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Strength-Based Flourishing Intervention to Promote Mental Health and Resilience in Infertile Women

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Quantitative Study

Abstract

Background: Psychological interventions may reduce fertility problems. There have been educational programs for infertile women based on various theoretical frameworks; however, the strength-based approach has not been evaluated so far. This study aims to investigate the effect of strength-based flourishing intervention on promoting mental health and resilience in infertile women.

Methods: The current research was quasi-experimental with a pretest-posttest control group design. The statistical population included all infertile women referred to Sara and Naveed infertility clinic in Tehran, Iran, from October 2022 to November 2022. In this study, 30 eligible patients were selected purposefully. Researchers randomly divided the participants into two groups: a family therapy counseling (n = 15 people) and a control group (n = 15 people). The experimental group was taught methods and techniques of strengths-based strategies for eight 90-minute sessions of strength-based training adopted by Saleebey, whereas the control group received no psychological training during this time. The experimental and control groups were asked to fill in a pre-test and post-test questionnaire about the scale of General Health Questionnaire (GHQ) and the Connor-Davidson Resilience Scale (CD-RISC). Data were compared using multivariate and univariate analysis of variance (ANOVA). All statistical analyses were performed in SPSS software.

Results: As indicated by the univariate results, there was a significant difference between the groups regarding mental health ($F = 24.36$, $P = 0.001$, $\eta^2 = 0.523$) and resilience ($F = 26.76$, $P = 0.001$, $\eta^2 = 0.578$). The results of the within-group comparison showed that mental health significantly decreased and resilience increased, and the between-group

comparison showed that mental health significantly decreased and resilience increased at the level of $P < 0.001$.

Conclusion: It can be concluded that using the strength approach increases infertile women's mental health and resilience. Therefore, strength-based therapy for infertile women is recommended to increase their mental health and resilience and improve their quality of life.

Keywords: Strengths; Mental health; Resilience; Infertility

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Introduction

Infertility is defined by the American Society for Reproductive Medicine as the inability to conceive after 12 months of regular, unprotected sexual contact (Practice Committee of the American Society for Reproductive Medicine, 2020). The number of people with infertility worldwide exceeds 186 million (Sun, Gong, Jiang, Zhang, Zhao, & Wu, 2019). As many as one out of seven couples in Western countries suffer from infertility issues. The rate may reach 30% in some regions, such as South Asia, some countries in sub-Saharan Africa, and the Middle East (Tse et al., 2016). The prevalence of infertility among couples of reproductive age in China is 25% (Zhou et al., 2018). A 2017 Global Burden of Disease, Injuries, and Risk Factors Study found that infertility was rising in both men and women (Sun et al., 2019). Patients who have never been pregnant are called primary infertility. Secondary infertility is defined as follows: one partner in a couple has had at least one successful conception in the past and is incapable of conceiving now. Prior research has indicated that environmental pollution, life pressure, food safety, increasing childbearing age, and lifestyle change increase the prevalence of infertility (Zhao, Huangfu, Li, Liu, & Tang, 2022).

Infertility could lead to emotional, social, sexual, and family relationship problems. Infertile couples frequently experience negative emotions like sadness, worry, remorse, and isolation. According to earlier research, infertile women experience more tension than men because they must undergo more intensive treatment (Tang et al., 2022). Infertility can cause various physical, mental, and social diseases such as depression, anxiety, stigma (social stigma), and social isolation that affect patients' fertility. All these things can significantly affect the quality of life of fertility patients (Santona et al., 2023). In general, infertility is a complex life crisis that is psychologically threatening and emotionally stressful. Perhaps this is why some researchers have compared the psychological consequences of infertility to public grief reactions (Hoegholt, Buus, Fernandes, Sui, Vuust, & Kringelbach, 2023). The most problematic emotional effect of infertility is the loss of control in life when infertility freezes out other essential aspects of life. This may be because in childhood and adolescence, social implications about the consequence of parenting are always propagated, particularly regarding women (Santona et al., 2023).

Other studies show a significant relationship between anxiety, depression, and resilience; in other words, higher resilience predicts lower anxiety and depression (Al Omari et al., 2023). Several other studies have found a correlation between resilience and poor mental health among people with stressful lives (Wang et al., 2023). Many aspects of a person's life are affected by infertility, including the way that he perceives stressful situations and how well he can tolerate negative experiences. The risk of mental illnesses such as depression and anxiety is higher for those under chronic pressure (Al Omari et al., 2023). Other studies have shown that resilience affects mental health (Al Omari et al., 2023; Ramazani, Mohammadi Shir Mahleh, Ranjbaripour, Ahamdi, & Peymani, 2022). Resilience is the active and constructive participation of a person in the environment, and is the ability of a person to establish biological-psychological balance in dangerous situations (Choi & Moon, 2023).

However, resilience is the ability to overcome threats and external strength factors, including educational and family support (Al Omari et al., 2023). Resilience strengthens adaptation, promotes recovery, protects mental health, and maintains integrated positive functioning over time in the aftermath of adversity (Yan, Chan, Chow, Zheng, & Sun, 2020). Some studies have shown that psychotherapeutic interventions improve mental health, reduce anxiety and depression, and increase

fertility (Rahimi, Hasanpour, Mirghafourvand, & Esmaeilpour, 2021). Researchers believe that psychological counselling is essential before and during in vitro fertilization (IVF) cycles, and couples seek psychological counselling when undergoing IVF (Mousavi & Hasanpoor-Azghady, 2019). According to the studies, to prevent the incidence and exacerbation of psychiatric disorders, researchers recommend counselling and psychotherapeutic interventions to help infertile couples (Rahimi et al., 2021).

According to strength-based perspectives, people with physical disabilities can make their lives more meaningful by leveraging their strengths (Emmett, 2022). They can also adapt healthily to living with a disability, physically and psychologically (Remmers, Zurn, Anoschin, Topolinski, & Zimmermann, 2023). Living with meaning involves going beyond the present moment and moving steadily toward achieving value and meaning in life in a planned manner (Rose, Womick, & King, 2023). Studies have shown that people who find meaning in life may better cope with challenges related to disability. For example, individuals with physical disabilities who make or find meaning tend to show less negative emotions and higher well-being than those who cannot find meaning (Remmers et al., 2023). Recently, some studies have shown that individuals with physical disabilities or chronic diseases who find meaning in life may better cope with negative emotions. For example, a study of individuals with multiple sclerosis (MS) reported that making meaning resulted in benefits, including higher life satisfaction and lower levels of anxiety and depression (Shoshani, Steinmetz, & Kanat-Maymon, 2016). A strengths-based approach can help people manage their health problems using their strengths, capacities, and resources. Infertile women can benefit from this new program by developing new skills and strengthening their conditions. Researchers conducted this study to evaluate how strength-based flourishing therapy could help infertile women increase their mental health and resilience.

Methods

The current research was quasi-experimental with a pretest-posttest control group design. The statistical population included all infertile women referred to Sara and Naveed infertility clinic in Tehran, Iran, from October 2022 to November 2022. Based on the result of the previous study with a mean difference of 8 and standard deviation (SD) of 2.40, power of 0.8, probability of type 1 error as 0.05, and attrition rate of 10%, a total of 30 samples were calculated (Remmers et al., 2023). Inclusion criteria included the diagnosis of infertility by a gynaecologist, the absence of another acute or chronic disease, having at least a middle school education, and consenting to participate in the study. Exclusion criteria included a history of psychiatric medications, receiving psychological treatment simultaneously, being absent for more than two sessions, and not doing the homework assigned in therapy sessions.

First, the researcher referred to Sara and Naveed infertility clinic in Tehran from October to November 2022. Informed consent was obtained from the eligible participants. In this study, 30 eligible patients were selected and invited to participate purposefully. Moreover, the assignment of individuals to experimental and control groups was done randomly. Each participant received an envelope containing a number and a randomly selected identifier to determine whether they were in the experimental (n = 15) or control (n = 15) group (Rose et al., 2023). After coordination with Sara and Naveed infertility center, the treatment goals and the working method were explained to the participants, and the time and place of the treatment sessions were

coordinated over the phone. Then, they were asked to fill out the Connor-Davidson Resilience Scale (CD-RISC) and the General Health Questionnaire (GHQ). To protect patient data privacy, researchers assured them their data would be kept confidential.

The GHQ: To evaluate the effect of the psychosocial intervention on well-being, the GHQ-28 was chosen as the primary outcome based on results from a comparable trial and because it was evaluated as an appropriate tool to capture emotional stress (Goldberg, 1972). The GHQ-28 requests participants to indicate how their health, in general, has been over the past few weeks, using behavioral items with a 4-point scale indicating the following frequencies of experience: "not at all", "no more than usual", "rather more than usual", and "much more than usual". The scoring system applied in this study was the same as the original scoring system, 4-point Likert scale. The minimum score for the 28 version is 0, and the maximum is 84. Higher GHQ-28 scores indicate higher levels of distress. Goldberg suggests that participants with total scores of 23 or below should be classified as non-psychiatric, while participants with scores > 24 may be classified as psychiatric, but this score is not an absolute cut-off.

In Iran, Palahang et al. (1996) and Yaghobi (2009) reported the reliability coefficients as 0.91 and 0.88 for anxiety and depression, respectively. The reliability of the questionnaire in this study using Cronbach's alpha was calculated at 0.89 (Palahang, Nasr, & Shahmohammadi, 1996; Yaghobi, 2009).

The CD-RISC: It is a self-report scale developed by Connor and Davidson in 2003. The scale is a 25-item instrument that measures resilience structure in a five-point Likert-type from zero to four, with zero being the minimum resilience score (Connor & Davidson, 2003). Therefore, the range of test scores is between 0 and 100. Higher scores indicate higher resilience of the subject. Haghranjbar et al. (2011) estimated the reliability of the Conner and Davison scale as 0.89, using Cronbach's alpha, and also its validity was satisfactory. The reliability of the questionnaire in this study using Cronbach's alpha was calculated at 0.88 (Haghranjbar, Kakavand, Borjali, & Bermas, 2011).

An educational program focused on strengths-based abilities was then administered to the experimental group in 8 sessions once a week lasting for 90 minutes. Table 1 shows the content of strength-based training adopted by Saleebey (2006). The control group did not receive psychological training during these two months.

Table 1. Contents of strengths-based protocol sessions

Sessions	Contents
1	By focusing on what works, what makes people feel good, and what people care about, a strengths-based approach can be developed. The talents, resources, abilities, capacities, and aspirations of everyone are independent of how easily they express themselves.
2	A client is the expert in her or his situation. She or he knows what is best for them. A practitioner has theoretical and technical knowledge that can assist others rather than hinder them in their actions.
3	The focus is on people and their environments, and interventions are designed to address both.
4	By focusing on individual strengths and abilities, people are able to develop.
5	It is difficult to predict human behavior because it is complex. Trauma does not necessarily lead to problems for people who have experienced it, even if it is serious.
6	Intervention is a shared responsibility between practitioners, families, and communities. The basis for intervention planning is a mutual process that uses the available resources. Practitioners must have the ability to discover the strengths of their clients and the environments in which they work.
7	Attempts are made to assess both the risks and strengths of individuals, families, groups, and communities.
8	Interventions are not focused on finding the causes of people's problems, nor are labels or stigmatizing terms used. The goal is to understand how people deal with their difficulties in the present.

Both groups received post-test evaluations following these sessions. Researchers answered participants' questions and alleviated any concerns they might have had throughout the procedure. After completion of the study, an educational technique based on strength was given to the control group as part of the research ethics.

In this study, descriptive and inferential statistics were used to analyze data. In descriptive statistics, the mean and SD and the analysis of covariance (ANCOVA) test (to control pre-test scores) were used for inferential statistics. Normal distribution was assessed using Kolmogorov-Smirnov (K-S) test. Multivariate analysis of variance (MANOVA) was used to assess the effect of an intervention on two dependent variables. Then, univariate ANCOVA was used to separately assess the effect of an intervention on dependent variables adjusted for baseline values. The variance homogeneity assumption was assessed using Levene's test. The multivariate equality of covariance matrices was evaluated using Box's M. All statistical analyses were performed in SPSS software (version 26, IBM Corporation, Armonk, NY, USA).

Results

Demographic data showed that study subjects were between the age range of 26 to 44. In the experimental group, 29% of participants were aged between 31 and 34, while 33% were aged between 28 and 31. Women made up 68% of the experimental group and 59% of the control group. Moreover, participants' educational degrees were from middle school to the bachelor's degree in the test group (36%), and in the control group, the associate degree had the highest frequency (40%). Results indicate that between the test and control groups, there was no significant difference in demographic variables ($P > 0.05$).

Table 2 shows that mental health scores in the experimental group (89.70 ± 7.43, 63.78 ± 7.43) compared to the control group (61.11 ± 7.24, 60.56 ± 6.43), respectively, decreased more in the post-test. Moreover, the experimental (69.20 ± 7.28, 85.20 ± 7.28) and control (68.46 ± 8.67, 69.70 ± 8.34) groups, respectively, showed increased resilience in the post-test.

According to the K-S test, mental health (K-S = 0.47, P = 0.33) and resilience (K-S = 0.34, P = 0.35), we met the assumption of normal distribution. The assumption of homogeneity of variances according to Levene's test for the variable of mental health ($F_{1,28} = 1.14$, $P = 0.11$) and resilience ($F_{1,28} = 0.94$, $P = 0.17$) was confirmed. The multivariate ANCOVA (MANCOVA) for the main effect of an intervention was significant (Wilks' lambda = 0.557, F = 65.24, $P < 0.001$). As a result, the univariate results were explored to find whether the significant multivariate result was applied to one or both dependent variables. As indicated by the univariate results, there was a significant difference between the groups regarding mental health ($F = 24.36$, $P = 0.001$, $\eta^2 = 0.523$) and resilience ($F = 26.76$, $P = 0.001$, $\eta^2 = 0.578$). The results of the within-group comparison showed that mental health significantly decreased and resilience increased, and the between-group comparison showed that mental health significantly decreased and resilience increased at the level of $P < 0.001$.

Table 2. Results of multivariate analysis of covariance (MANCOVA) on variables

Variable	Group	Pretest (mean ± SD)	Posttest (mean ± SD)
Mental health	Experimental	89.70 ± 7.43	63.78 ± 7.43
	Control	61.11 ± 7.24	60.56 ± 6.43
Resilience	Experimental	69.20 ± 7.28	85.20 ± 7.28
	Control	68.46 ± 8.67	69.70 ± 8.34

SD: Standard deviation

Table 3. Results of analysis of covariance (ANCOVA) in the multivariate ANCOVA (MANCOVA) context

Dependent variable	Source	SS	df	MS	F	P-value	Eta
Resilience	Group	2364.03	1	2364.03	24.36	0.001	0.52
Self-efficacy	Group	1719.45	1	1719.45	26.67	0.001	0.57

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

Discussion

The current study evaluated the effectiveness of strength-based flourishing therapy in promoting mental health and resilience in infertile women. The data analysis findings indicate that strength-based therapy improves mental health and resilience in infertile women. It is important to note that strengths-based approaches do not only focus on people's characteristics but also on their environment and a range of circumstances that shape their lives (Remmers et al., 2023). In this approach, emphasis is placed on the client's competencies and the available resources. Instead of labelling clients, practitioners should use their theoretical and technical expertise to empower and support them. According to this perspective, everyone can live a fulfilling and meaningful life according to their terms (Emmett, 2022). The first finding on the effectiveness of strength-based therapy in promoting the mental health of infertile women was consistent with Flink et al. (2015) study that showed positive psychotherapy improved the pain threshold and mental endurance of infertile women (Flink, Smeets, Bergboma, & Peters, 2015). In order to explain the present findings according to Ebrahimi and Esmaeili (2023), it can be said that positive interventions increase positive thoughts, emotions, and behaviors and satisfy basic needs like love and self-autonomy, attachment; while relationship increases happiness and psychological well-being and reduces depression (Ebrahimi & Esmaeili, 2023). Strength-based treatment, therefore, helps infertile women avoid depression and poor mental health by promoting expert self-care or interior richness (Chandler, Kalmakis, Chiodo, & Helling, 2020).

Through stimulating and inspiring ideas from strength-based counseling, this method aids infertile women's improvement of mental fortitude. Strength-based flourishing intervention helps to improve mental health by focusing on issues and promoting well-being in all critical areas of life. It is essential to remember that psychological intervention, which emphasizes a person's internal strengths and abilities, is to have serenity, comfort, compassion, and preparedness to deal with issues or hurdles to avoid their recurrence (Ebrahimi & Esmaeili, 2023). Based on this, infertile women can achieve higher mental health by taking advantage of deep relaxation treatment and adaptive preparation to deal with problems.

The next finding on the effectiveness of strength-based therapy was about resilience in infertile women, consistent with previous studies (Proyer, Gander, Wellenzohn, & Ruch, 2016; Shoshani et al., 2016). These researchers reported that strength-based therapy could improve psychological well-being and happiness by increasing coping strength. In order to explain the present findings, positive psychotherapy through the establishment and expansion of positive emotions shields against mental problems, and hence increases people's psychological well-being and happiness. This approach creates meaning in people's lives, reduces mental problems, and increases happiness and adaptive coping strength (Rose et al., 2023). Strength-based therapy with an emphasis on the experience of positive emotion often by offering better ability in using capabilities and adaptability in coping with life's

problems and challenges of family environment, improves adaptability, strength to cope with problems, and resilience in infertile women. The use of interventions in strength-based therapy increases individual and family psychological components, and by increasing positive emotions, positive challenges and meaning of life increase, too (Emmett, 2022).

Previous findings suggest that a high-impact power-based approach can be successfully implemented in clinical treatments by healthcare practitioners and psychologists (Tse et al., 2016). Accordingly, Yan et al. (2020) studied the mental health of individuals with chronic illnesses both before and after a certain treatment, focusing on their emotional and social well-being, fulfillment in life, mental joy, and overall well-being before and after the intervention, considering their psychological and social well-being, life satisfaction, psychological happiness, and ontological well-being (Yan et al., 2020). Eight studies, including 692 patients, were identified and critically evaluated in this review. The meta-analysis results for three comparable studies showed that the intervention based on personality strengths effectively improved the self-esteem of patients with chronic diseases, significantly increased their mental health and resilience, and reduced their depression. The intervention group significantly improved its well-being, while the control group showed no such improvement. Evidence indicates that a strength-based approach promotes health outcomes, including reduced hospitalization rates, improved occupational and educational performance, and improved intrapersonal feelings of self-efficacy and hope (Tse et al., 2016). McFarland and Fenton (2019) compared the mental capacity and resilience of parents with mental illness before and after the intervention by considering their psychological and social well-being, life satisfaction, psychological happiness, and ontological well-being. Their study showed that mental capacity and resilience increased in parents with mental illness after participating in a strength-based intervention (McFarland & Fenton, 2019).

This study has limitations such as the limited scope of the infertile women in Tehran, lack of methods for random sampling, and lack of follow-up; thus, for better generalization of the results at the research level, other studies should be carried out in other cities and areas with different cultures on other women with follow-up and random sampling to increase generalizations.

Conclusion

The results indicate a significant impact of strength-based therapy on mental health and resilience in infertile women. According to the findings of this study, at the functional level, it is recommended that health centers for infertile women, besides medical treatment, should improve the psychological components of these women through strength-based therapy.

Conflict of Interests

Authors have no conflict of interests.

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