International Journal of Research in Medical Sciences
Ramanath B et al. Int J Res Med Sci. 2025 Aug;13(8):3322-3327
www.msjonline.org
pISSN 2320-6071 | eISSN 2320-6012
DOI: https://dx.doi.org/10.18203/2320-6012.ijrms20252401

Original Research Article

A study to identify the risk factors associated with infertility among women attending infertility clinics

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Received: 28 May 2025
Revised: 04 July 2025
Accepted: 18 July 2025

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ABSTRACT

Background: Infertility is not a newly emerging issue; it has its crux from the olden days. It is a preexisting problem and a threat to the social integration of families. The impact of this problem contributes a lot to the disharmony among young couples.
Methods: Present study is a quantitative approach and descriptive design. It consists of the demographic variables, gynecological factors, psychological factors, lifestyle factors, physical measures, diagnosed cause of infertility and hormonal values.
Results: A total of 400 women participated in the study, in that 100 cases randomly selected. It was observed that women with infertility (76%) were within the age group of 21-30 years of age, (85%) of them had a primary education and (89%) of them were home makers (77%) them were living in a nuclear family, Hindus (77%) and also reside at urban region (52%). Experience marital conflicts (70%) It was inferred that a higher proportion of women (93%) are non-vegetarians, more than half them (63%) have a meal pattern of 2 meals,
Conclusions: The study concluded that irregular menstrual cycle, marital and familial conflicts, overweight, more of non-vegetarian foods, lack of exercise etc. were some common risk factors associated with infertility. The study thus also had a conclusion that with certain awareness on the modifiable factors and ways to modify them will always contribute towards betterment of women's health in terms of fertility.

Keywords: Infertility, Gynecological, Lifestyle, Demographic, Psychological

INTRODUCTION

Infertility is becoming more and more a social issue in today's world. Being a problem which exist from the past, its magnitude is increasing day by day. The impact of this problem contributes a lot to the disharmony among young couples. Infertility is a serious health issue worldwide, affecting approximately 8%-10% of couples worldwide.[1] Of 60-80 million couples suffering from infertility every year worldwide, probably between 15 and 20 million (25%) are in India alone.[2,3] Infertility is the inability to become pregnant even after one year of unprotected sex.[4] Both men and women contribute to this threat. Infertility is a global health issue. It is not a newly emerging issue; it has its crux from the olden days. It is a pre-existing problem and a threat to the social integration of families. The causes of infertility are wide ranging including diagnoses such as ovulatory disorders, fallopian tubal disease, endometriosis, chromosomal abnormalities, sperm related factors and unexplained infertility.[5] Overall long term decline in fertility rates is due to late marriage, frequent divorce, more use of contraception, delayed beginning of childbirth process, decreased family size. Age related infertility is far more likely in women. In olden

days people hesitated to come and seek aid for infertility.[6] this current study was undertaken to determine the factors associated with infertility among patients attending the infertility clinic.

METHODS

Present study is a quantitative approach and descriptive design. The study period was in between July 2019 to April 2020. Hundred women attending the Momsoon fertility center in Bangalore was selected as the samples for the study. The sampling technique used for the study was systematic random sampling. Per day about 15-20 women are in minimum attending the infertility clinic, so on an average for 60 working days there will be approximately 400-500 women. Usually, the women attend the infertility clinic once a month and rarely a second time in case of any diagnostic procedure or evaluation of the same. As decided the sample size was 40 per day the number of samples selected was 5. According to the above mentioned systematic random sampling technique K=n/s, where K is the samples, n is the available population and s is the size. Thus 30/5=6. Hence every 6th client from the infertility clinic register was selected.

Inclusion criteria

Women with primary infertility, women who are willing to participate and women who speak and understand English, Hindi, Kannada and Telugu were included.

Exclusion criteria

Women with secondary infertility, women with associated co morbid illness and women whose husbands have abnormal semen studies were excluded

The tool used for this study was structured interview and document schedule. Structured interview was adopted because, more relevant information was need for the study, and also, while collecting the information the investigator observed the pain in their talk. Document schedule was used to note down all results of diagnostic investigations and also other physical parameters.

Section A: Interview schedule

Part I: It consists of the demographic variables including age, education, occupation, religion, breadwinner, family type, income and place of residence

Part II: It consisted of gynecological factors which include menstrual history, and marital history

Part III: It consists of psychological factors including marital conflicts, familial conflict.

Part IV: It consists of lifestyle factors as diet, exercise, habits and sexual activity

Section B: Documentation schedule

Part I: Physical measures as height, weight, BMI.

Part II: Diagnosed cause of infertility and hormonal values.

Statistics

Descriptive statistical measures like mean, standard deviation was used to analyze demographic variables and inferential statistical methods like Karl Pearson's coefficient was used to analyze the correlation between factors. Also, Chi square test was used to identify the association between factors and selected variables

RESULTS

A total of 400 women participated in the study, in that 100 cases randomly selected.

Table 1 depicts that the higher proportion of women with infertility (76%) were within the age group of 21-30 years of age, more than half (85%) of them had a primary education, and majority (79%) of them were professionals.

Table 2 reveals that more than half of the women with infertility (77%) had attained menarche at the age of between 13-15 years, majority (54%) of them have a menstrual cycle of once in more than 45 days, and also that a higher proportion (62%) of them had dysmenorrheal associated with menstruation always.

Table 3 reveals that more than half of the women with infertility (70%) had been married at the ages between 21-25 years, majority of them (86%) had non-consanguineous marriage also that a higher proportion (61%) of them have a marital life for about 3-5 years.

Table 4 shows that majority of them experience marital conflicts (70%), and also experience familial conflicts (63%), also a higher proportion (62%) have reported that their spouse cares for them only at times.

Table 5 depicts that a higher proportion of women (93%) are non-vegetarians, more than half them (63%) have a meal pattern of 2 meals, and almost all of them practice only household activities rather than exercises. It also shows that majority (68%) of them have a sexual activity once in a week.

Table 6 interprets that majority (45%) of the women are overweight, and the diagnosed cause of most of them (56%) was polycystic ovarian disease. Also, among the women with hormonal imbalance most of them (8%) had an increased level of serum prolactin levels. Table 7 depicts that type of family is significantly associated with irregular menstrual cycle. Women in nuclear family have more irregular menstrual cycle as which are at a risk for infertility.

Table 1: Distribution of women with infertility according to baseline data, (n=100).

Demographic data		N	Percentage (%)
Age (in years)	20	12	12
	21-30+	76	76
	31-40	12	12
Education	Secondary	85	85
	Collegiate/ professional	15	15
Occupation	Home maker	21	21
	Professional	79	79
Type of family	Joint	23	23
	nuclear	77	77
Monthly income (in INR)	10,001-30,000	21	21
	More than 31,000	79	79
Breadwinner	Husband	67	67
	both	33	33
Religion	Hindu	69	69
	Christian	21	21
	Muslim	10	10
Place of residence	Urban	59	59
	Urban slum	19	19
	Suburban	7	7
	Rural	15	15

Table 2: Distribution of women with infertility according to menstrual history, (n=100).

Menstrual data		N	Percentage (%)
Age at menarche (in years)	10-12	15	15
	13-15	77	77
	>16	8	8
Menstrual cycle	0nce in 28 days	6	6
	Once in 28-32 days	18	18
	Once in 33-45 days	22	22
	Once in>45 days	54	54
Menstrual flow days	< 2 days	8	8
	2-3 days	34	34
	4-5 days	48	48
	6-7 days	10	10
Premenstrual symptoms	Always present	66	66
	Rarely present	26	26
	Not present	8	8
Dysmennorhea	Always present	62	62
	Rarely present	22	22
	Not present	16	16

Table 3: Distribution of women with infertility according to marital history, (n=100).

Marital history		N	Percentages (%)
Age at marriage (in years)	≤20	18	18
	21-25	70	70
	26-30	12	12
Type of marriage	Non consanguineous	86	86
	Consanguineous	14	14
Years of marital life (in years)	1-2	7	7
	3-5	61	61
	6-8	22	22
	>8	10	10

Table 4: Distribution of women with infertility according to conflicts, (n=100).

Marital conflicts		N	Percentages (%)
Experience of marital conflict	Yes	70	70.0
	No	30	30.0
Experience of family conflict	Yes	63	63.0
	No	37	37.0
Care of spouse	Yes	89	89.0
	No	11	11.0
Experience of job/social stress	Yes	12	12
	No	88	88

Table 5: Distribution of women with infertility according to lifestyle practices, (n=100).

Lifestyle practices		N	Percentages (%)
Type of food	Vegetarian	8	8.0
	Non-vegetarian	92	92.0
Frequency of meals	Regularly 3 meals	22	22.0
	Regularly 2 meals	63	63.0
	Irregular meal timing	15	15.0
Type of exercise	Household works	100	100.0
Frequency of sexual intercourse	Once a week	68	68.0
	Twice a week	15	15.0
	Occasionally	17	17.0

Table 6: Document schedule, (n=100).

Variables		N	Percentages (%)
Body mass index	Underweight	8	8.0
	Normal weight	32	32.0
	Overweight	45	45.0
	Obesity	15	15.0
Diagnosed cause of infertility	Polycystic ovarian disease	56	56.0
	ovarian cysts/ tumors	6	6.0
	Tubal blocks	20	20.0
	Hormonal imbalances	12	12.0
	Unexplained	6	6.0
Hormonal imbalance	TSH	4	4.0
	Prolactin	8	8.0
	Nil	88	88

Table 7: Association between menstrual cycle and demographic variable, (n=100).

Variables		Menstrual cycle							Pearson chi square test
		Once in 28 days		Once in 29-32 days		Irregular menstrual cycle			
		N	%	N	%	N	%		
Type of family	Joint family	7	30.4	4	17.4	12	52.2	23	X^2=25.39 P=0.001 DF=2 significant
	Nuclear family	0	0	15	19.5	62	80.2	77	

The Figure 1 depicts that the frequency of sexual intercourse is significantly associated with the infertility. Majority of women have a sexual intercourse (68%) only once a week, which is either too less for fertility, or also may end in a loss of coital activity in the fertile period. (X^2=13.39, p<0.02, DF=3 significant).

The Figure 2 depicts that body mass index is significantly associated with infertility. Majority of women who are

overweight (45.0%), are at a risk of the infertility. (X^2=18.76, p<0.01, DF=6 significant).

Figure 1: Association between frequency of sexual intercourse and infertility.

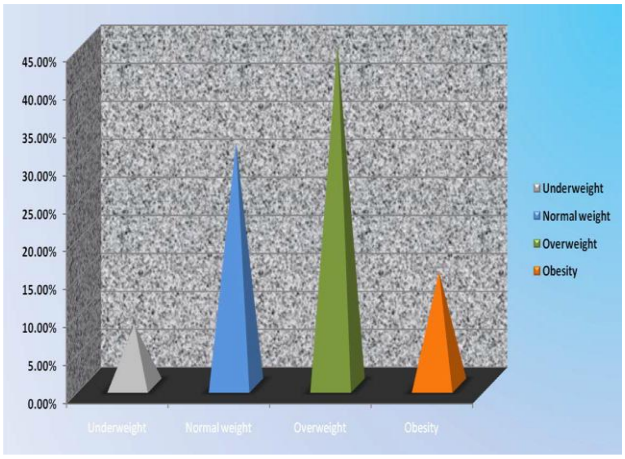

Figure 2: Association between BMI and infertility.

DISCUSSION

This study was an attempt to identify the common factors contributing towards female infertility. Keeping in view many of the psychological and social problems experienced by these women, it was planned to take up such a study. The socio demographic characteristics of the patients attending infertility clinic are depicted in Table 2. It was observed that higher proportion of women with infertility (76%) were within the age group of 21-30 years of age, more than half (85%) of them had a primary education, and majority (89%) of them were home makers. More than half of (77%) them were living in a nuclear family, and also husband is the bread winner (93%) in the family. Majority of the women are Hindus (77%) and also reside at urban region (52%).[7,8] the menstrual and marital history of the women which serve as some of the gynecological factors associated with infertility are interpreted in Tables 3 and 4. It reveals that more than half of the women with infertility (82%) had attained menarche at the age of between 13-15 years, majority (54%) of them have a menstrual cycle of once in more than 45 days. Women who had an irregular menstrual cycle were always at a risk of developing infertility to a certain extent. Also, a higher proportion (62%) of them had dysmenorrhea associated with menstruation always.

It shows that a higher proportion of the women with infertility (70%) had been married at the ages between 21-25 years, majority of them (86%) had a non consanguineous marriage also that a higher proportion (61%) of them have a marital life for about 3-5 years. The psychological and lifestyle factors associated with infertility among the women were inferred from tables 5 to Table 7. They show that majority of the women with infertility experience marital conflicts (70%) and also experience familial conflicts (63%). A higher proportion (62%) had reported that their spouse cares for them only at times. It was inferred that a higher proportion of women (93%) are non-vegetarians, more than half them (63%) have a meal pattern of 2 meals, and almost all of them practiced only household activities rather than exercises. Kelly-Weeder, suggested that six factors responsible for infertility with statistical significance as advanced age, elevated body mass index, age of onset of sexual activity, prior pelvic surgeries, and presence of stress.[9] The above-mentioned studies have all supported the identified risk factors in the investigation carried out increasing age, lack of exercise, PCOS, a history of an ectopic pregnancy, current smoking, obesity, and self-reported health status. Commonly identified were those women with irregular menstrual cycle (52%), women who are overweight (45%) and women who are diagnosed with PCOD (52%), women with increased serum prolactin levels (8%) etc., were also having infertility. Obesity has always contributed to infertility from ages. One of the reasons behind this is that excessive fat alters the normal hormonal levels needed for the ovulation, thus ending in alterations in ovulation pattern.[10] Food habits and lifestyle changes have also brought forward a lot of influences in human fertility.[11] Fertility problem and stress has direct effects that increase marital conflict and decrease sexual self-esteem, satisfaction with own sexual performance, and frequency of sexual intercourse and vice versa.[12]

The present study showed similar findings that there exists a relation between selected demographic variables and risk factors are related either directly or indirectly to infertility. By creating more awareness on those factors, it was believed that infertility risk can be reduced at least to a certain degree.

CONCLUSION

This study identified certain modifiable factors contributing towards infertility. The study concluded that irregular menstrual cycle, marital and familial conflicts, overweight, more of non-vegetarian foods, lack of exercise

etc. were some common risk factors associated with infertility. There was a significant association between most of these factors and infertility. Also, they were significantly associated with certain demographic variables. They study thus also had a conclusion that with certain awareness on the modifiable factors and ways to modify them will always contribute towards betterment of women's health in terms of fertility.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Ramanath B, Kumar GK, Subrahmanyam VB, Kumari SK. A study to identify the risk factors associated with infertility among women attending infertility clinics. Int J Res Med Sci 2025;13:3322-7.