Original article

The impact of complementary therapies on psychosocial factors in women undergoing in vitro fertilization (IVF): A systematic literature review☆

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ABSTRACT

Aim: This review evaluates the impact of complementary therapies on psychosocial factors in women undergoing IVF.

Background: According to the CDC, nearly 7% of married women in the United States face infertility. Approximately 1.5% of all infants born in the U.S. annually are conceived through assisted reproductive technologies (ART), such as IVF. Women undergoing ART report distress, anxiety, and depression related to their treatment. Stress has been cited as the top reason why women terminate treatment. Complementary therapies, such as mind-body techniques, have been associated with decreasing stress and anxiety.

Methods: CINAHL and PubMed databases were searched for studies 1) published from January 2010 to 2017, 2) written in English, 3) that examined the effect of an complementary therapy on the psychological well-being of women undergoing, or about to be undergoing a cycle of IVF.

Results: The search revealed 11 studies published between 2010 and 2015 from a variety of countries. The most common research design was a randomized controlled trial (n = 7). The psychosocial factor most frequently measured was anxiety (n = 8). The forms of complementary therapy varied, with the most common being Hatha yoga, cognitive behavioral interventions, and mind-body therapies (n = 2 each).

Conclusions: Utilizing complementary therapies appears to be a positive way to decrease women’s anxiety, depression, distress, and stress, and to increase fertility quality of life. This review informs providers that incorporating complementary therapies into the plan of care can lead to improved psychosocial health outcomes for women undergoing IVF.

1. Introduction

The World Health Organization reports that in developing countries one in four couples experience infertility (WHO, 2017). According to the Centers for Disease Control and Prevention, 6.7% of married women in the United States (U.S.) between the ages of 15–44 years experience infertility (CDC/National Center for Health Statistics, 2017). Infertility services are utilized by 12% of reproductively aged (15–44 years) women (CDC/National Center for Health Statistics, 2017). Approximately 1.5% of all infants born in the U.S. are conceived with assisted reproductive technologies (ART) (Sunderam et al., 2015). The states with the highest birth rates of infants conceived with ART are Connecticut, Hawaii, Illinois, Maryland, Massachusetts, Montana, New Jersey, Ohio, Rhode Island, Texas and West Virginia, each have laws that require insurers to cover or offer coverage for the diagnosis and treatment of infertility, with most including coverage for at least one round of IVF (National Conference of State Legislatures, 2014). New York, California, and Louisiana have laws that require insurers to cover or offer coverage for the diagnosis and treatment of infertility, with most including coverage for at least one round of IVF (National Conference of State Legislatures, 2014). Occasionally, this cost can be covered by insurance, however, not all states mandate coverage. In the U.S., 12 states, Arkansas, Connecticut, Hawaii, Illinois, Maryland, Massachusetts, Montana, New Jersey, Ohio, Rhode Island, Texas and West Virginia, each have laws that require insurers to cover or offer coverage for the diagnosis and treatment of infertility, with most including coverage for at least one round of IVF (National Conference of State Legislatures, 2014). New York, California, and Louisiana have laws that require insurers to cover or offer coverage for the diagnosis and treatment of infertility, with most including coverage for at least one round of IVF (National Conference of State Legislatures, 2014). New York, California, and Louisiana have laws that require insurers to cover or offer coverage for the diagnosis and treatment of infertility, with most including coverage for at least one round of IVF (National Conference of State Legislatures, 2014). New York, California, and Louisiana have laws that require insurers to cover or offer coverage for the diagnosis and treatment of infertility, with most including coverage for at least one round of IVF (National Conference of State Legislatures, 2014).
an already stressful time, even for those receiving insurance coverage, and clearly more so for those without coverage (Martin, Bromer, Sakkas, & Patrizio, 2011).

The experience of IVF is burdensome for both partners involved, but most so for the woman undergoing treatment. Domar, Smith, Conboy, Iannone, and Alper (2010) surveyed 47 insured women to assess the primary reason for terminating IVF treatment, prior to the third round of IVF covered by insurance. The result was that 39% of women cited stress as the reason they terminated treatment (Domar et al., 2010). Participants offered that having stress reduction education and intervention would have been helpful in continuing treatment (Domar et al., 2010). As stress is so prominent throughout a woman's IVF experience, and contributes to discontinuing treatment, women may benefit from the complementary therapies aimed at reducing stress and anxiety.

Undergoing infertility services, specifically IVF, as a means to achieve pregnancy is both financially and emotionally taxing. An infertility diagnosis, and subsequently undergoing IVF, carries the potential for negative psychosocial health outcomes such as distress, anxiety, and/or depression (Kahyaoglu Sut & Balkani Kaplan, 2015). High levels of psychosocial stress can negatively affect the success rates of IVF (Gourounti, Anagnostopoulos, & Vaslamatzis, 2011). Complementary therapies aimed at addressing these areas of mental health in women undergoing IVF have been utilized and researched. This systematic review aims to evaluate the impact of complementary therapies on psychosocial factors such as depression, stress, and anxiety in women who are undergoing IVF treatment.

2. Background

Women undergoing treatment frequently experience feelings of anxiety, depression, and distress (Kahyaoglu Sut & Balkani Kaplan, 2015). For many women with infertility, the inability to achieve their socially desirable role of motherhood leads to psychological distress (Greil, Slauson-Blevins, & McQuillian, 2010). Infertility not only puts a psychosocial strain on the individuals diagnosed, but also can negatively impact couples’ relationships following the diagnosis and during treatment (Tao, Costes, & Maycock, 2012). Moreover, infertility-specific stress and nonspecific anxiety during IVF are both negatively associated with a favorable pregnancy outcome (Gourounti et al., 2011). In a study investigating the relationship between stress and reproductive outcomes in women receiving IVF treatment, investigators found a negative correlation between state anxiety scores and live birth rate (An, Sun, Li, Zhang, & Ji, 2013). Ultimately, IVF treatment is a stressful process, which can often negatively impact a woman’s psychosocial health, while also influencing the success of her reproductive outcome.

Women often experience a reduction in quality of life during infertility treatment; therefore it is essential to provide holistic care (Kahyaoglu Sut & Balkani Kaplan, 2015). Complementary therapies, such as mind body approaches, are holistic and can be used in conjunction with traditional medical management, such as IVF (NIH, 2016). Complementary therapies specifically aim to address participants’ psychosocial health (NIH, 2016). The utilization of mind body approaches, specifically yoga, has nearly doubled between 2002 and 2012 (NIH, 2016). Acupuncture, guided imagery, and breathing exercises are also common complementary therapies that continue, along with yoga, to be researched across a wide range of populations, including women undergoing IVF (NIH, 2016). Qian et al. (2017) conducted a systematic review and meta-analysis of 30 trials examining the effect of acupuncture on IVF outcomes. Qian et al. (2017) reported that acupuncture does improve the clinical pregnancy rate among women who are undergoing IVF. The most optimal effects were seen when acupuncture was used over the entire time period of ovarian hyperstimulation and notably more so in Asian areas.

Psychosocial factors, such as anxiety, have physical and psychological components; therefore, the use of complementary therapies has the potential to reduce anxiety (Hart, 2013). Clinicians can utilize mind-body therapies in their plan of care when working with patients with anxiety for optimal outcomes (Hart, 2013).

3. Literature review

Clark, Will, Moravek, and Fisseha (2013) conducted a systematic review of randomized controlled trials (RCTs) examining the use of complementary and alternative therapies in men and women with infertility. Clark et al. (2013) identified 37 RCTs, with acupuncture, selenium supplementation (for male infertility), weight loss, and psychotherapeutic intervention being the most common modalities studied. These complementary therapies demonstrated beneficial outcomes in reducing anxiety levels (acupuncture specifically) but Clark et al. (2013) concludes more investigation is necessary before main stream use is indicated, given there are mixed results regarding IVF pregnancy rates when these therapies are used.

In another systematic review, Rockliff et al. (2014) identified 23 studies looking at emotional adjustments in IVF patients, and found one-third of psychosocial factors were related to this adjustment. Rockliff et al. (2014) reported that the following traits are protective factors for positive emotional adjustment in men and women undergoing IVF: optimism, problem-focused coping, positive family/marital function, acceptance, and secure attachment. Conversely, risk factors for negative emotional adjustment during IVF were identified as neuroticism, self-criticism, vulnerability to depression, avoidance coping, helplessness, and marital dissatisfaction (Rockliff et al., 2014).

Frederiksen, Farver-Vestergaard, Skovgrd, Ingerslev, and Zachariae (2015) conducted a recent systematic literature review and meta-analysis investigating the evidence on efficacy of psychosocial interventions on both pregnancy and distress outcomes in men and women utilizing assisted reproductive technology (ART) between 1978 and 2014. The review resulted in 39 studies (of which 3 are included in this present review): 21 were randomized controlled trials, 10 were non-randomized controlled trials, and 8 were uncontrolled trials. Study participants consisted of both women (n = 3064) and men (n = 347). Psychological interventions included cognitive-behavioral therapy (CBT) and mind/body interventions (MBI). Measurements included pregnancy rate, infertility-related distress, depression, state anxiety, and marital function. The results demonstrated that CBT and MBI intervention to be beneficial in reducing distress and improving pregnancy outcomes of ART (Frederiksen et al., 2015). Specifically, women receiving a psychological intervention were twice as likely to become pregnant in comparison to the non-intervention groups. Ultimately, the review concludes that psychological intervention could be an effective way to reduce anxiety and depression in women and men undergoing ART—more so effective for women. The larger the reduction in anxiety that occurred for women, the higher the pregnancy rates reported were.

Ying, Wu, and Loke (2016) conducted a systematic review aimed at investigating the effects of psychosocial interventions on mental health, rates of pregnancy, and marital function of couples with infertility. This review resulted in 20 randomized control trials (one of which, Mosalanejad, Khodabakshi Koolae, & Jamali, 2012, is also included in this present review) with 14 different interventions published from 1993 to 2014. The interventions most represented in this review were cognitive behavioral therapy, mind-body therapies, positive reappraisal coping therapy, and counseling. Results indicated that cognitive behavioral therapies and mind-body therapies did have positive effects on couples’ anxiety, pregnancy rates and marital function, although methodological issues were identified in these studies. Further, findings reported that none of the interventions relieved depression or stress in couple or individuals.

Due to the potentially beneficial effects of complementary therapies on relieving anxiety and distress in women, it is vital to evaluate the intervention’s effectiveness for those undergoing IVF treatment.
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