

The Benefits of Osteopathy as a Treatment Option for Infertility in Women

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Infertility is a rising issue amongst women around the world. In Canada, roughly 16% of couples are experiencing infertility and of that 16%, women are the cause in 40% of cases. (Gov. of Canada, 2013) Infertility does not have one single definition, but as a general definition it refers to the inability to conceive after having regular sexual intercourse without contraception after one year for women who are under the age of 35, or after 6 months for women over the age of 35. (Gov. of Canada, 2013) The following research paper will discuss some of the causes of infertility in women and how manual osteopathy can provide several benefits in the prognosis and treatment of infertility and other related conditions.

After the age 35, a woman's chance of conceiving will decrease greatly. According to Canadian Government (2013) 91% of women can get pregnant at the age of 30, which decreases to 77% by the age of 35 and reduces further to 53% by the age of 40. (Mayo Clinic, 2018) Aside from age, there are a number of other factors that can hinder the pregnancy process for women. Female infertility may be caused by a number of conditions including ovulation disorders like Polycystic Ovarian Syndrome (PCOS), damage to the fallopian tubes, endometriosis, hormonal imbalances, problems associated with the uterus or the cervix, unexplained infertility or stress-induced issues. (Mayo Clinic, 2018)

In order to understand complications associated with fertility, it is imperative to know how conception occurs. The steps required for conception to occur are as follows; sperm transport, egg transport, fertilization and embryo development followed by implantation. (UCSF Medical Center, 2018) After ejaculation, sperm will swim up through the cervix into the uterus and then to the fallopian tubes. If the sperm and the egg unite, then fertilization will occur. Once the egg has become fertilized then it will make its way into the uterus.

The main organs mentioned that are involved in reproduction and will be further discussed include the uterus, fallopian tubes and ovaries. Although it is essential to have an understanding and be aware of any disorders or conditions a client may have, it is of utmost importance to look for any impaired structures-including organs- within the patient's body. Often the female reproductive organs can become compressed, immobile and unsupported prohibiting them from properly functioning.

The ovaries are very important for hormonal purposes as they produce the female egg cells which is the beginning to the fertility process. The ovaries need to be motile, as well as have an adequate blood supply. If the ovaries are not moving well this may result in an altered hormone output which may in turn create difficulty with conception. The uterus itself is a very mobile organ, allowing it to bend and tilt forward depending on whether or not the bladder and intestines are full or empty. If it becomes too compressed due to buildup of waste matter- possibly a result of constipation- then the uterus' mobility may become restricted which could lead to pelvic congestion and inhibited function. (Ashburner, 2017) The fallopian tubes extend from the uterus to the ovaries, and require mobility and proper nourishment to function optimally. As stated earlier, the egg will travel down the fallopian tubes, which means that if they are not functioning properly or have become blocked or damaged then this inhibits the egg and sperm from reaching and will prevent fertility. (Ashburner, 2017)

Aside from the female reproductive organs, your pelvic floor muscles as well as a number of ligaments also play an important role in a woman's fertility. These ligaments can simply be divided into three categories, the broad ligaments are those associated with the uterus, fallopian tubes and ovaries, the uterine ligaments are primarily associated with the uterus and the ovarian ligaments are primarily associated with the ovaries. (Whitehead, 2017) Without the support of these ligaments, it can become difficult for the reproductive system to function

naturally and productively. For example, if the pelvis were to misalign or have a malfunction like a tear in the pelvic floor muscles then the uterus may become inhibited affecting fluid flow and tissue health, resulting in difficulty with implantation and the overall conception process.

Often, if a woman is infertile, there are a number of different fertility options available such as fertility drugs like clomid, undergoing surgery, artificial insemination, in vitro fertilization (IVF), intracytoplasmic sperm injections (ICSI), donor eggs or embryos or finding a gestational carrier. However, these options can become very costly and the treatments are usually attached to different levels of short and long term health risks.

Clomiphene (clomid) is a fertility drug that is used to help with the release of one or multiple eggs per ovulation cycle. There are a number of mild symptoms associated with clomiphene including headaches, hot flashes, ovarian enlargement, and sometimes severe gastrointestinal symptoms. (Cuhna, 2018) The pregnancy success rate of fertility drugs may vary from 20-60% and they are most often used in combination with artificial insemination. (BabyCenter Canada, 2017) One particular study done by Roy Humburg (2005) revealed an ovulation rate of 73% and 36% of the women in the study became pregnant. The cost of clomiphene pills will vary depending on the dose and the quantity of pills needed, but they can cost around \$50 for 5 pills of 50mg each and the price will increase with higher dosage pills. (BabyCenter Canada, 2017)

Surgery is another option that may help with genetic defects, blocked fallopian tubes or can help with the removal of endometriosis, fibroids or ovarian cysts. Often the side effects of surgeries depend on the extensiveness of the surgery, but for the most part they will result in temporary discomfort or pain in the area of operation. The cost of these surgeries will vary depending on the provincial health ministry, but it is important to note that Medicare does cover the cost of some laparoscopic surgeries in Canada. (BabyCentre Canada, 2017) A study done in 2013 that investigated the influence of surgery on infertile women with surgically proven endometriosis, rendered a natural conception rate of 41.9% post operation. (Lee et al., 2013) Women who have undergone surgery for blocked tubes have had a large range of success rates for conception that can vary anywhere from 10-90%. (BabyCentre Canada, 2017)

The last fertility treatment that will be discussed is in vitro fertilization, also known as IVF. This extensive procedure involves the removal of eggs from the ovaries, which are then fertilized with sperm in a laboratory. If the fertilization is successful, then it will become an embryo and will continue to grow in the lab for 5-6 days. If the embryo develops properly then it will be transferred into the uterus. (Monash IVF, 2017) A study done at the of Aberdeen in 2017, found that in their first complete IVF cycle 8.3% of women had at least one miscarriage and no live birth, 29.1% had at least one live birth and 62.4% of women did not conceive. (Cameron et al., 2017) The cost of IVF will vary greatly among different provinces and individual cases, but the average cost of one cycle is often between \$10,000-15,000 with it sometimes less, and sometimes more. (Chai, 2017)

Due to the low success rate of IVF after the first cycle, women often do multiple complete cycles. According to the previously mentioned 2017 study by Cameron et al., after two complete cycles of IVF, women who miscarried in their first complete cycle increased their chances of live birth to 40.9%, while those who had already had a live birth increased their chances to 49%, and those who had no pregnancies their first round increased their conception rate to 30.1%. (Cameron et al., 2017) The side effects of IVF will vary among women, but often the treatment involves a number of injections, and a couple of surgeries, which can cause bruising, swelling, tenderness, bloating and cramping in the affected areas.

Given that there are a number of Western medicine options for infertility, the complexity and financial hardship that is attached to each and every one of the options listed above can be overwhelming for a lot of women. Although manual treatment is not often associated with infertility, several recent studies have found that manual therapy like osteopathic treatments can in fact provide several benefits in the prognosis and treatment of infertility and some related conditions. (Moghaddam, n.d.)

As a drug-free and non-invasive manual therapy, osteopathy differentiates from other manual therapies. The sole purpose of osteopathy is to improve the function of the entire body and its individual systems by focusing on the body as a whole interconnected system. The human body functions optimally when everything within it is working together to maintain homeostasis and optimal health. Manual osteopathy refrains from focusing on one individual affected area, and instead promotes the movement of bodily fluids, restores muscle and tissue balance, relieves joint restrictions and misalignments, and treats structural and tissue abnormalities. (Gilliar, 2001) Osteopathy is a gentle and very safe manual therapy, that can help prepare and strengthen the body for a functional and optimal environment to conceive. Manual osteopaths use techniques like myofascial release, muscle energy techniques, cranial-sacral and visceral manipulation, lymphatic drainage techniques, counterstrain techniques and many others.

Osteopathy can be used as a viable and natural choice that gives individuals an affordable way to conceive naturally as well as provide them with other health benefits including muscle relaxation and stress relief. Manual therapy can aid infertility in a number of ways, one of which involves releasing any tension and creating mobility in and around the pelvic areas and spine. This can be achieved from joint mobilization and muscle energy techniques. Research has found that osteopathy provides patients with increased joint mobility, improved spinal and soft tissue health, as well as visceral motility and improved circulation. (Ashburner, 2017) As many infertility issues are often the result of the pelvic region experiencing either scar tissue, fascial restriction or lymphatic congestion, osteopathy has been found to release fascial restriction, mobilize any tight ligaments, and help to drain congested ligaments, making it a very applicable treatment option for the reproductive system. (Ashburner, 2017)

Infertility can be caused by several different problems that are connected to the pelvic region, or are associated with hormonal imbalances, emotional stress, poor or faulty body mechanics and posture, and possible misalignments of body organs that could lead to abnormal blood flow and nerve function. (Ashburner, 2017) All of these ailments can be detrimental to the function of the reproductive system. However, there are a number of ways that manual osteopathy can assist with them, because it seeks to restore and improve any structural imbalances that may cause dysfunction of the reproductive system. ("The Womb: Osteopathy," 2018) For example, a study done by Ellen Kramp, DPT, CLT-LANA in 2012 found that after 1-6 manual therapy treatment sessions that included muscle energy, lymphatic drainage and visceral manipulation, 6/10 women conceived within three months of their last treatment session and all six of the women in the study delivered at full term. (Kramp, 2012)

Another, larger study done at a private physical therapy clinic in 2015 included a ten-year research period that involved over 1390 female patients. This study had a varying number of diagnosis of infertility that included blocked fallopian tubes, hormonal dysfunction and endometriosis, and also had some patients undergoing IVF treatment. All the patients underwent whole body, patient specific treatments that used manual physical therapy, and a high focus on restoring mobility to the structures affecting reproductive function. (Rice et al., 2015)

Of the 1392 female patients, occluded fallopian tubes were observed in 680 of them, making them the largest group treated. The success rate of clearing at least one fallopian tube was 60.85% and 56.64% of those patients conceived post treatment. Endometriosis, a disorder that occurs when the tissue that lines the inside of your uterus begins to grow on the outside of your uterus and it is present in approximately 1 in 10 women during their reproductive years. (World Endometriosis Society, 2018). In this study, endometriosis accounted for 558 of the patients involved in the study. Of that 558, more than one half of them also presented with other conditions like blocked fallopian tubes.

For this particular study, success in the endometriosis analysis was dependent on pregnancy. The overall success rate for the endometriosis patients was 42.8% which is very similar to or better than the standard medical treatments like surgery. For patients who presented endometriosis as the only condition for infertility, their success rate for conception was 37.3%. Patients that were treated for both endometriosis and blocked fallopian tubes, their success rate for conception was 38.1%. For women with endometriosis and blocked fallopian tubes that had a posttreatment documentation of tubal patency status, their success rate for opening the blocked fallopian tubes was 59.7%. There were also 56 patients in the study that were diagnosed with endometriosis and had underwent manual physical therapy treatment prior to initiating IVF, and of those 56 patients, 31 of them (55.4%) conceived, which according to the national average is of 40.3% for IVF transfer is 1.3 times higher. (Rice et al., 2015)

Polycystic Ovarian Syndrome was also investigated in this study, as it affects an estimated 6-10% of woman worldwide. (Naz & Barthelmess, 2014) This is a hormonal disorder that is common among women of reproductive age that occurs when women have elevated male hormones which may result in missed menstrual periods and may make it harder for them to get period. 59 of the patients in this study had a history of PCOS and 28 of them were available for a follow up. Of that 28, over all pregnancy rate was 53.57% and one of these pregnancies occurred through IVF. (Rice et al., 2015)

Lastly, an issue that several women may not even realize could be inhibiting their fertility capacity is stress. Often when people become mentally stressed, it can trigger what can be a cascade of stress hormones that will cause their bodies will react in a very negative manner. When an individual is experiencing a stressful situation, such as the inability to get pregnant, their sympathetic nervous system will kick into high gear. This response is accompanied by an increased heart rate and blood pressure as well as a rapid breathing rate. (Harvard Health, 2011) Although this stress response is beneficial in life-threatening situations, if it is prolonged it can become detrimental to an individual's health.

Most people tend to carry their stress in the cervical spine, also known as their neck, as these muscles tend to tense with the fluctuation of vital functions like breathing and blood flow. This may further develop into postural misalignments like forward head posture, which will even further your body's inability to keep homeostasis, and continue to fire your sympathetic nervous system. (Moghaddam, n.d.) It is also important to note that if an individual's spine, sacrum, or pelvic area become misaligned due to poor posture or if they experience trauma it could irritate both the sympathetic and parasympathetic nerves that exit at the low-mid back and pelvic area. This could greatly impede the delivery of essential reproductive hormone, as well as influence hormonal balance, all of which will have a negative impact on conception.

Osteopathy has been used to help with stress-reduction and relaxation for a very long time. Dr. Irvin Korr, a very well-known professor in osteopathy, once said, "the most critical effect of manipulation is the reduction of sympathetic tone." This is crucial to any manual

therapy, because treatment cannot be effective if the body is constantly in high alert, as it will constantly move further away from homeostasis and lead to constant exhaustion, rendering the body more susceptible to disease, illness and ailments. Osteopathy techniques can be implemented and used to lower an overactive sympathetic system and help realign the body into a more functional and optimal state.

A number of women across the globe are suffering from infertility, whether it is caused from a condition like endometriosis, polycystic ovarian syndrome, occluded fallopian tubes, hormonal imbalances, problems associated with the uterus or the cervix, unexplained infertility or the result of stress, treatment options like osteopathy may be the answer. Manual osteopathy treats the body as an entire interconnected system, and it used to recreate motility within that system by removing any obstacles and restoring optimal function. Specifically, osteopathic manual therapy can be used to stretch, strengthen and mobilize certain muscles associated with the reproductive system like the iliopsoas muscle, as well as the organs of reproductive system such as the uterus, ovaries and the fallopian tubes. In conclusion, manual osteopathy has proven to be beneficial and effective for treating women diagnosed as infertile due to issues associated with a number of different disorders, and it should be further researched and studied to create my awareness and credibility as a profession and treatment option.

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