CAN MANUAL THERAPY AND MASSAGE BE USED AS COMPLEMENTARY METHODS FOR FEMALE INFERTILITY IN DIFFERENT AGE GROUPS?

Burhan Fatih Kocyigit
http://orcid.org/0000-0002-6065-8002

Department of Physical Medicine and Rehabilitation, Faculty of Medicine, Kahramanmaraş Sütçü İmam University, Kahramanmaraş, Turkey

Received: November 24, 2022
Accepted: November 28, 2022

Corresponding author: Burhan Fatih Kocyigit, E-mail: bfk2701@hotmail.com

Abstract
Infertility is the inability to conceive after one year of unprotected intercourse, and about one in six couples deal with this issue. Nearly half of the factors contributing to a couple’s infertility are female-related, and the underlying cause is variable. Many treatment options can be used depending on the underlying cause of infertility. The available treatments often include in vitro fertilization, intrauterine insemination, and fertility-inducing drugs. Numerous couples favor complementary medicine alongside conventional treatments to enhance treatment efficacy and reduce side effects. Manual therapy and massage are among these complementary treatment approaches. Manual therapy is defined in various ways. One of them is manipulating and mobilizing soft tissue structures and related joints using the hands. Manual therapy can alleviate pain, reduce inflammation, prevent contracture formation, manage existing contractures, increase range of motion, aid mobilization, and improve overall health. It contains a variety of massage treatments, stretching, and mobilization applications. Manual therapy and massage can be administered to manage various disorders, from pediatric to geriatric populations. These are safe interventions. Manual therapy and massage have beneficial effects on the management of female infertility. These methods reduce adhesions and mobilize organs in the pelvic region. They have positive effects on circulatory system disorders, including lymphatic drainage abnormalities. Overcoming reproductive system lymphatic drainage and circulation difficulties can result in balanced hormone levels, regular menstrual cycles, and pregnancies. In addition, manual therapy and massage improve the psychological state of individuals in a way that will benefit the management of female infertility.

Keywords: manual therapy; massage; female infertility; complementary medicine


Infertility is the inability to get a successful pregnancy after one year of unprotected sex and affects one in six couples throughout the world. The prevalence of infertility has shown an increasing trend over the years [1]. Roughly half of the factors contributing to a couple’s inability to conceive are female disorders [2]. Several underlying conditions could be to blame for a female’s inability to conceive, including problems with ovulation, damage to the fallopian tubes, abnormalities of the cervical region, and hormone imbalances [3].

There are two broad types of outcomes associated with female infertility. Infertility-related physical alterations make up the first group, while mental health problems make up the second. Menstrual irregularities, skin abnormalities, altered libido, and increased weight are all physical manifestations of this condition. Interpersonal difficulties, low self-esteem, humiliation, social isolation, suicidal ideation, anxiety, melancholy, guilt, and worthlessness are among the signs of the psychosocial disorders brought on by this condition [4].

Different treatment modalities may be utilized based on the underlying reason for the patient’s infertility. Generally, fertility-inducing medications, intrauterine insemination, and in vitro fertilization are the available treatment options [5]. These approaches have various drawbacks. To begin with, treatment success varies, and some procedures are invasive. They are not low-cost procedures. If the treatment fails, it should be repeated. They may be uninsured in some circumstances and countries [6]. Therefore, many patients utilize complementary medicine to
improve the efficacy of their treatment and minimize potential side effects [7]. For example, data from Turkey and Iran reveal that around half of infertile patients have used complementary medicine methods. In South Korea, this figure exceeds 60% [8, 9, 10].

This review discussed manual therapy and massage as complementary methods in female infertility. In addition, we aimed to address the possible mechanisms of action and potential benefits in managing female infertility.

Manual therapy and massage

There are various definitions of manual therapy. One of them is the manipulation of soft tissue structures and related joints with the help of hands by a healthcare professional experienced in this field. Another definition is a set of applications in which the hands are used manually with rhythmic pressure to increase physical performance, provide relaxation in daily life activities, and prevent and rehabilitate various disorders, including mapping soft tissue structures in a particular order. Connective tissue massage is essential to manual therapy [11, 12]

Manual therapy involves manual manipulation of joints and soft tissues to reduce pain, relieve inflammation, prevent the formation of contractures, rehabilitate existing contractures, increase range of motion, support mobilization, and ultimately improve overall health. In addition, it covers various massage techniques, stretching, and mobilization applications [13] (Figures 1 and 2). The fascial system protects the body, compartmentalizes it, aids in hemodynamic coordination, and transports blood and lymph fluid from peripheral structures to the heart and glands. Any disturbance in the mobility and flexibility of fascial structures leads to tissue hardening, adhesions, and accumulation of toxins - end products that increase oxidative stress. Furthermore, it can lead to disruption in the balance between body fluids. By stimulating the lymph system with manual therapy and massage, the elimination of metabolic wastes can be facilitated, extra fluid can be reduced, peripheral ponding and stasis can be eliminated, and the immunological system can be regulated [14, 15].

In animal experiments, it has been revealed that cyclic mechanical compression reduces the harmful effects of necrosis, fibrosis, and contractile dysfunctions secondary to muscle damage. In addition, changes in immune cells in tissues suggested that cyclic mechanical compression may act as an immune system modulator [13, 16]. One of the manual therapy approaches is connective tissue massage, which generates brief and long-term tractions in soft tissue, creates local mechanical effects on mast cells, lowers sympathetic system activity, and induces vasodilation. An increase follows this circumstance in the parasympathetic system’s impact, and the healing process is supported [17].

Manual therapy and massage in women of different age groups: potential mechanisms of treating infertility

Manual therapy and massage can be administered in different age categories, from pediatric to geriatric individuals. Parents may prefer complementary medicine approaches for their children if a particular complementary method is seen as beneficial, if they fear the side effects of pharmaceuticals, if they are dissatisfied with conventional treatment, or if they desire more individualized care [18]. Among the varied complementary methods, massage therapy is one of the most frequently utilized in the pediatric group [19]. Manual therapy and massage have been used in various pediatric issues involving abdominal pain, weight gain, musculoskeletal complaints, bowel motility disorders, cerebral palsy, asthma, torticollis, autism, and attention deficit hyperactivity disorder [20, 21, 22]. In addition, it has been demonstrated that spinal manipulative methods are safe for children under the age of three [23]. Along with aging, issues such as pain, degenerative joint diseases, balance and coordination disorders, osteoporosis, organ dysfunctions, and difficulty in walking come to the fore. One of the efficient complementary medicine methods for pain management is the osteopathic manipulative approach, a non-pharmacological way of relieving chronic pain in the geriatric population [24]. In addition, they are effective methods in reducing pain in geriatric oncology patients [25]. Nakano et al. [26] examined the effects of foot and hand massages on older individuals who need long-term care. They claimed that massage therapy interventions produced significant levels of pleasant, relaxed, and energizing emotions. According to this study, massage therapy can modify an aged person’s psychological state and EEG activity.

Manual therapy and massage are safe methods that can be administered by experienced healthcare personnel for various medical issues, from the pediatric to the geriatric population. Reproductive functions are negatively affected by age in both sexes. However, fertility decreases considerably for women by age 40, and around age 40, fertility is halved [27]. The underlying cause of female infertility can differ depending on the age group. Therefore, manual therapy and massage approaches should be modified according to age.
Scar tissue, adhesions, fascial restriction, and impaired lymphatic drainage are some factors that complicate a woman from becoming pregnant. Manual medicine can be used to manage these particular problems. Manual therapy, mobilization, and massage have a variety of cellular effects [6]. To comprehend the effectiveness of manual therapy and massage in managing female infertility, it is necessary to consider the reproductive anatomy and microenvironment at the cellular and tissue levels. Arterial, venous, and lymphatic circulation are interconnected. Each circulatory component has particular tasks to maintain homeostasis. There are more than two hundred lymph nodes in the abdominal and pelvic regions, including the urogenital system [28]. Eliminating lymphatic system abnormalities can aid in removing waste products from the relevant organs and tissues. Thus, the deterioration of functions at the cellular level can be prevented. Hormones can be delivered to target tissues more effectively by activating lymphatic drainage and resolving circulatory system abnormalities. Overcoming lymphatic drainage issues and other circulation elements within the reproductive system can result in normalized hormone levels, regular menstrual cycles, and pregnancies. Manual therapy and massage can assist in the activation of this entire process. Kramp et al. [6] approached female infertility from this perspective. Ten participants who followed up with female infertility were enrolled in the manual therapy program. Participants were assessed in terms of pelvic symmetry, sacral mobilization and bone restrictions, adhesions and limitations in fascial structures, myofascial trigger points including the entire pelvis, and lymphatic circulation disorders in the urogenital system. Manual therapy techniques were determined according to the detected abnormalities. The techniques used are listed below:

- Examining the pelvis asymmetry and, if necessary, correct it with the appropriate methods
- Evaluating sacral mobility and, if necessary, correcting dysfunction with craniosacral procedures
- Scanning the pelvis for trigger points and intervening with positional release techniques as needed.
- Evaluating lymph drainage of the pelvic region and adjacent organs and, if necessary, employing a manual lymph drainage procedure.
- Investigating the mobility of visceral components in the pelvic region and, if necessary, implementing fascial procedures to alleviate restrictions.
- Reevaluating symmetry and all mobilities [6].

Six of ten previously infertile female participants in this case series could conceive within three months of implementing the aforementioned manual therapy and massage approaches. Another point to be emphasized is the lack of standard treatment protocols. Healthcare professionals experienced in this field should evaluate individuals. Based on the abnormalities detected, individualized treatment regimens should be established.

Wurn et al. [29] evaluated the efficacy of manual therapy in promoting natural fertility and increasing in vitro fertilization pregnancy success in women with pelvic region adhesion formation. In the natural fertility group, 10 of the 14 patients available for follow-up were pregnant within a year. Of the 25 patients in the in vitro fertilization group eligible for follow-up, 22 of the 33 embryo transfers resulted in pregnancies. Pelvic adhesions are among the critical causes of mechanical infertility. Adhesions result from the natural accumulation of fibrous structures secondary to surgery, infections, inflammation, or trauma. Even after a long time, adhesions may persist and adversely affect the mobility and function of pelvic organs [30, 31].

Figure 1. Scapular mobilization as part of a manual therapy demonstration

Furthermore, a particular part of infertility may be caused by micro adhesions in the pelvis. Micro adhesions are typically too small to be visualized, and this condition makes them challenging to diagnose.
Mobilization and massage of soft tissues with the help of manual therapy involving the pelvic region seem to break the collagen cross-links in the adherent structures, provide the necessary mobility to the organs and alleviate the dysfunction [28].

Infertility is a condition that can have a detrimental impact on a couple’s social and marital lives in numerous ways. Depression, anxiety, and stress linked with infertility may influence the treatment success of couples. It is not rare for an infertile couple to experience mental health issues, with documented prevalence rates ranging from 30 to 80%. In addition, the underlying cause, the duration of infertility, previous treatment options tested, and the number of interventions affect the results [32, 33]. Various manual therapy and massage techniques positively influence individuals’ psychological states [34, 35]. From this perspective, relaxation in the psychological state with the effect of manual therapy and massage may have beneficial effects in the management of infertility and treatment success.

Conclusion

Despite recent advances, female infertility remains a challenging condition for certain patients. It can create a heavy burden on couples physically and mentally. Therefore, couples may seek different treatment approaches. Manual therapy and massage are safe methods when administered by experienced healthcare professionals. These approaches can be used as complementary methods, particularly in cases of adhesion in the pelvic region, lymphatic drainage disorder, and anatomical dysfunction. There are no standardized protocols for manual therapy and massage. Before the procedures, individuals should be evaluated, and approaches based on the detected disorders should be applied. The level of evidence for manual therapy and massage in the treatment of female infertility is low. Couples dealing with infertility are a vulnerable population and are in search of a new treatment. Therefore, these couples should be protected from the unethical, dishonest, and misleading promotion of the impacts of fertility massage. The fact that these are complementary approaches should be highlighted. The benefits of manual therapy and massage should not be overstated, misrepresented, or exaggerated [36]. There is a need for high-evidence studies in this area. Clearer conclusions on the efficacy of these methods can be reached through studies with high methodological quality, large samples, and long follow-up periods.

CONFLICTS OF INTEREST

The author declares no conflicts of interest regarding the publication of this article.

DISCLAIMER

No part of this article is copied or published elsewhere in whole or in part.

ACKNOWLEDGEMENTS

Thanks to Serkan Usgu for his support in the preparation of the figures.

FUNDING

None

Figure 2. Demonstration of deep abdominal massage involving the pelvic organs.

REFERENCES


21. Diego MA, Field T, Hernandez-Reif M. Preterm infant weight gain is increased by massage therapy and exercise via different underlying mechanisms. Early Hum Dev 2014;90(3):137-140.


