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Improving daily spiritual experiences and hope among infertile women: The impact of spiritually integrated psychotherapy

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Abstract

Background: Infertility can lead to depression, anxiety, a loss of hope, and a sense of meaninglessness in the lives of affected women. Implementing spiritual/religious interventions may help alleviate the psychological and social stress experienced by infertile women. This study aims to investigate the effectiveness of spiritually integrated psychotherapy (SIP) in enhancing hope and daily spiritual experiences in infertile women.

Methods: This quasi-experimental study utilized a pre-posttest design with a control group. The study population consisted of all infertile women who had visited the Omid Royan Fertility Center in Arak (Iran) in 2022. A sample of 40 infertile women undergoing infertility treatment was selected through convenience and voluntary sampling. These women were divided into 2 groups, an intervention group and a control group, each consisting of 20 participants, using a randomized block design. Subsequently, participants in the experimental group attended 10 SIP intervention sessions. Data were collected using the Daily Spiritual Experience Scale (DSES) and the Adult Hope Scale (AHS). The collected data were analyzed using univariate ANCOVA with SPSS v. 16.

Results: The results revealed a statistically significant difference between the mean scores of hopes (pre-test: 20.02 ± 4.01, post-test: 11.59 ± 2.81; P = 0.02) and daily spiritual experiences (pre-test: 32.81 ± 5.24, post-test: 33.07 ± 5.01; P = 0.01) in the participants of the 2 groups in the post-intervention phase. However, this difference was not significant for hope in the control group (pre-test: 12.02 ± 3.14; post-test: 11.59 ± 2.81; P = 0.52) and the DSES (pre-test: 32.61 ± 4.96, post-test: 33.07 ± 5.01; P = 0.81).

Conclusion: The findings suggest that integrative fertility treatment can effectively blend psychosocial interventions with spiritual/religious treatments. Furthermore, SIP intervention can be considered a complementary, supportive, and ongoing treatment option for infertile couples.

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Highlights

What is current knowledge?

- Spiritually integrated psychotherapy (SIP) helps people develop spiritual experiences to deal with problems and gives hope and meaning to their lives.
- Spiritually integrated psychotherapy can help in the treatment of trauma, eating disorders, individual psychotherapy, and the reduction of existential concerns.
- Despite the growing attention to spirituality/religion in holistic care, the effectiveness of SIP in increasing hope and developing daily spiritual experiences in infertile women has received less attention.

What is new here?

- The results showed that integrated fertility treatment can combine psychosocial interventions with spiritual/religious treatment.
- In addition, the SIP intervention can be considered as an additional, supportive, and ongoing treatment for infertile couples.

Introduction

Infertility poses a significant and intricate challenge for couples, particularly for women (1). It carries numerous psychological and social consequences, such as anxiety, depression, social isolation, violence, and ultimately a decline in quality of life (1,2). According to the World Health Organization (WHO), approximately 1 in 6 individuals worldwide experience infertility, accounting for roughly 17.5% of the adult population (3). In Iran, primary and secondary infertility rates are 18.3% and 2.5%, respectively (4). The infertility experienced by women jeopardizes their psychological and social well-being, with infertile women, particularly in middle and low-income countries, often facing elevated levels of anxiety (5). Infertile couples commonly endure high levels of stress and psychological distress, posing a severe threat to their quality of life (6). Infertility can lead to isolation and emotional and psychological discord within an individual (7-9). Previous research has demonstrated the effectiveness of cognitive behavioral therapy and logotherapy interventions for infertile women (8,9).

One effective intervention for addressing infertility is spirituality and religious teachings. However, religious teachings may manifest differently across various religions and cultures (10). Studies have emphasized the importance of acknowledging the spiritual and religious beliefs of infertile women and addressing their psychological, social, and cultural needs as part of holistic care. Embracing spiritual and religious beliefs can enhance hope for life, alleviate the suffering associated with infertility, and provide coping mechanisms for life's challenges (11). Spirituality and religion also aid in developing strategies for managing stress, fostering spiritual growth, strengthening faith, boosting self-esteem, and empowering the emotional management of infertile individuals (12).

Spirituality encompasses an awareness of existence or a force beyond the material aspects of life, creating a profound sense of unity or connection with the universe in an individual. Spiritual experiences represent an individual's personal beliefs that help them navigate problems and give meaning to their life, and such experiences have been widely integrated into care (13,14). Spirituality and religion enable infertile women to attain a deeper understanding of their involuntary childlessness. Fundamental aspects of spirituality, such as hope, meaning, and life's purpose, are redefined, and spiritual needs enhance the ability of couples to cope with childlessness and the associated suffering (14).

One of the effective interventions developed for treating infertile women is spiritually integrated psychotherapy (SIP). Studies have indicated that this intervention has enhanced the coping strategies employed by infertile women (13). Spiritually integrated psychotherapy intervention was introduced by Pargament et al., who proposed that spirituality could be a part of the solution to human psychological problems, as some individuals seek spirituality. However, this intervention should be presented to clients as a psychotherapeutic process. It is founded on a spiritual, empirical, and universal theory and can contribute to the enhancement of mental health (15-17). Spiritually integrated psychotherapy is influenced by the perspectives of Worthington et al., who delineate 4 types of spirituality: religious spirituality, humanistic spirituality, nature spirituality, and cosmos spirituality. In this psychotherapy, the process of forgiveness plays a significant role in helping individuals cope with life's tribulations (18).

Spiritually integrated psychotherapy assists individuals in cultivating spiritual experiences to address their problems and provides them with hope and a sense of purpose in life (12,19). A meta-analysis study has demonstrated that SIP can be effective in treating trauma, eating disorders, individual psychotherapy, and reducing existential concerns. However, the therapists' focus on the prevalent cultural and religious teachings within societies greatly influences the application of this intervention (20).

Despite the increasing recognition of spirituality/religion in holistic care, the effectiveness of SIP in enhancing hope and fostering daily spiritual experiences

in infertile women has received limited attention. Therefore, the present study aimed to investigate the effectiveness of SIP in enhancing daily spiritual experiences and hope among infertile women.

Methods

This quasi-experimental study employed a pre-test and post-test design with intervention and control groups. The study population comprised all infertile women undergoing infertility treatment at the Omid Royan Fertility Center, affiliated with the Academic Center for Education, Culture, and Research (ACECR) of Arak University of Medical Sciences (Iran). The intervention commenced in October 2022 and concluded in December of the same year. Participants were selected through convenience and voluntary sampling from a pool of 86 individuals who scored lower on the Daily Spiritual Experience Scale (DSES) and Adult Hope Scale (AHS). Ultimately, 40 eligible women were chosen and randomly assigned to either the intervention or control group using a random sampling and block allocation method. The sample size was determined using the formula for comparing two means and standard deviation (hope and spiritual variables):

$$n = \frac{\left(Z\,1-\frac{\alpha}{2}+Z\,1-\beta\right)(S_1^2+S_2^2)}{d^2} = 19.28$$

$$\alpha=0.05;\ \beta=0.02;\ S_1^2 = 7.6;\ S_2^2 = 7.2;\ d^2 = 6.2$$

The criteria for enrollment in the study were as follows: women diagnosed with primary infertility by a gynecologist and Omid Royan Fertility Center, possessing at least a high school degree, expressing a willingness to participate in the intervention, and not suffering from acute psychiatric illnesses, as diagnosed by a psychiatrist. The exclusion criteria included: attending fewer than 3 sessions, failing to complete the questionnaires or demonstrating unwillingness to cooperate in the study, and participating in other psychological courses or programs simultaneously.

Measurement:

Data collection for this study utilized the following instruments:

Adult Hope Scale (AHS):

The AHS is a 12-item tool developed by Snyder et al. (2007) to assess life expectancy in individuals aged 15 years and older. This scale was constructed based on Snyder's theory of hope, which posits that hope can create multiple pathways to achieving goals (21). The scale measures 2 subscales: agency and pathways. Responses to the items are rated on a 5-point Likert scale (5 = strongly agree, 4 = agree, 3 = undecided, 2 = disagree, and 1 = strongly disagree). Scores in the range of 4-8 indicate no to very low hope, 9-12 suggest slight hope, 13-16 indicate moderate hope, and scores from 17-24 suggest high hope. The internal consistency of the scale ranges from 0.63 to 0.86, with full-scale alphas ranging from 0.74 to 0.88 (21). In this study, the Cronbach's alpha coefficient for the scale was estimated to be 0.87.

Daily Spiritual Experience Scale (DSES):

This 16-item scale is a self-report tool developed by Underwood and Teresi (2002). It assesses ordinary experiences of connection with the transcendent in daily life (3,22). Items are rated on a 6-point Likert-type scale (1 = many times a day, 2 = every day, 3 = most days, 4 = some days, 5 = once in a while, and 6 = never). The total score is calculated by summing the scores for items 1 to 15, along with the score for item 16. The total score ranges from 6 to 36, with categories of high (6 to 10), medium (11 to 14), and low (15 to 36) indicating levels of daily spiritual experience. The scale typically exhibits a Cronbach's alpha value above 0.94-0.96 for reliability (23,24). In this study, the scale's reliability was confirmed with a Cronbach's alpha of 0.91.

Procedure

Following the acquisition of ethical approval from the university, invitations were extended to infertile women visiting the Omid Royan Fertility Center, affiliated with Arak University of Medical Sciences, to participate in the study. A total of 40 infertile women who met the inclusion criteria were selected and randomly assigned to 2 groups, the intervention group and the control group, using a randomized block design. Subsequently, both groups completed the 2 questionnaires as a pre-test assessment.

The SIP intervention, consisting of ten 90-minute sessions, was conducted for the participants in the intervention group. This intervention commenced in October 2022 and concluded after 10 weeks, ending in December of the same year. Conversely, the participants in the control group did not receive any intervention. After the 10-week duration, both groups completed the same instruments as a post-test assessment.

The intervention sessions took place on Tuesdays every week, from 10:00 to 11:30, at the Omid Royan Fertility Center in Arak. These sessions were led by a PhD candidate in psychology under the supervision of a gynecologist who worked at the fertility center. The content of the SIP program was adapted from existing SIP treatment programs (15-17, 25). The content underwent a thorough review and approval process, including the preparation and translation of relevant articles from English to Persian, in collaboration with research time (Table 1).

Table 1. The content of the spiritually integrated psychotherapy intervention program

Sessions	Focus	Content and goals
1	What is Spiritually Integrated Psychotherapy (SIP)?	Introducing the group members, providing instructions about the objectives of the intervention, the significance of spirituality, its applications to improve mental health, and how spiritual/religious beliefs help infertile women cope with psychological distress
2	About psycho-education (SIP)	Providing some instructions about the interconnections of behaviors, awareness, and beliefs and how spirituality can help better understand them
3	Increasing motivation	Emphasizing individual capabilities, friendly behaviors, and the role of hopefulness in spirituality
4	Praying and doing spiritual rituals	Talking to God, saying prayers, and donating to charity to help people in need
5	Forgiveness	Highlighting the importance of forgiveness, altruism, generosity, and compassion
6	Coping strategies	Replacing negative coping strategies with positive ones
7	Acknowledgments	Creating a sense of spiritual peace and gratitude for God's blessings
8	Sharing stories	Sharing stories of spiritual efforts to overcome problems in life
9	Meaning of life	Finding meaning in life and the role of goals in the meaning of life
10	Finding the path to spiritual self-awareness	Helping the clients find a new path to spirituality in life and overcome their problems

* Adapted from the Spiritually Integrated Psychotherapy (SIP) treatment programs (15-17,25)

In adherence to ethical protocols and to safeguard the rights of participants, detailed instructions were provided regarding the study's objectives and research procedure. Participants were explicitly informed that their participation was voluntary and free from any form of coercion. Furthermore, they were assured that all personal information would be treated confidentially, their data would be safeguarded, and research findings would be published without any private identifiers. Following the signing of written consent forms, self-report instruments were administered to both groups as both pre-test and post-test assessments. The post-test was conducted one week after the completion of the intervention sessions.

Throughout the implementation of the intervention, the control group continued with their regular visits to midwives but did not partake in the intervention sessions. As a motivational strategy, 6 additional intervention sessions were conducted for the control group at the end of the intervention.

The protocol for this study received approval under the ethics code IR.IAU.ARAK.REC.1400.037 from Islamic Azad University, Arak Branch. Data collected were analyzed using frequency and percentage for participants' demographic information and univariate analysis of covariance (ANCOVA) for hypothesis testing, all of which were performed using SPSS v. 16 software (SPSS Inc., Chicago, IL, USA).

Results

As shown in Table 2, the demographic information of infertile women includes age, education, and infertility duration. There was no significant difference between the two groups in these three variables.

Table 2. The participants' demographic characteristics in the infertile women

Variable	Categories	Control (n=20)	Intervention (n=20)	P-value
		N (%)	N (%)	
Age (y)	35-37	8 (40)	7(35)	0.753
	38-40	10 (50)	11 (55)	
	41-43	2 (10)	2 (10)	
Education	High school/diploma	7 (35)	6 (30)	0.557
	Bachelor's degree	11 (55)	10 (50)	
	Master's degree	2 (10)	4 (20)	
Infertility duration (y)	2- 4	8 (40)	9 (45)	0.467
	5- 7	12 (60)	11 (55)	

Table 3 displays the comparisons of mean scores, standard deviations (SD), and P-values for hope and daily spiritual experiences in the two groups.

Table 3. Comparisons of the mean score of hope and daily spiritual experiences the infertile women

Dependent variables	N	Groups	Pre-test	Post-test	P-value
			Mean ± SD	Mean ± SD	
Hope	20	Intervention	11.61±4.13	20.02±4.01	0.02
	20	Control	12.02±3.14	11.59± 2.81	0.52
Daily spiritual experiences	20	Intervention	25.61±4.96	32.81±5.24	0.01
	20	Control	32.61±4.96	33.07±5.01	0.81

An ANCOVA was conducted to compare the mean scores between the two groups. The assumptions of ANCOVA were assessed through Levene's test and Box's M test ($P > 0.05$).

As indicated in Table 3, there was a significant difference between the two groups concerning hope and daily spiritual experiences both before and after the intervention. Table 4 presents the results of ANCOVA, highlighting the group effects on hope.

Table 4. The results of univariate ANCOVA for group effects on hope in the intervention and control groups

Variable	SS	df	MS	F	P	Eta
Pre-test	177.33	1	177.33	9.22	< 0.001	0.13
Group effect	172.63	1	172.63	10.63	< 0.001	0.13
Error	75.63	38	18.98			

df: Degree of freedom; SS: Sum of squares; MS: Mean of squares

The data in Table 4 indicate a notable difference in hope levels between infertile women in the intervention and control groups ($P < 0.001$). Specifically, the mean hope scores for participants in the intervention group significantly exceeded those of participants in the control group post-intervention. Additionally, the intervention group explained 13% of the variances in hope.

Table 5 presents the results of univariate ANCOVA, demonstrating the group effects on daily spiritual experiences in infertile women.

Table 5. The results of univariate ANCOVA for group effects on daily spiritual experiences in the intervention and control groups

Variable	SS	df	MS	F	P	Eta
Pre-test	203.22	1	203.25	18.35	< 0.001	0.13
Group effect	175.81	1	175.81	15.04	< 0.001	0.11
Error	82.11	38	15.62	-	-	-

df: Degree of freedom; SS: Sum of squares; MS: Mean of squares

As indicated in Table 5, a significant difference was noted between infertile women in the intervention and control groups concerning their spiritual experiences ($P < 0.001$). Subsequently, participants in the intervention group reported notably higher levels of spiritual experiences compared to those in the control group post-intervention. Additionally, the intervention group explained 11% of the variance in spiritual experiences.

Discussion

This study has demonstrated that SIP enhances hope and daily spiritual experiences in infertile women. Similarly, Latifnejad Roudsari et al. (2013) conducted interviews with 30 infertile women from various religious backgrounds, including Christianity (Protestant, Catholic, and Orthodox) and Islam (Shia and Sunni). The results revealed that these women turned to spirituality and religion to foster optimism, positivity, supportive relationships, appreciation for life, spiritual empathy, and family cohesion as means to cope with their infertility challenges (26,27). These findings suggest that spiritual/religious teachings can be beneficial for infertile women of diverse cultures and faiths in coping with the emotional toll of childlessness and finding purpose in their lives. The SIP intervention significantly contributed to the growth of hope and spiritual experiences in infertile women. Some of these changes can be attributed to the nature and content of the SIP program (17,25), which includes elements such as psycho-education (SIP), increased motivation, prayer, spiritual rituals, forgiveness, coping strategies, expressions of gratitude, storytelling, exploration of life's meaning, and the journey toward spiritual self-awareness.

Another study explored the coping strategies employed by women undergoing in vitro fertilization (IVF) in Turkey, a predominantly Muslim country. It revealed that women who utilized positive religious strategies such as prayer, supplication, and seeking blessings coped more effectively with infertility issues (28). In this study, infertile women reported that prayer and engagement in spiritual rituals were among the ways they coped with feelings of hopelessness and purposelessness in life. Additionally, it has been found that infertile Chinese women undergoing IVF benefitted from integrative body-mind-spirit (I-BMS) interventions, resulting in improved mental and spiritual well-being (29). Hope is a vital psychological component in the treatment of infertility in women (30). Spiritual engagement and the discovery of life's meaning can serve to amplify hope. Assisting infertile women in augmenting their psychological, social, and spiritual support resources can enhance the effectiveness of infertility treatment.

The SIP intervention facilitates the integration of psychological, spiritual, and social dimensions in the lives of infertile women. This intervention imparts lessons in humanity, forgiveness, compassion, and the discovery of a newfound purpose for infertile women. The introduction and application of SIP as a comprehensive training intervention create a safe environment where infertile women can openly share their thoughts, beliefs, and emotions.

It should be noted that conducting this intervention via a quasi-experimental design and employing convenience and voluntary sampling may limit the generalizability of the findings. Nonetheless, SIP can be recommended as a valuable, cost-effective, and complementary intervention alongside medical and pharmaceutical treatments.

Conclusion

This study underscores the potential of Spiritually Integrated Psychotherapy (SIP) to enhance hope and daily spiritual experiences in infertile women. The findings also emphasize the value of spiritual/religious interventions when combined with other medical and pharmaceutical treatments to mitigate the psychosocial stress experienced by infertile women.

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Ethical statement

The article was registered with the Iran National Committee for Ethics in Biomedical Research (https://ethics.research.ac.ir) under the code IR.IAU.ARAK.REC.1400.037.

Conflicts of interest

The authors declare no potential conflicts of interest related to the research, authorship, and/or publication of this article.

Author contributions

Masoumeh Dehghan: Conducting research, data gathering, and analysis: Anahita Khodabakhshi-Koolaee: Conceptualization, study design, and drafting of the initial version; Hassan Heidari, Hossein Davoodi, and Nazila Najdi: Data gathering and analysis; Final approval: All authors.

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