PROFILE AND TREATMENT SEEKING PATTERN OF MARRIED WOMEN WITH INFERTILITY RESIDING IN RURAL AREA OF NORTHERN KARNATAKA-A CROSS SECTIONAL STUDY.

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Summary of Abstract
Infertility imposes major economic, emotional, and social burden among couples in India. Despite various programs under Reproductive and Sexual health, the concept of infertility is largely neglected in India.

ABSTRACT
*Objectives***:** According to WHO globally over 60 to 80 million couples suffer from infertility among which 10% are women who are inflicted. Infertility is a serious public health issue with social consequences but is often neglected as it does not cause physical disability. Reproductive and Child Health (RCH) has a limited focus on services for infertile couples. Current study explores the profile of married women with infertility and their treatment-seeking patterns.
Material&Methods: A community-based sectional Study was conducted between 1st January to December 31st, 2019 among 485 married women of reproductive age (15 to 49 years) with infertility residing in the field practice area of KLE JNMC by doing house-to-house visits with ASHA worker. Ethical clearance was obtained from the Institutional Review Board (IRB).
Results: The majority of infertile women were between 26 to 35 years age group. Around 48% completed secondary schooling, and 80% were housewives belonging to the nuclear family and class II socioeconomic class (SES). Around 70% did not have any knowledge about fertile days in a menstrual cycle and there was a significant association between family history and primary infertility. Around 70% sought allopathic treatment and 32.7% did not seek treatment due to economic reasons.
Conclusions: RMNCH+A includes reproductive and sexual health components, however infertility component is neglected. Hence this study explores the profile of infertile women and the need to include the infertility component in the RCH Programme.

Keywords: Primary infertility, Secondary infertility, Treatment-seeking pattern, causes of infertility.

INTRODUCTION

Infertility affects nearly 8% to 10% of couples worldwide.[1] According to WHO globally over 60 to 80 million couples suffer from infertility among which 10% are women who are inflicted.[1]Infertility is a serious public health issue with social consequences but is often neglected as it does not cause physical disability.[2]

According to the WHO demographic definition infertility is defined as married women of reproductive age (15 to 49 years) at risk of becoming pregnant (sexually active, not using contraception, and not lactating) who report trying unsuccessfully for a pregnancy for 5 years or more. Primary infertility is when a woman is unable to ever bear a child and secondary infertility is when a woman is unable to bear a child following a previous pregnancy.[2]

According to WHO globally, primary infertility accounts for 2% and secondary accounts for 11% respectively. [1,3] It is said that approximately, one-third of the causes are due to male factors, one-third due to female factors, and the remaining a combination of both male as well as female factors and in 20% of cases it is unexplained.[12,4]

All India Institute of Medical Sciences reported that over 12–18 million couples in India are diagnosed with infertility yearly.[7] The burden of primary and secondary infertility in India is 6.3 and 1.9 respectively.[3]

Various demographic factors such as employment, socioeconomic status, higher educational level, and the nuclear family are said to be associated with primary infertility.[7] Unsafe practices by healthcare providers during childbirth and the postpartum period lead to pelvic infection, tubal blockage, and infertility thereby causing bilateral tubal occlusion which is the most common cause of secondary infertility.[6] STIs which are preventable causes of infertility worldwide, cause 70 percent of all pelvic inflammatory diseases resulting in tubal damage. [1,9] Modified dietary habits and physical inactivity lead to obesity which causes hormonal imbalance and menstrual dysfunction which is one of the major risk factors leading to infertility.[4]

Though Reproductive and Child Health (RCH) addresses the reproductive health of women there is limited focus on services for infertile couples in the Reproductive and Child Health Programme (RCH).[2]Infertility issues have largely been ignored in the government policy in India. This study is being conducted to know the profile of married women along with their treatment-seeking patterns of married women residing in rural areas.

METHODS

The study was conducted among married women with infertility for a period of one year.

Study population: All married women of reproductive age (15 to 49 years) who are infertile residing in the field practice area for more than one year.

Inclusion criteria: All married women with infertility (primary & secondary**)** residing in the field practice area for more than one year.

Exclusion criteria: Any married women with h/o abortion or stillbirth in the past 5 years.

The eligible couple list was obtained sub-center and ASHA workers were asked to line list couples based on zero child and one child. Data was collected by doing house-to-house visits using a predesigned pretested questionnaire after obtaining written informed consent from the study participants.

STATISTICAL ANALYSIS:

Collected data was entered into an MS Excel sheet and the master sheet was prepared. Results were analyzed and expressed as percentages.

RESULTS

Table I. Distribution of Infertile women according to Age, education, occupation, type of family, and socioeconomic status

		Primary infertility (n=283)		Secondary infertility (n=202)		Total	
		No.	%	No.	%	No.	%
Age of infertile women	16 - 25	51	18.02	34	16.83	85	17.53
	26 - 35	138	48.76	125	61.88	263	54.23
	36 - 45	82	28.98	39	19.31	121	24.95
	> 45	12	4.24	4	1.98	16	3.30
Education of infertile women	Illiterate	39	13.78	11	5.45	50	10.31
	Primary schooling	60	21.20	43	21.29	103	21.24
	Secondary schooling	127	44.88	105	51.98	232	47.84
	PUC	44	15.55	37	18.32	81	16.7
	Degree	13	4.59	6	2.97	19	3.91
Education of husband	Illiterate	36	12.72	7	3.47	43	8.87
	Primary schooling	37	13.07	20	9.90	57	11.75
	Secondary schooling	101	35.69	81	40.10	182	37.53
	PUC	80	28.27	74	36.63	154	31.75
	Degree	29	10.25	20	9.90	49	10.1
Occupation of infertile women	Agricultural Labourer	52	18.37	21	10.40	73	15.05
	Government job	2	0.71	2	0.99	4	0.82
	Private job	9	3.18	6	2.97	15	3.09
	Housewife	220	77.74	173	85.64	393	81.04
Occupation of husband	Agricultural Labourer	63	22.26	36	17.82	99	20.41
	Government job	15	5.30	9	4.46	24	4.95
	Private job	105	37.10	91	45.05	196	40.41
	Business	33	11.66	36	17.82	69	14.23
	Others	67	23.67	30	14.85	97	20
Type of Family	Joint	69	24.38	55	27.23	124	25.57
	Nuclear	214	75.62	147	72.77	361	74.43
SES Modified B.G Prasad's classification	I	21	7.42	3	1.49	24	4.95
	II	144	50.88	87	43.07	231	47.63
	III	90	31.80	68	33.66	158	32.58
	IV	24	8.48	33	16.34	57	11.75
	V	4	1.41	11	5.45	15	3.09

| | | | 283 | 100 | 202 | 100 | 485 | 100 |

Table II. Distribution of Infertile women according to BMI, Knowledge about fertile days, and Presenting complaints

		Primary infertility	Secondary infertility	Total	
				Number	Percentage
BMI	< 18.5 Kg/m^2	14	6	20	4.13
	18.5 – 23.0 Kg/m^2	191	87	278	57.32
	23.0 – 27.5 Kg/m^2	71	105	176	36.29
	>27.5 Kg/m^2	7	4	11	2.27
Knowledge about fertile days	Present	79	71	150	30.93
	Absent	204	131	335	69.07
	Abnormal Vaginal discharge	13	13	26	5.36
	UTI	11	15	26	5.36
	H/o Genitourinary TB	2	0	2	0.41
	Menstrual irregularity	99	82	181	37.32
	No problems/complaints	158	92	250	51.55
Presenting complaints	Grand Total	283	202	485	100

Table III. Association between family history and frequency of intercourse with the type of infertility

		Primary infertility	Secondary infertility	Total		Yates chi-square value	P value
				Number	Percentage		
Family history of Infertility	Absent	236	189	425	87.63	9.231	p<0.05
	Wife and Husband's side	4	0	4	0.83		
	Present on wife's side	23	8	31	6.39		
	Present on Husband's side	20	5	25	5.15		
Frequency of Intercourse	1-2 times a week	111	31	142	29.28	33.136	p<0.001
	Once in 2 weeks	101	89	190	39.18		
	Once a month	34	46	80	16.49		
	Does not remember the last episode of intercourse /More than 6 months	37	36	73	15.05		

It is seen that the number of couples having a family history of infertility is high among couples with primary infertility as compared to secondary infertile couples and the difference is significant with p value<0.05. Couples who did not have intercourse for more than 6 months almost remained the same 40-50% in both groups.

TableIV. Distribution of infertile women depending on the System of Medicine sought for treatment(N=274)

Treatment sought	Primary infertility		Secondary infertility		Total	
	Number	Percentage	Number	Percentage	Number	Percentage
Allopathy	137	69.90	59	30.10	196	71.53
Traditional healers	2	66.67	1	33.33	3	1.09
Allopathy + Homeopathy	40	83.33	8	16.67	48	17.52
Allopathy+Ayurvedic	22	88.00	3	12.00	25	9.12
More than 3 treatments	2	100	0	-	2	0.73
Total	203		71		274	100.00

*Yates chi-square-0.262

Overall treatment-seeking behaviour was found highest among couples with primary infertility as compared to couples with secondary infertility but the difference was not significant.

TableV.Distribution of infertile women depending on the reason for not seeking treatment(N=211)

Reason for not seeking treatment	Primary infertility	Secondary infertility	Total	
			Number	Percentage
Economic burden	48	21	69	32.70
Waiting for Spontaneous conception	23	88	111	52.61
Don't know to whom to approach	5	17	22	10.43
Not willing treatment	1	5	6	2.84
Others	3	0	3	1.42
Total	80	131	211	100

a :Others- Male dominance where the women are not allowed to approach health care facility

In the present study, 32.7 reported that due to economic burden, and1.43 % had not sought any treatment because male dominance existed in the family hence woman was not allowed to seek medical help.

Nearly 27.59% of women were diagnosed with ovulatory dysfunction and anovulatory cycles. They have been told by the treating doctor that they don't have any reason in particular for infertility but they had immature follicles and were asked to undergo induction of ovulation which is a phase wise procedure and were also given few medications. Some of these women said that they have undergone treatment but it was futile and they had to bear huge cost of expenditure.

About 26.44% of women were diagnosed with PCOD. These women were advised for lifestyle modification. When they were inquired if they were able to follow the medical advice it was found out that almost everyone did not take the advice seriously and they were not aware of the diet to be followed and what exercise to be done. And they did not follow-up with the treating doctor for the same.

Next common problem women had was Premature ovarian failure. These women were just asked to follow balanced diet exercise and adapt stress free life. Women complained that they always had an issue with their menstrual cycles. Their menstrual cycles would be to short or irregular. They have reported that they would be in such a stress to conceive that their usual menses would be delayed, they would get very anxious and check for UPT only to find out it's negative. Some of them also said that following the birth of a child they are having this problem and previously their cycles were

normal. Rest of the causes like septate uterus, Tubal block, Mullerian abnormalities, account for 45% of the causes which require surgical intervention and In vitro fertilization techniques. These women have not undergone treatment due to Out –of pocket expenditure.(FigureI)
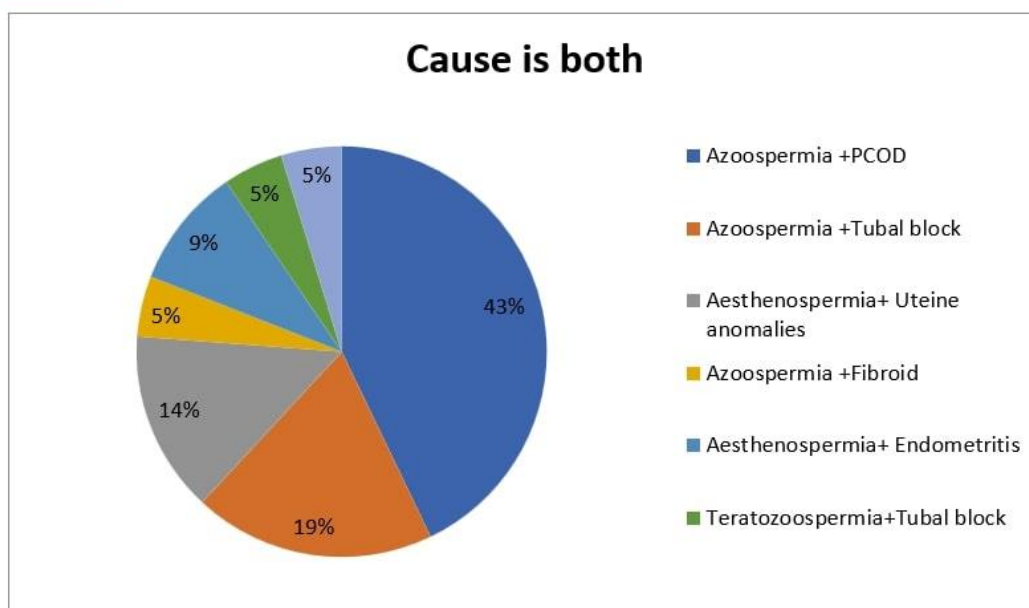
FigureI: Pie chart showing the distribution of Female Causes of Infertility
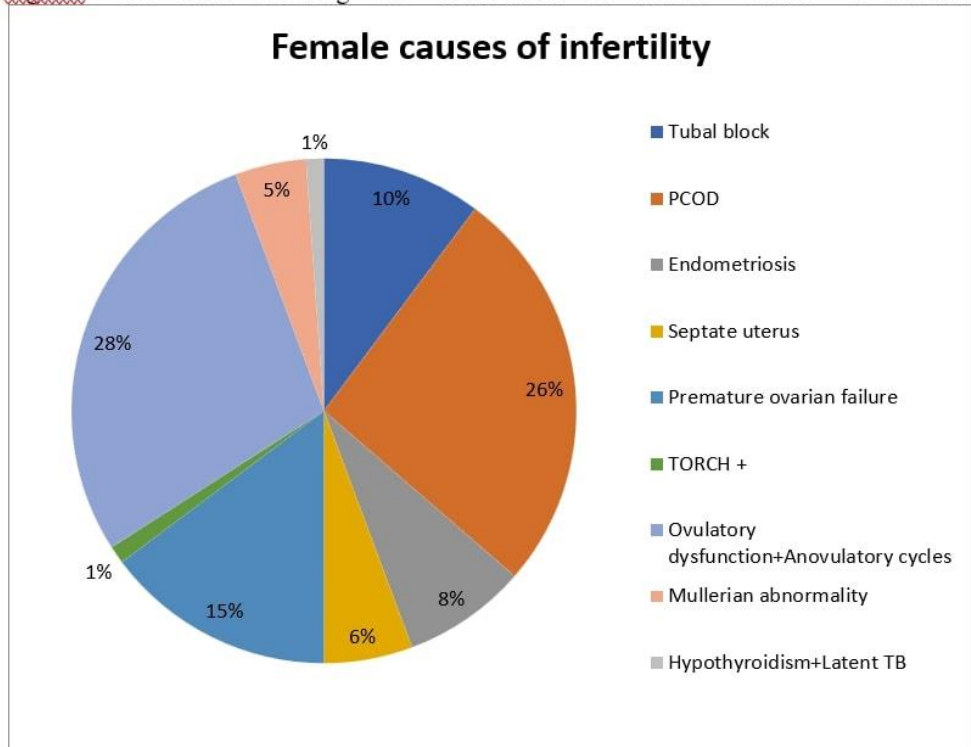
Male causes accounted for 18.25% of total causes for infertility. Among which Aesthenospermia accounted for 46% and Azoospermia 40%. Rest other causes like Oligospermia, Oligoaesthenospermia,, Teratozoospermia accounted for 14% of male causes for infertility. Though 274 couples have sought treatment , it was noted that a proportion of them have not undergone semen analysis because they felt that women were the reason for infertility and few of them denied giving their semen for analysis as per the treatment protocol as told by the infertile women participants.(FigureII)

FigureII: Pie chart showing the distribution of Male Causes of Infertility

Male cause for infertility

- ■ Azoospermia
- ■ Oligospermia
- ■ Aesthenospermia
- ■ Oligoaesthenospermia
- ■ Teratozoospermia

(40%, 8%, 46%, 2%, 4%)
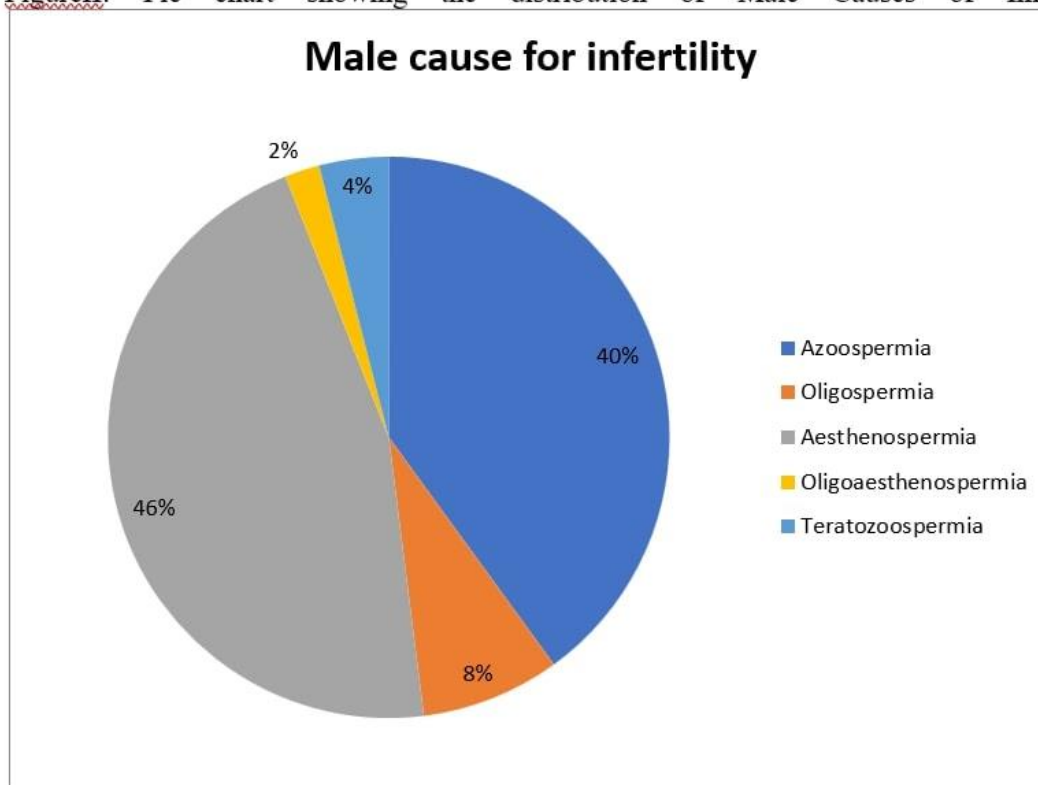
About 42.86% have been diagnosed with a combined problem of Azoospermia and PCOD. This type of problem can be overcome by medication and calendar method by noting the fertile days in a menstrual cycle. Rest of the 47.86% of the problems need surgical intervention.(FigureIII)

FigureIII: Pie chart showing the combination of both Male and Female Causes of Infertility

Cause is both

- ■ Azoospermia +PCOD
- ■ Azoospermia +Tubal block
- ■ Aesthenospermia+ Uteine anomalies
- ■ Azoospermia +Fibroid
- ■ Aesthenospermia+ Endometritis
- ■ Teratozoospermia+Tubal block

(43%, 19%, 14%, 5%, 9%, 5%, 5%)

DISCUSSION

In the present study, infertility was highest in the age group of 26-35 years. Findings were similar to a study done in Amritsar, Primary Infertility was highest in the age group of 21 to 35 years.[5] Around

90.7 percent were housewives and 9.3 % were in income-generating activities.[5]. The results were also consistent with the study done in Mysore which states that 38.8% belong to medium and high socio-economic status and 29% had completed their High Schooling.[1] In the current study though the majority fall into Class II SES, their salary is only enough to sustain their family, and infertility treatment would result in out–of–pocket expenditure for these couples.

Another study done on couples attending the infertility clinic of a tertiary care hospital in North India shows that 25% had a family history of infertility and 75% did not have any history.[8]

In the current study, it was noted that women with primary infertility were either malnourished or obese when compared to secondary in fertile women, about 36.29% were overweight and 2.27% were obese. Findings were similar to studies done in West Bengal and Pune where higher BMI would be associated with PCOD contributing to infertility.[9,10]Around 70% did not have any knowledge about fertile days in a menstrual cycle,.32% had menstrual irregularities, 10.72%had symptoms of UTI and vaginal discharge similar to the study done in Central India which showed 14.1% women had in irregular menstrual pattern and 21% had menstrual abnormalities. [5,9] Menstrual symptoms, infections, and BMI can be easily corrected with lifestyle modifications and prompt treatment. Yet these factors are largely ignored contributing to higher number of couples having primary infertility.

In the present study nearly 3/4th had sought allopathic treatment,1/5th of them sought both Allopathy and homeopathy, 1/10th have sought both Allopathy and Ayurveda and 1.1% sought traditional healers. The results were similar to the study done in Karnataka which showed that 95% of couples had sought allopathic treatment. Around 9% of males and 12% of females having primary infertility sought traditional healers. [11]Thus couples resorted to multiple treatments for infertility as there are no standard guidelines at the primary health care level.

In the present study, 32.7% did not seek treatment due to economic burden, and 10.3% had reported that they did not know whom to approach for treatment. Results were similar to a study done in Karnataka where 47.37% of males and 50% of females with primary infertility and 29% and 33.33% with secondary infertility due to economic hardship did not avail of any treatment.[11] It is seen that Ovulatory dysfunction with Anovulatory cycles and PCOD together contribute 54% of the causes. Others like Premature ovarian failure, Mullerian abnormality, Tubal block, Endometriosis , septate uterus contribute to 15%, 4.6%, 10.34%, 8%, and 5.75% respectively.

The results were similar to a study done in South India where 14% had PCOD, 6% had uterine anomalies, 4% endometritis, 4% ovarian cyst, 4% tubal factors, 3% low ovarian reserve.[11]

Study done in Teritiary care hospital in Dhaka showed that 17% had anovulation, 23% had premature ovarian failure, 8% had endometritis, 7% had tubal block, 3% had uterine factor problems. Similarly 40% had Azoospermia and 46% had Aesthenospermia. Rest of the causes like Oligospermia, Oligoaesthenospermia ,Teratozoospermia contributed to 8%,2% and 4% respectively. Results were similar to a study done in South India where oligospermia was found in 15%, 5% had severe oligospermi and azoospermia and 1% had normospermia.[11]

A study done in Dhaka showed 18% had azoospermia, 24% had abnormal sperm parameters and 58% had normozoospermia.[17]

The study focussed on treatment seeking pattern by noting various systems of medicine sought and identifying treatable causes for infertility along with factors responsible for delay in treatment. The strength of the study lies in the results obtained which help policy makers understand the loopholes in the current RCH programme and update the gudelines.

As infertility treatment is a long process there could be memory bias in obtaining history regarding treatment. Hence there is a need for standardized protocol to assess the cause and treatment of infertility along with the provision of basic investigation services and training of health personnel at primary health centers. Adoption can be considered an excellent option for managing infertility by counseling couples.

Conclusion: RMNCH+A includes reproductive and sexual health but infertility is not addressed. There are no guidelines that include the basic diagnosis or treatment of infertility. Hence couples seeking some form of treatment from various systems of medicine had to undergo huge- out-of-pocket

expenditures for the basic investigations. With early diagnosis and treatment preventable causes of infertility can be tackled. Counseling couples for adoption gives a sense of wholesome and philanthropic approach towards the healthcare of the community.

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