



Quality of Life of Infertile Couples in relation to Marital Adjustment, Factors related to Infertility, and Demographic Characteristics

Samereh Eghtedar^{*1}, Fatemeh-Sara Aparnak², Elnaz Asghari³

¹ Assistant Professor of Nursing Education, Nursing and Midwifery School, Urmia University of Medical Sciences, Urmia, Iran

² MSc in midwifery, Department of Midwifery, Urmia Branch, Islamic Azad University, Urmia, Iran

³ Assistant Professor of Nursing Education, Nursing and Midwifery School, Tabriz University of Medical Sciences, Tabriz, Iran

***Corresponding authors:** Samereh Eghtedar, **Address:** Nursing and Midwifery School, Urmia University of Medical Sciences, Urmia, Iran, **Email:** eghtedar.s@umsu.ac.ir, **Tel:** +984432754961

Abstract

Background & Aims: Quality of life of infertile couples is affected by changes happening in their life. Knowledge about the quality of life, marital adjustment, and underlying factors of infertile couples is an important part of social health information. Such information can be used for developing health promotion programs by family counselors. The aim of this study was to predict the quality of life of infertile couples based on marital adjustment, factors related to infertility, and background characteristics.

Materials & Methods: In this descriptive-analytic study, 131 women and 79 men referred to an infertility center in East Azerbaijan were recruited using a convenience method. Data were collected using the infertile women's quality of life and Spiner's marital adjustment questionnaires. Regression analysis was used for data analysis via the SPSS16.

Results: The mean age of the female and male participants were 35.74 ± 6.11 years and 32.45 ± 5.72 years, respectively. Of variables with a p-value less than 0.1 that entered the regression analysis, marital adjustment, gender, and insurance accounted for 78% of the observed variance in the quality of life of the infertile couples.

Conclusions: It was revealed that the variables of this study had important impacts on the infertile couples' quality of life. Therefore, holding consultation programs and conducting more studies are necessary for improving the couples' quality of life and promoting sexual and marital adjustment in infertile couples. Removing underlying problems by interventional studies are suggested to modify couples' quality of life.

Keywords: Quality of Life, Infertility, adjustment

Received 26 December 2020; accepted for publication 22 February 2021

Introduction

Despite major changes in individuals' attitudes toward sexual relationships, infertility is still a major

problem across the globe(1, 2). While the use of infertility healthcare services has increased in recent decades, the prevalence of infertility remained constant. The prevalence of infertility is reported to be 3.5-16.7%

in developed countries and 9.9- 9.3% in developing countries(3).

The problem of infertility has become a social concern that can lead to severe psychological issues, psychological imbalance between couples and even divorce(4). Particularly, in those societies that bringing children immediately after marriage is encouraged, infertility has a greater impact on couples' quality of life. Infertility as a barrier to the human's need for survival is a source of severe psychological stress (3, 5). For instance, infertile couples have less satisfaction with life than their counterparts(6). Infertility can be considered as a crisis in life, identity problem and a chronic illness. Infertility also impacts couples' quality of life(7).

The quality of life is defined as the subjective perspective of well-being and welfare in the present life experiences. The quality of life is a multi-dimensional concept that is influenced by physical, psychological, emotional, and social factors(8). The results of a systematic review study showed that infertility affected sexual and marital relationships among married couples (9, 10). Therefore, the investigation of factors affecting the quality of life of infertile couples needs the assessment of underlying social and psychological factors. Also, more attention should be given to factors affecting couples' relationships and marital adjustment.

Marital adjustment is defined as the process of modifying, accepting or changing the behavior of the individual to engage in the achievement of the highest level of marital satisfaction. In other words, it coordinates the individual's lifestyle with another individual's lifestyle, through a shared understanding of subjects, intimacy, and collaboration(11, 12). Infertile couples especially infertile women need to talk about infertility and share their understanding of marital adjustment(1, 13). However, the marital adjustment of infertile couples is considered to be less than that of fertile couples(12).

Individuals' feeling of the quality of life varies according to the time, situation, and living conditions. Also, there are various factors related to the quality of life in different societies and cultures(14). In Iran, there are more than one million infertile couples. The

religious and cultural history of Iranian society emphasizes childbearing. Therefore, infertility is considered as a major social issue and a cause of divorce(3). The present study was conducted to predict the quality of life among infertile couples using marital adjustment, factors related to infertility, and background characteristics.

Identifying factors that influence couples' marital problems and decrease their quality of life is essential for identifying couples who need supportive care. Knowledge of background characteristics and marital adjustment, and their impacts on the quality of life can be used for health planning and family counseling to improve couples' quality of life and relationships. This study makes health authorities aware of couples' needs to provide appropriate healthcare services.

Materials & Methods

This study was conducted in an infertility clinic in an urban area of Iran. This clinic is the largest and most well-equipped university-centered infertility clinic in the northwest of Iran.

Participants: Inclusion criteria were the age range of 15-45 years; the documented diagnosis of infertility; no history of severe mental problems; the absence of severe discomfort during the interview; and no other acute physical problems. Using a census sampling method from January to June 2020, 131 women and 79 men were found eligible to take part in this study. The means of the women and men's age were 35.74 ± 6.11 years and 32.45 ± 5.72 years, respectively.

Measures: The background characteristics and infertility-related questionnaire, the infertile women's quality of life, and Spiner's marital adjustment questionnaires were used for data collection. The infertile couples' quality of life questionnaire had 72 items in seven dimensions as physical, psychological, spiritual, religious, economic, emotional, sexual, and social. Scores varied from 72 to 288, and higher grades indicated better quality of life. Its validity and reliability have already been confirmed in similar studies(9) (15-17). The Cronbach's alpha coefficients of each domain

were higher than 0.81 and for the whole instrument were 0.89.

The Spiner's marital adjustment questionnaire was a 15-item instrument developed by lock Wallace. This questionnaire examined the extent of couples' agreement in various areas. Scores varied from 2 to 155, and grades less than 100 indicated tensions in marital adjustment. The internal consistency coefficient of this questionnaire was reported satisfactory in similar context(18).

Data analysis: Descriptive and inferential statistics were used for data analysis via SPSS version 16 (Chicago, Illinois, USA). The normality of data was confirmed using the Kolmogorov-Smirnov test. To examine the relationship between the quality of life and continuous variable such as age, the Pearson correlation coefficient was used. For categorical variables such as gender and the level of education, t-test and ANOVA were applied. All independent variables with a $p < .10$ from univariate analysis were entered into a multiple linear regression model. In multiple regression analyses, the stepwise method was used in order to arrive at the final model and deduce a multivariate summary model of determinants of the outcome variables. The independent variables in this study were a mixture of continuous and categorical variables. In multiple

regression analyses, the categorical variables with more than two groups were coded as "dummy variables"(19).

Ethical consideration: This research was approved by the Tabriz Student Research Committee (code number: 5/46/4880). This study was conducted after obtaining permission from the Ethics Committee, as well as explaining the study's aim to the couples and achieving their informed consent. The participants were explained about the voluntary nature of participation in this study, the possibility of withdrawal from the study at any time without being penalized.

Results

In this study, 131 women and 79 men completed the questionnaires. The average duration of marriage and duration of infertility diagnosis were 4.30 ± 2.25 and 2.73 ± 1.74 years, respectively. Other demographic and background characteristics of the couples were reported in Table 1. The mean score of marital adjustment was 97.40 ± 23.70 , which was in the range of 45-152. The p -value ≤ 0.05 was considered significant. The results of the uni-variable analysis showed that the relationships between the quality of life with age ($p < 0.05$, $r = -.139$) and marital adjustment ($p < 0.01$, $r = -.544$) were statistically significant, but no significant relationship was found between marriage and duration of infertility.

Table 1. Description of demographic and infertility-related characteristics of the participants

	Characteristics	Variable	n	%
infertility-related characteristics	History of infertility in the family	Yes	55	26.2
		No	155	73.8
	Reason of infertility	Female-related	41	19.5
		Male-related	48	22.9
		Common	49	23.3
		Unknown	35	16.7
		I do not know	37	17.6
	Type of infertility	Primary	152	72.4
		Secondary	58	27.6
	Type of treatment	Drug	67	31.9
		In Vitro Fertilization (IVF)	38	18.1
		Intra-Uterine Insemination (IUI)	49	23.3
		Micro Injection	9	4.3
		I do not know	47	22.4

	Characteristics	Variable	n	%
demographic characteristics	Under pressure to undertake treatment	By the family	20	9.5
		By the husband's family	43	20.5
		By the husband	68	32.4
		Myself	79	37.6
			79	37.6
	Gender	Female	131	62.4
		Male	79	37.4
	Education level	Illiterate	78	37.1
		Under diploma	74	35.2
		Diploma	43	20.5
		Academic	155	73.8
	Residence	Urban	55	26.2
		Village	82	39.0
	Occupation	Employed	128	61.0
		Unemployed	32	15.2
	History of other diseases	Yes	178	84.8
		No	23	11.0
	Income	Sufficient	187	89.0
		Insufficient	36	17.1
	Educational level of spouse	Illiterate	69	32.9
		Under diploma	51	24.3
		Diploma	54	25.7
		Academic	183	87.1
	Insurance	Yes	27	12.9
		No	184	87.6

The univariate associations between the quality of life and other factors associated with infertility and demographic characteristics were presented in Table 2. Accordingly, variables that had a p-value <0.1 entered

the regression analysis test (Table 3). Level of 0.1 indicates that we allow for 10% likelihood that we obtain our results by chance.

Table 2. The univariate associations between the quality of life with infertility-related and demographic characteristics

	Characteristics	Variable	Mean	Std.Deviation			Sig.*** (2-tailed)
					T*	df**	
infertility-related characteristics	History of infertility in the family	Yes	145.87	23.04	1.511	208	.132
		No	150.62	21.81			
	Reason of infertility	Female-related	151.58	22.01	2.794	4	.027
		Male-related	147.08	24.88			
		Common	157.67	19.81			
		Unknown	145.49	19.45			
		I do not know	157.45	22.08			

	Characteristics	Variable	Mean	Std.Deviation			Sig.*** (2-tailed)
					T*	df**	
demographic characteristics	Type of infertility	Primary	152.59	21.69	.636	208	.526
		Secondary	150.41	23.61			
	Type of treatment	Drug	153.86	21.22	4	1.050	.383
		In Vitro Fertilization (IVF)	150.18	28.74			
		Intra-Uterine Insemination (IUI)	153.26	18.84			
		Micro Injection	161.22	19.11			
		I do not know	147.70	21.23			
		By the family	153.35	15.64		3	5.884
	Under pressure to undertake treatment	By the husband's family	152.46	24.74			
		By the husband	159.66	17.45			
		Myself	144.79	23.79			
	Gender	Male	145.39	24.39	-3.261	139.277	.001
		Female	155.97	19.83			
	Education level	Illiterate	140.20	25.55	3	10.582	.000
		Under diploma	154.52	22.79			
		Diploma	159.27	18.09			
		Academic	139.00	19.67			
	Residence	Urban	153.76	21.09	1.955	208	.052
		Village	147.00	24.61			
	Occupation	Employed	153.50	2.59	-.036	208	.971
		Unemployed	151.43	1.89			
	History of other diseases	Yes	152.74	21.00	1.960	208	.062
		No	144.00	23.91			
	Income	Sufficient	143.86	25.41	-1.650	26.077	.111
		Insufficient	152.99	21.64			
	Educational level of spouse	Illiterate	158.36	20.13	3	3.581	.015
		Under diploma	147.49	24.16			
		Diploma	157.47	20.22			
		Academic	148.33	21.11			
	Insurance	Yes	153.76	21.09	1.955	208	.052
		No	147.00	24.61			

*t-test

**Degrees of freedom

***Significance (P value)

Table 3. The prediction of variance in the quality of life based on input variables

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.	95,0% Confidence Interval for B	
	B	Std. Error	Beta	t		Lower Bound	Upper Bound
1(Constant)	126.401	15.801		7.999	.000	95.244	157.559
Age	-.312	.224	-.085	-1.398	.164	-.753	.128
gender	6.302	2.741	.138	2.299	.023	.898	11.706
Marital adjustment	-.416	.058	-.444	-7.184	.000	-.530	-.302
residence	-10.337	3.159	-.205	-3.272	.061	-16.567	-4.107
insurance	13.176	3.959	.199	3.328	.001	5.369	20.984
Reason of infertility	-.026	.947	-.002	-.027	.978	-1.894	1.842
Under pressure to undertake treatment	-1.668	.958	-.105	-1.742	.083	-3.556	.220
education	.081	1.663	.003	.049	.961	-3.197	3.360

R2-.786

Discussion

The purpose of this study was to predict the quality of life among infertile couples using marital adjustment, factors related to infertility, and background characteristics. According to the findings of this study, male gender, living in the rural area, having insurance, unknown causes of infertility, lack of pressure for fertility, academic education, higher age, and improved marital adjustment are related to a better quality of life. In the regression analysis, gender, insurance, and marital adjustment accounted for more than 78% of the observed variance in the quality of life of the infertile couples.

Gender was one of the predictors of the quality of life, as men had a better quality of life in this study. A systematic review study also demonstrated the poorer quality of life of women than men (9). According to the Monga's study on the effect of infertility on the quality of life, women in the control group had a higher and better quality of life than women in the infertile group, but no differences were found between men in the groups(20). This indicated the negative effect of infertility on the women's quality of life. Childbearing for women is more important than men as they feel more responsibility(13). Evidence have shown that women experience more stress even when their husbands have a

physical problem(9). The disagreement between couples' attitudes toward infertility can be attributed to the importance of childbearing for women than men. Also, women are more likely to pursue diagnosis and treat infertility than men, even when the infertility is related to male factors. On the other hand, more women than men talk with their spouses about childbearing, while men do not express clearly their concerns (9, 13, 21).

Insurance was another factor that affected the quality of life of infertile couples. Economic factors are among important factors that affect the quality of life of couples. This is particularly important for infertile couples, because the costs of infertility treatment are high. In the past, infertility treatment was not subject to medical insurance. Recently, the reduction of the reproductive rate in Iran has made that several measures are taken to incorporate the diagnostic and therapeutic interventions of infertility into medical insurance. Perhaps the insurance coverage was more a predictor of the quality of life than living expenses for the infertile couples. This finding reveals the importance and necessity of wider coverage of infertility treatment.

Another predictor of the quality of life was marital adjustment. Marital adjustment is one of the important concepts of couples' quality of life(4). According to the

findings of this study, marital adjustment was one of the most important criteria for the prediction of variation in the infertile couples' quality of life. Couples' adjustment and improving couples' understanding of the marital life have many positive emotional effects on them, especially those who experience stress(11). It can influence the quality of life in physical, psychological, spiritual and religious, economic, emotional, sexual and social dimensions(4, 12).

The limitations of this research may influence generalization of the findings. In this study, infertility was studied when the couples were following therapeutic measures. Therefore, other periods of the couples' life such as the time of infertility diagnosis and disappointment with fertility were not considered in this study. It was also impossible to achieve the perspectives of couples simultaneously. Comparing the perspectives of couples provide a more accurate understanding of this phenomenon

In general, gender, insurance and marital adjustment influence the couples' quality of life. The findings of this study revealed the clinical value of appropriate interventions to promote marital adjustment and rectify the underlying causes that increase the infertile couples' quality of life. In this context, more attention should be paid to women, the use of insurance and widening the scope of insurance for the treatment of infertility. It was found that the components of quality of life were adversely affected by fertility problems, and this is a consequence of infertility. Also, it is suggested that suitable education courses are held to increase marital adjustment among couples.

Given the fact that the quality of life among couples of reproductive age affects the long-term health of each family member, health policymakers, family counsellors, and psychologists are required to pay special attention to physical, mental, and environmental health dimensions of infertile couple's life which adversely affects their quality of life. However, infertile couples, especially less educated younger women, are at risk of a sub-optimal health-related quality of life and they should be provided help and support in order to improve their health-related quality of life.

Aacknowledgements

We appreciate the close cooperation of the staff and officials of the infertility center and all couples in this study.

Conflict of interest

The authors have no conflict of interest in this study.

References

1. Söderberg M, Christensson K, Lundgren I, Hildingsson I. Women's attitudes towards fertility and childbearing—A study based on a national sample of Swedish women validating the Attitudes to Fertility and Childbearing Scale (AFCS). *Sexual & Reproductive Healthcare* 2015;6(2):54-8.
2. Chaves C, Canavarro MC, Moura-Ramos M. The role of dyadic coping on the marital and emotional adjustment of couples with infertility. *Family process* 2019;58(2):509-23.
3. Kazemijaliseh H, Tehrani FR, Behboudi-Gandevani S, Hosseinpanah F, Khalili D, Azizi F. The prevalence and causes of primary infertility in Iran: a population-based study. *Glob J Health Sci* 2015;7(6):226.
4. Yazdani F, Kazemi A, Ureizi-Samani HR. Studying the relationship between the attitude to infertility and coping strategies in couples undergoing assisted reproductive treatments. *J Reprod Infertil* 2016;17(1):56.
5. Peterson B, Place JMS. The Experience of Infertility: An Unexpected Barrier in the Transition to Parenthood. In *Pathways and Barriers to Parenthood*. Springer; 2019. p. 19-37.
6. Gana K, Jakubowska S. Relationship between infertility-related stress and emotional distress and marital satisfaction. *J Health Psychol* 2016;21(6):1043-54.
7. Luk BH-K, Loke AY. The impact of infertility on the psychological well-being, marital relationships, sexual relationships, and quality of life of couples: A systematic review. *J Sex Marital Ther* 2015;41(6):610-25.
8. Chadha C, Kataria J, Chugh P, Choudhary A. Quality of life in young adult females with PCOS. *Indian J Physiother Occup Ther* 2019;1:40-2.
9. Chachamovich JR, Chachamovich E, Ezer H, Fleck MP, Knauth D, Passos EP. Investigating quality of life and health-related quality of life in infertility: a systematic

- review. *J Psychosom Obstet Gynaecol* 2010;31(2):101-10.
10. Luk BH, Loke AY. Sexual satisfaction, intimacy and relationship of couples undergoing infertility treatment. *J Reprod Infant Psychol* 2019;37(2):108-22.
 11. Qadir F, Khalid A, Medhin G. Social support, marital adjustment, and psychological distress among women with primary infertility in Pakistan. *Women & health* 2015;55(4):432-46.
 12. Najafi M, Soleimani AA, Ahmadi K, Javidi N, Kamkar EH. The effectiveness of emotionally focused therapy on enhancing marital adjustment and quality of life among infertile couples with marital conflicts. *Int J Fertil Steril* 2015;9(2):238.
 13. Karaca A, Unsal G. Psychosocial problems and coping strategies among Turkish women with infertility. *Asian Nurs Res* 2015;9(3):243-50.
 14. Crocker TF, Smith JK, Skevington SM. Family and professionals underestimate quality of life across diverse cultures and health conditions: systematic review. *J Clin Epidemiol* 2015;68(5):584-95.
 15. Yaghmaei F, Mohammadi S, Majd HA. Developing "quality of life in infertile couple's questionnaire" and measuring its psychometric properties. *J Reprod Infertility* 2009;10(2):137-43.
 16. Rashidi B, Montazeri A, Ramezanzadeh F, Shariat M, Abedinia N, Ashrafi M. Health-related quality of life in infertile couples receiving IVF or ICSI treatment. *BMC Health Serv Res* 2008;8(1):186.
 17. Zurlo MC, Della Volta MFC, Vallone F. Predictors of quality of life and psychological health in infertile couples: the moderating role of duration of infertility. *Qual Life Res* 2018;27(4):945-54.
 18. Dowlatabadi FH. The Role of the Attachment Styles and Coping Strategies in Predicting the Marital Adjustment in Female Teachers. *International Journal of Humanities and Cultural Studies (IJHCS)* 2016;2(3):1029-40.
 19. Kleinbaum D, Kupper L, Nizam A, Rosenberg E. Applied regression analysis and other multivariable methods. Nelson Education; 2013.
 20. 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.
 21. Shahraki Z, Ghajarzadeh M, Ganjali M. Depression, anxiety, quality of life and sexual dysfunction in Zabol women with infertility. *Mædica* 2019;14(2):131.