

CrossMark
click for updates

OPEN ACCESS

Comparison of Sexual Problems in Fertile and Infertile Couples

Zahra Zare¹, Nahid Golmakani^{2*}, Malihe Amirian³¹Department of Midwifery, Faculty of Nursing and Midwifery, Sabzevar University of Medical Sciences, Sabzevar, Iran²Department of Midwifery, Faculty of Nursing and Midwifery, Mashhad University of Medical Sciences, Mashhad, Iran³Department of Obstetrics and Gynecology, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran

ARTICLE INFO

Article Type:

Original Article

Article History:

Received: 14 Aug. 2016

Accepted: 25 Jun. 2017

ePublished: 1 Sep. 2017

Keywords:

Sexual dysfunction

Fertile

Infertile

Couples

ABSTRACT

Introduction: Infertility is known to have a negative effect on couple's life and in most cases it has a profound impact on sexual relations. Sexual problems may be the cause of infertility or may arise as a result of infertility. The aim of this study was to compare the sexual problems in fertile and infertile couples.

Methods: This cross-sectional study was performed on 110 infertile and 110 fertile couples referring to Montaserieh infertility center and five health centers in Mashhad which were selected as class clustering method and easy method. Data collection tools included demographic questionnaires and Golombok-Rust Inventory. The collected information was analyzed by SPSS software and descriptive and inferential statistics.

Results: No significant difference was found between fertile 26 (17, 37) and infertile 26(18, 37) women in terms of total score of sexual problems and other aspects of sexual problems (except infrequency). The women in the fertile group had higher infrequency than infertile women. Total score of sexual problems in fertile men was 18.5 (13, 27) and in infertile men 25(19, 31) and the difference was statistically significant. Infertile men reported more problems in no relation, impotency and premature ejaculation compared to fertile men. Men in both fertile and infertile group reported more sexual problems than women.

Conclusion: In view of the more frequent sexual problems in infertile men than infertile women, it seems that it is necessary to pay more attention to sexual aspects of infertility in men and design the training programs for sexual and marital skills in infertility centers.

Please cite this paper as: Zare Z, Golmakani N, Amirian M. Comparison of sexual problems in fertile and infertile couples. J Caring Sci 2017; 6 (3): 269-79. doi:10.15171/jcs.2017.026.

Introduction

Experience of infertility that some have referred to as infertility crisis is associated with physical, economic, psychological and social stress that will affect all aspects of people's life.

This event is considered as a serious stress in life and imposes a severe psychological trauma on the couples.¹ Infertility is defined as inability to have children after one year of regular sexual activity without using contraceptive methods.² Infertility is a common problem and according to the World Health Organization in 2013, one per four couples is infertile. According to statistics provided by the Ministry of Health in 2009, the

prevalence of infertility in Iran is estimated as 20.2%.³

Researchers reported impulsive behavior, depression, anxiety, concern about sexual attraction, feelings of rejection, problem in marital status and sexual desire, and considering sexual relations as a duty- hence its futility in infertile couples.^{4,5} Since more sexual pleasure is the result of mind than body, it can be expected that sexual relation is affected by the consequences of infertility and this feeling interferes with the ability to enjoy sexual activity.⁶

Sexual relation is an important goal of forming a family and failure to reach this goal

*Corresponding Author: Nahid Golmakani (PhD), email: GolmakaniN@mums.ac.ir. This study was performed with financial support of research deputy of Mashhad University of Medical Sciences. (No. 920055)



© 2017 The Author(s). This work is published by Journal of Caring Sciences as an open access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by-nc/4.0/>). Non-commercial uses of the work are permitted, provided the original work is properly cited.

is one of the causes of crisis and problems between couples.⁷ Sexual problem has various effects on the life of people with sexual problems and influences interpersonal relationships and marital life.⁸ The etiology of sexual problems could vary widely and is normally caused by the interaction of biological, psychological and social factors.

The prevalence of sexual problems has increased in recent years. Stant and colleagues have reported that 30 to 50% of couples suffer from sexual problems.⁷ The prevalence of sexual problems in Tehran's general population in women and men is 31.5% and 18.8%, respectively.⁹

Attention to sexual problems is an essential component of health care standards. Discovering and solving sexual problems, identifying the concerns and helping the couples improve the quality of marital relationships can have a significant impact on increasing the sexual satisfaction and preventing family disputes and their consequences.¹⁰ On the other hand, lack of attention to emotional disorders of infertile couples such as marital dissatisfaction and decreased sexual desires could cause a vicious cycle which reduces the possibility of treating infertility.⁴ Infertility can be a result of sexual problems, as much as having a good sexual relationship may increase the possibility of fertility.¹¹ Different researchers have different opinions about the impact of infertility on the couple's relationship. Gulec et al., in their study to assess the impact of infertility on sexual problems of infertile couples have reported no significant difference between fertile and infertile couples in sexual function.¹² Pakpour in a study which was performed in 12 Infertility Clinics of 5 regions in Iran, reported more sexual problems in infertile women than fertile women.¹³ The results of various studies have showed different rates of sexual problems as well as the most common type of sexual problems. In the study of Tayebi et al., the most common sexual problem in infertile women was anorgasmia,¹⁴ while in the study of Khadem which was conducted on 100 infertile women,

only 7% of women were reported to have no sexual problems and the most common sexual problem was found to be arousal,¹⁵ and the study of Bahrami et al., which was conducted on 250 infertile women, found that 64% of women suffered from sexual problems.¹⁰

Gulec et al., and Besharat and Mirzamani reported that infertile men had more sexual problems compared to fertile women,^{12,16} while some studies have reported that women are more affected by negative psychological effects of infertility than men.¹⁷⁻²⁰ With regard to the importance of sexual issues in infertile couples and the fundamental role of being reproductive and childbearing in Iranian families and its cultural and social dimensions and the presence of conflicting researches on the impact of infertility on sexual problems, especially those prevalent sexual problems, also since infertility affects the whole family as a unit, but for various reasons, most studies have been performed on infertile women, therefore, this study was conducted on infertile couples (husband and wife) comparing them with fertile couples and contrasting the sexual problems in fertile and infertile couples.

Materials and methods

This cross-sectional study was performed on 440 cases, including 110 infertile couples (n=220) referred to Montaserieh infertility center and 110 fertile couples (n=220) referred to the selected health centers of Mashhad in 2013. To determine the sample size, as there were no similar studies to compare our results to, we used the results of the pilot study on 60 patients in the two groups of fertile and infertile couples and the formula of comparison of means with confidence coefficient of 95% and test power of 80%. The calculations of 9 subscales, including infrequency, non-communication, dissatisfaction, avoidance, non-sensuality, veganism's, anorgasmia and premature ejaculation and the total score were all conducted separately. On the basis of the total score, there were 175 cases calculated in each group. The highest amount

calculated was related to the subscale of non-communication, with 198 cases estimated in each group.

To have a big enough sample size, 220 cases in each group and a total of 440 cases were studied. The sampling of fertile couples was performed as a class clustering method. Thus, at first, out of the five health centers in Mashhad, one health center was randomly selected and in each selected center, in proportion to the population size and mean number of daily visits, 10 days of month was randomly selected and the eligible clients in those days were selected as the study's samples. As for the infertile couples, the sampling was performed on the basis of availability in Montaserieh Infertility Center, a public center which people from all classes of society referred to.

The inclusion criteria for both groups included being Iranian, 18-45 years old, literate in reading and writing, non-pregnant, and living with the husband as the only sexual partner of the husband. The inclusion criteria for the fertile couples included having at least one alive and healthy child and not being in postpartum period. The inclusion criteria for infertile couples included no pregnancy after one year of regular unprotected intercourse, primary infertility and confirmation of infertility by an infertility gynecologist.

The exclusion criteria included the couples' addiction to drugs and alcohol, using drugs affecting sexual function, having gone through stressful events during the past one month, suffering from a specific medical disease and psychological disorder; if the couples completed the questionnaires together, they were also excluded from the study.

To ensure the privacy of the participants, each couple was shown to a quiet and peaceful place in the foyer of the Montaserieh center or an empty room in care centers and the objectives and process of the research was explained to them. Having obtained permission from the ethics committee, the researcher attended the health centers from 8 to 12 in the morning, trying to select the qualified individuals from among the fertile

couples who had referred to the selected health centers in Mashhad to receive services (immunizations, family planning, etc.). The researcher was also personally present from 8 to 12 in the infertility center, trying to locate from among the infertile couples who had referred to Mashhad Montaserieh Research and Clinical Center for diagnosis, treatment or counseling the ones who met the inclusion criteria and were willing to participate in the study.

The study subjects were assured that their information would be confidential and available to them if needed. Then, the demographic questionnaire was completed through an interview. After the necessary information was provided on how to complete the questionnaire, it was completed by partners individually and simultaneously. In the case of the men, the questionnaire was completed in the presence of a male nurse. In the end, a booklet on sexual training was awarded to the units to thank them. As for the sexual problems, they were advised to refer to a doctor or psychologist depending on the type of the sexual problem.

Data collection tools in this study included an interview form consisting of four sections: personal-family information, marital life, the questions specific to fertile couples (parity, gravidity, number of children, etc.), the questions specific to infertile couples (duration of infertility, cause of infertility, etc.), and Golombok-Rust Inventory of Sexual status; GRISS-M, GRISS-F (Golombok-Rust Inventory of Sexual status -Male and Female) which is a questionnaire with 28 questions to assess the presence and severity of sexual problems.^{21,22} The questions in five degree Likert-scale assess the type and severity of sexual problems in seven fields in two separate forms for men and women for each question with the score of 0-4. The lowest score of the subject in this scale was zero and the maximum score was 112.

The subscales of female questionnaire consisted of infrequency, non-communication, dissatisfaction, avoidance, non-sensuality, vaginismus, anorgasmia and the subscales of male questionnaire consisted of impotency,

premature ejaculation, infrequency, non-communication, dissatisfaction, avoidance and non-sensuality. The total score of each subject shows the severity and weakness of sexual problems on a nine-degree continuum, with 1 representing the lowest rate of sexual problems (score 0-20 in women and 0-12 in men) and 9 as the most frequent problems (score >68 in women and >50 in men).

The validity of the demographic and sexual problems form was confirmed by content validity and the reliability of demographic form was confirmed by the evaluators' agreement method with correlation coefficient of $r=0.83$. GRISS questionnaire was designed by Golombok and Rust and its validity was confirmed by known groups' technique and its reliability was confirmed by Cronbach's alpha 0.87 for men and 0.94 for women.²² The validity and reliability of sexual problems questionnaire in Iran was confirmed by Besharat in fertile couples with Cronbach's alpha coefficient of 0.84 for women and 0.79 for men. The validity and reliability of sexual problems questionnaire was confirmed by Besharat and Hosseinzadeh in infertile couples with a correlation coefficient of 0.89 for women and 0.92 for men.^{17,23}

The data was analyzed by SPSS version 13 (SPSS Inc., Chicago, IL) and Kolmogorov-Smirnov test for normality statistical descriptive index and Mann-Whitney test, Kruskal-Wallis and Pearson correlation analysis. On the basis of Kolmogorov-Smirnov test results, most of quantitative data in this study were not normal. The correlation coefficient of 95% and test power of 80% were considered in the conducted tests. This study was approved by the ethics committee of Mashhad University of Medical Sciences (code IR.MUMS.REC.1392.141).

Results

The results showed that both fertile and infertile groups (men and women, separately) were similar in terms of age, marriage duration, educational level, job, income, residency status, living with other people in one place, number of marriages, and body

mass index (BMI). Tables 1 and 2 show some baseline characteristics of the subjects.

In this study, 83 cases (75.5%) of fertile women and 92 (83.6%) of infertile women were housewives. Sixty-five cases (59.1%) of fertile men and 62 (56.4%) of infertile men were self-employed. The mean duration of infertility diagnosis in infertile couples was 4.85 (3.53) years and mean duration of treatment was 3.62 (3.27) years. The cause of infertility was female factor in 28.2%, male in 40%, both in 10% and unknown in 10.9% of cases. Also, 46 patients (41.8%) had used assisted reproductive techniques.

In fertile couples, the mean number of pregnancies was 1.56 (0.80) and mean number of children was 1.27 (0.46). Method of contraception was interrupted intercourse in 50 fertile couples (45.5%) and condoms in 41 (37.3%).

The mean of sexual infrequency was significantly higher in fertile women than infertile women ($P=0.002$), with no significant difference found between the two groups in terms of the total score or other aspects of sexual problems. According to the nine-degree continuum, fertile and infertile women were at level 3 of sexual problems (score 26-30). The highest and lowest sexual problems in infertile women was "no relation and avoidance", respectively, and in fertile women it was "infrequency and lustiness, respectively" (Table 3).

Mann-Whitney test results showed that both fertile and infertile men were significantly different in terms of total score of sexual problems ($P=0.005$), no relation ($P=0.001$), impotency ($P=0.01$) and premature ejaculation ($P<0.0001$), while there was no significant difference between the two groups in terms of other aspects of sexual problems. According to the nine-degree continuum, the fertile men were at level 4 of sexual problems (score 21-24) with the infertile ones being at level 5 of sexual problems (score 25-28). Also, according to the results of Table 4, the most frequent sexual problems in fertile and infertile men was related to premature ejaculation and the lowest was avoidance (Table 4).

The results of this study showed a significant relationship between the sexual problems of fertile women with menstrual cycle ($P=0.015$) and lactation ($P=0.023$). So that fewer sexual problems were observed in the middle of the menstrual cycle and more sexual problems during menstruation and before it, as well as during lactation. There was a significant relationship between the sexual problems of fertile ($P=0.02$) and infertile men

($P=0.01$) and their jobs, that is the sexual problems were found most frequently in the men who made a living as workers. Spearman test results also showed a significant inverse relationship between the sexual problems of infertile women with the educational level ($P=0.003$, $r= -0.276$). No significant correlations was found between the sexual problems and other demographic characteristics, fertility and marital status.

Table 1. Some demographic-social characteristics of the studied fertile and infertile couples

Variables	Infertile N (%)	Fertile N (%)	Statistical indicator*
Woman's education			$P= 0.13$, $df= 1$, $k_2= 2.26$
Reading and writing	0	0	
Primary	1(0.9)	1 (0.9)	
High school	8 (3.7)	3 (2.7)	
Diploma	54 (49.1)	42 (38.2)	
College	47 (42.7)	64 (58.2)	
Man's education			$P= 0.18$, $df= 2$, $k_2= 3.45$
Reading and writing	1(0.9)	1(0.9)	
Primary	8 (3.7)	11(10.0)	
High school	25 (22.7)	22 (20.0)	
Diploma	40 (36.4)	39 (35.5)	
College	36 (32.7)	37 (33.6)	
Residency status			$P= 0.19$, $df= 4$, $k_2= 5.11$
Rental	46 (41.8)	58(52.7)	
Personal	42 (38.2)	38 (34.5)	
House of man's parents	17 (15.5)	13(11.8)	
House of woman's parents	1 (0.9)	1(0.9)	
etc	4 (3.6)	0	
Income level			$P= 0.18$, $df= 2$, $K_2= 3.34$
Less than living expenses	17 (15.5)	14 (12.7)	
enough for living expenses	90 (82.0)	87 (79.1)	
More than living expenses	3 (2.7)	9 (8.2)	
Woman occupation			$P= 0.13$, $df= 1$, $k_2= 2.26$
housewife	92 (83.6)	83 (75.5)	
Employed	18 (16.4)	22 (20.0)	
Student	0	5 (4.5)	
Man occupation			$P= 0.11$, $df= 1$, $k_2= 3.93$
Unemployed	2 (1.8)	0	
Worker	12 (10.9)	7 (6.4)	
Employee	34 (31.0)	38 (34.5)	
Self-employment	62 (56.4)	65 (59.1)	
Total	110 (100.0)	110 (100.0)	

* Chi square- test.

Table 2. Some demographic-marital characteristics of fertile and infertile couples

Variables	Infertile Mean (SD)	Fertile Mean (SD)	Statistical indicator*
Woman's age (year)	29.2 (4.9)	28.4 (3.9)	P=0.25, Z=-1.14
Man's age (year)	32.5 (5.1)	32 (4.8)	P=0.54, Z=-0.56
Woman's BMI*	25.2 (4.7)	24.3 (3.9)	P=0.14, Z=-1.48
Man's BMI*	26.3 (10.6)	25.9 (4.5)	P=0.51, Z=-0.67
Duration of marriage (year)	6.9 (3.83)	6.4 (3.9)	P=0.21, Z=-1.25

*Mann-Whitney-test, ** kg/m²**Table3.** Median of sexual problems score in fertile and infertile women as dimensions

Sexual problems	Infertile women Median (IQR) ‡	Fertile women Median (IQR) ‡	P-Value
Total	26(18,37)	26(17,37)	0.963
Non-communication	5(4,7)	5(3,7)	0.168
Infrequency	4(3,6)	5(4,8)	0.002
Dissatisfaction	2(1,5)	2(0,5)	0.526
Avoidance	2(0,5)	2(0,5)	0.418
Non-sensuality	2(1,5)	2(0,4)	0.153
Vaginismus	6(3,7)	6(3,8)	0.104
Anorgasmia	4(2,5)	4(1,5)	0.146

‡IQR: Inter quartile range (25,75)

Table4. Median of sexual problems in fertile and infertile men as dimensions

Sexual problems	Infertile men Median (IQR) ‡	Fertile men Median (IQR) ‡	P-Value
Total	18.5(13,27)	18.5(13,27)	0.005
Non-communication	2(1,4)	2(1,4)	0.001
Infrequency	4(2,6)	4(2,6)	0.073
Dissatisfaction	2(1,4)	2(1,4)	0.075
Avoidance	1(0,3)	1(0,3)	0.312
Non-sensuality	1.5(0,3)	1.5(0,3)	0.136
Impotency	2(1,4)	2(1,4)	0.01
Premature ejaculation	4(3,6)	4(3,6)	0.000

‡IQR: Inter quartile range (25,75)

Discussion

The results showed no significant difference between fertile and infertile women in terms of total score of sexual problems, which is consistent with the results of Nelson et al., Drosdzol et al.²⁴⁻²⁶ Furukawa et al., in their study comparing dyspareunia and sexual problems in 75 infertile women and 210 fertile women reported no significant differences between fertile and infertile women in terms of sexual problems.²⁹

However, some researchers believe that

there has to be a relationship between infertility and sexual problems of women, and that infertility is bound to be associated with reduced sexual activity.²⁷ The study of Besharat and Hosseinzadeh showed that infertile women suffer from more sexual problems than do fertile women, which is inconsistent with the present study.²³ The cause of this inconsistency may be the smaller sample size (45 fertile and 45 infertile women) or the selection of subjects from among women referring to the clinic in a hospital for treatment in their study,

which could hardly be representative of fertile women in the society at large.

The cause of no impact of infertility on infertile women's sexual problems in the present research can be explained as, in Iranian society, infertile women tend to be more vulnerable than infertile men.

This makes infertile women delay accepting their fertility and a continued hope of fertility increases the willingness of women to apply constructive compensatory mechanisms.²² In addition, cultural issues in Iranian society such as shying away from the expression of sexual problems can cause lower reports of sexual problems in women. Also, infertility causes women to think more of reproduction during sexual relations than sexual pleasure. Therefore, they report less sexual complaints and problems.¹²

This study which compared sexual problems dimensions in fertile and infertile women showed no significant differences between the two groups in terms of other aspects of women's sexual problems except sexual infrequency, so that fertile women had more sexual infrequency than infertile women ($P=0.002$), which is consistent with the study of Furukawa and Kucur et al.^{29,30}

On the other hand, the study of Oskay, Lee and Gule and colleagues showed that infertile women reported more sexual infrequency than did fertile women.^{12,27,31} It appears that during infertility treatment, infertile women were usually encouraged to have sex on regular intervals and the decision and desire to become pregnant through intercourse can be so overwhelming that it could increase the frequency of sexual intercourse.^{12,25}

The results of this research showed that infertile men had more sexual problems compared to fertile men ($P=0.005$), which is consistent with the results of Shindel's study and Monga.^{26,32} Shindel in a study that evaluated the sexual function and quality of life in 121 infertile couples

reported that sexual problems are common among infertile men.³²

In infertile men, there is probably too much psychological stress and force to have sexual relation around ovulation and this has negative impact on their sexual function and causes more sexual problems than there are with fertile men.²⁵ Also, infertility, rapidly and decisively and comprehensively, challenges the men and catches them in the crisis. Infertile men are faced with two major lacks: being incapable of fertility and losing male authority. These two lacks lead to more vulnerability and sexual problems in men.¹⁶

In this study, infertile men had higher rate of no relation ($P=0.001$), impotency (erectile dysfunction) ($P=0.01$) and premature ejaculation ($P<0.0001$), compared to fertile men, and the most sexual problems in infertile men was premature ejaculation. Lotti in a study conducted on 244 infertile men reported that the most common sexual problem in infertile men was erectile dysfunction which was directly related to depression.³³

Shindel in another study also reported that 50% of infertile men have premature ejaculation, the severity of which was inversely associated with marital satisfaction.³⁴ In infertile women also, the most frequent problem was related to no relation. The results of different studies reported different types of infertility with their own common sexual problems. Tayebi in a study on 300 infertile women in Yazd, showed that the most common sexual problems of infertile women was orgasm and then the sexual desire and dyspareunia.¹⁴

In the study of Khadem, the most common sexual problem was arousal and in the study of Oskay it was reported as a decreased sexual desire.^{15,31} This inconsistency of previous studies with the results of the present study can be due to using different tools for the evaluation of sexual problems. So that, in these tools, the dimension of non-communication of

couples I not included, which means couples being unable to speak about their sexual issues and problems.

In this study, according to nine the degree-continuum of classifying the sexual problems, fertile men were at level 4 of sexual problems and infertile men at level 5 of sexual problems, with both fertile and infertile women being at level 3 of sexual problems. Thus, men in both groups had more sexual problems than women which is consistent with the result of the study of Besharat and Mirzamani, Drozdol, and Güleç.^{12,16,25} Güleç et al., performed a study to assess the impact of infertility on sexual problems and marital adjustment in 110 infertile couples and 55 fertile couples, and found men in both groups as having more sexual problems than women.

On the other hand, Marci's study showed a decrease in sexual satisfaction in infertile women than fertile men.³⁵ It seems that the reason for inconsistent results of that study with our study may have to do with the different tools used. Also in the above study, the most common cause of infertility was considered female factor (36%) and only 15% was male factor, while in the present study, the most common cause of infertility was male factor (40%) and 28.2% was female factor, which may be the cause of greater sexual problems in infertile men than infertile women. The cause of more sexual problems in infertile men than infertile women in this study might be explained as follows, the urge to maintain and continue the current living helps the Iranian infertile women to adapt themselves more and better than men, and thus they experience fewer problems; on the contrary, the lack of this need in men coupled with their being incapable of fertility and loss of male authority impose more sexual problems on them.¹⁶

Sexual activity is separated from the purpose of reproduction and fertility with the beginning of infertility and achieving pleasure is associated with various problems such as infrequency, avoidance,

dissatisfaction, and lustiness; on the other hand, with the focus on the biological and social purposes of reproduction, its adverse psychological consequences indirectly increases sexual problems.¹⁷

One of the advantages of this study was evaluating sexual problems in both sexes and comparing the results with similar fertile groups. The limitations of this study included cultural issues such as embarrassment to speak about sexual issues which could affect the subjects' answering. Also, stress and concerns related to counseling, treatment and diagnosis of infertility in Montaserieh infertility clinic might have affected the response of infertile couples, of course, an attempt was made to relatively control for this imitation by completing the questionnaires when the subjects had the necessary mental preparation. In this study, 75% of fertile women were lactating, which can have negative effects on sexual function. So that breastfeeding can cause hypoestrogenic circumstances resulting in vaginal dryness, as well as increased prolactin and reduced testosterone leading to decreased sexual desire in breast-feeding women.²⁸

In infertile couples, sampling was performed as available in Montaserieh Infertility Center, because people from different classes of society referred to the center and this center was the only public Infertility center in Mashhad.

It is recommended that the future studies on the prevalence of sexual problems and its factors be performed so that their results could complete the results of the present study.

Conclusion

Based on the results of this study, infertile men reported more sexual problems than infertile women. There was no significant difference between fertile and infertile women in terms of sexual problems. But infertile men had more sexual problems compared to fertile men. With regard to more sexual problems in infertile men, it

seems that it is necessary to pay more attention to sexual aspects of infertility in men and designing the training programs for sexual and marital skills in infertility centers.

Acknowledgments

The respectful research grant and all personnel of the health centers of Mashhad and Montaserieh infertility center and doctor Susan Golombok and John Rust are appreciated for their sincere cooperation.

Ethical issues

None to be declared.

Conflict of interest

The authors declare no conflict of interest in this study.

References

1. Sadeghian E, Heidarian-poor A, Abed F. Comparison of psychiatric problems in infertile men and women referring to infertility clinic of Hamadan Fatemyeh Hospital. *Arak Medical University Journal* 2005; 9 (2): 31-9. (Persian)
2. Berek JS. *Berek and Novak Gynecology*. 14th ed. Philadelphia: Lippincott Wilims & Wikins; 2012.
3. Alirezaee S, Ozgoli G, Alavi Majd H. Comparison of sexual self-efficacy and sexual function in fertile and infertile women referred to health centers in Mashhad public in 2013. *Pejouhandeh* 2014; 19 (3): 131-36. (Persian)
4. Behjati Z, Akhondi MM, Kamali K, Fazli Z. Evaluation mental health of infertile couples referred to infertility center IBN Sina. *Journal of Reproduction and Infertility* 2010; 11 (4): 319-24. (Persian)
5. Etesamipour R, Banihashemian K. Comparison of sex disorders and couple abuse among fertile and infertile women. *Journal of Birjand University of Medical Sciences* 2011; 18 (1): 10 -7. (Persian)
6. Zabihi Rigcheshme M, Mirzaian B, Hasanzade R, Shahidi M. Comparison of sexual attitude among fertile and infertile couples. *Journal of Mazandaran University of Medical Sciences* 2012; 21 (1): 274-83. (Persian)
7. Fahami F, Najarian M, Kohan SH. Comparison among some effects of sexual dysfunction in female spouses of fertile and infertile couples. *Iranian Journal of Nursing and Midwifery Research* 2009; 14 (1): 25-8.
8. Azar M, Iranpour CH, Nohi S. Sexual dysfunction relationship with psychiatric disorders in women. *Iranian J of Psychiatry and Clinical Psychology* 2002; 9 (2): 22-29. (Persian)
9. Bakoyi F, Omidvar Sh, Nasiri F. prevalence of female sexual dysfunction in married women and its related factors (Babol 2006). *Journal of Babol University of Medical Sciences* 2007; 9 (4): 59-64. (Persian)
10. Bahrami N, Alizadeh S, Bahrami S. Sexual dysfunctions and associated factors in women of reproductive age. *Faculty of Nursing of Midwifery Quarterly* 2010; 21 (75): 8-13.
11. Wischmann TH. Sexual disorders in infertile couples. *J Sex Med* 2010; 7 (5): 1868-76.
12. Güleç G1, Hassa H, Yalçın EG, Yenilmez C. The effects of infertility on sexual functions and dyadic adjustment in couples that present for infertility treatment. *Turk Psikiyatri Derg* 2011; 22 (3): 166-76.
13. Pakpour AH, Yekaninejad MS, Zeidi IM, Burri A. Prevalence and risk factors of the female sexual dysfunction in a sample of infertile Iranian women. *Arch Gynecol Obstet* 2012; 286 (6): 1589-96. doi: [10.1007/s00404-012-2489-x](https://doi.org/10.1007/s00404-012-2489-x).
14. Tayebi N, Yassini Ardakani M. The prevalence of sexual dysfunctions in infertile women. *Middle East Fertility Society Journal* 2007; 12 (3): 184-7.
15. Khademi A, Alleyassin A, Amini M. Evaluation of sexual dysfunction

- prevalence in infertile couples. *Sex Medicine* 2008; 5 (6): 1402-10. doi: [10.1111/j.1743-6109.2007.00687.x](https://doi.org/10.1111/j.1743-6109.2007.00687.x)
16. Besharat MA, Mirzamani M. The relationship between attachment styles and sexual problem among infertile couple. *Journal of Iranian Psychologists* 2004; 2 (6): 101-10. (Persian)
 17. Bagshawe A, Taylor A. Counselling. *BMJ* 2003; 327 (7422): 1038-40.
 18. Khayata GM, Rizk DEE, Hasan MY, Ghazal-Aswad S, Asaad MA. Factors influencing the quality of life of infertile women in United Arab Emirates. *International Journal of Gynecology & Obstetrics* 2003; 80 (2): 183-8. doi: [10.1016/S0020-7292\(02\)00387-9](https://doi.org/10.1016/S0020-7292(02)00387-9).
 19. Breg Bj, Wilson JF. Psychiatric morbidity in infertile population: a reconceptualization. *Fertile Stril* 1990; 53 (4): 654-61
 20. Lee TY, Sun GH, Chao SC. Effect on infertility diagnosis on the distress, marital and sexual satisfaction between husbands and wives in Taiwan. *Hum Reprod* 2001; 16 (8): 1762-7.
 21. Rust J, Golombok S. The Golombok-Rust Inventory of Sexual Satisfaction (GRISS). *British Journal of Clinical Psychology* 1985; 24 (1):63-4. doi:[10.1111/j.2044-8260.1985.tb01314.x](https://doi.org/10.1111/j.2044-8260.1985.tb01314.x)
 22. Rust J, Golombok S. The GRISS: a psychometric instrument for the assessment of sexual dysfunction. *Arch Sex Behav* 1986; 15 (2): 157-65.
 23. Besharat MA, Hosseinzade R. Comparison of mental health and sexual problems fertile and infertile women. *Journal of Psychiatry and Clinical Psychology (thoughts and behavior)* 2005; 12 (2): 146-51. (Persian)
 24. Nelson CJ1, Shindel AW, Naughton CK, Ohebshalom M, Mulhall JP. Prevalence and predictors of sexual problems, relationship stress, and depression in female partners of infertile couples. *J Sex Med* 2008; 5 (8): 1907-14. doi: [10.1111/j.1743-6109.2008.00880.x](https://doi.org/10.1111/j.1743-6109.2008.00880.x).
 25. Drosdzol A, Skrzypulec V. Quality of life and sexual functioning of Polish infertile couples. *Eur J Contracept Reprod Health Care* 2008; 13 (3): 271-81. doi: [10.1080/13625180802049187](https://doi.org/10.1080/13625180802049187)
 26. Monga M, Alexandrescu B, Katz SE, Stein M, Ganiats T. Impact of infertility on quality of life, marital adjustment, and sexual function. *Urology* 2004; 63 (1): 126-30.
 27. Millheiser LS, Helmer AE, Quintero RB, Westphal LM, Milki AA, Lathi RB, et al. Is infertility a risk factor for female sexual dysfunction? *Fertil Steril* 2010; 94 (6): 2022-5. doi: [10.1016/j.fertnstert.2010.01.037](https://doi.org/10.1016/j.fertnstert.2010.01.037)
 28. Sattarzadeh N, Zamanzadeh V, Zenozy A. Assessment of Women's Sexual Experiences after Child Birth: A Phenomenological Study. *Medical Journal of Tabriz University of Medical Sciences and Health Services* 2007; 29 (3): 59-66. (Persian)
 29. Furukawa AP, Patton P, Amato P, Li H, Leclair CM. Dyspareunia and sexual dysfunction in women seeking fertility treatment. *Fertility and Sterility* 2012; 98 (6): 1544-8. doi: [10.1016/j.fertnstert.2012.08.011](https://doi.org/10.1016/j.fertnstert.2012.08.011)
 30. Kucur Suna K, Ilay G, Aysenur A, Kerem Han G, Eda Ulku U, Pasa U. Effects of infertility etiology and depression on female sexual function. *J Sex Marital Ther* 2016; 42 (1): 27-35
 31. Oskay UY, Beji KN, Serdaroglu H. The issue of infertility and sexual function in Turkish women. *Sexuality and Disability* 2010; 28 (2): 71-9. doi:[10.1007/s11195-010-9158-4](https://doi.org/10.1007/s11195-010-9158-4)
 32. Shindel AW, Nelson CJ, Naughton CK, Ohebshalom M, Mulhall JP. Sexual function and quality of life in the male partner of infertile couples: prevalence and correlates of dysfunction. *J Urol* 2008; 179 (3): 1056-9. doi: [10.1016/j.juro.2007.10.069](https://doi.org/10.1016/j.juro.2007.10.069).
 33. Lotti F, Corona G, Rastrelli G, Forti G, Jannini EA, Maggi M. Clinical correlates

- of erectile dysfunction and premature ejaculation in men with couple infertility. *J Sex Med* 2012; 9 (10): 2698-707. doi: [10.1111/j.1743-6109.2012.02872.x](https://doi.org/10.1111/j.1743-6109.2012.02872.x)
34. Shindel AW, Nelson CJ, Naughton CK, Mulhall JP. Premature ejaculation in infertile couples: prevalence and correlates. *J Sex Med* 2008; 5 (2): 485-91.
35. Marci R, Graziano A, Piva I, Lo Monte G, Soave I, Giugliano E. Procreative sex in infertile couples: the decay of pleasure. *Health Qual Life Outcomes* 2012; 23 (10): 140.