www.jmscr.igmpublication.org

Impact Factor 3.79
Index Copernicus Value: 5.88
ISSN (e)-2347-176x ISSN (p) 2455-0450
crossref DOI: http://dx.doi.org/10.18535/jmscr/v3i11.50

IGM Publication
Journal Of Medical Science And Clinical Research
An Official Publication Of IGM Publication

Prevalence of Infertility in Rural community: A Community Based Cross-Sectional Study

(Original Research Article)

Authors

Dr Mittal Rathod[*1], Dr Mehul Kaliya[2], Dr Aniruddha Gohel[3], Dr Chintan Bundela[1] Dr Sumit Unadakat[4], Dr Dipesh Parmar[5]

[1]Tutor, Community Medicine Dept., M.P.Shah GMC, Jamnagar
[2]Assistant Professor, Medicine Dept., Shree M.P.Shah GMC, Jamnagar
[3]Post Graduate, Community Medicine Dept., M.P.Shah GMC, Jamnagar
[4]Tutor, Community Medicine Dept., M.P.Shah GMC, Jamnagar
[5]Associate Professor, Community Medicine Dept., Shree M.P.Shah GMC, Jamnagar
[6]Professor & Head, Community Medicine Dept., Shree M.P.Shah GMC, Jamnagar

Corresponding Author

Dr Mittal Rathod

Tutor, Community Medicine Dept., Shree M.P.Shah Medical College, Jamnagar, Gujarat, India
Email: *dr.mittal74@gmail.com, Mobile No. 09033334649*

ABSTRACT

The World Health Organization (WHO) estimates that 60 to 80 million couples worldwide currently suffer from infertility. It causes mental as well as social trauma too. The present assessment employed quantitative research methodology in rural areas of study district among 450 women by means of house to house one to one interview. There was even distribution in almost all Age group of reproductive age group women except for15-19 years and 40-44 years. The prevalence of infertility was 5.33% had, of which 1.78% had primary failure and 3.55% had secondary failure, had reasons like hysterectomy for medical reasons & hypothyroidism in 1.33% & 2.22% respectively. Prevalence of infertility is increasing due to chronic diseases & endocrinal disorders. Thus there must be policy for primordial & primary prevention which can help in reduction of the chronic diseases which are the root of the many conditions.

INTRODUCTION

The World Health Organization (WHO) estimates that 60 to 80 million couples worldwide currently suffer from infertility[1]. Infertility varies across regions of the world and is estimated to affect 8 to 12 per cent of couples worldwide[2, 3.] Underlying these numbers exists a core group of couples, estimated to be 3 to 5 per cent, who are infertile due to unknown or unpreventable conditions. A prevalence of infertility above this level suggests preventable or treatable causes[4]. Infertility tends to be highest in countries with high fertility rates, an occurrence termed "barrenness amid plenty[5]".

Total infertility is divided into primary and secondary infertility. Definitions of primary infertility vary between studies, but the operational definition, put forth by the WHO, defines primary infertility as the "Inability to conceive within two years of exposure to pregnancy (i.e.- sexually active, non-

contracepting, and non-lactating) among women 15 to 49 yr old[6]". Secondary infertility refers to the inability to conceive following a previous pregnancy. Globally, most infertile couples suffer from primary infertility[7].

Among Indian women reporting primary infertility and PID, STI prevalence was high[3]. Estimates of infertility vary widely among Indian states from 3.7 per cent in Uttar Pradesh, Himachal Pradesh and Maharashtra[8], to 5 per cent in Andhra Pradesh[9], and 15 per cent in Kashmir[10]. Moreover, the prevalence of primary infertility has also been shown to vary across tribes and castes within the same region in India[8, 11]

Due to prevailing cultures & customs in India, women are blamed for the Infertility. It causes mental as well as social trauma too.

There are sparse data on the prevalence of primary infertility in India[3]. By knowing the prevalence; routine health services can impart its services. Thus keeping in view above stated problems the present study was conducted.

The primary objective of the study was to find out prevalence of infertility & possible reasons.

MATERIALS & METHODS

Study area and population:

The present assessment employed quantitative research methodology in rural areas of study district.

Type of study:

A cross sectional study.

Period of study:

1 year (July 2013- June 2014)

Sample size:

Sample size of this study was decided on the basis of WHO estimates the overall prevalence of primary infertility in India to be between 3.9 and 16.8 per cent.[1]

As per WHO practical manual on sample size determination in health studies by Lwanga and Lemeshow.[12]

$N = Z\alpha_{PQ}/l^2$

Where,

$Z\alpha$ =1.96 at 5% significance level

N= required sample size

P=proportion or prevalence of interest

Q=100-p

L=allowable error, absolute error 5%

P is taken as 16.8%, so as q=83.2%. If l=5%,

Then, sample size would be,

$N = (1.96)^2 * 16.8 * 83.2/5 * 5 = 223.64$

The sampling technique being used in present study was Cluster sampling, thus taking 2design effect, the sample size computed to 446, which was rounded to 450 study subjects.

Study population:

The study group comprised of 450 women of reproductive age group of rural areas of study district.

Ethical clearance: The study protocol was reviewed and approved by the institutional ethical committee of the institution. Prior written informed consent was taken after fully explaining the purpose of the study.

Inclusion criteria:

Ever Married, Reproductive age group women (15-49 years),

Willing to participate

Not Pregnant Presently

Exclusion criteria:

Unmarried women

Not willing to participate

Sampling technique:

Study subjects were selected by multistage sampling. Out of the total 7 blocks in the district, 3 blocks were selected randomly. Five Primary Health Centres were selected from each of the blocks by simple random sampling. From each PHC, three sub centres were selected by simple random sampling method. So total 45 sub centres were selected from 3 blocks. Sub centre was taken as natural cluster. Thus total 45 clusters were selected. From the one geographically identified point, one direction was chosen randomly and from each cluster 10 women were selected and interviewed till the desired number was achieved in each cluster. So total 450 women were recruited from rural area.

Method of study:

Data were collected in a pre-designed and pre-tested Proforma by interviewing woman. The study was carried out by undertaking house to house visits of the area of each cluster. Proforma consisted sociodemographic profile & obstetric profile. The deficiency & the misbelieves were corrected by means of one to one health education.

Data entry and analysis:

The data entry was done in Microsoft Office Excel 2007. Analysis was done using Epi info and Microsoft office Excel 2007 & SPSS.

RESULTS & DISCUSSION

Table 1: Socio-demographic profile of study subjects

Sociodemographic Characteristics	Frequency (Percentage)
Age group	
15-19 Years	9(2%)
20-24 Years	99 (22%)
25-29 Years	81 (18%)
30-34 Years	72 (16%)
35-39 Years	72 (16%)
40-44 Years	36 (8%)
45-49 Years	81 (18%)
Religion	
Hindu	378 (84%)
Muslim	72 (16%)
Social Class	
I	63 (14%)
II	81 (18%)
III	138 (30.7%)
IV	111(24.6%)
V	57(12.7%)
Educational Status of women	
Illiterate	198 (44%)
Primary	144(32%)
Secondary & Higher Secondary	108(24%)
Educational Status of Husband	
Illiterate	126(28.57%)
Primary	140 (31.74%)
Secondary & Higher secondary	130(29.47%)
Graduate & above	45 (10.20%)
Occupation	
Housewife	333 (74%)
Labror	63 (14%)
Famer	54 (12%)
Occupation of Husband	
Business	90(20.40%)
Service	81(18.36%)
Labror	180(40.81%)
Farmer	63(14.81%)
Other	27(6.12%)

There was even distribution in almost all Age group of reproductive age group women except for15-19 years and 40-44 years. Majority belonged to middle and lower socio economical class. Higher literacy rate among husbands of participants (71.43%) than females (56%). Womens were engaged in mostly house hold activities (74%) where as their husbands were engaged in labour work (40.81%), some kind of business (20.40%), farming (14.81%).

In present study when analysed in terms of socio demographic profile, there was an even distribution of age group, except for 15-19 years i.e. 2%. 84% participants were Hindus.

According to NFHS-3 (2005-06) data, majority of households in Gujarat were Hindu (91%), Muslims were 9% and other religion was less than1%.[13]

As per modified Prasad's classification, 37.4% belonged to lower class, of which 12.7% belonged to lower class, 24.7% belonged to upper lower class, 48.7% belonged to Middle class, of which 30.7% belonged to Lower middle class, 18% belonged to upper middle class, & 14% belonged to upper class.

On assessment of literacy status, 56% women were literate and 44% women were illiterate. 32% women had up to primary education, 24% women were educated up to secondary, none of the participant studied up to graduation and above. Out of 441 husbands of study subjects, 28.57% were illiterate, while 71.43% male were literate.31.74% were educated up to primary level, 29.47% had education up to secondary & higher secondary level and 10.20% were received education up to graduation and above.

Women with no education are six times more likely to get married early than those with 10 years or more of education.[14] Literacy plays important role in the development of health & health seeking behaviour of individuals. According to DLRHS-1, 35.6% women were illiterate in this district and according to census 2011 of India; Literacy rate of females in the same district was 65.97%. (9) In a study by Koringa

Hetal (2013), 23.77% women's' husband were illiterate, while 31.33%, 22.45% and 12.23% women's husband had education up to primary level, secondary level and higher secondary level respectively. Only 10.22% women's husband were graduate.

Observations indicate that majority the of women i.e.74% were economically dependent on their husbands and thus less empowered which may reflect adversely on their health seeking behaviour. 40.81% women's husbands were Labror, 20.40% had their own business, 18.36% were employed in different public & private services, 14.28% were farmers and 6.12% were employed in other activities.

Table: 2 Distribution of women according to Failure to conceive:

Failure to conceive		No. (Frequency)	Percentage (%)
Primary		8	1.78%
Secondary	Hysterectomy	6	1.33%
	Hypothyroidism	10	2.22%
Total		24	5.33%

Out of 450 study subjects, 5.33% had failure to conceive, of which 1.78% had primary failure and 3.55% had secondary failure, had reasons like hysterectomy & hypothyroidism in 1.33% & 2.22% respectively.

In a study conducted by Patel Beena (2013) in the same district, prevalence of infertility was 5.8%, of which 3.65% had primary infertility where as 1.23% had secondary infertility & she found 1.2% had tuberculosis, 1.2% had hypothyroidism & 3.5% had diabetes.[15]

Based on the census reports of India 2001, 1991, 1981 researchers show that childlessness in India has raised by 50 per cent since 1981. [16]

The WHO estimates of primary infertility in India are 3.9 per cent (age-standardized to 25-49 yr) and 16.8 per cent (age-standardized to 15-49 yr), using the "age but no birth" definition[17]

The prevalence of primary infertility in the current study of young women was 12.6 per cent in a study by Paul C. Adamson in Mysore, India.[18]

Data collected by NFHS-3 from 23,722 women in reproductive age group by household survey shows that 2,023 (8.5%) women were infertile.

CONCLUSION

As the infertility prevalence rising in all over India, especially due to chronic conditions & endocrinal conditions, which is part of epidemiological transition, it is concerning finding. It can indirectly lead to imbalance in physical, social & mental health. Thus it must be considered in routine health services to identify it at earliest and so can be resolved.

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