### **Original** Article

## Association between the Religious Coping of Infertile People with their Own Quality of Life and Their Spouses': A Correlation Study in Iranian Infertile Couples

### Abstract

Background: Infertile couples have a lower quality of life (QoL) than that of the general population. Religious coping strategies (RCOPE) could affect OoL in distressing situations. The present study aimed to assess the association between the RCOPE of infertile people with their own QoL and that of their spouses'. Materials and Methods: This cross-sectional study was conducted among 200 infertile couples referring to Infertility Center of Qom, Iran in 2015. The data was collected using three questionnaires including Brief RCOPE scale, Short Form Health Survey, and a demographic questionnaire. p value of  $\leq 0.05$  was considered as significant level. **Results:** Multivariate analysis showed relationship between wives' RCOPE-N with their own QoL ( $\beta = -1.31$ , p < 0.001). Further, in husbands, RCOPE-P showed significant positive relationship with their own QoL ( $\beta = 0.80$ , p = 0.002), and their RCOPE-N had significant negative relationship with it ( $\beta = -0.61$ , p = 0.02). Surprisingly, wives' RCOPE-P showed negative relationship with husbands' QoL ( $\beta = -0.62$ , p = 0.04); whereas their RCOPE-N had no significant relationship with their husbands' OoL. In addition, neither RCOPE-P nor RCOPE-N of husbands had a significant relationship with their wives' QoL. Conclusions: In summary, we could not find an obvious and significant relationship between RCOPE of each spouse with QoL of the other spouse in infertile couples. Hence, further investigations with more participants of various religions are recommended.

Keywords: Infertility, Iran, quality of life, religious coping

### Introduction

Infertility is defined as the failure of a couple to become pregnant after 12 months of sexual intercourse without anv contraception.<sup>[1]</sup> In Iran, using 20-27-year-old 16-18% of married women experience primary infertility.<sup>[2]</sup> The majority of infertile couples report profound suffering such as conflict, communication difficulties, disagreement over medical treatment, absence of empathy, and differential investment in the infertility treatment procedure that lead to depression, social isolation, sense of incompetency, embarrassment, shame, and finally divorce.[3-7] Several studies have verified significant adverse effects of infertility on quality of life (QoL) among infertile couples.<sup>[4-6]</sup> QoL is a subjective concept including four subscales - physical psychological symptoms, symptoms, outlook on life, and meaningful existence.[8] Although factors such as age, occupation, education, personality, and other individual

characteristics are effective on QoL, values and beliefs are also significant in interpreting and coping with adverse events.<sup>[9,10]</sup> Belief in a divine being or eternal life may make individuals more resilient when faced with worldly trials, disappointments, and major life changes.<sup>[11]</sup> Religious coping refers to how a patient makes the habit of his/her system of religious beliefs and practices to understand and cope with stress. RCOPE-P is characterized by a constructive reliance on faith to promote healthy adaptation (e.g., through "seeking God's love and care"). RCOPE-N is characterized by tension, question, and conflict about spiritual issues within oneself, with the divine, and with other people associated with psychological distress, worse QoL, and increased mortality in patients with a wide range of chronic medical conditions.<sup>[12,13]</sup> Considering that infertility requires long-term treatment or is even incurable in some cases, strengthening of

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religious beliefs can be considered as an effective factor to improve the QoL for infertile couples.<sup>[14-16]</sup> Several studies have investigated the effect of RCOPE on QoL in infertile men and women, however, no study has investigated the association of RCOPE of one spouse with the QoL of her/his spouse. The present study aimed to assess the association between the RCOPE of infertile couples with own QoL and of his/her spouse.

### **Materials and Methods**

This cross-sectional study was conducted among infertile couples referring to the Infertility Center of Qom, Iran in 2015. Two hundred couples with known infertility (at least 1 year after diagnosis and in the process of treatment) were selected by convenience sampling. To calculate the sample size,  $\alpha = 0.05$  and  $\beta = 0.8$  were considered. Further, correlation coefficient = 0.2 between RCOPE and QoL was applied based on a similar research by Taheri et al.<sup>[17]</sup> Couples were not included in the study if one or both spouses had a history of psychological disorders or any acute/chronic diseases. Exclusion criteria was incomplete questionnaire. Participants completed three questionnaires - Brief RCOPE scale, Short Form Health Survey (SF-36), and demographic questionnaire. The researcher patiently answered any questions the participants had regarding the study. Both spouses separately completed the questionnaires without helping and counseling each other. The demographic questionnaire included age of both spouses, educational level of both spouses, economic status of family, having children, history of abortion, previous infertility treatment, cause of infertility, duration of marriage, and duration of infertility. To measure the QoL, Short Form Health Survey (SF-36) was used. This self-administered questionnaire is a general QoL instrument that measures eight health-related concepts including physical functioning (PF, 10 items), role limitations due to physical problems (RP, 4 items), bodily pain (BP, 2 items), general health perceptions (GH, 5 items), vitality (VT, 4 items), social functioning (SF, 2 items), role limitations due to emotional problems (RE, 3 items), and perceived mental health (MH, 5 items). Furthermore, a single item that provides an indication of perceived change in general health status over a 12-month period (health transition) is also included in SF-36. The validity and reliability of the Persian version of this scale has been reported by Montazeri et al. in Iran.<sup>[18]</sup> In the present study. the reliability of SF-36 was determined by Cronbach's alpha as 0.88. Brief RCOPE, designed by Pargament et al., consists of 14 items in two subscales (positive and negative). Seven items measure positive religious coping (RCOPE-P) and the other seven items measure negative religious coping (RCOPE-N). Responses to each statement were rated on a 4-point Likert scale from 0 "Not at all" to 3 "A great deal," so that each participant received one score for RCOPE-P and one score for

RCOPE-N. A higher score on each subscale shows a greater use of that RCOPE.<sup>[19]</sup> To use this questionnaire in Farsi, it was translated into Farsi by forward-backward translation method. The internal consistency was assessed by Cronbach's alpha coefficient which was calculated as 0.9. Paired *t*-test was applied to compare the scores of wives and husbands in QoL and its subscales as well as RCOPE. To analyze the association between QoL and demographic characteristics as well as RCOPE in the spouses, we applied analysis of variance (ANOVA), independent t-test, and Pearson's correlation coefficient. In this manner, association between two variables was assessed by univariate analysis. Considering that the QoL of the wives and husbands had significant relationship with each other (p < 0.0001, r = 0.4), multivariate regression was used to simultaneously determine the factors associated with wives' and husbands' QoL. In this manner, wives' and husbands' QoLs were entered into the model as dependent variables and RCOPE and demographic variables as independent variables. To interpret the coefficients of qualitative variables (categorical variables), one of the categories was considered as reference category and others were compared with it. Data were analyzed using SPSS 21, IBM, Armonk, NY, United States of America. p value of  $\leq 0.05$  was considered as significant level.

### **Ethical considerations**

The study protocol was approved by the Ethics Review Committee of Qom University of Medical Sciences. All questionnaires were anonymous and participation was voluntary. All participants also signed a consent form.

### Results

The mean (SD) age of wives and husbands was 28.82(5.13)and 32.61 (5.32) years, respectively. The mean (SD) of marriage duration and infertility duration was 7.31 (4.76) and 4.93 (3.95) years, respectively. Regarding the view of the couples, most had a good economic status (83.50%) and did not have any children (83.50%), and reported that the cause of their infertility was unknown (33%) [Table 1]. Total score of the QoL and all its subscales were significantly lower among wives in comparison with their husbands (p < 0.05) except perceived mental health. Among the subscales of the QoL, the lowest was "role limitations due to emotional problems" in wives and "vitality" in their husbands; whereas, the highest subscale was "physical functioning" in both spouses [Table 2]. Regarding RCOPE, the mean of RCOPE-P was significantly higher in wives (p = 0.01); however, the wives and their husbands were not significantly different in RCOPE-N [Table 2]. The results of univariate analysis showed that wives' OoL was not correlated with RCOPE-P and RCOPE-N of the husbands and demographic variables. However, in wives, both RCOPE-P and RCOPE-N were correlated with their own QoL, as RCOPE-P was positively (r = 0.15, p = 0.02) and RCOPE-N was negatively correlated with

Table 1: Demographic	Table 1: Demographic variables of the participants						
Variable	Wives N(%)	Husbands N(%)					
Educational level							
Secondary school or lower	48 (24)	52 (26)					
High school	76 (38)	74 (37)					
University education	76 (38)	74 (37)					
Age mean (SD)	28.82 (5.13)	32.61 (5.32)					
Economic status of family							
Good	167	(83.50)					
Average	24 (12)						
Weak	9	(4.50)					
Having children							
Have children	33 (16.50)						
Have no children	167 (83.50)						
History of abortion							
Yes	39 (19.50)						
No	161	(80.50)					
History of infertility							
treatment							
Yes	118 (59)						
No	82 (41)						
Cause of infertility							
Female factor	4	4 (22)					
Male factor	51	(25.50)					
Both female and male	39	(19.50)					
Unknown factor	6	6 (33)					
Duration of marriage year	7.3	1 (4.76)					
mean (SD)							
Duration of infertility year	4.9	3 (3.95)					
mean (SD)							

# Table 2: Comparison of wives and husbands in subscales of QOL and RCOPE

Variables	Wives	Husbands	df	t	р		
	Mean (SD)	Mean (SD)					
Physical	75.43 (26.10)	85.91 (19.11)	199	5.34	< 0.001		
functioning							
Role	60.41 (36.61)	66.31 (34.81)	199	2.04	0.04		
limitations due							
to physical							
problems							
Bodily pain	· · · · · ·	77.10 (24.11)			< 0.001		
General health	63.91 (18.46)	70.11 (17.61)	199	4.19	< 0.001		
perceptions							
Vitality	60.32 (22.10)	66.21 (19.72)	199	-3.51	0.001		
Social	68.24 (14.10)	72.91 (24.52)	199	-2.79	0.006		
functioning							
Role	53.38 (38.82)	64.21 (39.71)	199	3.07	0.002		
limitations due							
to emotional							
problems							
Perceived	68.52 (20.32)	71.10(18.23)	199	-1.59	0.11		
mental health							
Total score of	66.61 (17.74)	73.50 (15.72)	199	-5.29	< 0.001		
quality of life							
RCOPE-P	16.92 (3.53)	16.12 (4.52)	199	2.54	0.01		
RCOPE-N	5.32 (4.52)	5.10 (4.61)	199	0.89	0.35		

wives' QoL (r = -0.31, p < 0.001) [Table 3]. In husbands, univariate analyses indicated that only educational level among demographic variables had significant association with their QoL (p = 0.001). In addition, husbands' QoL was negatively correlated with RCOPE-N of both wives and husbands (respectively r = -0.13, p = 0.04; r = -0.23, p = 0.002) [Table 3].

Multivariate analysis indicated that wives' age had a significantly negative relationship with husbands' OoL  $(\beta = -0.52, p = 0.04)$ , as the lower was the wives' age the higher was the husbands' QoL. Having a history of previous infertility treatment had a negative relationship with only wives' QoL, indicating that wives with a previous history of infertility treatment had lower QoL rather than ones without it ( $\beta = -4.43$ , p = 0.04). In cases where infertility was due to husbands, wives' OoL was higher than the cases with unknown factor ( $\beta = 6.13$ , p = 0.03). Educational level of the wives did not have any relationship with husbands' QoL as well as their own; however, educational level of the husbands had a significant relationship with both wives' and husbands' QoL, respectively ( $\beta = -5.93$ , p = 0.04and  $\beta = -6.04$ , p = 0.02), indicating that the husbands with higher educational level had higher QoL both for themselves and their wives [Table 4].

Regarding the main objectives of the study, the results showed that, in wives, RCOPE-N had significant negative relationship with their own QoL ( $\beta = -1.31$ , p < 0.001); whereas, RCOPE-N had no significant relationship. Moreover, in husbands, RCOPE-P showed significant positive relationship with their own QoL ( $\beta = 0.80$ , p = 0.002) and their RCOPE-N had significant negative relationship with it ( $\beta = -0.61$ , p = 0.02). Surprisingly, wives' RCOPE-P showed negative relationship with husbands' QoL ( $\beta = -0.62$ , p = 0.04); whereas, their RCOPE-N had no significant relationship with their husbands' QoL ( $\beta = -0.21$ , p = 0.30). Furthermore, neither RCOPE-P ( $\beta = 0.14$ , p = 0.60) nor RCOPE-N ( $\beta = 0.31$ , p = 0.20) of husbands had a significant relationship with their wives' QoL.

### **Discussion**

The results of our study showed that scores of all subscales of QoL SF-36 were significantly lower in wives in comparison with their husbands. In a study by Keramati *et al.*, wives' QoL was lower in comparison with their husbands in all subscales of both general QoL (SF-36) and infertility-related QoL questionnaires.<sup>[20]</sup> Moreover, the findings of three studies by Dillu and Rashidi and Ragni are consistent with our finding.<sup>[21-23]</sup> Rashidi *et al.* reported markedly lower SF-36 scores in females compared to males and concluded that female gender was a significant predictor of poorer health-related QoL.<sup>[24]</sup> The probable cause is that infertile wives experience more stress than their husbands maybe due to cultural factors and more involvement in diagnostic and treatment interventions;

Variables	Wives'	QoL		h QOL using univariate analysis Husband's QoL			
	Pearson correlation (r)	-	р	Pearson correlation (r)		р	
Wives' RCOPE-P	0.15		0.02	-0.12		0.09	
Wives' RCOPE-N	0.31		< 0.001	-0.13		0.04	
Husbands' RCOPE-P	0.13		0.14	0.12		0.07	
Husbands' RCOPE-N	-0.02		0.70	-0.23		0.002	
Duration of marriage (year)	0.06		0.31	-0.03		0.63	
Duration of infertility (year)	0.04		0.54	-0.03		0.56	
Wives' age	0.04		0.50	-0.06		0.30	
Husband's age	0.12		0.10	-0.03		0.60	
	Mean (SD)	F/t	р	Mean (SD)	F/t	p	
Educational level of wives							
Secondary school or lower	66.31 (15.92)	0.16	0.81	70.12 (16.11)	1.56	0.22	
High school	67.33 (18.21)			74.64 (15.93)			
University education	65.34 (18.81)			74.75 (15.36)			
Educational level of husbands							
Secondary school or lower	66.12 (15.72)	1.39	0.25	67.73 (16.41)	7.06	0.001	
High school	64.21 (19.94)			73.12 (15.33)			
University education	69.12 (16.93)			78.14 (14.41)			
Economic status of family							
Good	66.03 (19.42)	0.02	0.97	69.25 (16.22)	1.70	0.18	
Average	66.51 (17.12)			74.76 (15.33)			
Weak	67.06 (21.02)			73.08 (17.24)			
Having children		1 N N					
Yes	69.42 (17.83)	-1.03	0.30	73.1 (15.80)	-0.92	0.35	
No	65.94 (17.81)			75.9 (15.50)			
History of abortion							
Yes	65.14 (19.65)	0.51	0.60	73.04 (16.07)	0.23	0.82	
No	66.82 (17.45)			73.71 (15.73)			
History of infertility treatment							
Yes	64.93 (19.11)	1.42	0.15	72.42 (15.95)	1.27	0.21	
No	68.65 (15.91)			75.32 (15.53)			
Cause of infertility							
Female factor	65.56 (17.63)	0.97	0.40	0.46	0.90	0.44	
Male factor	69.78 (16.73)			74.16 (16.57)			
Both female and male factors	67.16 (17.22)			69.92 (16.97)			
Unexplained	64.24 (19.17)			74.42 (15.11)			

F: fisher statistics, t: t statistics, p: p-value

moreover, women are often more sensitive to childlessness. Some studies have demonstrated that the effect of infertility and its treatment was stronger in women than men, indicating that having children was more important to women than men.<sup>[4,24,25]</sup> Another explanation is that women are blamed more frequently for couple's infertility or sometimes they take the blame themselves; thus, the stigma relating to such blaming causes more distress and deteriorations in QoL among female partners.<sup>[26,27]</sup>

In the present study, univariate analyses showed that, out of all demographic variables of wives and husbands, only husbands' educational level was associated with their own QoL. This finding supports the study of Rashidi *et al.* who found that low educational level was a significant predictor of poor health-related QoL in infertile couples.<sup>[21]</sup> However, multivariate analysis indicated that, in addition to husbands' educational level, the cause of infertility was associated with their wives' QoL, as when the cause of infertility was male factor, the wives' QoL was better. Psychologists believe that if the cause of infertility is the female, they will encounter critical emotional problems such as worry and fear of their spouses' attitude towards the problem and disruption of the family.<sup>[28]</sup> The result of a study by Charandabi *et al.* is consistent with our finding. They found that low mental component of QoL was associated with unexplained cause of infertility in infertile women.<sup>[29]</sup> Both studies showed that, when the cause of infertility was the husband, wives' QoL was higher and when it was the wife or was uncertain, wives' QoL was lower. It seems that, when the cause of infertility

Table 4: Association of RCOPE and demographic								
variables with QOL using multivariate analysis								
Variables		Wives' QoL			Husbands' QoL			
	β	SE (β)		β	<u>SE (β)</u>			
Wives' RCOPE-P	0.51	0.32	0.10	-0.62	0.31	0.04		
Wives' RCOPE-N	-1.31	0.31	< 0.001		0.25	0.30		
Husbands' RCOPE-P	0.14	0.24	0.60	0.80		0.002		
Husbands' RCOPE-N	0.31	0.30	0.20	-0.61		0.02		
Wives' age	-0.45		0.21	-0.52		0.04		
Husbands' age	0.31	0.23	0.15	0.24	0.25	0.36		
Educational level of wives								
Secondary school or	-1.41	4.12	0.74	0.22	3.60	0.92		
lower	1.71	7.12	0.74	0.22	5.00	0.72		
High school	2.40	3.13	0.45	0.53	2.76	0.84		
University education		Re	eference	catego	rv			
Educational level of				U	5			
husbands								
Secondary school or	-2.81	3.60	0.42	-9.41	3.11	0.003		
lower								
High school	-5.93	2.96	0.04	-6.04	2.64	0.02		
University education		Re	eference	catego	ory			
Economic status of								
family								
Weak	-0.90		0.87	-0.81	4.50	0.81		
Average	-1.81	4.17	0.65	2.13	3.67	0.55		
Good		Re	eference	catego	ory			
Having children	2 0 2	4.01	0.54	2 0 1	1.00	0.01		
No	-2.93	4.81		-3.91	4.23	0.31		
Yes		Re	eference	catego	ory			
History of abortion	1 10	2.21	0.75	1.64	2.05	0.54		
Yes	-1.10			-1.64		0.54		
No		K	eference	catego	ory			
History of infertility treatment								
Yes	-4.43	2.14	0.04	-2.25	2 25	0.31		
No	-4.43					0.51		
Cause of infertility		K	eference	catego	лy			
Female factor	2.51	3.41	0.42	-0.50	3.10	0.83		
Male factor	6.13	3.12	0.42	-2.41	3.10	0.85		
Both female and male	4.84	3.60	0.03	-4.92		0.45		
factors	4.04	5.00	0.18	4.92	3.21	0.16		
Unexplained	Reference category							
Duration of	0.21	0.62	0.63	-0.41	0.52	0.33		
marriage (yr.)	0.21	0.02	0.05	0.11	0.02	0.00		
Duration of	-0.21	0.62	0.68	0.63	0.52	0.21		
infertility (yr.)								

Degree of free (df) for all parameters=1

is the male, annoyance and harassment of husband and his relatives decrease and negative feelings such as abandonment, insufficiency, stigmatization, and sin reduce in female spouses which can raise her QoL. Meanwhile, when the cause of infertility is unexplained, female spouses are usually blamed or sometimes they take the blame themselves leading to a lower QoL. Rashidi *et al.* reported that in univariate analysis health-related QoL was better in infertile couples with male factor or both male and female infertility factor; however, in multivariate analysis the cause of infertility was not a significant predictor of poor health-related QoL.[21] In addition, multivariate analysis indicated that the history of treatment was associated with wives' QoL. Treatment interventions could harm infertile women both physically and psychologically resulting from hospitalization, fear of procedures, feeling of pain, and treatment frustration. In contrast, based on a logistic regression analysis, Rashidi et al. reported that previous treatment for infertility was not a significant predictor of poor health-related QoL in infertile couples.[21] This contradiction in results is probably caused by different analysis methods. We found no association between age and their own QoL in wives and husbands; however, in a study by Rashidi et al., lower age was a significant predictor for poor mental component of health-related QoL in infertile couples receiving in-vitro fertilization or ICSI (Intra Cervical Sperm Injection) treatment.<sup>[21]</sup> This contradiction may be due to different sample sizes. In our study, wives' age was negatively associated with husbands' QoL, as the older the wives were, the lower the husbands' OoL was. It seems that a younger infertile woman is hopeful to become pregnant and have a baby but when she becomes older her disappointment and depression and anxiety could affect her husband's QoL. In the present study, economic status of family was not associated with infertile wives' and husbands' OoL: however, Charandabi et al. in another study indicated that low mental component of QoL was associated with low income in infertile women.<sup>[30]</sup> In this case, different ways for categorization of economic status of family can explain the different results of two studies.

The results showed that the mean of RCOPE-P was significantly higher in wives. This finding supports the finding of another study on cancerous patients in which women applied RCOPE-P more than men.<sup>[30]</sup> Regarding the main objective of the present study, multivariate analysis demonstrated that in husbands RCOPE-P and RCOPE-N had positive and negative associations, respectively, with their own QoL. These findings are consistent with several studies conducted to assess the association of RCOPE with QoL in various patients. For example, Vallurupalli showed that QoL was associated with RCOPE-P positively in cancerous patients. On the other hand, RCOPE-P improved their QoL.<sup>[31]</sup> In a similar study, Tarakeshwar et al. demonstrated that RCOPE-P had a positive association and RCOPE-N had a negative association with QoL in cancerous patients.<sup>[30]</sup> Moreover, Ramirez et al. found similar results in hemodialysis patients.<sup>[13]</sup> However, multivariate analysis demonstrated that in wives RCOPE-P had no significant positive association with their OoL. This finding is in contrast to the abovementioned studies. This contradiction could be because of various conditions (hemodialysis versus infertility), different religions, and cultural situation. Surprisingly, we found that wives' RCOPE-N had no

association with husbands' QoL; however, their RCOPE-P had negative association with their husbands' QoL. An explanation is that infertile women seeking miraculous cure usually involve in religious activities hopefully. It can be resulted in reminding the problem consistently and rising anxiety in their husbands. Moreover, we found that neither RCOPE-N nor RCOPE-P of husbands was associated with their wives' QoL. To rationalize this finding, we could say that most men usually do not express and exhibit their feelings and attitudes and keep it to themselves; so, their RCOPE does not affect their wives. One possible limitation is that all participants were Muslim and our findings cannot be generalized. Further studies are required among infertile couples belonging to other religions. Another limitation is convenient sampling employed for selecting participants.

### Conclusion

We found that husbands' RCOPE (either positive or negative) was associated directly with their own QoL rather than their wives' QoL. In addition, wives' RCOPE- P was associated with their husbands' QoL negatively; however, their RCOPE- N was not associated with their husbands' QoL. In summary, we could not find an obvious and significant relationship between RCOPE of each spouse with QoL of the other spouse in infertile couples. Therefore, further investigations with more participants of various religions are recommended.

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### **Conflicts of interest**

Nothing to declare.

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