Research Article

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A study of prevalence and socio-demographic profile of infertile couples in field practice area of a tertiary care centre, Amritsar, Punjab, India

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ABSTRACT

Background: Infertility is a global health issue affecting 8 to 12% of couples worldwide. The objective was to study the prevalence and socio-demographic profile of infertility in the study population.

Methods: The present cross sectional community based study was conducted in the field practice area of SGRD, Amritsar. The socio-demographic profile of the screened infertile couples was taken by filling up the pre-tested proforma. The data was statistically analysed by using SPSS (20.0 versions) IBM Chicago and valid conclusion drawn.

Results: The total number of infertile couples were 291 making the prevalence of infertility 4.57% [N=6373] with primary and secondary infertility were 1.95% and 2.62% respectively.

Conclusions: The prevalence of infertility in the study population was 4.57% with a primary infertility was 1.95% and secondary was 2.62%. Among the infertile women 115 (39.5%) were from urban and 176 (60.5%) were from the rural area. Secondary infertility cases were higher in women from both urban and rural area.

Keywords: Infertility, Prevalence, Socio-demographic factors

INTRODUCTION

Infertility implies apparent failure of couples to conceive while sterility indicates absolute inability to conceive, for one or more reasons. Normally it is observed that 50% couples conceive within 3 months of regular unprotected intercourse, 75% in 6months and 80-85% conceive within a year. Children are often desired soon after a couple become sexually active usually through marriage and the failure to produce a child especially a son in some societies is readily recognized by the couple themselves as well as by all those around them. Thus, infertility is a global health issue. Infertility varies across regions of the

world and is estimated to affect 8 to 12% of couples worldwide.³ Underlying these numbers exists a core group of couples, estimated to be 3 to 5%, who are infertile due to unknown or unpreventable conditions. The prevalence of infertility above this level suggests preventable or treatable causes. Infertility tends to be highest in countries with high fertility rates, an occurrence termed "barrenness amid plenty".⁴ The incidence of infertility in any community varies between 5 and 15%.¹

Globally, most infertile couples suffer from primary infertility. The WHO estimates the overall prevalence of

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primary infertility in India to be between 3.9% and 16.8%. Estimates of infertility vary widely among Indian states from 3.7% in Uttar Pradesh, Himachal Pradesh and Maharashtra to 5% in Andhra Pradesh, and 15% in Kashmir. Moreover, the prevalence of primary infertility has also been shown to vary across tribes and castes within the same region in India.⁴

According to NFHS-3 data of Punjab state women who had primary and secondary infertility constitute 7 and 1.8% respectively of ever married women between 15-49 years. A sizeable 79.5% of ever married women reported to have experienced problems in conceiving for the first time, 11.7% had problems conceiving after still/live birth and 8.2% after undergoing induced abortion. More than 10% of ever married women in Amritsar, Kapurthala, Hoshiarpur, Firozpur, Faridkot and Barnala have infertility problem including primary and secondary infertility.⁵

Despite the existence of an extensive body of the literature on infertility, there are quite a few studies on health-related quality of life in infertile couples. The current study aims to establish the prevalence of infertility, socio-demographic characteristics in the sample.

METHODS

The study was carried out in the field practice area attached to department of Community Medicine, Sri Guru Ram Das Institute of Medical Sciences and Research, Amritsar, Punjab, India. All eligible couples registered by the health workers of the study area were the study participants. It is cross sectional community based study.

Inclusion criterion

- The infertile couples (primary and secondary)
- Who are willing to participate
- Who are available during the data collection

The information was collected on a predesigned and pretested proforma from the infertile wives by house to house visit. Study participants were told about the purpose of the study, and confidentiality of the information was assured and informed consent was taken.

At first, all eligible couples under the study population were screened for diagnosing overall prevalence of the primary and secondary infertility. The history of those couples who were diagnosed as having primary or secondary infertility was taken by filling up the proforma.

The proforma included socio demographic profile like age, education, occupation, Socio economic status (SES) etc. SES of the couple was calculated according to the Modified Udai Pareek Scale (MUP Scale).⁶.

The socio economic classes are divided as follows according to MUP score⁶.

High >28
Upper-middle 22-28
Lower-middle 15-21
Lower <15

Analysis

The data was compiled and statistically analysed using SPSS software (20.0 versions) IBM Chicago and valid conclusion drawn.

Working definition

Eligible couple

Currently married couple wherein the wife is in the reproductive age, which is generally assumed to lies between the ages of 15 and 45 years.⁷

Primary infertility

When a woman is unable to bear a child either due to the inability to become pregnant or the inability to carry a pregnancy to a live birth.

Secondary infertility

When a woman is unable to bear a child either due to the inability to become pregnant or the inability to carry a pregnancy to a live birth following a previous ability to carry the pregnancy to a live birth.

RESULTS

The total number of infertile couples were 291 making the prevalence of infertility 4.57% (N=6373). The prevalence of primary and secondary infertility were 1.95% and 2.62% respectively in the study population.

The mean age of infertile women included in the study was 29.74 ± 5.9 years and mean age of their husbands were 32.69 ± 6.06 years. The average age of marriage for women and men was 21.35 ± 3.63 years and 24.29 ± 3.70 years respectively.

Table 1 shows that maximum primary infertile women (33.9%) were in the age group of 21-25 years and secondary infertility was high (31.7%) among 26-30 years age group.

Table 2 shows that among the 291 total cases, 115 (39.5%) were from urban places whereas 176 (60.5%) were from the rural field practice areas. Secondary infertility cases were higher in women from both urban and rural areas (Table 2).

Table 1: Distribution of infertile women according to age and type of infertility.

Age group (in years)	Primary infertility (%)	Secondary infertility (%	Total %) (%)
16-20	10 (76.9)	3 (23.1)	13 (100.0)
	(8.0)	(1.8)	(4.5)
21-25	42 (60.0)	28 (40.0)	70 (100.0)
	(33.9)	(16.8)	(24.0)
26-30	41 (43.6)	53 (56.4)	94 (100.0)
	(33.1)	(31.7)	(32.3)
31-35	16 (25.4)	47 (74.6)	63 (100.0)
	(12.9)	(28.1)	(21.6)
36-40	10 (26.3)	28 (73.7)	38 (100.0)
	(8.0)	(16.8)	(13.1)
41-45	5 (38.5)	8 (61.5)	13 (100.0)
	(4.0)	(4.8)	(4.5)
Total	124 (42.6)	167 (57.4)	291 (100.0)
	(100.0)	(100.0)	(100.0)

Table 2: Distribution of infertile women according to residence.

Residence	Primary infertility (%)	Secondary infertility (%)	Total (%)
Rural	85 (48.3)	91 (51.7)	176 (100.0)
	(68.5)	(54.5)	(60.5)
Urban	39 (33.9)	76 (66.1)	115 (100.0)
	(31.5)	(45.5)	(39.5)
Total	124 (42.6)	167 (57.4)	291 (100.0)
	(100.0)	(100.0)	(100.0)

Education level of 189 (64.9%) infertile women was above matriculation and 102 (35.1%) had an education below matriculation (Table 3). But the distribution of below matriculation and above matriculation level of education was almost similar in primary (44 i.e. 35.5% versus 80 i.e. 64.5%) and secondary infertility (58 i.e. 34.7% versus 109 i.e.65.3%) cases.

Table 3: Distribution of infertile women according to education level.

Education	Primary infertility (%)	Secondary infertility (%)	Total (%)
Below	44	58	102
matriculation	(35.5)	(34.7)	(35.1)
Matriculation	80	109	189
and above	(64.5)	(65.3)	(64.9)
Total	124	167	291
	(100.0)	(100.0)	(100.0)

A little less than one tenth i.e. 9.3% of infertile women (Table 4) were involved in income generating activities where as majority i.e. 264 (90.7%) of them were house wives.

Table 4: Distribution of infertile women according to occupation.

Occupation	Primary infertility (%)	Secondary infertility (%)	Total
House wife	109 (41.3)	155 (58.7)	264 (100.0)
	(87.9)	(92.8)	(90.7)
Income generating activity	15 (55.6)	12 (44.4)	27 (100.0)
	(12.1)	(7.2)	(9.3)
Total	124 (42.6)	167 (57.4)	291 (100.0)
	(100.0)	(100.0)	(100.0)

Table 5 depicts that almost two third i.e. 66.7% of the infertile couples belonged to joint families.

Table 5: Distribution of infertile couples according to the type of family.

Type of family	Primary infertility (%)	Secondary infertility (%)	Total (%)
Joint	91 (46.9)	103 (53.1)	194 (100.0)
	(73.4)	(61.7)	(66.7)
Nuclear	33 (34.0)	64 (66.0)	97 (100.0)
	(26.6)	(38.3)	(33.3)
Total	124 (42.6)	167 (57.4)	291(100.0)
	(100.0)	(100.0)	(100.0)

Table 6 shows that the maximum (117 i.e. 40.2%) infertile couples belonged to lower middle class followed by upper middle class (112 i.e. 38.5%) according to MUP scale. Only 43 (14.8%) and 19 (6.5%) cases were from upper and lower socio economic status respectively. Maximum primary infertility cases (50 i.e. 40.3%) were from upper middle class families where as maximum secondary infertility cases (71 i.e. 42.5%) were from lower middle class families.

Table 6: Distribution of infertile couples according to their socio-economic status and type of infertility.

SES	Primary infertility (%)	Secondary infertility (%)	Total (%)
Upper	19	24	43
	(15.3)	(14.4)	(14.8)
Upper	50	62	112
middle	(40.3)	(37.1)	(38.5)
Lower middle	46	71	117
	(37.1)	(42.5)	(40.2)
Lower	9	10	19
	(7.3)	(6.0)	(6.5)
Total	124	167	291
	(100.0)	(100.0)	(100.0)

DISCUSSION

In an international survey, it was concluded that the prevalence of infertility was 3.5% to 16.7% in more developed nations and from 6.9% to 9.3% in less-developed nations, with an estimated overall median prevalence of 9%. A study based on the NFHS-3 (2005-06) data showed that, in India as a whole, the prevalence of infertility was 2.3%. However it was 1.5% in the state of Punjab. 9

Another study at Mysore, India concluded that the prevalence of primary infertility was 12.6% (n = 113; 95% CI: 10.5-15.0%).³ DLHS-3 of Punjab (2007-08) showed that the women who had primary and secondary infertility constitute 7% and 1.8 % respectively of ever married women of reproductive age group.⁵

A study among two tribal communities in central India showed the mean age of infertile women among the Khairwars was 31.3±8.9 years and 27.5±9.2 years among non-Khairwars.³ In another study, the mean age of primary and secondary infertile women was found 28.9±7.9 and 37.5±8.6 years respectively.¹⁰ The mean age of primary infertile women was 25.9±3.12 years in another study conducted at Mysore.⁴ Another study showed the mean age of infertile women was 38.9±4.9 years at the time of the study.¹¹

It was found in a study of West Bengal that, maximum number of infertile women i.e. 108 (56.54%) were in the age group of 25-34 years. Another study at Bangalore showed that 18 (36%) women were in the age group between 35-39 followed by 17 (34%) were in 30-34 years age group, 11 (22%) were in the 25-29 years, 3 (6%) were in 40-44 years and only 1 (2%) were in 45-49 years age group. The range of age was 25-45 and the mean age was 33.32 years. Similarly in another study at Mysore, the maximum i.e. 55.8% primary infertile women were found in the 21-25 years of age group.

Table 2 findings are in consonance with another study in Egypt. ¹⁰ On the contrary, it was noted in NFHS-2 and NFHS-3 that the infertility rate was higher among women in urban areas compared to women in rural areas. ¹⁴

On contrary, a study of Egypt reported 70.8% secondary and 64.8% primary infertile women were illiterate among the study population. Another study reported that 19.5% were illiterate, 30.1% had primary, 45.1% had secondary and 11.5% had a post secondary education level among the primary infertile women.⁴

Similarly in a cross sectional study of West Bengal, about 75.39% women were house wives among the infertile women.³⁶ In another study, it was reported that majority i.e. 81.4% infertile women were house wives.⁴

A study conducted in West Bengal, it was found that majority of the infertile couples were from nuclear

families. ¹² Another study at Bangalore, 70% infertile couples among 50 total subjects were from nuclear families. ¹³

Women belonging to low standard of living had high infertility compared to women belonging to medium and high standard of living. It was 2.28, 1.86 and 1.93% respectively in NFHS-2 and 2.17, 1.71 and 1.63% respectively in NFHS-3.¹⁴

CONCLUSION

The prevalence of infertility in the study population was 4.57% with a primary infertility was 1.95% and secondary was 2.62%. The mean age of infertile women and their husbands were 29.74±5.9 years and 32.69±6.06 years respectively. Majority of primary infertile women (33.9%) were in the age group of 21-25 years and secondary infertility was high (31.7%) among 26-30 years age group.

Among the infertile women 115 (39.5%) were from urban and 176 (60.5%) were from the rural area. Secondary infertility cases were higher in women from both urban and rural area. Education level of 189 (64.9%) infertile women was above matriculation and 102 (35.1%) had an education below matriculation.

About 9.3% of infertile women were involved in income generating activities where as majority (90.7%) infertile women were house wives. Almost two third (66.7%) of the infertile couples belonged to joint families. Majority of the couples (40.2%) belonged to lower middle class followed by upper middle class i.e. 38.5% according to Modified Uday Pareekh scale.

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Institutional Ethics Committee

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