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# Association between infertility factors and perceived relationship quality in infertile couples

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## Abstract:

**BACKGROUND:** Infertility is a crisis in the life of couples that could affect their relationships. The present study was conducted to evaluate the relation between infertility factors and the quality of marital relationship in infertile couples who were referred to the Fertility and Infertility Center of Isfahan.

**MATERIALS AND METHODS:** The present study was conducted cross-sectional on 131 infertile couples who were referred to the Fertility and Infertility Center of Isfahan and had the inclusion criteria and were selected using convenient sampling method. Data gathering tool for the present study was Perceived Relationship Quality Components (PRQC). All the data were analyzed using SPSS software version 21. Analysis was conducted using descriptive and inferential statistics (independent *t*-test and one-way analysis of variance). The level of significance was set at 0.05 for all the statistical tests.

**RESULTS:** The mean score of PRQC for women and men was 84.05 and 88.46, respectively, and their difference was statistically significant. There was a significant relation between the score of PRQC in women ( $P = 0.028$ ) and men ( $P = 0.030$ ) with the infertility factor. Results showed that the mean score of perceived quality of different aspects of the marital relationship was significantly lower when the infertility factor was female ( $P < 0.05$ ). In women aspects of "satisfaction" ( $P = 0.024$ ) and "commitment" ( $P = 0.011$ ) and in men aspect of "love" ( $P = 0.004$ ) from the perceived aspects of relationship had a significant relation with the infertility factor.

**CONCLUSIONS:** Perceived quality of different aspects of marital relationship had a significant relation with infertility factor in infertile couples. Results of the present study showed that when infertility had female causes, the quality of relationship was more affected. Therefore, in infertility counseling, simultaneous counseling for both spouses with emphasis on women, along with treatments, should be considered.

## Keywords:

Infertility, infertility factors, marital relationship, Perceived Relationship Quality Components

## Background

Infertility is defined as inability to have a child after 1 year of having constant sexual activity without using any kind of contraceptive methods, which is considered a disease of the reproductive system.<sup>[1,2]</sup> This issue as a treatable, and sometimes untreatable problem, had caused the couples to face various consequences.<sup>[3]</sup> Infertility has involved about 10%–15% of

the couples.<sup>[1]</sup> The prevalence of infertility in Iran has been reported as 10.9%<sup>[4]</sup> and 13.2%<sup>[3]</sup> which is close to the global statistics. Causes of infertility could be divided into four groups of male, female, unknown, and both male and female factors.<sup>[5]</sup> Infertility is one of the most important crises of the lifetime that could cause mental problems for the affected individuals.<sup>[6]</sup> When couples would not be able to achieve the fruit of their marital life, their relationship would be affected. Emotions that would

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occur following infertility would mostly affect mutual understanding between the couples.<sup>[7]</sup> Infertility in the Iranian society, due to its special cultural structure, would find deeper aspects and gradually the curiosity of others would be drawn toward the couple. Pressure from others and sometimes their interference in couple's life would affect their relationship.<sup>[8]</sup> Infertility is considered a psychological trauma for the couples and would make them encounter sexual issues, problems in marital relationship, depression, feeling guilty, disappointment, weakness, and exhaustion.<sup>[9]</sup>

Meanwhile, infertility crisis would lead to more intimacy and improvement of relationship in the couples.<sup>[10]</sup> One study showed that infertility had no negative effect on marital relationship and quality of life in infertile couples.<sup>[11]</sup> Not only infertility and its treatment had no negative effect on sexual functioning and sexual satisfaction of couples, but also sharing the stress that has been caused by infertility would bring the spouses closer to each other and improve their relationship.<sup>[12]</sup> Ignoring the emotional disorders of infertile couples and infertility-related problems, such as problems in interpersonal relationships, marital dissatisfaction, and decreased sexual desires, would lead to a defected cycle that could cause failure in infertility treatment.<sup>[13]</sup> Considering the controversies in the studies about the effect of underlying factors such as infertility factors on occurrence of disturbance in couple's relationship, the present study was conducted to evaluate the relation between infertility factors and marital relationships in infertile couples who were referred to the Fertility and Infertility Center.

## Materials and Methods

### Study design and setting

The present study was conducted cross-sectional and regarding a confidence interval of 95% and  $d = 2.5\%$ ; 131 infertile couples who were referred to Isfahan Fertility and Infertility center, Isfahan, IR; and had the inclusion criteria were enrolled in the study using convenient sampling method.

### Study participants and sampling

The inclusion criteria were having primary infertility, couple's awareness of the cause of infertility, being in their first marriage, and not having any diagnosed psychological diseases by the psychiatrist. Data gathering tool for the present study was Perceived Relationship Quality Components (PRQC) that was filled by the researcher in a calm and quiet space by interviewing the participants after gaining their informed consent.

### Data collection tool and technique

PRQC contains 18 questions that have been developed by Fletcher *et al.* in 2000. This questionnaire contains aspects

of satisfaction, commitment, intimacy, trust, passion, and love, and 3 questions have been assigned to each aspect. Making this questionnaire, Fletcher *et al.* tried to increase face validity and internal reliability of each aspect and meanwhile avoid overlapping questions. For this purpose, for each aspect, they chose questions that were similar in their face and meaning. Scoring of the questions has been made based on the 7-point Likert scale from 1 = never to 7 = completely. The minimum score was 18 and the maximum score was 126 that would be achieved by summing up the scores of the questions.<sup>[14]</sup> In the present study, the score of "perceived quality from aspects of marital relationship" was considered out of 100 where lower scores indicated lower quality and higher scores indicated higher relationship quality in different aspects. This status is true for all the aspects of marital relationship, therefore, scales of marital relationship quality would measure conceptual approaches or evaluations of the relationship. Nilforoushan *et al.* approved the reliability and validity of this questionnaire with a Cronbach's  $\alpha$  of 0.85.<sup>[15]</sup>

### Statistical analysis

Data analysis was performed using SPSS software version 21 (SPSS Inc., Chicago, Illinois, USA). Quantitative variables were reported as mean and standard deviation (SD), and qualitative variables were reported as percent and number. Descriptive statistics (mean, SD, minimum, and maximum) and inferential statistics (independent *t*-test and one-way analysis of variance [ANOVA]) were used for data analysis. For all the statistical analysis, level of significance was set at 0.05.

### Ethical considerations

This study was approved by the Ethics Committee of the Isfahan University of Medical Sciences (ethics code: IR.MUI.REC: 1392.3.539). All the participants were aware of the details of the study and were free to withdraw from the study at any desired time. A written informed consent form was obtained from all the participating couples in the study.

## Results

The mean age of the participated women and men in the study was 27.5 and 31.9 years, respectively. 90.8% of men and 26.9% of women were employed. The highest educational level in men and women was diploma. The mean duration of infertility was 4.5 years. The most prevalent infertility factors were male (31.3%), unknown (26%), female (25.2%), and both male and female factors (17.5%), respectively. The mean score of "perceived quality of marital relationship" was 84.05 in women and 88.46 in men, out of 100. The difference between men and women was statistically significant ( $P = 0.01$ ,  $t = 2.56$ ) [Table 1].

The relation between infertility factor and the perceived quality of marital relationship is presented in Table 2. one-way ANOVA showed a significant relation between infertility factor and the score of “perceived quality of marital relationship” in women ( $P = 0.028$ ,  $f = 3.135$ ). *Post hoc* (LSD) showed that the difference between female infertility factor and male factor ( $P = 0.034$ ), unknown factor ( $P = 0.007$ ), and both male and female factors ( $P = 0.022$ ) was significant, meaning that the mean score of perceived quality of marital relationship was significantly lower in the group with female infertility factor in comparison with other groups ( $77.76 \pm 17.78$ ). Regarding the aspects of perceived relationship in women, “satisfaction” ( $P = 0.024$ ,  $f = 3.247$ ) and “commitment” ( $P = 0.011$ ,  $f = 3.883$ ) aspects had a significant relation with infertility factor in a way that when the infertility factor was female, the score of these two aspects was lower than the groups with other infertility factors [Table 2].

Table 3 shows a significant relation between the score of “perceived quality of marital relationship” and

infertility factor in men ( $P = 0.030$ ,  $f = 3.0.82$ ). *Post hoc* LSD showed that the difference between female infertility factor and male ( $P = 0.011$ ) and both male and female factors ( $P = 0.009$ ) was statistically significant, meaning that the mean score of perceived quality of aspects of relationship was significantly lower in groups with female infertility factor than other groups ( $83.16 \pm 16.38$ ). Regarding the aspects of perceived relationship in men, only the aspect of “love” had a significant relation with infertility factor ( $P = 0.004$ ,  $f = 4.674$ ), meaning that when the infertility factor was female, the score of “love” aspect was lower than other infertility factors.

## Discussion

Results of the present study showed that the perceived quality of aspects of relationship in infertile couples had a significant relation with infertility factors. When the infertility is female, relationship quality would be more affected. In women, aspects of “satisfaction” and “commitment” had a significant relation with infertility factor in a way that when infertility factor was female, the score of these two aspects was lower than other infertility factors. In men, only the aspect of “love” had a significant relation with infertility factor, meaning that when the infertility factor was female, the score of this aspect was lower than other infertility factors.

Various studies have been conducted regarding the quality of relationship in infertile couples using standard

**Table 1: The mean score of the “perceived relationship quality” in infertile couples**

Sex	Perceived relationship quality score			T	P
	Mean±SD	Minimum	Maximum*		
Female	84.05±14.89	24	100	2.56	0.01
Male	88.46±12.76	31	100		

\*Total score was considered out of one hundred. SD=Standard deviation

**Table 2: Comparing the aspects of the “perceived quality of relationship” score and infertility factor in infertile women**

Components of perceived relationship quality	Infertility factor (mean±SD)				F	P
	Female factor (n=33)	Male factor (n=41)	Unknown (n=34)	Both male and female factors (n=23)		
Satisfaction	69.77±27.29	77.83±25.87	86.5±16.81	84.45±19	3.247	0.024
Commitment	80.71±22.77	91.12±11.691	88.99±16.48	93.38±7.035	3.883	0.011
Intimacy	80.31±21.95	83.5±22.59	90.13±12.81	84.93±16.77	1.354	0.260
Trust	87.69±19.21	91.76±12.25	94.35±9.38	89.52±15.08	1.246	0.296
Passion	59.94±28.19	70.43±26.98	72.15±23.69	76.73±24.11	2.247	0.086
Love	87.21±18.63	93.83±13.69	94.54±11.43	91.45±14.47	1.705	0.169
Total	77.76±17.78	84.85±14.75	87.76±10.76	86.83±12.61	3.135	0.028

SD=Standard deviation

**Table 3: Comparing the dimensions of the “perceived quality of relationship” score and infertility factor in infertile men**

Components of perceived relationship quality	Infertility factor (mean±SD)				F	P
	Female factor (n=33)	Male factor (n=41)	Unknown (n=34)	Both male and female factor (n=23)		
Satisfaction	77.7±23.54	89.35±17.45	84.14±21.3	88.07±16.92	2.279	0.083
Commitment	86.11±18.56	92.54±12.71	86.89±18.08	92.33±8.13	1.624	0.187
Intimacy	82.72±17.11	89.08±13.71	88.62±17.92	90.97±10.81	1.614	0.190
Trust	90.31±15.83	95.95±8.93	92.09±17.02	96.28±5.45	1.588	0.196
Passion	74.84±27.19	81.25±21.84	82.38±18	85.9±21.48	1.229	0.302
Love	87.62±21.97	95.87±8.52	96.95±7.18	98.93±3.6	4.674	0.004
Total	83.16±16.38	90.72±10.84	88.47±12.81	92.16±7.18	3.082	0.030

SD=Standard deviation

or researcher-made questionnaires, with various results. PROQ questionnaire was used in the present study for the first time for infertile couples which would achieve the perception of infertile couples of relationship quality. Developing this questionnaire, Fletcher *et al.* showed that the scores of perceived relationship quality had a positive skewness and believed that the reason was individual's willingness to give a positive report about the status of their relationships.<sup>[14]</sup> This could be the reason for higher average scores of relationship quality in the present study in comparison to other studies. Cserepes *et al.*, using the Dyadic Adjustment Scale, showed high levels of marital compatibility in infertile couples, and believed that the strong relationship could be a reason for decreased infertility stress.<sup>[16]</sup> After diagnosis of infertility, intimacy and marital satisfaction were increased in the couples.<sup>[17]</sup> Hence, the process of infertility treatment could not be a threat for their marital compatibility and sharing the caused stress could even strengthen couple's marital relationship.<sup>[18]</sup> In a study, the mean score of marital satisfaction had a significant difference between fertile and infertile women in a way that infertile women had higher marital satisfaction than fertile women.<sup>[19]</sup> Undoubtedly, having children has an important role in the happiness of the couples.<sup>[20]</sup> However, when couples are deprived from having the biological product of their marital life, not only the concept of life but also their interpersonal relationship would be disturbed.<sup>[7]</sup> Therefore, infertility consequences would deeply affect the lives of infertile couples, personally and socially.<sup>[21]</sup> Infertility problem could decline couple's commitment to their relationship and have a negative effect on the quality of their relationship.<sup>[22]</sup> However, Schmidt *et al.* believed that infertility could be a factor for improving marital relationship because of talking and communicating to find a solution for infertility problem which would bring the spouses closer to each other.<sup>[23]</sup> On the other hand, fertility is considered the symbol of women's self-actualization and identity, and generally, women are more affected by stressful factors and their marital satisfaction would be more influenced; this could be the reason for lower scores of perceived quality of marital relation in women compared to men.

In the studied couples, infertility factors had a significant relation with the perceived quality of marital relationship. In women, the highest and lowest scores, respectively, belonged to unknown factor and female factor, and when the infertility factor was female, perceived quality of marital relationship was decreased in women. Some studies have shown that even when the infertility factor was male, women were the ones who mostly bore the burden of infertility.<sup>[24,25]</sup> Studies show that following the diagnosis of female infertility, women would experience more anxiety, lower self-esteem, higher perception of nonphysical abuse, and less marital and

sexual satisfaction in comparison to men.<sup>[10,26]</sup> Infertility would question the personal and social competence of women, which is the value of being a mother and wife and would disrupt the meaning of marriage and continuity of marital life.<sup>[27]</sup> In these situations, women take most of the infertility's responsibility. On the other hand, even when the infertility factor is male, most of the men would hold their wives' responsible for infertility.<sup>[28]</sup> When infertility factor was female, women had lower marital satisfaction and perceived less social support from the social media.<sup>[29]</sup> Fear is considered a stressful factor in infertile women that would affect the quality of marital relationship.<sup>[30]</sup> In other words, having children is of significant importance for women, and even when the infertility factor is male, women show more effort for treatment of infertility.<sup>[31]</sup>

One of the perceived aspects of marital relationship is commitment, which is defined as the strongest and stable predictive factor for quality and stability of marital relationship.<sup>[32]</sup> Commitment in spouses has a positive relation with marital stability and quality and also expressing love, compatibility, and decreasing marital conflicts.<sup>[33]</sup> Results of the present study showed that aspects of "commitment" and "satisfaction" had a significant relation with infertility factor in a way that when the infertility factor was female, scores of these two aspects were lower than other infertility factors. Tajik *et al.* also revealed that infertility issue had a negative effect on marital commitment and quality and would challenge the spouses' marital life.<sup>[34]</sup>

Regarding the relation between infertility factor and perceived quality of marital relationship in men, the minimum and maximum mean scores belonged to female factor and both male and female factors, respectively, meaning that when the infertility factor was female, the quality of aspects of marital relationship would decrease for men. Tao believed that infertile men had higher satisfaction than their wives and infertility with male factor could not have a negative effect on the quality of marital relationship.<sup>[35]</sup> Generally, fertility-related issues are still considered female, and even when the infertility has male factor, women's responsibility becomes heavier,<sup>[36]</sup> and infertility could have more psychological effect on women than men.<sup>[24]</sup>

In men, only the aspect of "love" had a significant relation with infertility factor in a way that when the infertility factor was female, the score of this aspect was lower than other infertility factors. In couples with infertility problem, loving would turn into an executive, scheduled, and timed action mostly with necessary abstinence periods, rather than a pleasing action along with emotional relationship. In fact, couples who are using reproductive assisted techniques would usually experience feelings of

stress, isolation, fear, suppression, and even anger instead of love, connection, and emotional relationship which are associated with making love. Most of the psychological studies have been conducted on the variables of marital satisfaction, stress, and anxiety and just a few studies have evaluated the aspect of love. In the study by Khosravi and Tavassoli, the infertile group has reported higher scores for the aspect of love in comparison to the fertile group and the infertile individuals mostly had associable love.<sup>[37]</sup> However, results of the present study revealed high quality of marital relationship in infertile men; in other words, infertility with male factor had no negative effect on the quality of marital relationship and infertile men had high marital satisfaction with their wives. In fact, men and women show different mental reactions to infertility. Gender is an important factor in evaluating the differences in infertility stress and sexual satisfaction between men and women. Infertility factor could be an important factor for the compatibility of the infertile couple.

The present study was limited to the infertile couples who were seeking infertility treatment. Therefore, infertile couples who had not tried to receive treatment were not investigated. However, the present study had revealed a clear understanding of the perceived quality of marital relationship in infertile couples and could be a positive step for infertility-related studies. Furthermore, the present study could be a reference for developing psychological and counseling intervention protocols for these couples.

## Conclusions

Results of the present study showed that the perceived quality of the aspects of marital relationship in infertile couples had a significant relation with the infertility factor. In cases of female infertility factor, the quality of marital relationship would be more affected. Therefore, along with medicinal treatment, in infertility counseling, both the spouses should be considered simultaneously with emphasis on women, and infertility treatment should be performed in association with psychological counseling and psychotherapy.

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## Conflicts of interest

There are no conflicts of interest.

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