



Research Article

Effect of a Mind-Body Therapeutic Program for Infertile Women Repeating In Vitro Fertilization Treatment on Uncertainty, Anxiety, and Implantation Rate



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SUMMARY

Purpose: The study aimed to develop a mind-body therapeutic program and evaluate its effects on mitigating uncertainty, anxiety, and implantation rate of second-trial in vitro fertilization (IVF) women.

Methods: This study employed a nonequivalent control group nonsynchronized design. The conceptual framework and program content were developed from a preliminary survey of eight infertile women and the extensive review of the literature. Program focuses on three uncertainty-induced anxieties in infertile women: cognitive, emotional, and biological responses. To evaluate the effect of the intervention, the infertile women with unknown cause preparing for a second IVF treatment were sampled at convenience (26 experimental and 24 control).

Results: The experimental group in the study showed greater decrease in uncertainty and anxiety in premeasurements and postmeasurements than the control group did. However, no statistically significant differences in the implantation rate between groups were observed.

Conclusion: This study is meaningful as the first intervention program for alleviating uncertainty and anxiety provided during the IVF treatment process. The positive effects of the mind-body therapeutic program in alleviating both uncertainty and anxiety have direct meaning for clinical applications.

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Introduction

The number of infertile couples in Korea increased by 47.5% from 2002 to 2006, amounting to over 150,000 couples, which is about one in seven couples. In particular, the increasing rate of infertile women in their thirties reached 77.6%, the highest increase rate for a single condition (Kim, 2009). Infertility brings an unexpected crisis to a woman; it can threaten dreams of motherhood, desire for a perfect life, self-esteem, and trigger loss of balance and security in her relationships (Fogel & Woods, 1995). The procedure of diagnosis and treatment of infertility is time consuming, economically and psychologically burdening, and physically difficult for the patient

without pregnancy guarantee (Cho & Park, 1996; Lee, Kim, Moon, Song, & Kim, 1998). In vitro fertilization (IVF) is the last resort for infertile women who fail in natural conception, ovulation induction, and intrauterine insemination. The average success rate of IVF was 35.3% for US women less than 35 years old (Centers for Disease Control and Prevention, 2009) and 33.1% for Korean women in 2006 (Yoon et al., 2007), while most women needed to repeat the process. After IVF failure infertile women experience severe emotional and relational changes and feel great loss and grief losing hope for pregnancy (Worthington, 1995). During this period, the woman is occupied with uncertainty, burden, blame, and vigorous desire for pregnancy, and reflects on her need for a child. Lack of information and inability to anticipate the outcome compounds the sense of uncertainty. It takes considerable time and energy to overcome such grief and negative emotions (Han, 2003; Kang & Kim, 2004).

It is known that infertile women are more prone to experience negative emotions from infertility than men are (Boivin, 2003; Newton, Sherrard, & Glavac, 1999). Indeed the pain of an infertile

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woman is comparable to chronic illness or AIDS (Domar, Clapp, Slawsby, Kessel, Orav, & Freizinger, 2000a). Worse, in cultures that are male-oriented, such as Korea, infertile women are likely to be blamed even for male-infertility (Kim, 1998). Qualitative studies have shown that Korean infertile women experience severe despair, anguish, exhaustion, powerlessness, despondency, and isolation (Han, 2003). Due to cultural reasons, however, most infertile women feel restrained from bringing up the issue (Park, 1993), making access to their problems difficult. Although many infertile women experience conflict over the social significance of pregnancy and negative emotions, current medical technology focuses on the infertility diagnosis and treatment process; the degree of psychological and social support is little (Cho & Park, 1996; Lee et al., 1998).

As a countermeasure, the Korean government has subsidized infertility treatment expenses since 2006, encouraging infertile couples to treatments. However, governmental support is limited to financial support, and cannot be a fundamental resolution to infertility. Therefore, strategies in promoting the success of infertility treatments are needed.

Among the emotional turmoil of infertile women, uncertainty and anxiety are prominent issues. The various uncertainty factors arising between an IVF failure and the next IVF leads to anxiety, and such a negative emotion affects the infertile women's psychoneurologic pathways. These changes cause the vascular system to contract, decrease blood circulation to the tissue, and impede ovum development and ovulation in the ovary, subsequently inhibiting fertilization and implantation, and causing negative effects on pregnancy (Domar et al., 2000a). Especially during the 3-month period between IVF failure and the next treatment, the infertile woman is not under medical supervision, and has to deal with various issues by herself (Han, 2003), which may further accentuate feelings of uncertainty and anxiety. Recent studies reported that the psychological and emotional status of a pregnant woman is one of the major factors to the outcome of IVF treatments, and the psychosocial interventions based on mind-body connection have positive effects on pregnancy outcome (Bae, Chang, Kim, & Kang, 2011; Chan, Ng, Chan, Ho, & Chan, 2006; Cousineau, 2004; Domar, Clapp, Slawsby, Kessel, Orav, & Freizinger, 2000b; Hosaka, Matsubayashi, Sugiyama, Izumi, & Makino, 2002; Park, 2000). However, clinical interventions for Korean infertile women are limited to providing one-time information about infertility treatment procedure, or short-term interventions after ovum aspiration and embryo transplantation (ET) (Bae et al.; Park, 2000).

Therefore, this study attempted to alleviate the uncertainty and anxiety of infertile women throughout the IVF process, and induce positive pregnancy results via mind-body pathways, incorporating cognitive, emotional, and physiological approaches.

Conceptual framework

The conceptual framework was built based on the literature survey on the infertile women's experience from the diagnosis to the treatment of infertility. Infertility is an unexpected situational and developmental crisis to a woman accompanied by uncertainty and anxiety (Fogel & Woods, 1995). The loss of fertility may cause the loss of self-esteem and imperfectness as a man or woman. With loss of fertility, one can experience the loss of health, physiological and emotional stability, social position, fame, and confidence; one can also experience negative emotions such as anxiety and shame; these worsen as the infertility lasts for a long time (Domar, 2007). Upon diagnosis, the couple experiences intense stress, and this stress can change the quality of the couple's emotional and sexual relationship, affecting their relationship with colleagues, friends, and family members (Peterson, Newton, & Feingold, 2007), and

even cause negative effects on their quality of life (Park, 1993). Infertility-related stress is a stimulus, such as psychological tension or emotional shock, arising from infertility itself or related medical treatments. Such a response to stress is considered to lead to anxiety and pain (Cousineau & Domar, 2007). Once infertility is considered a crisis and a stressor, the infertile individual faces uncertainty, negativity, loss of control, and ambiguity (Covington & Burns, 2006).

The time-consuming process of diagnosis and treatment of infertility can eventually induce relational changes and internal challenges (Cho & Park, 1996). If the infertile woman recognizes herself as a defective person, she experiences the loss, role failure, identity diffusion, and even a change of relationship within the family (Mathews & Matthews, 1986).

Because of the uncertainty in both personal and relational aspects, an infertile woman experiences anxiety. The anxiety worsens if she fails the IVF treatment (Verhaak, Smeenk, van Minnen, Kremer, & Kraaimaat, 2005), which is regarded as the last resort to infertility. Anxiety grows as an IVF treatment proceeds (Bae et al., 2011; Kim, 1999). Such a negative emotion causes changes in the neuroendocrine system via mind-body connection. This change impedes ovum development and ovulation in the ovary, inhibiting fertilization and implantation, and resulting in a negative effect on pregnancy (Domar et al., 2000a). However, the degree of negative emotion that individuals experience will differ based on the level of social support, quality of the marital relationship, and infertility stress level (Kim, 1999; Li et al., 2011).

In this study, a mind-body therapeutic program (MBTP) was developed, taking cognitive, emotional, and physiological approaches to help the infertile women repeating IVF treatment recognize and objectify the uncertainty factors and uncertainty-induced anxiety that are experienced throughout the diagnosis and treatment process, and find positive resolution.

Methods

Study design

This study employed a nonequivalent control group non-synchronized design with data collection of the control group completed before the experimental group to avoid diffusion effects.

The research hypotheses for the study were as follows: (a) The experimental group will show greater decrease in uncertainty from premeasurements to postmeasurements than will the control group do. (b) The experimental group will show greater decrease in anxiety from premeasurements to postmeasurements than will the control group do. (c) The experimental group will show higher implantation rates than will the control group do.

Setting and sample

The participants were 50 Korean women, who were infertile and met the following conditions: (a) diagnosed with unexplained infertility, (b) failed the first IVF treatment and were waiting for the second round, (c) under IVF long protocol¹, (d) body mass index at less than 23 kg/m², (5) had no other disease, and (6) did not receive sperm or ovum donations. Qualifying patients were identified by chart review. Researchers had interviews with them at their hospital visit to explain the study and encourage their participation.

¹ This procedure involves pituitary and ovarian suppression prior to gonadotropin administration, gonadotropin-releasing hormone agonist starting in the midluteal phase (cycle day 21 of an idealized 28 day cycle).

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