Original Article

Effects of Healing Codes Training on Infertility Stigma and Self-Concept in Infertile Women

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Abstract

Background: Couples diagnosed with infertility encounter a range of stressful experiences including strain on marital and family relationships, changes in sexual dynamics, and other unavoidable challenges. This study aimed to examine the impact of healing codes training on infertility stigma and self-concept among infertile women.

Methods: This quasi-experimental study employed a three-stage design (pretest, posttest, and follow-up) with two groups (experimental and control). The target population comprised all infertile women seeking treatment at fertility centers in Isfahan, Iran in 2023. A convenience sample of 40 volunteers was selected based on predefined inclusion and exclusion criteria. The study participants were randomly assigned to either an experimental group (n=20) or a control group (n=20). All participants completed the Infertility Stigma Scale and the Beck Self-Concept Test at the pretest, posttest, and follow-up stages. The experimental group received 14 weekly sessions of healing codes training (90 minutes per session). The control group was placed on a waiting list. Repeated measures ANOVA was used to analyze the data.

Results: The healing codes group exhibited a marked decline in infertility stigma scores following the intervention. The pretest mean score of 90.40 (SD=15.42) decreased significantly to 72.80 (SD=11.82) at the posttest and remained relatively low at the follow-up, with a mean of 70.81 (SD=12.69) (P=0.001). Similarly, self-concept scores within the healing codes group demonstrated a notable reduction. The pretest mean was 62.92 (SD=7.44), followed by a decrease to 52.33 (SD=5.17) at the posttest and a minor fluctuation to 52.29 (SD=4.78) at the follow-up (P=0.001). In contrast, the control group exhibited stability in both infertility stigma and self-concept scores across time points.

Conclusions: The findings of this study provide compelling evidence for the effectiveness of the healing codes intervention in addressing infertility stigma, and improving self-concept among individuals struggling with infertility.

Keywords: Self-healing, Stigma, Self-concept, Infertility, Women

1. Introduction

Marriage is the most significant event in the human life cycle, during which a couple establishes a mutual relationship. This is the most important bond in a person's life (1). The natural instinctive and emotional human need dictates that spouses have children after marriage (2). When a child is born, the family regains its true meaning and transforms into a solid triangle, the third side of which is represented by the child. The husband and wife are unconsciously filled with pride and happiness because their marriage bond has produced the eagerly-awaited result. However, not all marriages result in fertility, and some couples face the tragedy of infertility (3). Infertility can be a devastating emotional experience (4). Couples diagnosed with infertility encounter a range of stressful experiences related to their condition. These experiences include strain on marital and family relationships, changes in sexual dynamics, and other unavoidable challenges (5). Motherhood is often regarded as the primary role for women and has great importance in shaping their identity. Therefore, the inability to fulfill this societal expectation can lead to dissatisfaction and unfavorable attitudes from others (6). Being a mother is a source of strength and respect in a culture where having a child is considered an "asset" for couples (7). Infertility is defined as a failure to have a pregnancy after one year of unprotected intercourse (8). According to the World Health Organization, approximately 8–12% of couples are infertile worldwide (9). The point prevalence of primary infertility based on the epidemiological definition among Iranian couples nationwide is 6.9%. Additionally, the point prevalence of secondary infertility based on the epidemiological definition among Iranian couples

nationwide is 9.0% (10). Although both husbands and wives experience the infertility crisis, research indicated that women tend to experience greater negative psychological effects than men (11). Additionally, since people have variations in psychological adaptation to infertility, some infertile people better adapt to different conditions (12). However, failing to adapt psychologically to the circumstances will exacerbate marital problems, cause social and psychological strains, and diminish life satisfaction (13).

Infertility is considered a stigma or social disgrace in many societies. In certain countries, including Iran, infertility has more profound importance due to the culture-specific framework (14). When there is a delay in pregnancy, acquaintances often become more curious. This can lead to various reactions in a couple, which include avoiding social gatherings and keeping infertility hidden. The couple may also choose to limit contact with acquaintances and avoid engaging with new people to refrain from answering intrusive questions (15). In many countries, a woman who cannot become pregnant and give birth is regarded as useless, which causes psychological distress in the individual (16). Research showed that 69.19% of infertile women feel stigmatized, and 53.8% experience self-stigma (17). According to Taebi and colleagues (18), infertility hinders social acceptance, economic and social opportunities, the ability to receive a healthy and normal opinion from others, social relationships, and the perception of oneself as a typical individual.

Stigma is closely related to the social and psychological aspects of infertility. Individuals who are unable to conceive often struggle to fully accept themselves as equal to others due to the negative experiences that they face in society (17). In this situation, the individual experiences a significant sense of insecurity due to a sense of uncertainty about how they are being perceived by others (19). Moreover, infertility can exacerbate negative self-perception and potentially result in social isolation for the infertile person, thereby hindering the development of a realistic self-concept (20). Known as a crucial aspect of the psyche, self-concept can significantly affect an individual's self-confidence and hope. Thus, both physical and psychological illnesses can harm one's self-concept (21). Additionally, studies showed that stigma is a significant problem that hinders people's

effectiveness, inhibits the healthy development of identity, and prevents the flourishing of talents (22). Because of the social stigma experienced by women who are unable to conceive, they may struggle to develop a healthy self-concept. This can prevent them from attaining a realistic perception of themselves and may lead to feelings of inadequacy and worthlessness, ultimately resulting in various psychological disorders (23).

Given the vulnerability of infertile women and the pervasive nature of infertility stigma, it is crucial to identify interventions that can alleviate stigma and enhance self-concept. One such intervention is the healing codes approach, a self-healing method that incorporates various techniques such as memory retrieval, harmful action reduction, self-healing skills, prayer, and specific healing codes (24). These practices aim to balance cellular energy, reduce physiological stress, strengthen the immune system, and promote relaxation and wise behavior (25). Self-healing refers to the innate capacity of individuals to heal themselves. Healing codes represent a therapeutic ability inherent in people, enabling the restoration of bodily and mental integrity (26). These codes play a pivotal role in achieving health and independence. Research on this therapeutic approach focused on addressing destructive cellular memories and images, such as cache and false memories (27). The goal is to identify the underlying causes of physiological stress, eliminate unhealthy personality traits, and modify lifestyle behaviors (28). Additionally, individuals are encouraged to seek divine guidance through prayer. This treatment can contribute to both prevention and acceleration of the recovery and rehabilitation process (29).

Given the significance of preserving family dynamics and the mental health of each family member, especially infertile women, implementing the healing codes approach can apparently prove effective in rehabilitating such individuals. This approach is up-to-date, relatively simple, and understandable for the general public. Accordingly, this study aimed to investigate the effect of healing codes training on infertility stigma and self-concept in infertile women.

2. Methods

This quasi-experimental study adopted a three-stage design (pretest, posttest, and follow-up)

with two groups (experimental and control). The statistical population included all infertile women visiting fertility centers in Isfahan, Iran in 2023. Forty volunteers were recruited using convenience sampling method, adhering to established inclusion and exclusion criteria. The volunteers were randomly assigned to an experimental group (n=20) and a control group (n=20) using a random numbers table. A random numbers table was used to generate a sequence of numbers, which were then assigned to each volunteer. Participants with odd numbers were placed in the experimental group, while those with even numbers were assigned to the control group. The sample size was determined based on a previous study by Zarean and co-workers (30), which provided estimates of the mean and standard deviation of infertility stigma scores in the post-test phase. The healing codes group was expected to have a mean score of 72.80 (SD=11.82), while the control group was expected to have a mean score of 95.53 (SD=14.28). To ensure a statistical power of 0.80, a significance level of 0.05, and to account for a 10% attrition rate, the calculated sample size was deemed sufficient to detect a significant difference between the two groups. The participants signed informed consent forms and completed the Infertility Stigma Scale and the Beck Self-Concept Test at baseline under similar conditions. The inclusion criteria were: an age range of 25–45 years, ability to read and write, infertility that persisted despite medical intervention and expert approval, primary infertility, physical stability (i.e., absence

Table 1: The protocol for healing codes therapy sessions

Session	Content
1	Establishing rapport with the group members and developing a therapeutic relationship; introducing situational stress and instructing on the management of such stress; describing the immune system and the impact that stress has on its functioning
2	Describing physiologic stress, hidden stress or destructive cellular memories, and cache memory; conducting an examination and analysis of the members' latent stresses and destructive cellular memories; conducting self-observation and analysis of stress in daily life, as well as applying correct breathing and relaxation techniques in practice, at least once per day
3	Recognizing real and false problems; teaching realistic and problem-oriented thinking methods; reminiscence training per the failures, conflicts, and confusions experienced by individuals throughout their lives; taking an online memorization test; examining how members confront false thoughts and employ problem-solving methods; members examining both real and false problems in their lives
4	Identifying and addressing destructive cellular memories, grudges, false beliefs, triangular negative emotions, and harmful actions; examining the first three groups of healing codes among members based on their lifestyle.
5	Reminiscing about traumas and very effective aspects of life at all stages of life, shocks, and post-traumatic stress disorder (PTSD) depending on the individual's attitude; teaching the empty chair technique; using the glass elevator technique to instruct group members while discussing harmful practices; examining the online test of memorization; engaging in temple meditation
6	Elucidating the enigma encompassing positive and negative emotions; teaching forgiveness strategies; facilitating a shift in group members' attention from past events to the present and future; imparting effective techniques for expressing emotions; evaluating detrimental behaviors exhibited by individuals in the group; assisting group members in articulating their emotions while analyzing and identifying their emotions through body light scanning meditation.
7	Training will-strengthening techniques to treat harmful actions and destructive, erroneous habits; adapting to and modifying environmental conditions and circumstances; mastering reverse-reminiscing techniques
8	Fortifying the initial four healing codes, *i.e.*, love, joy, peace, and tolerance; emphasizing individual differences, reducing expectations, promoting kindness, fairness, and human attitude (as well as an understanding of genuine happiness); Instructing on the remedy for selfishness, enhancing communication, and facilitating enjoyable activities; effective time management; establishing a healthy mental connection; Modifying perfectionism through tolerance training; anger management
9	Enhancing the fifth to ninth healing codes, *i.e.*, kindness, goodness, trust, humility, and self-control; enhancing communication abilities (with oneself, God, others, and the natural world); boosting self-esteem (considering the kindness index, effective expression, self-confidence, and self-efficacy; diminishing stubbornness; cultivating communication abilities and positive thinking); addressing detrimental pride through self-care and the promotion of spiritual well-being; treating loss of control by increasing self-restraint, which entails preventing the response and anticipating the syndrome of tomorrow
10	Explaining the role of true request, the effects of prayer, and the importance of remaining focused on desires in one's life; explaining the scientific evidence related to prayer in healing codes; creative visualization training; teaching how to perform unique healing code exercises
11	Balanced lifestyle education and behavior modification through the identification of detrimental actions and bad habits; altering the sleep cycle; controlling nutrition, leisure activities, travel, physical activity, and health
12	Teaching to improve life quality in the areas of health and hygiene, intimacy and communication, scientific advancement, and career advancement; practical social activities
13	Internal dialogue modification; stress revision and power breathing training; individual stress assessment; constant self-care to prevent physical and mental harm; effective emotion management and communication.
14	Spiritual excellence methods, the spiritual purpose of life, the necessity for self-reflection, and spending hours alone

of obvious physical symptoms to attend sessions), and non-use of psychiatric medications. Individuals with a history of severe mental illnesses, such as depression or anxiety, were excluded from the study. Additionally, participants were ineligible if they were undergoing infertility evaluations or treatments, were pregnant during the study, or experienced a significant bereavement event during the study, or missed more than two sessions for any reason.

2.1. Procedure

Following informed consent, participants were provided with a detailed explanation of the study's objectives, procedures, and ethical considerations. Prior to the commencement of the training course, participants received the necessary research tools. These tools were also administered at the conclusion of the treatment sessions and at a 45-day follow-up. Table 1 outlines the group-based treatment sessions, which were conducted according to the protocol established by Latifi and colleagues (31). The experimental group received 14 weeks of healing codes training, comprising one 90-minute session per week. The intervention sessions were facilitated by the first author, who had undergone specialized training in the healing codes technique. Both groups completed a posttest evaluation immediately following the final session. To assess the long-term effectiveness of the interventions, a 45-day follow-up was conducted.

2.2. Instruments

2.2.1. Infertility Stigma Scale: Designed by Fu and colleagues (32), the Infertility Stigma Scale consists of 27 items that aim to assess the perceived stigma experienced by infertile women. The scale was developed as an index for measuring perceived stigma and self-stigma among women coping with infertility diagnosis and treatment. The items are scored on a 5-point Likert scale ranging from "completely disagree (1)" to "completely agree (5)". The minimum and maximum scores are 27 and 135, respectively. This indicates the lowest and highest levels of infertility stigma. The Infertility Stigma Scale includes four factors: self-devaluation (items 1–7), social withdrawal (items 8–12), public stigma (items 13–21), and family stigma (items 22–27). Fu and colleagues (32) reported a Cronbach's alpha coefficient exceeding 0.94 for the infertility stigma scale. The Persian version of the scale used in the study of Rajabi and colleagues (33)

demonstrated strong psychometric properties. The scale demonstrated excellent internal consistency, with a Cronbach's alpha of 0.95. Furthermore, content validity, assessed using the Content Validity Ratio (CVR) and Content Validity Index (CVI), was found to be high. The questionnaire achieved a mean CVR of 0.91 and a mean CVI of 0.88 (33).

2.2.2. Beck Self-Concept Test: This test is a 25-item self-report instrument developed by Beck and co-workers (34). The scale measures five aspects of mental ability, job efficiency, physical attractiveness, social skills, and morality. The items are scored on a five-point Likert scale: "completely agree (1)", "somewhat agree (2)", "have no opinion (3)", "somewhat disagree (4)", and "completely disagree (5)". The minimum and maximum scores on this scale are 25 and 125, respectively. Lower scores indicate more positive levels of self-concept. In this study, only four aspects of the questionnaire were addressed and the job efficiency dimension was not evaluated. Thus, the questions related to this subscale were not provided to the participants (34). The questionnaire demonstrated excellent internal consistency, with a Cronbach's alpha of 0.78 (35). Furthermore, the questionnaire exhibited strong content validity, with a mean Content Validity Ratio (CVR) of 0.88 and a mean Content Validity Index (CVI) of 0.85 (35).

2.3. Statistical Analyses

Descriptive statistics, including means and standard deviations, were calculated for all variables. Paired t-tests were used to compare pre-test and post-test scores within each group. Chi-square tests were employed to examine differences in categorical variables between the groups. Prior to analysis, Levene's test of equality of variances and the Shapiro-Wilk test were used to assess the assumptions of normality and homogeneity of variances. To identify specific group differences in infertility stigma and self-concept, Bonferroni post-hoc tests were conducted following repeated measures ANOVA. All statistical analyses were performed using SPSS version 24.

3. Results

The participants were 40 infertile women. The mean age of women in the experimental group and the control group was 33.70 (SD=6.39) and 35.42

(SD=5.58) years, respectively (P=0.370). The mean duration of marriage was 7.45 (SD=2.60) years in the experimental group and 8.51 (SD=3.39) years in the control group (P=0.274). Regarding employment status, 13 (65.00%) participants in the experimental group were housewives, while 7 (35.00%) were employed. In the control group, 15 (75.00%) were housewives and 5 (25.00%) were employed (P=0.496). Regarding education, 14 (70.00%) participants in the experimental group had a high school education, and 6 (30.00%) had a university education. In the control group, 12 (60.00%) had a high school education, and 8 (40.00%) had a university education (P=0.513). No significant differences were found between the experimental and control groups in terms of these demographic variables.

Tables 2 report descriptive findings of mean and standard deviation (SD) of infertility stigma and self-concept in the experimental and control groups. A comparative analysis of infertility stigma and self-concept scores between the healing codes group and a control group revealed significant disparities across three assessment points: pretest, posttest, and follow-up. The healing codes group demonstrated a marked decline in both infertility stigma and self-concept scores following the intervention. The pretest mean score of 90.40 (SD=15.42) for infertility stigma decreased significantly to 72.80 (SD=11.82) at the posttest and remained relatively low at the follow-up, with a mean of 70.81 (SD=12.69) (P=0.001). Similarly, self-concept scores within the healing codes group exhibited a notable reduction, with the pretest mean of 62.92 (SD=7.44) decreasing to 52.33 (SD=5.17) at the posttest and fluctuating slightly to 52.29 (SD=4.78) at the follow-up (P=0.001). In contrast, the control group exhibited stability in both infertility stigma and self-concept scores across time points, with minimal changes in the

mean scores and standard deviations for both constructs. These findings collectively indicated that the healing codes group experienced a significant reduction in both infertility stigma and self-concept, while the control group maintained relatively stable scores.

To ensure the validity of the statistical analyses, Levene's test of homogeneity of variances and the Shapiro-Wilk test of normality were conducted. The results indicated that the data met the assumptions of normality and homogeneity of variance. Additionally, the correlation coefficients between the covariance variables were all below 0.80, confirming the assumption of independence among these variables. The results of Mauchly's test were found to be significant for infertility stigma and self-concept. As a result, the Greenhouse–Geisser correction was applied to the infertility stigma variable. There were significant differences in the infertility stigma at the pretest, posttest, and follow-up stages based on the significance of within-group factors (P=0.001). Additionally, due to the significant group effect, a significant difference was observed between the experimental and control groups in terms of infertility stigma and self-concept (P=0.001). Moreover, a significant within-group effect was detected, indicating a significant difference among the three measurement points (pretest, posttest, and follow-up) for self-concept (P=0.001).

The effectiveness of healing codes training on the infertility stigma and self-concept was analyzed using Bonferroni's post hoc test. Table 3 reports the results. There were significant differences in the scores of infertility stigma and self-concept between the pretest, posttest, and follow-up stages (P=0.001). Additionally, the scores from the follow-up phase of the scales exhibited a relatively stable pattern, indicating that the impact of the healing codes training course endured over time.

Table 2: Mean and standard deviation (SD) of infertility stigma and self-concept in the experimental and control groups

Variables	Phase	Healing codes group	Control group	P (between group)
		Mean±SD	Mean±SD	
Infertility stigma	Pretest	90.40±15.42	94.99±17.24	0.380
	Posttest	72.80±11.82	95.53±14.28	0.001
	Follow-up	70.81±12.69	96.18±14.95	0.001
	P (within group)	0.001	0.817	-
Self-concept	Pretest	62.92±7.44	65.53±8.93	0.622
	Posttest	52.33±5.17	66.40±7.10	0.001
	Follow-up	52.29±4.78	65.45±7.05	0.001
	P (within group)	0.001	0.735	-

Table 3: Bonferroni post-hoc test for pairwise comparison of infertility stigma and self-concept in the pretest, posttest, and follow-up phases

Variables	Phase A	Phase B	Healing codes group			Control group		
			Mean difference (A-B)	SE	P	Mean difference (A-B)	SE	P
Infertility stigma	Pretest	Posttest	-17.60	4.34	0.001	0.54	5.01	0.915
		Follow-up	-19.59	4.47	0.001	1.19	5.10	0.817
	Posttest	Follow-up	-1.99	3.88	0.611	0.65	4.62	0.889
Self-concept	Pretest	Posttest	-10.59	2.03	0.001	0.87	2.55	0.735
		Follow-up	-10.63	1.98	0.001	-0.08	2.54	0.975
	Posttest	Follow-up	-0.04	1.57	0.980	-0.95	2.24	0.674

SE: Standard Error

The results suggested that healing codes training had a positive effect on reducing infertility stigma and self-concept among infertile women (Table 3).

4. Discussion

This study aimed to examine the impact of healing codes training on infertility stigma and self-concept in women experiencing infertility. The findings revealed significant differences in both infertility stigma and self-concept scores across the pretest, posttest, and follow-up stages. The results suggested that the healing codes approach has a positive and significant effect on both constructs. Consistent with these findings, previous research demonstrated the efficacy of self-help interventions in addressing psychological challenges. Tol and colleagues (36) found that a self-help program can reduce psychological distress and enhance psychological well-being in female refugees. Similarly, Nasresfahani and co-workers (37) observed positive effects of healing codes on women with psychological distress, improving their mental health and capacity for forgiveness. Zarean and colleagues (38) reported that self-healing training reduced marital problems in women with marital conflicts visiting counseling centers.

The healing codes approach emphasizes the restoration of destructive cellular memories and the cultivation of virtues (27). This intervention empowers infertile women to challenge negative self-perceptions and disregard the opinions of others. By addressing the psychological and social challenges associated with infertility, healing codes can help women overcome self-destructive behaviors and isolation. Fundamental to the healing codes approach is the recognition that all individuals experience painful emotions and negative thoughts. However, it is essential to learn how to navigate these challenges and live a fulfilling life. By avoiding judgment and distorted perceptions of others, individuals can minimize feelings of dissatisfaction or resentment. Moreover, cultivating emotional freedom and healing past wounds are crucial for maintaining mental health and promoting familial harmony (25). The healing codes approach prioritizes forgiveness and the avoidance of grudges, which are fundamental aspects of personal and relational well-being. By addressing these underlying issues, healing codes can significantly improve the mental health of infertile women and foster a more peaceful family environment.

The notion that motherhood is essential to a woman's identity can lead to significant psychological distress in infertile women. This false belief can activate destructive cellular memories, erode their sense of security, and impair their ability to navigate life effectively. Such negative beliefs can induce stress, triggering a defensive response in the body and activating the autonomic nervous system's fight-or-flight response. These detrimental beliefs, akin to emotional tumors, can erode a person's sense of self-worth (17).

The healing codes approach aims to enhance the self-confidence of infertile women by strengthening positive memories, reducing negative ones, and promoting lifestyle modifications, spiritual growth, and creative visualization. By addressing the underlying causes of infertility stigma and fostering positive self-perception, healing codes can significantly improve women's overall well-being. The technique of reverse reminiscence involves recalling positive experiences and strengths from different stages of life, reinforcing a sense of self-worth and diminishing negative beliefs. As individuals experience improved performance and positive feedback, they develop greater self-efficacy and hope (31).

Other effective techniques for enhancing self-esteem and addressing unhealthy fears and beliefs include creative visualization, reverse reminiscence, the glass elevator technique, creating a checklist of life periods, meditation, acknowledging the interplay of positive and negative emotions, recognizing one's own existence and the reality of life, determining one's role in accepting the current situation, and correcting internal dialogues associated with unfounded fears and beliefs.

Infertile women often experience feelings of helplessness and powerlessness as they navigate challenging social relationships (39). Forgiveness, a fundamental principle of the healing codes approach, involves releasing resentment and hatred towards others, freeing oneself from past judgments, and working to heal past wounds. The absence of forgiveness in interpersonal relationships can lead to heightened stress levels, triggering a defensive response in the body and activating the fight-or-flight response in the autonomic nervous system.

The healing codes approach addresses narcissism, reduces expectations from others, and shifts the individual's focus towards their own needs and concerns, rather than engaging in rumination and self-blame. By empathizing with and acknowledging the person's feelings, the healing codes approach helps to alleviate their emotional burden. Additionally, the empty chair technique can provide valuable insights into the perspective of the individual responsible for the situation (38).

The healing codes approach empowers individuals to shift from a reactive role to a proactive one, choosing forgiveness over resentment. This shift in perspective can facilitate forgiveness and improve interpersonal relationships. By altering an individual's beliefs about themselves and the world, the healing codes approach can reduce cognitive distortions and increase forgiveness, leading to better adaptation to life (27).

Participation in healing codes sessions, which focus on letting go of resentment, practicing forgiveness, and promoting a balanced lifestyle, can lead to improved communication, engagement in beneficial activities, enhanced self-efficacy, and effective communication skills. These positive outcomes are likely to have contributed to the improved well-being and resilience of infertile women.

One of the important pieces of training in this course is to create and strengthen healing codes, including trust. In other words, a person allows themselves to trust others and holds a positive attitude towards their behavior, enabling them to fully experience their true self. A person has attained genuine love at this moment. The reinforcement of healing codes and the prioritization of instructing methods of attaining spiritual excellence including fostering trust and surrender (to God and letting go of unsolvable problems), strengthening belief and faith in the infinite power of God, engaging in introspection, and dedicating hours of solitude to oneself have contributed to an increase in resilience of these women against hardships and improving their relationships with others.

4.1. Limitations

One limitation of the present study was that the sample consisted solely of infertile women who sought treatment at fertility centers in Isfahan, Iran. Therefore, it is important to exercise caution when applying the findings to other populations with different social and cultural characteristics.

5. Conclusions

The findings of this study provide compelling evidence for the effectiveness of the healing codes intervention in addressing infertility stigma and improving self-concept among individuals struggling with infertility. The healing codes group demonstrated significant reductions in both infertility stigma and self-concept scores following the intervention, while the control group exhibited no significant changes. These results suggest that the healing codes intervention is a promising approach for individuals experiencing infertility-related psychological challenges. Further research is needed to explore the long-term effects of the healing codes intervention and to investigate its efficacy in diverse populations.

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Authors' Contribution

Fahimeh Zarean: Substantial contributions to the conception and design of the work; acquisition, analysis, and interpretation of data for the work, drafting the work and reviewing it critically for important intellectual content. Ali Sheykholeslami: Substantial contributions to the conception and design of the work; acquisition, analysis, and interpretation of data for the work, drafting the work and reviewing it critically for important intellectual content. Esmaeil Sadri Damirchi: Substantial contributions to the conception and design of the work; acquisition, analysis, and interpretation of data for the work, drafting the work and reviewing it critically for important intellectual content. Ali Rezaei Sharif: Substantial contributions to the conception and design of the work; acquisition, analysis, and interpretation of data for the work, drafting the work and reviewing it critically for important intellectual content. All authors have read and approved the final manuscript and agree to be accountable for all aspects of the work, such as the questions related to the accuracy or integrity of any part of the work.

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Ethical Approval

The study was approved by the Ethics Committee of Mohaghegh Ardabili University, Ardabil, Iran with the code of IR.UMA.REC.1402.065. Also, written informed consent was obtained from the participants.

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