

# Investigating the Relationship between Spiritual Intelligence and Resilience in Infertile Couples in Isfahan: A Cross-Sectional Study

## Abstract

**Background:** Infertility is a psychological crisis for a couple, spouse, and their families. Due to the positive effects of spiritual intelligence on the positive adaptation and growth of the individual under difficult circumstances, this study was conducted to determine the relationship between spiritual intelligence and resilience in infertile couples in Isfahan. **Materials and Methods:** This cross-sectional study was performed in 2020 on 162 infertile couples. Data were collected by the convenience sampling method from infertile couples referring to Infertility Centers in Isfahan through two standard questionnaires. Data analysis was performed using descriptive statistical methods for quantitative variables. The relationship between spiritual intelligence and resilience score was investigated using inferential statistical methods of Pearson's correlation coefficient and multiple linear regression. A  $p$  value of less than 0.05 was considered significant. **Results:** The results showed that the mean age Standard Deviation (SD) of women and their spouses was 32.01 (5.86) and 36.30 (5.82) years, respectively. Pearson's correlation coefficient showed that there was a significant positive direct relationship between resilience score with total spiritual intelligence score ( $r = 0.36$ ,  $p < 0.001$ ) and its dimensions Critical Existential Thinking (CET) ( $r = 0.60$ ,  $p < 0.001$ ), personal meaning production (PMP) ( $r = 0.38$ ,  $p < 0.001$ ), Transcendental Awareness (TA) ( $r = 0.43$ ,  $p < 0.001$ ), and Conscious State Expansion (CSE) ( $r = 0.53$ ,  $p < 0.001$ ). The PMP ( $t = 6.38$ ,  $p < 0.001$ ) and the CSE ( $t = 2.15$ ,  $p = 0.03$ ) were significant predictors of resilience scores. **Conclusions:** The result of our study showed that couples with a higher level of spiritual intelligence had a better understanding of the problems and harms of primary infertility and would cope with it more efficiently.

**Keywords:** Infertility, intelligence, Isfahan, psychological resilience, spirituality

## Introduction

Infertility is a global problem. A total of 15% of couples are infertile. This will be approximately 48.5 million couples.<sup>[1]</sup> Various studies estimated that the prevalence of infertility in Iran in recent years is between 14 and 20%.<sup>[2]</sup> Thus, one-fifth of Iranian families experience primary infertility.<sup>[3]</sup> In Iranian culture, childbearing is precious. However, infertility is a tragic psychological accident for the individual, the spouses, and the couple's families.<sup>[4]</sup> Studies have shown that having children in Iran, as in other developing countries, has a significant effect on the mental health of infertile people.<sup>[5]</sup> Infertility creates a sense of inability for women to get their desired social role, so it can lead to mental distress.<sup>[6]</sup> In addition, treatment of infertility is associated with exorbitant

costs, low self-esteem, guilt, loneliness, insecurity and fear of the future, and a sense of failure and regret. These negative emotions are observed even in people under treatment and are not limited to developing areas.<sup>[7]</sup> Infertility for a couple is a complex problem that threatens the mental and social health of infertile couple, especially woman. Couples experience some psychological problems due to both infertility and medical interventions such as psychological disorder, fear, anxiety, worry, and depression. Sometimes, these side effects are so severe. For example, the results of a systematic review revealed that, in 21,453 infertile individuals from eight countries, the mental burden from the treatment had been one of the main reasons for stopping the infertility treatment.<sup>[8]</sup> There are several ways to help infertile couples to improve their health. Paying attention to

**Masoume Pirhadi,  
Fatemeh Torabi,  
Fatemeh Mokhtari**

*Nursing and Midwifery Care  
Research Center, Faculty of  
Nursing and Midwifery, Isfahan  
University of Medical Sciences,  
Isfahan, Iran*

**Address for correspondence:**  
Fatemeh Mokhtari,  
Nursing and Midwifery Care  
Research Center, Faculty of  
Nursing and Midwifery, Isfahan  
University of Medical Sciences,  
Isfahan, Iran.  
E-mail: mokhtari@nm.mui.ac.ir

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spirituality is one of these strategies that can be considered to help couples.

Spirituality seems to be one of the factors that affects health; however, attention to the spiritual dimension of health has been neglected in health promotion issues and programs around the world (especially in the field of infertility). Spirituality allows individuals to identify a single concept in life and feel that there is a greater force than all the problems. Spiritual health can have a positive effect on physical and mental health.<sup>[9]</sup>

Researchers expressed that creating personal meaning in life could be associated with pain and stress.<sup>[10]</sup> Religious beliefs could allow people to gain more mental ability and patience to endure the pains of life.<sup>[11,12]</sup> Resilience reflects physical endurance, self-motivated improvement, and the ability to create emotional balance in stressful situations.<sup>[13]</sup> Infertility problems, such as the cost of treatment, depression, the effects of medications, and surgical procedures, may make it difficult for a couple to cope and in some cases even lead to irreparable damage to the couple's life. In some cases, the couple's incompatibility with the existing conditions leads to the abandonment of treatment methods. So, considering the positive effects of spiritual intelligence on the positive adaptation and growth in difficult situations and the failure to investigate the relationship between spiritual intelligence and resilience among infertile couples in Iran, the purpose of this study was to determine the relationship between spiritual intelligence and resilience in infertile couples in Isfahan.

## Materials and Methods

This study was a descriptive cross-sectional study, which was performed in one step in 2020 (from January to April) on infertile couples in Isfahan. The sample size was estimated to be 162 couples based on similar studies<sup>[14]</sup> and using the formula ( $p = 0.12$ ,  $q = 0.88$ ,  $z = 1.96$ ,  $d = 0.05$ ). The inclusion criteria of the research included having a history of primary infertility and completing an informed consent form. Lack of willingness to participate in the study was considered as the exclusion criterion of the study. Isfahan has two main infertility treatment centers, one of which is privately run and the other is publicly run. Samples were collected using a convenience sampling method, and information was collected from infertile couples who were referred to the Isfahan Fertility and Infertility Center (private center) and Maryam Clinic (public center), in Isfahan, Iran. The researcher visited infertility centers and identified couples with inclusion criteria. One of the researchers then stated the research objectives for the couple. After obtaining informed consent, the questionnaire was completed by infertile couples as self-reported.

King's Spiritual Intelligence Self-Report Inventory (SISRI) was used to collect research data. The questionnaire has 24

items that measure spiritual intelligence on a 5-point Likert scale (0–4), and its scores vary between 0 and 96. The scale has four subsets of Critical Existential Thinking (CET), Personal Meaning Production (PMP), Transcendental Awareness (TA), and Conscious State Expansion (CSE). In Iran, Raghibi *et al.*<sup>[15]</sup> obtained Cronbach's alpha coefficient of 0.89 and a validity coefficient of 0.67 through retesting. In a study conducted by Khodabakhshi Koolae *et al.* (2013),<sup>[10]</sup> Cronbach's alpha for the total questionnaire was 0.91, that for CET was 0.75, that for PMP was 0.79, that for TA was 0.66, and that for CSE was 0.80.

The Connor–Davidson Resilience Scale (CD-RISC) was used to measure the level of infertility-related resilience. This scale has 25 items that measure the resilience structure based on a 5-point Likert scale. Based on this scale, a score of 1 is considered “completely incorrect” and a score of 5 is considered “always correct.” The scoring range is between 25 and 125. Mohammadi translated it and obtained its reliability as 0.89 by Cronbach's alpha internal consistency, and its validity was 0.87 by the factor analysis method.<sup>[16]</sup> Also, demographic and fertility characteristics were collected using a checklist including questions about women and spouse's age, education level of wife and spouse, housing and income level, duration of marriage, duration of treatment, and cause of infertility.

Data analysis was conducted using Statistical Package for the Social Sciences (SPSS) version 18 (Chicago, IL, USA). To analyze the data for quantitative continuous variables, descriptive statistical analysis was used. Also, Pearson's correlation coefficient, independent-samples t-test, and multiple linear regression were used to investigate the relationship between spiritual intelligence and resilience score. A  $p$  value of less than 0.05 was considered significant.

## Ethical considerations

Patient information was kept confidential by the researcher, and all patients completed informed consent. The ethics committee of Isfahan University of Medical Sciences approved this study, and the committee's reference number was “IR.MUI.RESEARCH.REC.1397.486.”

## Results

The results showed that the mean (SD) of women's age was 32.01 (5.86) years and the mean (SD) of men's age was 36.30 (5.82). Also, it was shown that the duration of marriage was 8.48 (5.49) in the range of 1 to 27 years and their mean treatment's period was 50.72 (51.41) days between 1 and 216 days. Approximately 58.6% of participants had referred to the public center, and the others had gone to the private center.

The average score of the couple's total spiritual intelligence was 53.41 (12.19). Also, the average resilience score of the subjects was 86.03 (15.86) in the range of 47–125. Pearson's correlation coefficient showed that there was a direct

relationship between resilience score and total spiritual intelligence score and all its dimensions. There was a direct relationship between resilience score with CET ( $r = 0.60$ ) and medium direct relationship with TA ( $r = 0.43$ ) and CSE ( $r = 0.53$ ), while there was a weak direct relationship between resilience score with total spiritual intelligence score ( $r = 0.36$ ) and PMP ( $r = 0.38$ ,  $p < 0.001$ ) [Table 1].

Multiple linear regression analysis showed that scores of PMP and TA were significant predictors of resilience score, respectively, but in the presence of these two, other dimensions of spiritual intelligence were not significant predictors of resilience score, respectively [Table 2].

Independent-samples t-test showed that the mean score of resilience and the total score of spiritual intelligence and its

dimensions were not significantly different between couples treated in public and private centers ( $p > 0.05$ ) [Table 3].

## Discussion

The results showed a positive and significant relationship between spiritual intelligence and resilience. The results of our study showed that there was a strong direct relationship between resilience score with CET and medium direct relationship with TA and CSE, while there was a weak direct relationship between resilience score with total spiritual intelligence score and PMP. Therefore, the results indicated that couples who had a higher level of spiritual intelligence would have a better understanding of their infertility problems. Spiritual intelligence was related to emotional and behavioral stability and resilience to stress.<sup>[17]</sup>

The results showed that the mean score of resilience and the total score of spiritual intelligence and its dimensions were not significantly different between couples treated in public and private centers. Therefore, it seems that the economic and social status of couples was not among the factors affecting spiritual intelligence and resilience in infertile couples.

The results of the present study showed that there was a positive and significant relationship between all four dimensions of spiritual intelligence with resilience in infertile couples. Therefore, the development of spiritual intelligence seems to be effective in achieving better and more efficient adaptation to the consequences of infertility. In other words, it seems that the development of spiritual intelligence can reduce the negative psychological and social results of infertility and may be effective for continuing treatment methods. Similarly, the results of a study showed that spirituality could reduce the psychological problems of infertile women and help them during infertility treatments.<sup>[14]</sup> Furthermore, spirituality increases the resistance of individuals to face problem in any case.<sup>[18]</sup>

The results of this study indicated a strong relationship between resilience with CET and medium relationship with TA and CSE. Like the results of the present study, Nik Amal and Shademanfar's study and some other studies<sup>[19-21]</sup> showed that spiritual intelligence had a positive and significant relationship with resilience. In our study, among the dimensions of spiritual intelligence, CET had the most relationship with resilience, but in Nik Amal and Shademanfar's study, transcendent self-awareness had the greatest share in explaining resilience changes.<sup>[22]</sup> It seems that the significant difference between the results of these two studies can be attributed to the difference in the studied communities.

Also, the result of our study showed that there was a weak direct relationship between resilience score with total spiritual intelligence score and PMP. So, when experiencing

**Table 1: Pearson's correlation coefficients between resilience score and total spiritual intelligence score and its dimensions**

| Dimensions of spiritual intelligence | Resilience score |          |               |         |
|--------------------------------------|------------------|----------|---------------|---------|
|                                      | <i>r</i>         | <i>p</i> | Mean (SD)     | Min-Max |
| Total spiritual intelligence         | 0.36             | <0.001   | 53.41 (12.19) | 12-91   |
| Critical existential thinking        | 0.60             | <0.001   | 16.17 (4.45)  | 4-28    |
| Personal meaning production          | 0.38             | <0.001   | 11.97 (3.29)  | 1-20    |
| Transcendental awareness             | 0.43             | <0.001   | 15.54 (3.78)  | 6-27    |
| Conscious state expansion            | 0.53             | <0.001   | 9.73 (3.29)   | 0-20    |

**Table 2: Multiple linear regression analysis to predict resilience score based on spiritual intelligence dimension scores**

| Dimensions of spiritual intelligence | $\beta$ | S.E  | <i>p</i> | CI (95%) for $\beta$ |
|--------------------------------------|---------|------|----------|----------------------|
| Critical existential thinking        | -0.16   | 0.30 | 0.61     | -0.75-0.44           |
| Personal meaning production          | 2.64    | 0.41 | <0.001   | 1.83-3.46            |
| Transcendental awareness             | -0.09   | 0.37 | 0.81     | -0.82-0.65           |
| Conscious state expansion            | 0.85    | 0.40 | 0.03     | 0.70-1.64            |

**Table 3: Mean resilience score and total spiritual intelligence score and its dimensions by type of infertility treatment site**

|                               | Public center | Private center | Independent-samples <i>t</i> -test |          |
|-------------------------------|---------------|----------------|------------------------------------|----------|
|                               | Mean (SD)     | Mean (SD)      | <i>t</i>                           | <i>p</i> |
| Total spiritual intelligence  | 54.33 (13.48) | 52.11 (10.04)  | 1.20                               | 0.23     |
| Critical existential thinking | 16.45 (4.96)  | 15.76 (3.59)   | 1.03                               | 0.31     |
| Personal meaning production   | 12.20 (3.58)  | 11.64 (2.83)   | 1.06                               | 0.29     |
| Transcendental awareness      | 15.90 (4.13)  | 15.03 (3.18)   | 1.50                               | 0.13     |
| Conscious state expansion     | 9.77 (3.35)   | 9.67 (3.22)    | 0.19                               | 0.85     |
| Resilience score              | 85.32 (16.98) | 87.05 (14.19)  | 0.68                               | 0.49     |

stress, PMP allows the individual to create new conditions, even if it is stressful, to find meaning or purpose in it and be able to adapt to new conditions. In this way, it can change the stressors and reduces their negative effects. Similarly, the result of study in Iran showed that when faced with a difficult situation, PMP may lead a person to a meaning-oriented solution and act as an effective problem-solving method.<sup>[23]</sup>

Some studies, similar to the results of the present study, showed a positive and significant relationship between spirituality, spiritual intelligence, and resilience.<sup>[17,13]</sup> Therefore, it is expected that those who have higher spiritual intelligence will not only be resistant to facing personal problems caused by infertility, but also strengthen their marital relationships.<sup>[24]</sup> So, the healthcare providers should be aware of the couple's spiritual beliefs and it is always important to respect and consider them in the process of diagnosis and treatment.<sup>[8]</sup> The medical team can help the patient organize the spiritual aspects of one's life during the diagnostic and treatment process. It has been proven that having a child plays a pivotal role in couples' happiness in their marital life. When they are deprived of having them, they not only miss the meaning in their life but also develop conflicts in their interpersonal communication, which predisposes them to mental and psychological problems such as anxiety, depression, and mental pressure, consequently which can expose them to domestic violence.<sup>[25]</sup>

The most important advantages of this project were that for the first time, this study had specifically addressed the relationship between spiritual intelligence and resilience as one of the factors affecting psychological adjustment to the physical and psychological consequences of infertility in Iran. Culture and religion affect spiritual intelligence,<sup>[26,27]</sup> so conducting a study in Isfahan society limited the generalizability of the study to all infertile couples. Therefore, it was recommended to do the same study in different societies with different cultures and religions.

## Conclusion

Based on the findings, there was a positive and significant relationship between spiritual intelligence and resilience. The result of our study showed that couples with a higher level of spiritual intelligence had a better understanding of the problems and harms of primary infertility and would cope with it more efficiently. Developing spiritual intelligence could probably be effective for better and more efficient adaptation to the consequences of infertility and continued treatment.

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## Conflicts of interest

Nothing to declare.

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