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Research Article

Investigation of Quality of Life and Related Factors in Infertile Women Undergoing Infertility Treatment

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Received: May 04, 2021; **Published:** May 27, 2021

Abstract

Objective: Infertility is an unpleasant emotional experience and is one of the factors that affect the quality of life. Psychological problems caused by infertility can affect fertility success. This study conducted to investigate quality of life and related factors in infertile women.

Methods: This cross-sectional study carried out on 80 infertile women referred to the infertility treatment center of Imam Khomeini Hospital in Sari, Iran. Data gathered by World Health Organization Quality of Life (WHOQOL)-BREF questionnaire and analyzed using Pearson's and Spearman's correlation coefficient and Kruskal-Wallis test in SPSS version 24 ($P < 0.05$).

Results: Mean age of women was 33 ± 5.70 years. Quality of life of them was good (32.5%), moderate (61.2%), and poor (6.2%). there was a reverse relationship between the duration of trying to conceive and quality of life, meaning that increase of this duration was associated with decreased quality of life ($P = 0.05$). The increase in duration of cohabitation resulted in a lower number of individuals with a good life quality level and a higher number of subjects with a moderate level of quality of life. In all levels the desire to have a child resulted in moderate life quality in most of the participants. Findings also indicated a significant relationship between quality of life and monthly income, people with lower economic status had lower quality of life ($P < 0.05$).

Conclusion: Because two-thirds of people had a moderate quality of life, awareness of healthcare providers about this issue and their needs will lead to better service provision to this group.

Keywords: *Infertility; Quality of Life; Fertilization In Vitro; Pregnancy; Psychological Tests*

Abbreviation

WHOQOL: WHO Quality of Life

Introduction

Infertility is the fourth most stressful life event following maternal and paternal mortality and spouse betrayal [1]. The prevalence of infertility varies from 7% to 28% depending on women's age [2]. For many couples, the ability to have a child is an important factor in the development of male and female personality, identity determination and the result of life. For couples who want a child but cannot get pregnant, this issue is not only frustrating but also devastating [3]. In fact, infertile individuals are more likely to experience depression and anxiety. Lack of attention to emotional disorders of infertile couples and secondary symptoms to infertility cause a defective cycle that reduces the possibility of infertility treatment [4].

Couples tend to have children because of cultural, social, familial and inherent matters [5]. Family and social pressures for family name survival also can impose psychological burdens on infertile couples. On the other, financial, psychological, and physical challenges from assisted fertility methods are likely to have a greater impact on infertile couples [6]. In Iran, there are over one million infertile couples, and given the importance of childbearing in the religious, historical, and general culture of the Iranian community, infertility can be one cause of divorce [7]. Undoubtedly, religion and culture by affecting some life problems such as infertility, affect quality of life [8].

Life quality is the mental feeling of persons of their health status, which comes from former and current life experiences [9] and one of the most important health components. This concept has been defined in various ways. The first definition focuses on welfare aspects of an individual's life, whereas the second and third definitions emphasize economic abilities, and social status, and areas such as specific symptoms and diseases, respectively [10]. Reproductive status and its related factors can affect quality of life by causing social stress, decreasing life satisfaction, increasing marital problems and reducing sexual self-esteem, and decreasing sexual and marital satisfaction, ultimately cause a change in quality of life [11,12].

Little research has been conducted on the quality of life of infertile women in Iran, and most studies have evaluated the relationship between infertility and depression. Only a few studies have assessed the life quality among infertile women using the questionnaire, which is a criterion for measuring the quality of public life and more focused on the physical aspects of life quality [13].

Aim of the Study

So, this study aimed to investigate quality of life and related factors in infertile women for understanding the needs of them.

Materials and Methods

This cross-sectional research performed on 80 infertile women referred to the infertility treatment center of Imam Khomeini Hospital in Sari, Iran, from September to the end of December 2018. Study approved by the Medical ethic committee of the Mazandaran University of Medical Sciences, Sari, Iran with ethic code: (IR. MAZUMS. IMAM HOSPITAL. REC.1397.1030). Sample size based on a study by Jamilian., *et al*. (2017) [14] in which the quality of life score of infertile women with a standard deviation of 16.6, was calculated in the distance between 95% confidence and 90% study power, 170 people. Samples were selected conveniently in the infertility treatment center of Imam Khomeini Hospital and Informed and written consent was obtained from all samples.

Inclusion criteria include primary infertility, absence of chronic disease such as diabetes, hypertension, mental disorder, and genital problems [11]. We only wanted to measure the impact of infertility on women's quality of life. In the case of chronic diseases, since it was thought to be suffering from these diseases and their impact on quality of life were excluded from the study. Exclusion criteria include

regret for participating in the study while filling out the questionnaire. Data recorded using two questionnaires. Demographic and social information of individuals and WHO Quality of Life (WHOQOL-BREF) questionnaire [15]. This questionnaire encompasses 26 items and evaluates the quality of life in four different structures Included physical (7 questions), mental (6 questions), social (3 questions) and environment (8 questions) and two other questions are separately in overall life satisfaction. In this questionnaire, each question on a Likert scale is assigned a score from 1 to 5. The score of each structure is from zero to 100 according to the ranking of the World Health Organization. A higher score indicates a better situation in that structure [11]. To calculate the score of each index, the average score is used. After calculating the scores in each field, its score can be converted to a score of 4 - 20 or a score of 0 - 100.

Data analysis was performed in SPSS version 24 using Mean and standard deviation were used to describe the data, Pearson's and Spearman's correlation coefficient and Kruskal-Wallis test were used ($P < 0.05$).

Results and Discussion

Participants in this study were 80 infertile women with a mean age of 33 ± 5.70 years. Demographic and social information of individuals. The score of quality of life was good, moderate and poor in 32.5%, 61.2% and 6.2% of the subjects, respectively (Table 1).

Variable	Subgroup	Frequency (%)
Education	Below of Diploma	51 (63.7%)
	Diploma and higher	29 (36.2%)
Occupation	Housewife	66 (82.5%)
	Employee	14 (17.5%)
Residence	Urban	49 (61.2%)
	Rural	31 (38.8%)
Monthly income	Low	36 (45%)
	Average	44 (55%)
BMI* (kg/m^2)	≤ 18.5 (Underweight)	1 (1.2%)
	18.5 - 25 (Normal)	36 (45%)
	26 ≥ (Overweight)	43 (53.8%)
Duration of cohabitation (years)	< 5	44 (55%)
	5 ≥	36 (45%)
Duration of trying to conceive (years)	≤ 5	47 (58.8%)
	6 - 9	19 (23.8%)
	10 - 14	12 (15%)
	15 ≥	2 (2.5%)
Desire to have child	Very much	63 (78.8%)
	Much	11 (13.8%)
	Middle	5 (6.2%)
	Little	1 (1.2%)
Score of quality of life	Good	26 (32.5%)
	Moderate	49 (61.2%)
	Poor	5 (6.2%)

Table 1: *Demographic characteristics of infertile women.*

**: Body Mass Index.*

In order to compare the scores of the structures, using the scale introduced in the WHOQOL-BREF, the scores of all structures were converted from 0 to 100. The average scores of the quality of life questionnaire structures in terms with a 95% confidence interval showed that the highest average scores were related to social structure and the lowest average scores were related to environmental structure.

According to Spearman's correlation coefficient test, there was a reverse relationship between the duration of trying to conceive and quality of life, meaning that increase of this duration was associated with decreased quality of life (Spearman coefficient = 0.2, P = 0.05). Various levels of life quality based on the duration of cohabitation demonstrated that increase in the duration of cohabitation resulted in a lower number of individuals with a good life quality level and a higher number of subjects with a moderate level of quality of life. In all levels the desire to have a child resulted in moderate life quality in most of the participants. A significant relationship observed between life quality and monthly income, People with lower economic status had lower quality of life ($p < 0.05$). There was no significant correlation between the quality of life and variables of age, occupational status, BMI, level of education, and place of residence of patients. According to the results of the Kruskal-Wallis test, there was a significant relationship between the score of life quality (self-reported) and quality of life assessed by the questionnaire ($P < 0.05$). In order to compare the scores of constructs, the scores of all constructs were converted to (range of 0-100, confidence interval=95%) using the scale presented in the WHOQOL-BREF Guidelines (Table 2).

Variable	Score range	Minimum	Maximum	Mean ± SD*
Environmental-life quality	0-100	25	88	54.01 ± 13.89
Social-life quality	0-100	19	100	66.05 ± 19.53
Psychological-life quality	0-100	31	88	60.33 ± 11.27
Physical-life quality	0-100	31	88	54.68 ± 12.47

Table 2: *Mean and standard deviation of scores of quality of life structures in infertile women.*
**: Data presented as Mean ± Standard Deviation.*

In the present study, we evaluated the quality of life in infertile women. According to results, two-thirds of people had a moderate quality of life, which shows the effect of infertility on the life of these families. Our findings were in line with the results obtained by Coffey., *et al*. [16] and Mousavi., *et al*. [17] and Drozdzal., *et al*. [18] in the United States. Since infertility is a crisis that exerts major and chronic pressures on the lives of infertile people, it can also affect the quality of life of infertile women [19]. A study in 2014 suggested that developed body image sexual difficulty and marital problems developed in infertile women [20]. Our patients had less agreement to express their feelings about sexual relationships because of cultural limitations. So, in this study we didn't investigate sexual relationships with details which probably decreased in this susceptible population because it needs future research.

According to the WHO definition, life quality is the feeling and perception of one's life status as a cultural and value-based system based on the individual's ideals, expectations and standards. This issue has the dimensions of physical, psychological, level of independence, social communications, environment and personal beliefs [21]. In the present study, the life quality score showed a moderate score. Various studies have shown that different factors affect the quality of life of infertile women, most researches indicated social and psychological pressures. In a research, Obeisant., *et al*. reported that infertile women experience a high level of stress and neglected sexual desires [22]. In a study by Millheiser., *et al*. infertile women were significantly more vulnerable to sexual dysfunction and had lower sexual desires and sex drive [23]. Therefore, all healthcare staff, including physicians, nurses, midwives, and other healthcare specialists, must focus on psychological issues besides physiological aspects of the condition. Counseling and discussion classes on these issues can be helpful.

Another finding of present study was the relationship between the duration of trying to conceive and quality of life, meaning that the longer efforts to have children, reduced the quality of life. Our findings were congruent with the results obtained by Alacami [24]. In another study, the authors found that infertility duration has a significant relationship with depression and anxiety disorders especially in third years of infertility diagnosis [25] that was like our research, but we didn't evaluate annual screening for these factors.

We did not find any correlation between the quality of life and age of patients (P = 0.15), which is consistent with the results got by side [26]. Our findings indicated a significant relationship between quality of life and monthly income (P < 0.05), which showed lower quality of life in low economic levels and individuals with lower income. A study showed that better socioeconomic conditions could have an optimistic effect on satisfaction with cohabitation [27]. Finally, according to the effective factors in improving the quality of life of people, it is suggested that similar studies be conducted in this area with a larger sample size in different regions with different social structures and cultures, which is one of the factors affecting the quality of life of infertile women.

Conclusion

Because most infertile women have a moderate quality of life, understanding their level of quality of life will raise awareness of healthcare providers regarding their needs and will lead to better service provision to this group. This will be possible by removing social structural barriers and strengthening social support in the financial dimension for infertility treatments and focusing on solving psychological problems such as anxiety and depression through education and counseling in these people. Recommended that people who refer to infertility centers before and during treatment undergo psychological and psychological training and counseling to improve the quality of life.

Acknowledgment

This study Supported by Mazandaran University of Medical Sciences. The authors wish to thank the infertile women for their participation in this research and the staff at the Imam Khomeini infertility clinic for their contribution to this research.

Conflict of Interest

The authors declare that they have no financial conflict of interest.

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Volume 10 Issue 6 June 2021