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Comparison of the Quality of Life in Fertile and Infertile Women Admitted to Shiraz's Healthcare Centers During 2017-2018

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Abstract

Background: Infertility, as an individual and social problem, affects couples' quality of life and family functioning, job relationships, sexual skills, and marital satisfaction.
Objectives: The present study aimed to investigate the relationship between infertility and the quality of life in fertile and infertile women.
Methods: In this cross-sectional study with a convenience purposive sampling method, 220 eligible women (110 fertile and 110 infertile) admitted to Shiraz's healthcare centers were selected. Data collection was conducted using a demographic information questionnaire and the World Health Organization Quality of Life questionnaire.
Results: In this study, a total of 220 fertile and infertile women were studied. Our findings showed that the quality of life WHOQOL-BREF score was higher in the fertile group (72.21 ± 12.74) than in the infertile group (69.86 ± 12.58), although not significant. However, the physical area of the quality of life was significantly higher in the fertile group (17.55 ± 3.62) than in the infertile group (16.57 ± 3.55) ($P = 0.04$). There was no statistically significant difference between the groups concerning other quality of life areas ($P > 0.05$).
Conclusions: The results showed that infertility could reduce the quality of life of infertile women in all areas, and this reduction was significant in the physical area. It appears that infertility diagnostic and therapeutic interventions can affect the quality of life of women in the physical area. Further research is recommended in this field.

Keywords: Infertility, Women, Quality of Life, Fertility, Comparison

1. Background

Infertility is defined as the inability to become pregnant after one year of regular and unprotected sexual intercourse (1). Infertile couples around the world make up 10 to 15 percent of married couples (2). Due to the increasing number of women who delay their pregnancy, this problem is likely to increase in the near future (3). Having children is one of the most significant goals in married life (4). Thus, infertility can be associated with countless psychological and social problems such as anxiety, depression, low self-esteem, feelings of shame and guilt, stigma, lack of communication with others, social isolation, and sexual dysfunction (5, 6). Infertility, as an individual and social problem, affects couples' quality of life and family functioning, job relationships, sexual skills, and marital satisfaction (3, 7). Thus, infertility and a negative attitude toward it put a lot of pressure on women, leading to threats to the security of family ties, various forms of domestic violence, shame, deprivation, and separation (8, 9). Quality of life is defined as people's perception of their position in the form of their culture and value system and in relation to their goals, expectations, standards, and concerns. The quality of life includes the perceived psychological, physical, social, and environmental functioning and health (10). The quality of life related to health (QoL) is now considered a key tool for measuring infertility in infertile couples. Due to various adverse physical, psychological, and social effects of infertility, the evaluation of QoL components in these couples may lead to the identification of various aspects of lifestyle in this population and help them plan a better treatment (11, 12).

The quality of life includes all aspects of life satisfaction, self-concept, and health factors, as well as economic,

social, and cultural affairs. Infertility is one of the factors that can affect all quality of life areas (13). Infertile women experience lower quality of life than infertile men (14-16). Women are particularly more affected by infertility in societies where there is prejudice against women. Thus, attitudes toward women's infertility are often influenced by ethnic and cultural groups (17). In the Iranian culture, infertility is associated with many psychological and social challenges, especially for women, and affects all quality of life areas of Iranian couples (6, 18). Numerous studies have shown a negative effect of infertility on infertile women's quality of life, but different studies have reported conflicting results. For example, in a study conducted by Bakhtiari et al. (2019) in Lorestan, unlike Anat et al.'s study that showed higher quality of life in infertile women, scores in various quality of life aspects were significantly lower in infertile couples than in the fertile population (17, 19). This study aimed to investigate the quality of life in fertile and infertile women admitted to Shiraz's healthcare centers. Obtaining information about the quality of life of these women and examining their physical, psychological, economic, and social problems will be useful in assessing their healthcare needs.

2. Objectives

The present study was conducted to investigate the relationship between infertility and the quality of life in fertile and infertile women.

3. Methods

3.1. Study Design and Sampling

This cross-sectional study (2017-2018) was conducted using convenience purposive sampling. The inclusion criteria were the age group of 18 to 48 years, residents of Shiraz, and the ability to read and write. The exclusion criteria in both groups included dissatisfaction and unwillingness to participate in the study, physical problems (spinal cord injury, amputation, paralysis, and deformity of the limb), mental illness (diseases under supervision or treatment by a psychiatrist or psychologist), medical diseases (cardiovascular diseases, lung disease, hyperthyroidism and hypothyroidism, epilepsy, and diabetes), the experience of disastrous or adventurous events in the last three months (death or acute illness of close relatives and major changes in lifestyle), and addiction to alcohol or drugs.

First, the study's purposes and the inclusion criteria were explained to individuals present at the centers, and then, volunteers were registered. The questionnaires were distributed among the volunteers, and while receiving a briefing on how to respond to the questionnaires, they were assured that their information was completely confidential, without the need to mention their names and addresses, and that the questionnaire was only for the study purposes. Data collection was performed using a demographic information questionnaire and the World Health Organization Quality of Life (WHOQOL-BREF) questionnaire. The study was conducted at healthcare centers affiliated to the Shiraz University of Medical Sciences, Iran, using random sampling between summer 2017 and winter 2018. The researcher performed infertile group sampling at the Research and Infertility Center of the Hazrat Zeinab Hospital, and Sampling of the fertile group was performed in three healthcare centers, including Motahhari clinic, Imam Reza clinic, and Hazrat Abbas health center. The reason for choosing these centers was that people were admitted there with different economic and social levels, making it possible to generalize results. The study population included women with infertility based on the infertility criteria who were unable to conceive after one year of unprotected sexual intercourse. The population also included fertile women who were not pregnant, had at least one six-month-old child, and used one of the contraception methods. The main measurable consequence included a comparison of demographic characteristics and the quality of life between the two groups.

3.2. Study Size

The sample size of 110 individuals in each group and a total of 220 individuals were estimated.

3.3. Research Tools

Data collection tools included a researcher-made handwritten demographic information questionnaire and WHOQOL-BREF. The demographic information questionnaire included information about the age, education level, employment status, and income level of the participants and their spouses, family type (nuclear or extensive), second-degree kinship relationship with the spouse, and type (compulsory or optional) and duration of marriage. WHOQOL-BREF includes 26 items in the four areas of physical health (items 2, 3, 4, 10, 15, and 16), psychological health (items 1, 5, 6, 7, 11, 17, 19, and 26), social relationships (items 20, 21, and 22), and social environment (items 8, 9, 12, 13, 14, 18, 23, 24, and 25).

In the questions 1-2-5-6-7-8-9-10-11-12-13-14-15-16-17-18-18-19-20-21-22-23-24-25, in items 3, 4 and 26 the scoring method is different from other items. questionnaire that has five options: very high, good, average, low, and not at all.

In the analysis of the questionnaire in cases (1-2-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21-22-23-23 24-25) Very high

answer grade 4, good answer grade 3, medium answer grade 2, low answer grade 1 and zero answer at all. In items 3, 4, and 26, scoring the answers is the reverse of the previous item, and for items 3-4-26, the very high answer is given a zero score, the good answer is given a score of 1, the average answer is given a score of 2, the low answer is given a score of 3, and the not at all answer is given a score of 4. The total quality of life score is obtained by summing the scores of all dimensions.

Scores of 0-20 show very low quality of life, scores of 20-40 show low quality of life, scores of 40-60 show medium quality of life, scores of 60-80 show the high quality of life, and scores of 80-104 show very high quality of life.

The validity and reliability of the tool for the Iranian population were evaluated in Yousefi et al.'s study. In their study(Yousefi et al.study), Cronbach's alpha coefficient for 4 areas of physical health, psychological health, social relations, and environmental health were reported to be 0.81, 0.78, 0.82, and 0.80, respectively, which are satisfactory (20). The class's internal correlation for each quality of life area and the overall quality of life was more than 0.7. Some scores were obtained by adding the scores of items in each area.

3.4. Statistical Methods

Data analysis was performed using an independent t-test and a chi-square test. The t-test was used to compare the mean of the parameters in each of the two groups, and the Chi-square test was used to compare the variables and qualitative characteristics between the two groups. SPSS statistical software, version 22, was used to analyze the data.

3.5. Ethical Consideration

After obtaining the approval of the Ethics Committee of the Shiraz University of Medical Sciences (the grant code 16686), a letter of introduction was submitted to the head of the research units to enter the research environment. The study's purposes and the inclusion criteria were explained to the participants. Moreover, the participants were assured that their information would be kept completely confidential, and that the questionnaire was only for the study purposes. They were also assured that they had the right to withdraw from the study at any time. Sampling was performed after obtaining the informed consent.

4. Results

Comparison of the demographic characteristics between the fertile and infertile women showed no statistically significant difference in terms of age (0.171), education level (P = 0.257), spouse's education (P = 0.498), employment status (P = 0.056), family type (P = 0.14), type of marriage (P = 0.494), number of sexual intercourses (P = 0.105), and kinship ratio (P > 0.99). However, there was a statistically significant difference between the two groups in terms of four variables of spouse's age (P = 0.008), income (P = 0.0001), spouse's job (P = 0.002), and duration of marriage (P = 0.001) (Table 1). The results of comparing the quality of life in the fertile and infertile women showed that scores obtained in all quality of life areas were higher in the fertile women than in the infertile ones, except for the physical area (0.04). However, no statistically significant difference was found between the two groups in terms of other quality of life areas including physical health, psychological health, social relationships, environment, and total quality of life (Table 2).

5. Discussion

The results of the present study showed that all quality of life areas were lower in the infertile women than in the fertile women, but the difference was only significant in the physical area. A study by Amiri et al. showed similar results and the quality of life in fertile and infertile women did not differ significantly. However, contrary to our study, the physical area of the quality of life was higher in infertile women (21). The difference in the results concerning the physical area could be due to the difference in the sample size. Noorani et al. obtained similar results in their study and reported no statistically significant difference between the two groups regarding other quality of life areas, including physical health, psychological health, social relationships, environment, and total quality of life (22). The lack of difference concerning the physical area of the quality of life may be due to receiving fewer diagnostic and therapeutic interventions in infertile women.

The results of Masoumi et al.'s study are in agreement with those of the present study In the physical erea of quality of life. In their study (Masoumi et al.), the mean score of the fertile group in all quality of life areas was higher in a fertile group than in the infertile group, with the difference being was statistically significant only in the physical and environmental areas and disagree with the present study, the mean score of the quality of life in the fertile group was significantly higher than the infertile group (7). However, the difference between their study and ours is that they included 250 couples, 125 fertile couples, and 125 infertile couples. The results of other studies are not in the same line with those of our study. In these studies, the quality of life was significantly lower in infertile women than in fertile women (23-25).

Table 1. Sociodemographic Data for the Fertile and Infertile Women

Characteristics	Fertile, No. (%)	Infertile, No. (%)	P Value
Wife's age			0.171
20-30	25 (22.7)	36 (32.7)	
30-40	59 (53.6)	28 (61.8)	
> 40	26 (23.6)	6 (5.5)	
Spouse's age			0.008
20-35	24 (21.1)	51 (46.4)	
35-50	76 (69.1)	59 (30.6)	
> 50	10 (9.1)	0 (0)	
Education level of women			0.25
Illiterate	1 (0.9)		
Elementary	24 (21.8)	26 (23.6)	
Middle and high school	44 (40)	31 (28.2)	
Associate degree	12 (10.9)	19 (17.3)	
Bachelor's degree and higher	29 (26.4)	34 (30.9)	
Education level of men			0.49
Illiterate	1 (0.9)	2 (1.8)	
Elementary	30 (27.3)	35 (31.8)	
Middle and high school	41 (37.3)	36 (32.7)	
Associate degree	11 (10)	17 (15.5)	
Bachelor's degree and higher	27 (24.4)	20 (18.2)	
Employment status of women			0.52
Housewife	86 (78.2)	82 (74.5)	
Employed	24 (21.8)	28 (25.5)	
Employment status of men			0.002
Unemployed	2 (1.8)	2 (1.8)	
Manual worker	10 (9.1)	31 (28.2)	
Free	65 (59.1)	58 (52.7)	
Employee	33 (30)		
Monthly income (thousand toman)			0.0001
> 1500	8 (7.3)	22 (20)	
500-1500	42 (38.2)	61 (55.5)	
500 <	60 (54.5)	27 (24.5)	
Family type			0.14
Nuclear	104 (94.5)	98 (89.1)	
Extensive	6 (5.5)	9 (8.2)	
Type of marriage			0.19
Optional	95 (86.4)	101 (91.8)	
Forced	15 (13.6)	9 (8.2)	
Duration of marriage			0.001
2 >	5 (4.5)	11 (10)	
2-5y	9 (8.2)	21 (19.1)	
5-10	27 (24.5)	38 (34.5)	
> 10	69 (62.7)	40 (36.4)	
Kinship ratio			0.14
Yes	33 (30)	33 (30)	
No	77 (70)	77 (70)	

Table 2. Comparison of the mean Quality of Life Scores in the Two Groups of Fertile and Infertile Women

Group	Mean	SD	P Value
Psychological			0.78
Fertile	21.29	4.71	
Infertile	21.12	4.44	
Physical			0.043
Fertile	17.55	3.62	
Infertile	16.57	3.55	
Social			0.756
Fertile	8.53	2.27	
Infertile	8.44	2.06	
Environmental			0.11
Fertile	24.84	4.76	
Infertile	23.76	5.14	
Total			0.176
Fertile	72.21	12.74	
Infertile	69.86	12.58	

The quality of life assessment includes aspects of psychological status, as well as physical, social, and environmental functioning. Thus, the quality of life of infertile couples may be inversely affected by various individual, family, and social aspects, as well as various aspects of infertility and its treatment (26, 27). Even in countries where there is almost a common culture among the people, there are somewhat different cultures between different strata and groups of society. This diversity in dealing with issues causes people to have different experiences of infertility in different societies. In some societies, there may be more gender equality, and the stigma against women as the main cause of infertility may be less obvious (28). Emotional support is a constant tool for the well-being and quality of life of infertile people (29). The results of some studies have shown that infertility can cause positive changes in a couple's relationship and bring them closer together (30). The strong relationship between spouses can reduce a woman's psychological burden due to the fear of losing their marital life and spousal remarriage and also the fear of being ignored and stigmatized by the spouse's family. More social support for a variety of reasons, such as personal or family relationships, can improve an infertile woman's physical and mental health. Thus, it provides a relatively high level of social welfare and quality of life (17). The power distribution pattern in the family plays a major role in the interactions of family members. Moreover, the lack of patriarchal relations can provide a sufficient support system for infertile women to enjoy the desired quality of life (31). The negative impact of infertility on a person's life can be mitigated by positive social and spiritual relationships, and there is a need for awareness of the diversity and impact of culture on infertility treatment and infertility counseling (28). In some qualitative studies, participants have stated that infertility has made them stronger in their relationship with God and brought them closer to God. Some English infertile women believed that they were chosen by God to grow spiritually and become stronger (30). One of the strengths of this study was that it had strict inclusion criteria (lack of physical problems, medical diseases, experience of stressful events in the last three months, and no addiction to alcohol or drugs) that reduced the impact of disruptive factors. However, one of the weaknesses of this study was that the participants may not have correctly responded to the questionnaires due to fatigue.

5.1. Limitations of the Study

The results of this study cannot be generalized to all women because of its limited sample size and since we might have excluded many infertile women from the study. Thus, it is necessary to conduct more qualitative studies with a larger sample size in different cities with different cultural backgrounds. Another limitation was that many critical factors (such as couple relationships, culture, social support, etc.) were not included in the study.

5.2. Suggestions

It is recommended to conduct studies with a larger sample size and in different communities: 1. Comparison of the quality of life in infertile women undergoing surgical treatment with fertile women and 2. Comparison of the quality of life in infertile women under medical treatment with fertile women.

5.3. Conclusion

In the present study, with the exception of the physical area, other quality of life areas were not significantly different between the fertile and infertile women. Infertility and other related issues, such as treatment, appear to have a negative impact on the physical health of infertile couples. These interventions are applied to women and affect their quality of physical life. It appears that differences in social, cultural, and spiritual factors that govern societies, even in different parts of a country, cause problems related to infertility and the quality of life of women. Therefore, further studies are needed to identify influential factors in different societies to maintain and improve the quality of life of women as major influential members of the family and society.

Moreover, the origin of many diseases and physical disabilities is rooted in a person's mental problems, and more research is needed in this area.

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Footnotes

Authors' Contribution: FB and MZ prepared the first draft of the manuscript, and MA and AN made critical revisions to the paper and responded to the reviewers' comments. MS was involved in statistical analysis.

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