



The prevalence of infertility and related factors in patients referred to infertility center in Besat hospital, Sanandaj, Iran

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Original Article

Abstract

BACKGROUND: Infertility is considered as a prominent health care issue. The present study aimed to determine the prevalence rate of infertility and certain factors relevant to it.

METHODS: The current study was performed on every couple who visited the infertility center of Besat hospital located in Sanandaj City, Iran, in a period between 2014 and 2015. The study population was comprised of 579 patients. A certain questionnaire was used for data collection. Data was analyzed using STATA Ver.11 software. Descriptive statistics as well as chi-square, t, and Fisher's exact tests were used.

RESULTS: Out of 579 cases, 372 ones (64.3%) showed primary infertility, and 207 cases (35.7%) had secondary infertility. The most prevalent cause of infertility in women was found to be in relationship with ovarian factors (33.5%), and in men, male factors were the first cause (30.2%). Other observed causes of infertility were uterine factors (5.5%), tubular factors (12.8%), and unknown factors (18%). No significant relationship could be found between women's age groups and the male factors of infertility ($P = 0.813$); while there was in fact a meaningful statistical relationship between women's age groups and ovarian factors ($P = 0.001$).

CONCLUSION: The current study shows that prevalence rates of primary and secondary infertilities were 64.3% and 35.7%, respectively. Most commonly found causes of infertility in men were male factors, and in women, tubal, ovarian, and unknown factors.

KEYWORDS: Male Infertility, Female Infertility, Causality

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Introduction

Infertility is considered a major health care problem, which can be defined as the lack of occurrence of pregnancy after having one year of regular intercourse without using any

contraception methods.¹ The prevalence rate of infertility has been estimated as 3.5-16.7 percent in developed countries, and 6.9-9.3 percent in developing countries;² while the average infertility rate reported for Iran is 13.2%.³ It has been reported that from the total infertilities, 40% are detected in men, 40% in women, and 20% are recognized in both sexes.⁴

Infertile couples are at the risk of

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psychological disorders. As one of the major psychological disorders that accompany infertility, depression critically affects the life of both infertile men and women, as well as their treatment, and the matter of following-up their treatment.⁵ Infertility is not simply a health problem; it is also associated with social injustice and inequality,⁶ and leads to distress and depression, and potentially ostracism and discrimination.^{7,8}

Infertility can be divided into two types of primary and secondary. The secondary infertility is defined as the inability to give birth despite of being exposed to pregnancy for a period of one year.⁹ Different studies have shown that infertility, whether primary or secondary, takes place in almost 15% of all the women worldwide,¹⁰ and the incidence rate of female infertility is rising every year.⁶

Numerous reasons are considered as the causes for infertility, and often several reasons in combination are the cause of infertility.¹¹ The causes of infertility vary, including varicocele, azoospermia of vas deferens obstruction, sperm problems (dysmorphology, low number, and low mobility), and sensitivity to sperm that are male problems; plus female problems that include body weight, nutrition disorders, ovulation problems, smoking, age, cervix disorders, luteal phase defects, endometriosis, poor quality of ovulation, obstruction of the fallopian tubes, and polycystic ovarian syndrome.¹²⁻¹⁵

The most commonly observed reasons of female infertility are ovulation defect, and low ovarian reserve in the ovaries as a result of aging; in addition, being overweight in women affects androgen and estrogen production, and this cause is responsible for 12% of all infertility cases in women.¹⁴ The most prevalently seen cause of male infertility is varicocele,^{15,16} which is defined as dilated and twisted veins of the pampiniform plexus in the spermatic cord.¹⁷ The age of onset of infertility is usually during puberty or immediately after it.¹⁸

Considering the importance of infertility

issue as a health consideration, which tremendously affects the lives of couples, and given the lack of information about the prevalence of infertility in Kurdistan Province, Iran, the aim of the current study was to determine the prevalence of infertility and its related factors in patients referred to the infertility center of Besat hospital in Sanandaj City, in a period between 2014 and 2015.

Materials and Methods

The current descriptive analytical cross-sectional study was conducted on every couple who had referred to the infertility center of Besat hospital, in a period between 2014 and 2015. The study population included 579 patients enrolled using census sampling method.

A questionnaire was utilized in order to collect the data. Certain data including demographics, the final diagnosis of the cause of infertility, infertility duration, marriage age, and marriage duration were obtained from the patients' medical records.

Data was analyzed using Stata software (version 11, StataCorp LLC., College Station, TX, USA). Descriptive statistics, mean, and standard deviation, as well as t (for quantitative variables), chi-square, and Fisher's exact (for qualitative variables) tests were utilized to analyze the data.

Results

The results of the current study revealed that the mean age of men, the mean age of women, the mean marriage duration, and the mean infertility duration were 35.6 ± 7.6 , 31.2 ± 6.6 , 8.7 ± 5.9 , and 4.8 years, respectively. Education level of most of the participants was below high school diploma. The majority of men were self-employed (75.0%), and most of women were housewives (89.0%), whereas the rest were employees (10.6%). Most of the participants had a history of consanguineous marriage, and a history of infertility in their family.

Among 579 cases, 372 cases (64.3%) had primary infertility, and 207 (35.7%) had secondary infertility.

Table 1. The frequency of different infertility causes in terms of women's age

Women age groups	The causes of infertility [n (%)]					Total
	Male factors	Ovarian factors	Uterine factors	Tubal factors	Unknown factors	
Less than 25 (years)	35 (28.0)	59 (47.2)	7 (5.6)	7 (5.6)	17 (13.6)	125 (100)
25-35 (years)	88 (30.7)	98 (34.1)	12 (4.2)	37 (12.9)	52 (18.1)	287 (100)
Over 35 (years)	52 (31.3)	37 (22.3)	13 (7.8)	30 (18.1)	34 (20.5)	166 (100)
Total	175 (30.3)	194 (33.7)	32 (5.5)	74 (12.8)	104 (17.8)	579 (100)

The most observed infertility cause among women was connected to ovarian factors (33.5%) and in men, the common causes were male factors (30.2%). Uterine factors (5.5%), tubular factors (12.8%), and unknown factors (18%) were the other causes of infertility.

In women of less than 25 years of age, the most prevalent causes of infertility were ovarian factors (47.2%); in women of 25-35 years of age, ovarian factors (34.15%) were also the major cause of infertility; and finally, the most commonly observed infertility cause in women of over 35 years of age, was the male factor (31.33%).

In women of less than 25 years of age, 28% of infertility causes of couples were related to the male factor, and 72% were related to other factors; while in women of 25-35 years of age, 30.66% of infertility causes were related to the male factors, and 69.34% were related to other factors (Table 1).

There was not a meaningful relationship between women's age groups and male factors of infertility ($P = 0.813$); while there was a significant relationship between women's age groups and ovarian factors ($P = 0.001$). This implied that in women of less than 25 years of age, 47.2% of infertility were related to ovarian factors, and in women of 25-35 years of age,

and those over 35 years of age, the percentages were 34.1 and 24.3, respectively. In women who were under 25 years of age, 5.6% of infertilities were related to tubal factors, while in women of 25-35 years of age and those over 35 years, the percentages were 12.9 and 18.1 respectively

The results obtained here showed that there were no meaningful relationship between women's age groups and uterine factors of infertility ($P = 0.262$) (Table 2).

There was in fact a meaningful relationship between women's age group and tubal factors of infertility ($P = 0.007$) (Table 3).

There was also a statistically meaningful relationship between women's age groups and unknown factors of infertility ($P = 0.310$) (Table 4).

Even though no statistically significant relationship was found between the marriage duration with the male, uterine, unknown, and tubal factors, there was in fact a statistically significant relationship between marriage duration and ovarian factors of infertility ($P = 0.002$) in couples who were into their marriage for less than 10 years (38.2%); and in couples who had been married for more than 10 years, an infertility rate of 25.8% was observed.

Table 2. The relationship between the age group of women with uterine factors of infertility among the subjects

Women age groups	Cause of infertility [n (%)]			Chi-square	P
	Uterine factors	Other factors	Total		
Less than 25 (years)	7 (5.6)	119 (94.4)	126 (100)	2.86	0.262
25-35 (years)	12 (4.2)	275 (95.8)	287 (100)		
Over 35 (years)	13 (7.8)	153 (92.2)	166 (100)		
Total	32 (5.5)	546 (94.5)	579 (100)		

Table 3. The relationship between the age group of women with tubal factors of infertility among the subjects

Women age groups	Cause of infertility [n (%)]			Chi-square	P
	Tubal factors	Other factors	Total		
Less than 25 (years)	7(5.6)	119 (94.4)	126 (100)	9.94	0.007
25-35 (years)	37 (12.9)	250 (87.1)	287 (100)		
Over 35 (years)	30 (18.1)	136 (81.9)	166 (100)		
Total	74 (12.8)	504 (87.2)	579 (100)		

Table 4. The relationship between the age group of women and unknown factors of infertility among the subjects

Age groups (years)	Cause of infertility [n (%)]			Chi-square	P
	Tubal factors	Other factors	Total		
Less than 25	17(13.6)	109 (86.4)	126 (100)	2.34	0.310
25-35	52(15.1)	235 (81.9)	287 (100)		
Over 35	35 (20.4)	131 (79.6)	166 (100)		
Total	104 (17.8)	475 (82.2)	579 (100)		

Discussion

In the current study, the mean age of women and men were 31.2 ± 6.6 and 35.6 ± 7.6 years, respectively. The average length of marriage was 8.7 ± 5.9 years, and the average length of infertility was 4.8 ± 4.7 years. The most prevalent infertility type was detected as primary, which male factors were the causes in men, and ovarian factors were the causes for it in women. In the present work, out of 579 cases, 372 cases (64.3%) had primary infertility, and 207 (35.7%) had secondary infertility. The results also revealed that there was no statistically meaningful relationship between the age group of women with male and uterine factors of infertility; however, there in fact was a significant relationship between the age group of women with tubular and unknown factors.

In a study performed by Masoumi et al. in Hamadan, Iran, from 1200 cases, 834 cases (69.5%) suffered from primary infertility, and 366 (30.5%) had secondary infertility. Moreover, the average length of marriage of infertile couples was 7.6 ± 5.3 years, and their duration of infertility was 4.6 ± 5.1 years;¹⁹ which is almost identical to the current study.

In the present work, 10.6% of women were

employees, and 89.4% were housewives. In a study conducted by Pal et al., almost less than one tenth (9.3%) of infertile women were involved in income-generating activities, while the majority of them [264 (90.7%)] were housewives;²⁰ which is consistent with the present study findings.

In the current study, almost 51.2% of infertility causes were related to female factors, while in a study performed by Masoumi et al. amongst the various reasons of infertility, 88.6% were related to female factors.¹⁹

Studies have shown that various factors including social, individual, economic, and irrational thoughts about having children might negatively impact the life quality of infertile women. In addition, the life quality of infertile couples is directly related to their sexual satisfaction, self-esteem, social support, as well as marital satisfaction.²¹ Infertility imposes certain potentially undesirable effects on the life quality of infertile couples,²² and it variously impacts multiple dimensions of functioning and health in these couples, including sexual functioning and marital adjustments.²³

Conclusion

The results of this work show that infertility is one of the major problems of couples that are a several years into their marriage. The most observed cause of infertility in men was found to be male factors and for women, the major causes were tubal, ovarian, and unknown factors. Further studies with a bigger population are required to achieve more

accurate results, and to be able to make more serious decisions.

Conflict of Interests

Authors have no conflict of interests.

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