A Comparative Study of Quality of Life in Infertile and Fertile Women Referred to Jahrom Infertility Clinics

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Abstract

Introduction: Infertility is a medical problem which influences all the dimensions of one's individual and social life and can expose him/her to psycho-physical, socio-economic, sexual and family challenges. This study was designed to compare the quality of life of fertile and infertile women.

Materials & Methodology: This is a case-control analytical study in which 180 fertile and infertile women (aged 18-42) participated. The infertile group consisted of women who had visited an infertility treatment clinic. The fertile group consisted of healthy women who had children and had visited a healthcare center in the city of Jahrom. For the case group (n=90), sampling was conducted based on the census method; for the control group (n=90), subjects were selected through stratified random sampling. Data were collected using a questionnaire which had two sections: demographic information and the World Health Organization quality of life questionnaire (WHO QOL-BREF). The collected data were analyzed using SPSS version 16.

Results: The mean age of the participants was 28.26±4.85 years. 76.5% of the infertility cases were due to female infertility and 5.9% were due to male infertility. The results showed that there was a significant difference between the infertile and fertile groups in their overall satisfaction with life levels (p=0.002). There were no significant differences between the two groups in mean scores of somatic, psychological, social and environmental dimensions (p>0.05).

Conclusion: Considering the results of the present research, it seems that factors like acceptance of infertility by couples, hope for present medical solutions to be effective, use of support plans and recent advancements in technology are possible reasons for the absence of difference between the infertile and fertile groups in quality of life.

Keywords: infertility, quality of life, fertility, psychological problem, reproduction

1. Introduction

Among the most basic desires of humanity, fertility and reproduction form the base of the survival of the human race; yet, some people are deprived of it for various causes (Richlin, Shanti & Murphy, 2003).

Stanford reports that the prevalence of infertility in the US population is 15.5% overall and 24.3% among nulliparous women (Stanford, 2013). Studies conducted in Iran show that about 21-22% of married women in Iran and 20.1% of women in the province of Fars experience primary infertility in their lives (Kazem & Ali, 2009; Serajaddin, Ardalan, & Kazem, 2006). Today, with the advancement of technology, many infertile couples can have children; yet, infertility is still a highly stressful experience in a married life (Alesi, 2005; Askari & saedi, 2012). This is especially true in societies where having children is very important for women to maintain a high status in their social and family lives. Therefore, infertility can cause more family and social problems for women than for men (Monga, Alexandrescu, Katz, Stein, & Ganiats, 2004).

Infertility is not only a health and medical problem; it also influences all the aspects of one's individual and social life (Elliot, LoBiondo-Wood, Beanland, & Haber, 2004). Infertile couples are often exposed to

psycho-physical, socio-economic, sexual and family challenges. Low self-confidence and self-esteem, aimlessness, helplessness and a negative self-image are the consequences of infertility and infertility treatments (Poorgholami, Shadfard, Talebizadeh, & Kargar Jahromi, 2015; Khodakarami, Hashemi, Seddegh, Hamdeeh, & Taheripanah, 2009; Verhaak et al., 2007). Infertility is considered as an important issue in societies which traditionally value women for their role as mothers. Infertility can cause instability in a married life, violence at home and isolation for infertile women. Also, Anxiety, depression and suicidal tendencies can follow an unsuccessful infertility treatment (Ramezanli, Kargar Jahromi, Talebizadeh, & Poorgholami, 2016; Kjaer et al., 2011). A decision to discontinue treatment could have adverse effects on all the aspects of a couple's life (Gameiro, Boivin, Peronace, & Verhaak, 2012). The results of the study of Monga et al. show that infertility-related issues have a negative impact on couples' quality of life (Monga et al., 2004). The importance of quality of life as one of the aspects of health has attracted the attention of many researchers (Nilforooshan, Latifi, Abedi, & Ahmadi, 2008). Quality of life has become one of the important issues today and is seen as one of the measurable criteria for evaluation of treatment (Tirgari, 2007; Shek, Chan, & Lee, 2005).

A multidimensional concept, quality of life is defined by WHO as an individual's understanding of his/her life status in view of his/her culture and value systems, relationships with others, expectations, interests, standards and life experiences. This definition is broad one and includes physical health, psychological health, independence, social communications and personal beliefs (Cadena, Vinaccias, Perez, Rico, Hinojosa & Anaya, 2003). Quality of life is also related to life satisfaction, self-image, health factors, and functional, social, economic and cultural matters; as mentioned earlier, infertility is one of the issues that can affect every aspect of quality of life (Sabetgadam, Poorgholami, Badiyepeymaie Jahromi, & Parandavar, 2016; Agha Molayi & Eftekharardebili, 2005).

Quality of life is an abstract and dynamic concept. Evaluation of quality of life can be effective in diagnosis of diseases, their treatments and care for patients. Today, the goal of much research is to improve the quality of life of individuals to enable them to function in their daily lives more satisfactorily (Poorgholami, Mansoori, Montaseri, & Najafi, 2016; Poorgholami, Javadpour, Saadatmand, & Kargar Jahromi, 2016). Promotion of quality of life in infertile individuals requires a deep and proper understanding of their problems from different aspects (Poorgholami, Kargar Jahromi, Kalani, & Parniyan, 2016; Abdesaedi & Akbari, 2005).

Evaluation of quality of life helps establish an effective relationship between a patient and his/her treatment team, i.e. physicians and nurses. This increases patients' knowledge about their diseases and diagnosis, the advantages and disadvantages of different treatments and helps infertile individuals make informed decisions about treatment methods (Krol, Sanderman, & Suurmeijer, 2003). Nurses can improve patients' quality of life via nursing processes: they should make careful evaluations of patients' quality of life and regulate their care models accordingly (Kargar Jahromi, Poorgholami, Rahmanian, & Rahmanian, 2016; Alligood, 2004). Evaluation of quality of life of infertile couples helps healthcare providers and special-care nurses choose the right treatment and support care (Omranifard, Afshar, Mehrabi & Asadollahi, 2007; Yaghmaee, Mohammadi & Alavi Majd, 2009). Improvement of infertile couples' quality of life can create happy families and a stable society (Aghabarari, Ahmadi, Mohammadi, Hajizadeh, & Varvani-Farahani, 2006). This study was designed to compare the quality of life of fertile and infertile women and identify appropriate ways to improve the quality of life of infertile couples.

2. Materials and Methods

In the present case-control analytical study, conducted between June and October 2012, 180 women-90 infertile women and 90 fertile women-were studied. After obtaining permission from the Research Council and Ethics Committee of Jahrom University of Medical Sciences, the researchers visited the infertility treatment clinics affiliated with Jahrom University of Medical Sciences and considered all the individuals who were seeking treatment for infertility as candidates for the case group. Members of the control group (fertile women) were selected from among healthy women who had children and had visited the health clinics of Jahrom. In both groups, the participants were: aged 18-42 years, Iranian, literate, in a husband-wife relationship, living in Jahrom, and not faced with stressful problems during the last three months. Women who had physical or psychological problems and could not take part in the study or were unwilling to cooperate were excluded. Incomplete questionnaires were not considered for statistical analysis. Infertile women were selected based on the scientific definition of infertility: Absence of pregnancy after one year of unprotected sex). For the case group, sampling was conducted based on the census method and for the control group, subjects were selected using stratified random sampling. To this end, each clinic's coverage percentage of women was calculated and sampling was conducted randomly based on the covered percentage. The participants of the two groups were similar in age, job and education level. After signing the informed consent form, the subjects completed the questionnaire.

The researchers explained the objectives of the research to therespondents and collected information via the questionnaire. The questionnaire had two sections: the demographic section and the quality of life questionnaire.

The quality of life questionnaire (WHO QOL-BREF): This is a standard international questionnaire designed by WHO in order to measure quality of life in different cultures. This questionnaire has been translated into different languages. The first two questions evaluate overall status of health and quality of life. The subsequent questions evaluate four dimensions: somatic health (questions 3, 4, 10, 15, 16, 17, 18), psychological health (questions 5, 6, 7, 11, 19, 26), social relationships (questions 20, 21, 22) and environmental health (questions 8, 9, 12, 13, 14, 23, 24, 25).

According to the scoring directions provided in the guide of the questionnaire, each dimension is scored between 0 and 100 and higher scores indicate a better condition and lower scores indicate more problems (WHO-QOL group, 1996). Questions were five-choice items based on Likert scale.

In Iran, this questionnaire has been validated and normalized by Nejat et al. All of the Cronbach's alpha coefficients were above 0.7 and the reliability of the questionnaire was verified (Taqdisi, Borhani, Solhi, Afkari & Hosseni, 2012). Furthermore, this questionnaire has been repeatedly used by other researcher for the measurement of quality of life in patients (Nejat, Montazeri, Halakoee Naeni, Kazem & Majdzadeh, 2006; Ferreira, Vicente, Duarte & Chaves, 2015).

2.1 Statistical Analysis

The collected data were analyzed using descriptive statistics (frequency, percentage, mean and standard deviation). To check homogeneity between the infertile and fertile groups, the researchers used the independent sample t-test for the quantitative variables and chi-square test for the qualitative variables. Also, correlation analysis was used to examine the relationship between the demographic data and different dimensions of quality of life. Spearman test was used for the qualitative variables and the Pearson test was used for the quantitative variables. Data normality distribution was determined using Kolmogorov-Smirnov test. Due to the sample size and the normality of the variables, parametric tests were used. Significance level was set atless than 0.05. The collected data were analyzed using the Statistical Package for the Social Sciences (SPSS), version 16.0, Inc, and Chicago, Illinois, USA.

3. Results

Data were collected from 76 infertile women (case group) and 79 fertile women (control group). 84.4% in the case group and 87.78% in the control group participated in the study: in the control group, 11 participants returned incomplete questionnaires and in the case group, 14 participants did not respond to the researchers' invitation or returned incomplete questionnaires.

Results were as follows: The mean age of both groups was 28.26±4.85 years (28.26±4.84 in the case group and 28.26±4.85 in the control group). The independent sample t-test showed no significant difference between the two groups in this respect (p=0.5). The results of the Chi-square test showed that there was no significant difference between the two groups in the variables of occupation (p=0.058) and education level (Table 1).

Table 1. Distribution of frequency in education level in the two groups

Education level*	Fertile group N (%)	Infertile group N (%)	P-value
Illiterate	1(1.27)	0(0)	
Below high school	23(29.11)	23(30.26)	
High school and associate's degree	37(46.83)	38(50)	0.250
Bachelor	17(21,52)	15(19.74)	
Master degree and above	1(1.27)	0(0%)	

N: Number p level: < 0.05*: Chi-Square test.

In the present study, the majority of the infertility cases were female infertility (76.5% (52)); next in rank were male- female infertility (14.7% (10)), male infertility (5.9% (4)) and unexplained infertility (2.9% (2)).

Based on the single domain of the t-test results, it can be seen that there is a significant difference between the fertile and infertile groups in their overall satisfaction with life levels. No significant difference was found between the two groups in their mean scores of somatic, psychological, social, and environmental dimensions

and total score for quality of life (Table 2).

Table 2. A comparison of mean values of different dimension of quality of life in the two groups

Variable	Fertile Mean±S.D	Infertile Mean±S.D	d.f	t	P-value
Overall satisfaction of life	4.01±0.70	3.66±0.81	150	2.891	0.004*
Psychological dimension	21.49±5.88	21.18±3.90	142	0.380	0.352
Social dimension	11.41±2.26	11.64±2.45	144	-0.592	0.277
Environmental dimension	28.28±5.18	29.00±5.63	144	-0.801	0.212
Somatic dimension	26.38±4.58	26.37±4.80	140	0.018	0.493
Total score of quality of life	86.42±14.48	88.22±13.75	126	-0.723	0.235

Mean±standard deviation; Independent t-test*: p level < 0.05.

The results of the correlation test showed that there is a significant reverse relationship between the cause of infertility and quality of life (p=0.010, r=-0.193), age and mean value of satisfaction with one's health (p=0.004, r=-0.232) and history of abortion and the subjects' overall evaluation of their quality of life (p=0.007, r=0.218). Furthermore, there were positive correlations between education and health (p=0.009, r=0.193) and job and health (p=0.007, r=0.199) (Table 3).

Table 3. Correlations between demographic variables and dimensions of quality of life

Variables	Age	Education Level	Job
Health	r= -0.138[*], p: 0.044	r= 0.193[**], p:0.009	r= 0.199[**], p:0.007
Qol	r= -0.232[**], p: 0.004	r= 0.075, p: 0.181	r= 0.000, p: 0.499
Somatic	r= -0.087, p: 0.151	r= 0.000, p: 0.496	r= 0.002, p: 0.490
Psycho	r= -0.010, p: 0.452	r= 0.070, p: 0.203	r= -0.005, p: 0.476
Environmental	r= 0.011, p: 0.447	r= 0.211[**], p: 0.005	r= 0.064, p: 0.222
Social	r= -0.079, p: 0.171	r= 0.211[**], p: 0.005	r= 0.039, p: 0.319
Total QOL	r= -0.061, p: 0.247	r= 0.182[*], p: 0.048	r= 0.049, p: 0.292

**: Correlation is significant at the 0.01 level;

*: Correlation is significant at the 0.05 level.

4. Conclusion and Discussion

Infertility can lead to a lot of problems for women, most notably reduce their quality of life (Huppelschoten et al., 2013). Women make up more than half of the population and are the foundation of the health of the family and community. Attention to their quality of life guarantees family stability: quality of life includes such concepts as happiness, well-being and satisfaction with one's life. Therefore, evaluation of infertile women's quality of life is among the topics of interest to physicians and behavioral sciences experts. Quality of life is a descriptive term which refers to the emotional, social and physical conditions of individuals and their ability to perform their daily duties (Nilforooshan et al., 2008).

The present study was conducted to compare the quality of life of fertile and infertile women. The results showed no statistically significant differences in the total mean score of quality of life between fertile and infertile women. Also, no statistically significant differences were found with regard to the dimensions of quality of life. A study conducted by Norani et al. to compare the quality of life of fertile and infertile women showed that, although the fertile women had slightly higher scores in all areas of quality of life, there were no statistically significant differences between the two groups in any of the aspects of quality of life (Norani, Jonaedi, Shakri, & Mokhber, 2012). Similarly, Nilforoushan et al. report that infertile women's quality of life is lower than that of fertile women, but the difference is not statistically significant (Nilforooshan et al., 2008).

In the present study, there wasn't a statistically significant difference between the two groups in any of the somatic, psychological, social or environmental domains; however, the results of the study of Nilforoushan et al.

show that infertile and fertile women have significantly different mental and emotional conditions: infertile women experience significantly harsher emotional conditions (Nilforooshan et al., 2008). Based on the results of some studies, in infertile couples, women experience more stress in comparison with their husbands (Chachamovich, Chachamovich, Ezer, Fleck, Knauth, & Passos, 2010; Huppelschoten, van Dongen, Verhaak, Smeenk, Kremer, & Nelen, 2013). Other similar studies report no significant differences in the mean score of quality of life in infertile women. In their study, Onat et al. report that the mean score of quality of life of the infertile group was higher than the fertile group, but it was not a statistically significant difference. Some studies also show that there is not a significant difference between the genders in the mean score of quality of life between fertile and infertile couples (Onat & Kizilkaya Beji, 2012). The results of the present study and other similar studies show that infertility does not influence quality of life.

In contrast, some studies, such as the study by Paskalez et al., show that infertile women and couples who have used infertility treatment techniques have lower quality of life levels (Pascalis, Agostini, Monti, Paterlini, Fagandini, & La Sala, 2012). Hassanian's study shows that infertility is the cause of lower quality of life score in women with primary infertility. Moreover, lower levels of quality of life and a higher incidence of sexual dysfunction correlate with an increase in years of infertility (Hassanin, Abd-El-Raheem, & Shahin, 2012). Kissi et al. evaluated the quality of life of Tanzanian infertile couples and found out that the infertile women had lower quality of life scores than the infertile men did (Kissi, Amamou, Hidar, Ayoubi Idrissi, Khairi, & Ben Hadj Ali, 2014). Differences between the participants in the two groups in the present study and lack of cooperation on the part of the subjects in the infertility group can account for the discrepancy between the results of the present study and the above-mentioned studies.

Hope for treatment with recent advances in assisted reproductive technology, advertisements for medical centers, an increase in social welfare in some communities and promotion of family support for infertile couples could be among the factors leading to satisfactory levels of quality of life in infertile couples. However, financial difficulties, cultural factors, psychological issues in infertile women with primary and secondary infertility and lack of access to medical care are potential factors that could reduce the quality of life in infertile couples. As mentioned earlier, quality of life can be affected by many factors, including infertility which can create a lot of stress for individuals and is referred to as one of the most serious stressors (Chachamovich, Chachamovich, Ezer, Fleck, Knauth, & Passos, 2010; Poorgholami, Zamani, Kargar Jahromi & BadiyepeymaJahromi, 2016; Kargar Jahromi, Javadpour, Taheri, & Poorgholami, 2016).

Although the results of the present study show that in the areas of quality of life, there is no statistically significant difference between the two groups, the overall assessment of the subjects' quality of life shows one significant difference between the two groups: the results of the evaluation of satisfaction with life showed that fertile women had higher scores than the infertile women. This shows the need for more support and attention, such as comprehensive health care - psychological, familial and social-that is necessary to creating a good quality of life.

In the present study, there is a negative and significant correlation between quality of life and the cause of infertility, which shows that infertility, has a lot of impact on increasing life problems and stress. Also, inability and weakness in individuals as an undesirable emotional impact can reduce quality of life. In this study, most of the cases of infertility were female infertility. Also, with regard to the mean score of quality of life, there is a significant difference between the two groups. In the present study, women were found to experience more stress probably because female infertility was the most common type of infertility in the study. The study of Kissi et al. shows that infertile women have a lower score of quality of life than fertile women do (Kissi et al., 2014). Khodakarami et al. report that infertile couples undergo severe social and family pressures and that their quality of life decreases significantly (Khodakarami, Hashemi, Seddigh, Hamdeeh, & Taheri panah, 2009; Jamali , Ramezanli , Kargar Jahromi, & Poorgholami, 2016). Khodakarami et al. also report that, although some men know that they are infertile, they criticize and humiliate their wives (Khodakarami et al., 2009). Obviously, such behaviors can cause a sense of inability, weakness and humiliation and reduce quality of life.

Moreover, the present study shows a negative significant correlation between age and quality of life: quality of life decreases as age increases. Khayata reports that infertile women aged above 30 have a lower quality of life compared to those who are younger (Khayata, Rizk, Hasan, Ghazal-Aswad, & Asaad, 2003). However, the results of the studies of Amanati and F Fekkes do not agree with this conclusion (Fekkes et al., 2003; Amanati, Alami, Shokrabi, Haqqani, & Ramezanzadeh, 2009). The negative relationship between age and quality of life can be a result of negative mental images, horror and anxiety resulting from aging, failure to have children and loss of family.

Although the present work of research shows that there is no significant difference between the two groups in the different dimensions of quality of life, an increase in the duration of infertility, especially in couples with primary infertility, can cause a decline in their quality of life.

Therefore, it is necessary to consider the negative impact of infertility on infertile couples' lives and use strategies to help them control their problems and improve their quality of life as one of the goals of the care provided to them. On the other hand, in view of the discrepancies between the results of studies in this area, further studies, such as phenomenological studies, are recommended to identify the factors affecting the quality of life in view of gender,

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Competing Interests Statement

The authors declare that there is no conflict of interests regarding the publication of this paper.

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