A Study to Assess the High Risk Factors Associated with Primary Infertility Among Women at Selected Infertility Centre Vijayapur

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Abstract:
Female age is the most important factor affecting fertility. Women are born with all the eggs they will ever have and the number of eggs available decreases each day from birth onwards. In young women the decline is fairly gradual (only a few eggs are 'lost' each day), but as women approach their mid to late 30s, the decrease gets much steeper (many more eggs are 'lost' each day). In addition to this decrease in the number of eggs available, the quality of the eggs also declines as women get older. This reduction in both the quantity and quality of available eggs means that older women are less likely to get pregnant and, if they do get pregnant, they are more likely to have a miscarriage. Male fertility may also decrease with age although to a much lesser degree. The aim of the study is to assess the risk factors associated with primary infertility among women. **Materials and methods:** 130 women's were selected making use of purposive sampling techniques. Data were analysed by using descriptive and inferential statistical methods. Result: The study result shows that primary infertility was found to be associated with gynaecological characteristic such presence of PMS, psychological characteristics such job/social stress, lifestyle such passive smoking and coitus and document schedule such BMI and diagnosed cause of infertility and Exposed to passive smoking was observed to be associated with income/month.

Key Words: Body Mass Index, Primary Infertility, Premenstrual syndrome, Risk factor

I. Introduction

Reproduction is one of the best things that occur in women life. Fertility is considered as one of the vital event in women life. As per Indian culture fertility is considered as most important thing for all married women. Loss of this precious event will result in stress and depression, marital instability, divorce, re marriage etc. Infertility refers to inability of the couple to get pregnant even after one year of unprotected sexual intercourse. Bothe male and female are equally contribute to this threat. There are so many reasons which can lead to infertility in men and women. In India the rate of infertility is around 2.5 %. Infertility is not a major health issue; most of the infertility cases have been solved by taking other measures. Infertility is a relatively common condition, greatly affecting couples medically and psychologically. Although infertility treatment is safe, it can be time-intensive, expensive, and increase the risk of multiple gestations. Thus, to reduce costs and risks, couples may initially consider lifestyle change to increase their fertility and chances of pregnancy. For many of the diet factors studied (eg, caffeine, soya, protein, iron), there are

conflicting data. However, there are some items men and women consume that are detrimental to fertility, such as alcohol and tobacco.

Review of Literature:

Hamideh Jafari et al.(2016) A systematic review on factors affecting male infertility An online search was conducted in electronic databases including PubMed, Google Scholar, SID, and Scopus to identify articles on the factors associated with male infertility, published in English and Persian. The search was conducted without a time restriction, up to April 2020. The search resulted in a total number of 691 studies. After an assessment of the articles, finally 14 studies were included in this study with a total number of 26,324 infertile males. The factors associated with male infertility included semen abnormalities, varicocele and testis disorder, smoking, exposure to heat, obesity, anabolic steroids, vascular abnormalities, anti-spermatogenesis factors, antidepressants, taking ranitidine and cimetidine, penile discharge and genital ulcers, painful micturition, occupational factors, alcohol, chronic disease, sexual disorder, Surgical and urological diseases, genetic factors and herpes infection. Among these, the semen and varicocele disorders were common in most studies. The present review suggests that the factors affecting male infertility in Iran are similar to those reported from other countries.

Jimei Cong et al .(2016) cross-sectional study was conducted to investigate and analyze prevalence and risk factors of infertility at a representative rural site of Northern China involving 5,131 women who were at childbearing age. The study results shows that Infertility prevalence in Suizhong County was 13.09%, of which the primary infertility incidence was 0.99% and the secondary infertility incidence was 12.10% . The infertility incidence of women with little exercise was 4 times more than that of women with regular exercise, and 2 times more than that of women with heavy exercise. For men, those who stayed up late at night more than 3 times per week showed a significantly higher infertility incidence. Men who engaged in occupations with high-temperature working environment also suffered from an infertility incidence of about four times more than the others. The study concluded with significant association between women's infertility incidence with their BMI, state of exercise, amount of menstrual flow, number of pregnancies and number of abortions. As for men, both staying up late and engaging in high-temperature occupations are independent factors affecting their fertility.

II.Objectives

- To identify the high risk factors contributing to primary infertility
- To find out the relationship between selected high risk factors and primary infertility
- To find out the association of high risk factors with their selected demographic variables

III.Hypothesis

- **H_0**: There is no association between risk factor and infertility among the study subject
- **H_1 :** There is association between risk factor and infertility among the study subject
- **H_0 :** There is no significant association between risk factors and selected demographic variables of the study participants
- **H_1 :**There is no significant association between risk factors and selected demographic variables of the study participants

IV.Sample

The sample for the present study consists of 124 women selected at infertility centres of Vijayapur district; Sample for the present study was conducted in three steps as follows

Step 1: The researcher will obtain prior permission from the concerned authority.

Step 2: The purpose of the study will be explained to study participants.

Step3: The structured questionnaire will be administered for getting data from women's at the selected infertility centres

V.Research Design

In these present study investigators uses Descriptive and Evaluative Research Design to high risk factors contributing to primary infertility, to find out the relationship between selected high risk factors and primary infertility and to find out the association of high risk factors with their selected demographic variables

VI.Tool used

Tool used in this study under the following sections

Section-I: Demographic data

Section-II: Gynaecological factors

Section-III: Psychological factors

Section-IV: Life Style factors

VII.Analysis & Results

Table No -1: Distribution of women with infertility according to their gynecological characteristics

SINO	Gynecological characteristics	Subgroups	No	%
1	Age at menarche	10-12	26	26.5
		13-15	59	60.2
		16-17	12	12.2
		>17	01	1.0
2	Pattern of occurrence of menstrual cycle	Once in 28 days	15	15.3
		Once in 28 – 32 days	01	1.0
		Once in 33 – 45 days	23	23.5
		>45 days	58	59.2
		Twice in a month	01	1.0
3	Menstrual Flow duration(days)	Less than 2	15	15.3
		2-3	50	51.0
		3-5	13	13.3
		5-7	20	20.4
4	PMS	Always present	17	17.3
		Rarely present	71	72.4
		Not present	10	10.2
5	Experience dysmenorrhea,abdominal cramps during menstruation	Always present	61	62.2
		Sometimes present	18	18.4
		Not present	19	19.4
6	Age at marriage (yrs)	Less than 20	21	21.4
		21-25	27	27.6
		26-30	04	4.1
		above 30	46	46.9
7	Type of Marriage	Consanguineous	63	64.3
		Non- Consanguineous	35	35.7

8	Marital life (yrs)	1-2	35	35.7
		3-5	31	31.6
		6-8	8	8.2
		>8	24	24.5

From table no 1, it was clear that more than half (60.2%) of the women with infertility had attained age at menarche between 13-15 years. More than half (59.2%) had menstrual cycle once in 45 days, majority (51.0%) had menstrual flow between 2-3days, higher proportion of women (72.4%) had rarely presence of PMS associated with menstruation, majority (62.2%) Experience dysmenorrheal, abdominal cramps during menstruation, majority (46.9%) of them got married after 30 years of age,

Table No -2: Distribution of women with infertility according to their psychological factor

SINO	psychological factor	Subgroups	No	%
1	Marital Conflicts	Yes	48	49.0
		No	50	51.0
2	Conflict with in-laws	Yes	33	33.7
		No	65	66.3
3	Income sufficient to run family	Yes	34	34.7
		No	64	65.3
4	Is your spouse caring towards you	Yes	48	49.0
		No	50	51.0
5	experience any job /social stress	Yes	64	65.3
		No	34	34.7

Table 3, showed that majority le than half (49.0%) of women with infertility had marital conflict, lower proportion (33.7%) had conflict with their in laws, le than half (34.7%) women reported insufficient income, more than half (51.0%) reported that their spouse don't care them and 65.3%) reported no job/social stress

Table No -3: Distribution of women with infertility according to their life style

SINO	Life style	Subgroups	No	%
1	Food habit	Vegetarian	24	24.5
		Non-Vegetarian	66	67.3
		Mixed	08	8.2
2	Frequency of meals	Regularly 2 meals	29	29.6
		Regularly 3 meals	50	51.0
		More than 3 meals	19	19.4
4	Types exercise	Household works	43	43.9
		Walking	40	40.8
		Mild jogging	13	13.3
		Others	02	2.0

5	Personal habits	Betel nut chewing	54	55.1
		Tobacco chewing	44	44.9
6	Exposed to passive smoking	Yes	80	81.6
		No	18	18.4
7	Do you have coitus	Once a week	59	60.2
		Twice a week	25	25.5
		More than twice a week	06	6.1
		Occasionally	08	8.2

Table no 3 revealed that higher proportion (67.3%) of women with infertility were non-vegetarian, (51.0%) have meal pattern of 3 times/day, majority (40.8%) of them do walking, Higher proportion of women (81.6%) reported to have exposed to passive smoking, more than half (60.2%) reported to have coitus once a week

Table No -4: Distribution of women with infertility according to their document schedule

SINO	Gynecological characteristics	Subgroups	No	%
1	BMI	Underweight = <18.5	10	10.2
		Normal weight = 18.5–24.9	43	43.9
		Overweight = 25–29.9	34	34.7
		Obesity = BMI of 30 or greater	11	11.2
2	Diagnosed cause of infertility	Polycystic ovarian disease	18	18.3
		Ovarian cysts /tumors	13	13.2
		Tubal blocks	21	21.4
		Hormonal imbalances	11	11.2
		Unexplained	25	25.5
		Others	10	10.2

From table no 4, it was clear that majority (43.9%) of the women had normal weight followed by (34.7%) who were overweight and diagnosed cause of most (25.5%) of were unexplained

Table no 5 : identification of risk factors of infertility among the study participants with regard to gynecological characteristic

SINO	Gynecological characteristics	Chi-square	Df	p-value	Result
1	Age at menarche	0.54	3	0.91	NS
2	Pattern of occurrence of menstrual cycle	2.61	4	0.62	NS
3	Menstrual Flow duration(days)	6.62	3	0.08	NS
4	PMS	10.20	2	0.006	**S**
5	Experience dysmenorrhea,abdominal crampsduring menstruation	2.90	2	0.23	NS

6	Age at marriage (yrs)	2.8	2	0.41	NS
7	Type of Marriage	1.27	1	0.26	NS
8	Marital life (yrs)	0.85	3	0.83	NS

Table no 5, showed that there is significant association between infertility and presence of PMS. More than half women with infertility reported rarely presence of PMS followed by 17(17.3%) reported that PMS was always present. The women with preence of PMS are at higher risk of primary infertility (Chi-square value= 10.20, DF=2 p-value=0.006 significant)

Table No -6: identification of risk factors of infertility among the study participants with regard psychological factor

SINO	Psychological factor	Chi-square	df	p-value	Result
1	Marital Conflicts	1.04	1	0.30	NS
2	Conflict with in-laws	0.005	1	0.94	NS
3	Income sufficient to run family	0.47	1	0.49	NS
4	Is your spouse caring towards you	0.51	1	0.47	NS
5	experience any job /social stress	21.03	1	0.0001	**S**

Table no 6, interprets that there is association between infertility and job/social stress. Majority of women (65.3%) with infertility had job/social stress. The women with job/social stress are at higher risk of infertility. (Chi-square value= 21.03, DF=1, p-value=0.0001 significant)

Table No -7: Distribution of women with infertility according to their life style

SINO	Life style	Chi-square	d.f	p-value	Result
1	Food habit	3.39	2	0.18	NS
2	Frequency of meals	1.35	2	0.51	NS
3	Types exercise	5.78	2	0.12	NS
4	Personal habits	0.17	1	0.67	NS
5	Exposed to passive smoking	33.5	2	0.0001	**S**
6	Do you have coitus	9.08	3	0.02	**S**

Table No -7revealed that there is significant association between infertility and passive smoking. Majority of women (81.6%) with infertility were passive smokers. The women who are passive smokers are at higher risk of infertility. (Chi-square value= 33.5, DF=1, p-value=0.0001 significant)

Table no 10: association between high risk factors and their selected socio-demographic variables.

SINO	Socio-demographic Variables	High risk factors	Chi-Square	df	P-value	Results
Relationship between Socio-demographic variable & Presence of PMS						
1	Age		16.26	6	0.01	**S**
2	Educational qualification		4.30	6	0.63	NS
3	Occupation		12.87	8	0.11	**NS**

4	Types of family	**Presence of PMS**	7.09	4	0.13	NS
5	Income/month		28.94	6	0.0001	**S**
7	Religion		18.81	6	0.005	**S**
8	Residence		17.67	6	0.007	**S**
Relationship between Socio-demographic variable & job/social stress						
1	Age	**job/social stress**	25.50	6	0.001	**S**
2	Educational qualification		7.1	6	0.314	NS
3	Occupation		21.4	8	0.006	**S**
4	Types of family		21.3	4	0.0001	**S**
5	Income/month		19.5	6	0.03	**S**
7	Religion		5.43	6	0.49	NS
8	Residence		27.8	6	0.0001	**S**
Relationship between Socio-demographic variable & exposed to passive smoking						
1	Age	**exposed to passive smoking**	4.44	6	0.62	NS
2	Educational qualification		5.47	6	0.48	NS
3	Occupation		14.2	8	0.07	NS
4	Types of family		3.39	4	0.49	NS
5	Income/month		14.5	6	0.02	**S**
7	Religion		15.1	6	0.02	S
8	Residence		11.01	6	0.09	NS

NS-Not Significant S-Significant

SINO	Socio-demographic Variables	High risk factors	Chi-Square	df	P-value	Results
Relationship between Socio-demographic variable & BMI						
1	Age	**BMI**	6.50	9	0.68	NS
2	Educational qualification		12.6	9	0.17	NS
3	Occupation		20.1	12	0.06	NS
4	Types of family		7.2	6	0.3	NS
5	Income/month		6.29	9	0.71	NS
7	Religion		12.9	9	0.16	NS
8	Residence		27.9	9	0.001	**S**
Relationship between Socio-demographic variable & Diagnosed Cause						
1	Age	**Diagnosed Cause**	19.5	9	0.02	**S**
2	Educational qualification		12.3	9	0.19	NS
3	Occupation		32.5	12	0.001	**S**
4	Types of family		6.33	6	0.38	NS
5	Income/month		14.2	9	0.11	NS
7	Religion		19.5	9	0.02	NS
8	Residence		7.88	9	0.54	NS

NS-Not Significant S-Significant

From table no 10, it was clear that, the presence of PMS was highly associated with age, income/month, religion and residence. Job/social stress was highly associated with age, occupation, types of family, income/month and residence. Exposed to passive smoking was highly associated with income/month and religion of the study subjects. Body mass index and residence of the study samples was found to be associated. Association between age of the study participants and diagnosed cause of infertility was found to be associated.

Conclusion

It was concluded that presence of PMS, job/social stress, exposed to passive smoking, BMI and diagnosed cause were high risk factors associated with primary infertility

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