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The Effectiveness of Mindfulness-Based Cognitive Therapy in Resilience, Rumination, and Dysfunctional Attitudes of Infertile Couples

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Extended Abstract

Background and Objectives

Infertility affects an estimated 10–15% of couples worldwide and is considered a major public health concern due to its profound psychological, relational, and social consequences. Couples facing infertility often experience heightened levels of stress, anxiety, depression, and marital discord, stemming from the uncertainty and repeated cycles of treatment failure. Two critical cognitive-emotional processes implicated in the distress of infertile couples are rumination—a repetitive focus on negative thoughts—and dysfunctional attitudes—rigid, maladaptive beliefs that distort self-concept and coping strategies. Conversely, resilience, defined as the ability to maintain or quickly regain psychological well-being in the face of adversity, has been identified as a protective factor that buffers against the negative impact of fertility-related stress (Li et al., 2019; Yuan, 2020). Mindfulness-Based Cognitive Therapy (MBCT) integrates mindfulness practices with cognitive therapy to enhance present-moment awareness, reduce automatic negative thinking, and improve emotion regulation. MBCT has demonstrated efficacy in reducing rumination and dysfunctional attitudes in diverse clinical populations, as well as in bolstering resilience (Docteur et al., 2020). However, research specifically examining the effectiveness of MBCT in infertile couples remains scarce in Iran and globally. This study aimed to evaluate the impact of an eight-week MBCT intervention on resilience, rumination, and dysfunctional attitudes in infertile couples undergoing treatment, hypothesizing that MBCT would significantly increase resilience while decreasing rumination and dysfunctional attitudes compared to a control group.

Materials and Methods

A quasi-experimental pretest-posttest design with a one-month follow-up and a waitlist control group was employed. Thirty infertile couples (N = 60 individuals), aged 24–40 years and meeting inclusion criteria (primary infertility diagnosis, 3–10 years of infertility, no psychiatric disorders, minimum bachelor's degree), were recruited from Ibn Sina Infertility Center in Tehran. Participants were randomly assigned to the MBCT intervention group (n = 15 couples) or the control group (n = 15 couples).

The experimental group received eight weeks of MBCT training based on the Segal et al. (2018) protocol, delivered online via the Skyroom platform in twice-weekly 90-minute sessions. Exercises included mindful eating, body scan, sitting meditation, breathing space, and self-compassion practices, with homework assignments to reinforce daily mindfulness integration. The control group remained on a waiting list and received MBCT after study completion for ethical considerations.

Outcome measures, administered at baseline (pretest), immediately post-intervention (posttest), and one month post-intervention (follow-up), were: (1) Connor-Davidson Resilience Scale (CD-RISC; Connor & Davidson, 2003), measuring five resilience components; (2) Ruminative Response Scale (Nolen-Hoeksema & Morrow, 1991), assessing brooding and reflective rumination; and (3) Dysfunctional Attitudes Scale-26 (DAS-26; Weissman & Beck, 1978), evaluating maladaptive beliefs. Data were analyzed using SPSS v26, employing multivariate analysis of covariance (MANCOVA) with pretest scores as covariates. Assumptions of normality, homogeneity of variance, and homogeneity of regression slopes were verified before analysis.

Results

MANCOVA results indicated a significant multivariate effect of group on combined dependent variables at posttest and follow-up (Wilks' $\Lambda = 0.149$, $F(3,26) = 49.35$, $p < 0.001$, $\eta^2 = 0.851$). Univariate analyses revealed that, controlling for pretest scores, the MBCT group showed significantly higher resilience scores at posttest ($M_{adj} = 60.00$ vs. 45.23; $F(1,28) = 381.95$, $p < 0.001$, $\eta^2 = 0.934$) and follow-up ($M_{adj} = 65.63$ vs. 45.77; $F(1,28) = 521.86$, $p < 0.001$, $\eta^2 = 0.951$). Rumination was significantly lower in the MBCT group at posttest ($M_{adj} = 79.20$ vs. 79.17; $F(1,28) = 26.45$, $p < 0.001$, $\eta^2 = 0.495$) and follow-up ($M_{adj} = 75.33$ vs. 79.50; $F(1,28) = 33.85$, $p < 0.001$, $\eta^2 = 0.556$). Dysfunctional attitudes were likewise reduced at posttest ($M_{adj} = 79.97$ vs. 80.70; $F(1,28) = 104.13$, $p < 0.001$, $\eta^2 = 0.794$) and follow-up ($M_{adj} = 73.80$ vs. 81.20; $F(1,28) = 262.52$, $p < 0.001$, $\eta^2 = 0.907$). These effects persisted at one-month follow-up, demonstrating the durability of MBCT benefits.

Discussion

The significant improvements in resilience, reduction of rumination, and decreased dysfunctional attitudes among MBCT participants underscore the intervention's utility in addressing cognitive-emotional challenges inherent in infertility. MBCT's focus on present-moment awareness and decentering from automatic thoughts likely interrupts ruminative cycles, thereby mitigating persistent negative cognitions and fostering adaptive coping. Enhanced resilience may result from improved emotion regulation and cognitive flexibility cultivated through mindfulness practices, enabling couples to navigate infertility-related stress with greater psychological resources (Li et al., 2019; Yuan, 2020).

The sustained effects at follow-up highlight MBCT's capacity to instill enduring skills beyond the intervention period, aligning with research demonstrating long-term benefits in diverse populations (Docteur et al., 2020). By reducing dysfunctional attitudes—rigid beliefs that exacerbate distress—MBCT may also facilitate more adaptive self-appraisals and relational dynamics, which are critical for couples facing the relational strains of infertility.

Limitations include the small sample size, reliance on self-report measures, and lack of active control intervention. Future research should replicate these findings with larger, multisite samples and explore the comparative efficacy of MBCT versus other third-wave therapies. Investigations into physiological correlates, such as cortisol regulation, and relationship outcomes, such as marital satisfaction, would further elucidate MBCT's mechanisms in infertility contexts.

Conclusion

This study provides compelling evidence for MBCT's effectiveness in enhancing resilience and reducing maladaptive cognitive processes—rumination and dysfunctional attitudes—in infertile couples. Implementing MBCT in fertility clinics may serve as a valuable adjunct to medical treatments, addressing the psychosocial dimensions critical for holistic care. Training healthcare providers in MBCT delivery and integrating mindfulness into standard infertility treatment protocols could improve psychological outcomes and overall treatment satisfaction.

Given the global prevalence of infertility and its psychological toll, scalable MBCT programs, including digital and group-based formats, warrant further development and evaluation. Ultimately, empowering infertile couples with mindfulness skills may foster resilience, reduce cognitive-emotional burdens, and enhance quality of life throughout the reproductive journey.