comparison of duration of marriage between rural & urban infertile women

Education	Rural n=116	Urban n=126	p value	Total n=242
No formal	17(14.66)	0(0)	<0.0001	17(7.02)
Primary	8(6.9)	4(3.17)		12(4.96)
Secondary	52(44.83)	57(45.24)		109(45.04)
Higher	39(33.61)	65(51.59)		104(42.98)
Total	116(100)	126(100)		242(100)

Table-4: Comparison of education between rural & urban female infertile patients

Family in- come/month	Rural n=116	Urban n=126	p value	Total n=242
≤ Rs 2500	5(4.31)	0(0)	0.0001	5(2.07)
Rs 2501-5000	36(31.03)	12(9.52)		48(19.83)
Rs 5001-10000	53(45.69)	51(40.48)		104(42.98)
>Rs 10000	22(18.97)	63(50)		85(35.12)
Total	116(100)	126(100)		100(100)

*Figures in parentheses are percentages

Table-5: Comparison of family income/month between rural & urban infertile women

cation than their rural counterpart. The disparity in number of women with formal education between rural and urban settings could be due to the fact that educational resources and facilities are more located in the cities. Roy Ann Sherrod in his study (2004) showed that although educational level of urban/rural was not statistically significantly different from the total group, urban infertile persons were better educated than rural persons.¹⁰ Chhabra et al. (2012) in¹¹ their study showed that less rural women report for health seeking for infertility. So there is a need for education. Education and information is essential in health care, and in infertility care it needs to take cognition of existing concepts as well as of concerns regarding the reasons of infertility. Lack of infor-

mation is likely to cause or contribute to anxiety, which in itself can cause stress-related effects and also create a barrier to treatment. Education has a statistically significant and strong positive effect on a woman's age at first marriage. The highly educated women are more likely to delay marriage.¹² In many countries, the tendency for education to increase the age of marriage becomes universal only after a few years of primary education. Paul C. Adamson et al.¹³ (2011) conducted a study in Mysore, India which showed that women with primary infertility reported higher levels of education, and these women also reported an older age at first sex, which may point to a delay in marital status and sexual debut associated with educational attainment. Women with no education are more likely to be undernourished, which could contribute to a higher risk of spontaneous abortion and stillbirth. There was significant difference of family income between rural & urban groups (p<0.0001). Majority of the infertile women (50%) in urban area had family income >Rs 10000 whereas majority of the rural infertile women (45.69%) had the income of Rs. 5001 to Rs 10000. The standard of living and quality of life depends on the economic power. Income of the family is an important factor in seeking the health care. Studies by Abbas Aflatoonian M.D. et al¹⁴ (2009) & study in China¹⁵ (1990) showed more frequency of infertility in low socio economic condition. But the researcher of study in Mysore, India (2011) concluded that it is likely that women from higher income families were able to access health-care because they could afford to pay for services more than women from lower income families.¹³

CONCLUSION

Infertility is a medical as well social problem, the couple and

the family suffers at the same time silently. Etiology of infertility varies from region to region and from one population to another and even from one locality to another within the same population. This study has provided some important data about the socio demographic factors of female infertility in rural & urban areas of West Bengal and can help in the setting of the priority of future plan for complementary assessment and preventive programmes in general population.

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