

CALIFORNIA STATE UNIVERSITY, NORTHRIDGE

Using Hypnosis to Enhance Fertility for Women Experiencing Infertility

A graduate project submitted in partial fulfillment of the requirements

For the degree of Master of Science in Counseling,

Marriage and Family Therapy

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December 2016

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Dedication

I dedicate this to my parents, George and Dani Casareno, who made all of this possible. Just like the song goes, “I could fly higher ... because you were the wind beneath my wings.” Since I was a child, you have loved me unconditionally, believed in me, stood by my side through all the good times, and held me during my darkest hours. You inspire me through your unyielding faith in God and the holy family, how you give your all in the things you do, how you continually lead through example, always doing what is right and reminding me to give back to the less fortunate. Thank you for all the years and the sacrifices you have made for the good of our family. Thank you for supporting me through this. YOU taught me the meaning of FAMILY, STRENGTH, FAITH, PERSEVERANCE, GOODNESS, and HOPE, but most of all LOVE. I am the person I am because of you. This is for YOU! THANK YOU.

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Abstract

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Fertility and reproductive health are an inherent human right of women worldwide. It is also a vital component of society's general health and is pivotal to the propagation of the human race. However, many women are faced with infertility. In the United States, based on data obtained by the Centers for Disease Control and Prevention (2016), 6.7 million women have an impaired ability to conceive or carry to term. Globally, infertility affects 1 in 4 couples, or 72.4 million women. Approximately 56% of these women seek medical interventions such as assisted fertility treatments. Infertility in women is a multifactorial situation but has mainly been treated as a medical condition. Biological and psychological components influence infertility. For decades, assisted fertility treatments have focused on the biological aspects but have undervalued the psychological constituents. Assisted reproductive services offer women alternative options,

but their high cost limits the number of women who can utilize the intervention. This project presents a detailed review of published research utilizing hypnosis in both medical procedures and the treatment of mental health. Research conducted in the application of hypnosis during medical procedures has included pain management, irritable bowel syndrome, dermatological and cancer treatments; in the field of Obstetrics embryo transfer during in vitro fertilization, labor and delivery. All reviewed studies varied in target populations and experimental parameters. Despite the variance of the research, all literary works indicated auspicious outcomes as a result of hypnotic interventions. This illustrates hypnotic interventions are an advantageous alternative that incorporates the psychological constituents in the treatment of infertility or as an adjunct provision to medical interventions. Developing a program that employs hypnosis to enhance fertility will result in a propitious outcome. This project was created to provide women with an alternative cost effective option that address the psychological influences that are associated with and can cause infertility consequently optimizing their chances of conception.

Chapter 1

Introduction

Fertility and reproductive health are vital components of society's general health and essential to the proliferation of humanity. They have global ramifications. Reproductive health is integral to general health and is the basis of human development. It facilitates social and economic growth. Individuals who are afflicted with a medical or psychological condition are less able to propagate. The ability to procreate, women becoming mothers and men becoming fathers, is a fundamental human right that many struggle to attain.

Background of Problem

Many women face the challenge of infertility. Infertility is defined as the inability to conceive after 1 year of unprotected intercourse (6 months if the woman is over age 35) or the inability to carry a pregnancy to live birth (Centers for Disease Control and Prevention, 2016). It impacts not only the women who have difficulty conceiving or carrying to term, but also influences the lives of their partners, their families, and society. Infertility is not limited to a specific nation, race, or age group.

On a global perspective, a survey conducted by the World Health Organization in 2004 (WHO, 2015) reported one in four couples in developing countries have been affected by infertility. Worldwide, 72.4 million women are currently infertile; of these women, 40.5 million are seeking fertility treatments (Boivin, Bunting, Collins, & Nygren, 2007).

In the United States, based on the data obtained by the Centers for Disease Control Prevention (CDC; 2016), 6.7 million woman (10.9%) have an impaired ability to conceive or carry to term. Of that, 1.5 million married women or 12% of women who try for 12 months are unable to get pregnant. One in eight couples in the United States has trouble getting pregnant.

Less than half of women under the age of 35 who use reproductive technologies are successful in becoming pregnant, and the success rate drops significantly based on a woman's age (Lindsey & Driskill, 2013). Understanding the prevalence and incidence of infertility reinforces the need to develop interventions that can help reduce the burden of this global condition. There is a great need to expand reproductive therapies for these women.

Changes in social norms have also influenced fertility. The CDC reported that since 2008, the average age of first time mothers has increased. In the United States, more and more women are waiting until they are in their 30s and 40s to become first time mothers. This trend will only continue, and it is becoming worldwide. Women in other countries are also waiting to become mothers. However, women becoming first time mothers later in life have many consequences. It affects their lives, the number of children they can have, family dynamics, society, and economics, and it has many health ramifications. By the age of 35, women's fertility begins to decline. Women ovulate less frequently; therefore, an egg is not always released. Furthermore, women's egg quality diminishes in their 30s and especially in their 40s. Additional complications women may experience are infections that may cause scar tissue to develop around their fallopian tubes or cervix, decreased cervical fluid, endometriosis, the development of fibroids, or other uterine disorders (CDC, 2016). It is important to note that women between the ages of 35 and 45 have a 20% to 35% chance of having a miscarriage (American Pregnancy Association, 2012).

Cost of infertility. Infertility impacts millions of lives all over the world. Infertile couples who long to be parents are continually searching for options that will facilitate and remedy their predicament. Great advancements have been made in assisted reproductive therapies. Now, women have more options. Based on the cause of infertility, women can be

treated with medication, such as clomiphene, which can promote ovulation (CDC, 2016). If the medication does not result in a pregnancy, then women can be given hormone shots that promote ovulation. More invasive procedures include intrauterine insemination (IUI) and in vitro fertilization (IVF). In IUI, a doctor uses a tube to deliver sperm directly into a woman's uterus just before ovulation. This is usually done in combination with clomiphene or hormone shots. This treatment can be effective when male infertility plays a role or in cases in which no cause of infertility has been found. IVF is used as the last resort when all other options have been exhausted. A doctor carefully removes eggs from the ovaries. The eggs are placed in a test tube or dish along with sperm so fertilization of the egg by the sperm can happen. The fertilized eggs (embryos) are then placed into the uterus. Alternative options for couples are surrogacy and adoption. Despite all the advancements that have been made, even with assisted reproductive therapies, women between age 41 and 42 only have a 12% success rate, and women between age 43 and 44 have only a 5% chance of pregnancy (Lindsey & Driskill, 2013).

Despite the increased demand for infertility treatments, the high cost can preclude many individuals from seeking help. Researchers at the University of California-San Francisco assessed direct out-of-pocket costs for couples undergoing fertility treatment. Individuals who only used medication had the lowest out-of-pocket expenses of \$912, while those using a single cycle of IVF had the highest cost of \$19,234 (Counting, 2013). It is important to note that IVF does not guarantee the woman will become pregnant. In many instances, women undergo multiple cycles of IVF because their first attempt failed. Based on the data acquired by the National Infertility Association, women who decide to utilize IVF increases their likelihood of becoming pregnant by 40% (Resolve, 2015). IVF is generally not a covered benefit in most medical insurance plans; therefore, \$20,000 dollars per cycle is not something many individuals

can afford. Alternative cost-effective therapies need to be developed to help individuals in this situation.

Psychological association of infertility. For decades, infertility has been viewed and treated as a medical condition, and the psychological aspects of infertility have been undervalued and at times ignored. Fertility problems in women are actually a multifactorial situation (Lindsey, 2013). Aside from biology, other factors that increase a woman's risk for infertility include age above 35, smoking, excess alcohol use, poor diet, being overweight or underweight, sexually transmitted infections, hormonal changes, and stress. Stress plays a huge factor on a woman's ability to reproduce and can adversely affect the success of assisted reproductive therapies (Hajela, Prasad, Kumaran, & Kumar, 2016). More research and scientific evidence have revealed that fertility is influenced by emotional and psychological states.

Women undergoing fertility problems experience a plethora of emotional responses, such as shock, frustration, anger, despair, and blame. These feelings are not easily resolved in a short amount of time. Many women are unaware they may have problems conceiving until they try to become pregnant. According to Resolve, the National Infertility Association, 20% of women who go to a fertility specialist are given an idiopathic infertility diagnosis (Nguyen, 2014). Healthy women who are given an idiopathic infertility diagnosis are inclined to experience disbelief and anger. For healthy women who are unable to become pregnant and women who know they have fertility problems yet continue to pursue their dream of becoming mothers, the state of hoping during each attempt in itself becomes painful. Continually trying to conceive naturally and or using assisted fertility treatments that do not result in a pregnancy can lead women to develop feelings of rage that can eventually lead to hopelessness and depression. 40% of women with infertility experience various mental disorders (Katibali, Mammadzada, &

Hajiyeva, 2012). Over time, the repeated attempts women undergo which do not result in a pregnancy can cause women to perceive their infertility as their fault and begin blaming themselves. Self-blame many times can lead to feelings of shame and guilt.

Loss and grief are additional painful and powerful emotions women may experience. Every time a woman attempts to conceive, but does not result in a pregnancy, she can re-live these negative emotions. The loss women feel is not simply about not having a baby or becoming a mother, the loss they experience correlates to so much more. According to Resolve (2015), some of the losses women with infertility may experience include the loss of pregnancy and the entire birth experience, the loss of a genetic legacy, the loss of the parenting experience, the loss of stability in their ideal family and other personal relationships, the loss of giving grandchildren to their parents, the loss of a sense of hope for the future, and feelings of low self-worth and self-esteem (Getz, 2012). Once women have succumbed to their feelings of loss, the grieving process begins. After each endeavor, many women experience a sense of grief, because it represents the loss of their unborn child. Unruh and McGrath noted that this grief is similar to the grief felt by someone who has lost a significant loved one (as cited in Lindsey, 2013). They concluded that women who experience infertility have created fantasies about the child and their life with the child. When these expectations are not met, the result is a loss of those hopes and dreams resulting in extreme grief (Lindsey, 2013). This loss and grief may not simply end when women decide to stop trying to conceive; it can continue throughout their lifetime. Women who endured infertility can re-live these feelings of grief when they watch their family and friends becoming parents and grandparents, a reality they will never experience. These negative emotions women feel during their pursuit to become mothers further increase their already stressful lives.

Stress. Stress is a huge component of day-to-day life in today's society. It is defined by the American Institute of Stress (n.d.) as the nonspecific response of the body to any demand for change, and stress can have a positive or negative affect. It is difficult to categorize the various types of stressors because it is subjective. People will react differently to the same situation. Stress can originate internally or be caused externally. External stress emerges from the environment and surroundings, while internal stress emanates within and determines the body's ability to respond to external stress-inducing factors or stressors (Health24, 2009). Occupational, financial, and social stressors are types of external stressors. Social stress involves the dynamic interpersonal relationships within a family and between individuals and friends, extended family, siblings, parents-in-law, and other relatives (Bodenmann, Ledermann, Blattner, & Galluzzo, 2006). Internal stressors include negative thoughts and beliefs, emotional state, health or the presence of illness, and the amount of rest or sleep individual's get (Health24, 2009). Throughout people's lives, they will experience major life changes also categorized as major life stressors, such as death of a spouse or loved one, divorce, severe illness, and unemployment and minor, everyday stresses, including the irritating, frustrating, and distressing demands in everyday transactions with the environment such as errands, needed miss placed items, traffic and being late (Bodenmann et al., 2006).

Additionally, cultural and social norms negatively influence and increase the stress women experience in their day-to-day life. For centuries, women have been socialized to be the primary nurturers and caregivers responsible for managing the home. In the United States, gender roles and social norms began to shift when women started entering the workforce during and after both World Wars. Since then, more and more women have entered the workforce. Based on statistics acquired from the U.S. Department of Labor (2011), women now constitute

47% of the workforce. An average of 49.6% of women represent the workforce globally (Catalyst, 2016). Despite all the advancements women have made toward gender equality in society, in many cultures and homes, women are still obliged to perform a majority of domestic responsibilities, including child rearing, cooking, and cleaning, in addition to earning a living. When women arrive home from work, they still perform twice as much routine housework compared to men. The article “Women Are Still Doing Most of the Housework,” published in *Time* magazine (Sifferlin, 2014), noted that only 15% of men perform housework on an average day. There is more pressure on women to balance work and family; therefore, women are more susceptible to experiencing increased stress levels.

Elevated stress levels have not only been associated with infertility, but also can, in fact, cause it. Cultural and social norms toward women, the demands of day-to-day living, and the additional added pressure of trying to conceive cause women more stress than ever. In the field of psychoneuroimmunology research has been conducted uncovering the mechanisms through which stressful emotions alter cell function. In his article “The Mind-Body Connection; Not Just a Theory Anymore,” Littrell (2008) stated stress decreases the activity of cells. In women, increased stress levels significantly transmute their HPG axis, which then alters their reproductive hormonal milieu and can contribute to ovulatory dysfunction and infertility. Anxious women take longer to conceive and are more likely to miscarry than women who have lower levels of anxiety. Other studies have shown that women with a history of depression are twice as likely to experience infertility vs. women with no history (Hajela, 2016). Subsequent research has revealed increased stress levels are associated with diminished IVF success rates. Women’s emotional state and stress level can no longer be ignored in the pathway to conception.

Need and Purpose of Project

It is undeniable that women's psychological state and mental health impact their infertility. More alternative reproductive therapies such as hypnosis need to be developed that incorporate women's psychological state with medical interventions, especially during assisted reproductive therapies. Studies have recognized that psychological burdens are the most common reason for unfavorable outcomes (Sina, Ter Meulen, & Carrasco de Paula, 2010). Sina et al. (2010) concluded, "Professional care for those who are undergoing or have undergone fertility treatment should (i) embrace a broader and more comprehensive perspective to understand infertile couples' experience and should (ii) provide appropriate therapy" (p. 158).

Literature has documented the efficacy of talk-therapy interventions in altering and enhancing the body's ability to function optimally, thereby improving success rates for women trying to conceive and eventually becoming a mother (Littrell, 2008). In a report published by the CDC in 2006, only one in six health care practitioners provided preconception counseling to women of child-bearing age planning to become mothers. This illustrates the disparity of practitioners and health care systems in treating reproductive health from the philosophy of a mind-body connection. Reproductive health is a vital component of general health, yet women are not being provided adequate care in treating infertility to optimize their success rates. The purpose of this project is to provide women with a low-cost ancillary resource that incorporates the psychological constituents in the treatment of infertility or as an adjunct provision to medical interventions. Hypnosis is the conduit, which integrates the psychological components with medical treatments, enhancing women's fertility.

Definition of Key Terms

Alprazolam: A benzodiazepine commonly known as Xanax. Is a prescribed medication used to treat anxiety disorders, panic disorders, and anxiety caused by depression

Assisted Reproductive Technology (ART): All treatments or procedures that involve surgically removing eggs from a woman's ovaries and combining the eggs with sperm to help a woman become pregnant. The types of ART are in vitro fertilization (IVF), gamete intrafallopian transfer (GIFT), and zygote intrafallopian transfer (ZIFT).

Atopic Dermatitis: The most common type of eczema, it is a skin disease characterized by areas of severe itching, redness, scaling, and loss of the surface of the skin.

Autonomic Nervous System: The part of the nervous system responsible for controlling bodily functions not consciously directed, such as breathing, the heartbeat, and digestive processes.

Conscious Area: Formed around the age of 8 or 9, and is the logical, reasoning, decision making part of the mind

Critical Area: Also formed around the age of 8 or 9, filters message units and accepts or rejects them from entering into the Modern Memory. If the Critical Area is overwhelmed, it breaks down, activating fight/flight, causing a hypersuggestible state.

Dr John Kappas: Founder of HMI in 1968. Who literally defined the profession of hypnotherapy in 1973, when he wrote and defined the profession of a "Hypnotherapist" in the Federal Dictionary of Occupational Titles (079.157-010).

Endometriosis: The development of uterine-lining tissue outside the uterus.

Functional Magnetic Resonance Imaging (fMRI): A functional neuroimaging procedure using MRI technology that measures brain activity by detecting changes associated with blood

flow. This technique relies on the fact that the cerebral blood flow neuronal activation are coupled.

Gamete Intrafallopian Transfer (GIFT): An ART procedure that involves removing eggs from the woman's ovary, combining them with sperm, and using a laparoscope to place the unfertilized eggs and sperm into the woman's fallopian tube through small incisions in her abdomen.

Glioma: A malignant tumor of the glial tissue of the nervous system.

Hyperalgesia: Abnormally heightened sensitivity to pain.

Hypnosis Motivation Institute (HMI): a non-profit nationally accredited college and clinic of hypnotherapy that has been serving the Southern California area for more than 47 years

Hypnotherapy: A form of psychotherapy used to create change in an individual in the form of new responses, thoughts, attitudes, behaviors or feelings by accessing the subconscious; the use of hypnosis as a therapeutic technique.

Hypothalamic-Pituitary-Gonadal Axis (HPG Axis): It starts in your brain, where the hypothalamus and the pituitary are located, and it allows your brain to communicate with your ovaries using molecules called hormones.

Idiopathic Infertility: Infertility cases where standard infertility testing is inconclusive in determining the cause of a failure to become pregnant also referred to as unexplained infertility

Infertility: A disease of the reproductive system defined by the failure to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse. If a woman is over the age of 35, the time of trying to conceive is reduced to 6 months to be considered infertile.

In Vitro Fertilization (IVF): An ART procedure that involves removing eggs from a woman's ovaries and fertilizing them outside her body. The resulting embryos are then transferred into a woman's uterus through the cervix.

Knowns: In the subconscious mind represent pleasure, in that they are things we have experienced, associated or identified before. A Known may be either positive or negative but is accepted by the Subconscious because it has been experienced before.

Limbic System: A group of interconnected structures of the brain including the hypothalamus, amygdala, and hippocampus that are located beneath the cortex, are common to all mammals, and are associated with emotions such as fear and pleasure, memory, motivation, and various autonomic functions.

Magnetic Resonance Imaging (MRI): A test using a magnetic field and pulses of radio wave energy to make pictures of organs and structures inside the body. It gives different information about structures in the body than can be seen with an X-ray, ultrasound, or computed tomography (CT) scan.

Modern Memory Area: Part of the subconscious, which contains all of a person's "knowns."

Neodissociation Theory: A classic state theory where the hypnotic induction is said to split the functioning of the executive control system (ECS) into different streams of consciousness. It proposes that hypnotic phenomenon are produced through a dissociation within high level control systems.

Neurophysiology: A branch of physiology and neuroscience concerned with the study of the functioning of the nervous system.

Parasympathetic Nervous System (PSNS): The part of the autonomic nervous system that inhibits or opposes the physiological effects of the sympathetic nervous system, by slowing down the heartbeat and dilating blood vessels. This stimulates the bodies "rest-and-digest" or "feed and breed" activities. It includes the function of many glands, such as those that produce tears and saliva, and stimulates motility and secretions of the digestive system.

Positron Emission Tomography (PET): A nuclear medicine, functional imaging technique used to observe metabolic processes in the body. The system detects pairs of gamma rays emitted indirectly by a positron-emitting radionuclide (tracer), which is introduced into the body on a biologically active molecule.

Primary Infertility: Refers to couples who have not become pregnant after at least 1 year of having sex without using birth control methods.

Primitive Area: Part of the subconscious and established from birth. It contains the fight/flight response and the fears of falling and loud noises.

Psoriasis: A long-lasting autoimmune disease characterized by patches of abnormal skin. These skin patches are typically red, itchy, and scaly.

Psychoneuroimmunology (PNI): the study of how emotions and thoughts impact the brain, hormones, and nervous system and the immune system's ability to protect. Applications include how stress leads to illness and how chronic inflammation can lead to cardiovascular problems, cancer and other diseases

Response Expectancy Theory: Is based on the idea that what people experience depends partly on what they expect to experience. In hypnosis, how a client expects the suggestions to change his or her subjective experience leads to a change in the experience and can generate involuntary responses.

Secondary Infertility: Refers to couples who have been able to get pregnant at least once, but now are unable.

Socio-Cognitive Theory: Is based on the idea that people learn by watching others. In hypnosis, it assumes people who are hypnotized are not in an altered state but are merely playing the role expected of them.

Somnambulism: A situation where a person responds equally well to all suggestions, both direct and indirect, affecting both the body and emotions. This person would have a 50/50 suggestibility (50% physical suggestible and 50% emotional suggestible).

Sympathetic Nervous System (SNS): The part of the anatomic nervous system, which inhibits or opposes the physiological effects of the PSNS. The SNS's primary function is to stimulate the body's fight-or-flight response, it serves to accelerate heart rate, constrict blood vessels, and raise blood pressure

Theory of Mind: Description of the four areas of the mind that must be affected to enter the state of hypnosis. The four areas are The Primitive Area, Modern Memory Area, The Conscious Area, and The Critical Area.

Unexplained Infertility: (see Idiopathic Infertility)

Unknowns: In the subconscious mind represent pain, or physical or psychological threats in that they are things the mind has not associated or identified before. An unknown may be either positive or negative but is not accepted by the Subconscious because it can be a potential threat.

Zygote Intrafallopian Transfer (ZIFT): An ART procedure in which eggs are collected from a woman's ovary and fertilized outside her body. A laparoscope is then used to place the

resulting zygote (fertilized egg) into the woman's fallopian tube through a small incision in her abdomen.

Limitations of the Project

This project primarily focuses on treating women's infertility. It does not address men's infertility, including the biological and psychological role it has in conception. The benefits of infertility and women waiting later in life to become first time mothers on a social and global scale were also excluded in this study. Types of assisted reproductive therapies were explained but their disadvantages and risks were not presented. The literary works reviewed utilized hypnosis as an adjunct to medical interventions. No studies implementing hypnosis as the sole intervention in the treatment of infertility were found. This denotes that the use of hypnosis to treat women's infertility cannot provide certainty and will vary with each case. The extensive studies on the effectiveness of hypnosis in the treatment of pain and other medical conditions indicate its high plausibility.

The limitations of this study begin with the absence of a universal definition for hypnosis. The reviewed literary works have a divergent denotation of hypnosis. This lack of a standard universal definition demonstrates the ambiguity within the field. For the purpose of this study, the definition employed is from the American Psychological Association. All philosophies that have been postulated explaining the mechanism associated with hypnosis are not expounded; details of these theories are not included. There is much dissent regarding how to define hypnosis, theories of exposition, what occurs during the process, and the clinical practice of hypnosis. This exemplifies the insufficient disquisition within the field and elucidates why many fail to recognize the validity of hypnosis as a therapeutic intervention.

The limitations further include the disparity between research and clinical outcomes. Hypnosis has been employed to treat mental disorders such as anxiety, depression, and PTSD (Goliath, n.d.). It has been utilized to treat asthma; reduce the side effects of cancer treatments, dermatological conditions, IBS, insomnia, and migraines; and improve surgical recovery, smoking cessation, and TMJ (Stewart, 2005). Due to the lack of empirical research providing objectives, measurements, and outlined standardization to delineate positive results not only in treating infertility but also other medical conditions, hypnosis has not been accepted globally by medical practitioners and the general public.

The reviewed literature presented in Chapter II define hypnosis, the paradigms expounding the field of study, and factors that need to be addressed to result in a positive outcome. Chapter II presents a history in the field of medicine and discusses medical procedures where hypnosis has been employed to cure or reduce the symptoms of various medical conditions. It further depicts its role in enhancing fertility and promoting a healthy pregnancy, labor, and delivery. The literature elucidates hypnosis as a viable instrument in the treatment of women's infertility or as an adjunct to assisted reproductive treatments.

Chapter 2

Review of Literature

Prior to understanding hypnosis, it is important to note how the mind is categorized in two parts, the conscious and the subconscious. Only 5% of the mind is comprised of the conscious, while 95% is governed by the subconscious. *Theory of Mind* by Dr. John Kappas explains the mind and the four components of the conscious and subconscious, including how they accept or reject information and how information is stored, accessed, and modified through hypnosis. Four components comprise the conscious and subconscious mind: (a) the conscious mind, (b) critical area, (c) modern memory, and (d) primitive area (HMI College of Hypnotherapy, n.d). The primitive area, established from birth, is part of the subconscious, which contains primal survival instincts, such as the fight/flight response as the two original fears (Kappas, 1987). Its main function is to protect individuals from any type of threat or harm. The nervous system governs the human body and many of its functions. The autonomic nervous system, which is responsible for the involuntary or the subconscious functions of the human body, controls the Sympathetic Nervous System and Parasympathetic Nervous System. On a cellular level, stress can be interpreted by the body as a perceived threat, activating the SNS and the fight or flight response.

In relation to fertility and a woman's pursuit to become pregnant, high levels of stress can trigger the primal mind to believe a threat is imminent; therefore, it must be prepared, conserving its energy and resources. As a result, the primal mind can hinder the development of a pregnancy, which requires a significant amount of energy to sustain. The modern memory area of the mind is also part of the subconscious and contains all of a person's memories and experiences, also referred to as beliefs and "knowns" (Kappas, 1987). To the mind, "knowns"

are accepted by the subconscious because it represents situations or circumstances it has previously experienced or is aware of and can relatively predict the outcome. Anything the mind has not experienced or is uncertain of the outcome thus represents situations it may not be able to handle or protect itself is perceived by the mind as pain and referred to as “unknowns” (Kappas, 1987). If modern memory believes or associates a pregnancy and being a mother as something negative (e.g., a woman who grew up in a family with alcoholism), and the woman doubts or fears she will be a good mother or that her child may develop the disease, then her psychological beliefs can influence her body to impede a pregnancy from occurring.

The conscious area begins to form around the age of 8 or 9 years and is the logical, reasoning, decision-making portion of the mind (Kappas, 1987). It guides individuals in the conscious choices they make and why. Although the conscious mind can decide it is ready to embark on the path to motherhood, but her subconscious mind has conflicting beliefs, it can further obstruct a pregnancy from developing. The critical area of the mind also forms around the age of 8 or 9 years, filters message units (information) based on beliefs, experiences, and “knowns,” and accepts or rejects the information from entering the modern memory (Kappas, 1987).

Becoming aware of the various components of the mind and understanding their function and the “knowns” imbedded in an individual’s subconscious can facilitate or prevent the individual from attaining one’s goals. When women consciously decide they are ready to have a baby and become a mother, but their subconscious mind has negative beliefs and associations toward motherhood, the critical area can influence biologically healthy women in experiencing infertility. When the conscious and subconscious mind are incongruent, individuals can undergo a form of unconscious self-sabotage; therefore, attaining the desired outcome becomes more

challenging, extremely difficult, or impossible. When the critical area of the mind becomes overwhelmed and over-stimulated, it breaks down, activating fight/flight, causing a hypersuggestible state or the hypnotic state of consciousness (Kappas, 1987).

Definition of Hypnosis

Hypnosis is defined as an altered state of awareness characterized by deep relaxation; susceptibility to suggestions; and changes in perception, memory, motivation, and self-control (Gerrig & Zimbardo, n.d.). It involves the induction of a state of mind in which a person's conscious critical or incredulous nature is circumvented, allowing new suggestions and associations to be introduced allowing the acceptance of these suggestions into the subconscious (Stewart & Thomas, 1995). The hypnotic state of consciousness is not a state of sleep; individuals are aware, but their mind is conditioned to minimize or eliminate distractions so their attention is focused on the suggestions given to promote treatment and health. It is a heightened state of concentration. Hypnosis is a natural occurring condition that many compare to meditation, being immersed in a daydream, or watching an enthralling movie (Goliath, n.d.).

History of Hypnosis

Descriptions of ancient rituals and healing practices similar to hypnosis and hypnotic suggestions have been documented in ancient Chinese, Hindu, Greek, Roman, Egyptian, and African writings (Hammond, 2013). The modern practice of hypnosis, referred to as "mesmerism or animal magnetism," dates back to 1778 in France with Austrian physician Franz Anton Mesmer. Mesmer, a charismatic man, worked with psychiatric patients and believed his animal magnetism could provoke the magnetic streams of his patients, resulting in therapeutic cries. News of his work began to spread, and more and more individuals turned to Mesmer for treatment, which enraged the European medical community. In 1784, King Louis XVI

commissioned Benjamin Franklin and the first American ambassador to France to investigate Mesmer and his practice; eventually, they discredited his work (Riskin & Frankel, 1994).

Although this was a setback for the study and practice of hypnosis, other individuals continued to incorporate hypnosis in their medical practice.

Seminal individuals who contributed to the development and progression of hypnosis as a therapeutic intervention include James Braid, Marquis de Puységur, John Elliotson, James Esdaile, Pierre Janet, and Milton H. Erickson (Wikipedia, n.d). Surgeon James Braid introduced the term “hypnotism” and utilized an eye fixation technique to induce the hypnotic state of consciousness (Stewart, 2005). Later, he discovered the value of including suggestions to his patients while in that hypnotic state. Marquis de Puységur, a student of Mesmer, is credited for the formulation of the term “somnambulism” (Stewart, 2005). Then defined as sleepwalking, in the current context of hypnosis, somnambulism refers to an individual who is highly suggestible and responds equally well to direct and indirect suggestions, affecting both the body and emotions (HMI College of Hypnotherapy, n.d).

Another use of hypnosis, before the introduction and use of chloroform to anesthetize individuals who needed surgery, John Elliotson and James Esdaile utilized hypnosis as an anesthetic and performed hundreds of successful surgical procedures. Shortly after the use of hypnosis to anesthetize gained popularity, ether and chloroform were discovered and displaced the use of hypnosis for anesthesia during surgery.

Pierre Janet is credited for the conception and introduction of the ideology suggesting that in the hypnotic state of consciousness, it is possible for the conscious and unconscious parts of the mind to disassociate (Hammond, 2013). He believed as the patient progressed deeper into the hypnotic state, the more fully the unconscious portion took control; this is a fundamental

principal of State Theory. He demonstrated that dissociative phenomena play an important role in widely divergent post-traumatic stress responses, which he included under the 19th century diagnosis of hysteria (Van der Hart & Horst, 1989). Twentieth-century hypnosis began with the highly regarded psychiatrist and psychologist Milton H. Erickson, founder of the American Society of Clinical Hypnosis. He exerted direct suggestion for the induction of a deep hypnotic state for age regression and incorporated the use of indirect suggestions intermixed with psychoanalysis on other patients (Hypnosis Tools, n.d.). The requisition of indirect suggestions in hypnosis during this time period was considered *recherché*.

Theories

Over the past century, multiple theories have been postulated explaining the mechanism associated with hypnosis. According to the article, Scientific Theories of Hypnosis, these theories can be categorized between State and Non-state ideologies. Some of the prevailing State theories include Neodissociation, Neurophysiological, and Disassociated Control. The principal concepts that constitute State ideologies of hypnosis are (a) hypnotic inductions produce an altered state of consciousness, (b) the hypnotic state is associated with an altered brain function, (c) responses to hypnotic suggestion are a result of an altered state of consciousness or a disassociation, and the (d) hypnotizability of an individual is stable over long periods. The bases of State theories consist of the premise that the mental function of an individual in a hypnotic state of consciousness is divided: One state of consciousness focuses on the suggestions, while the other processes and interprets the insight disclosed. Socio-Cognitive and Response Expectancy theory are two prevalent Non-state theories. The properties that comprise the Non-state philosophy are (a) individuals respond to suggestions almost as well without hypnosis; (b) individuals in the hypnotic state are actively engaged; (c) responsiveness to

suggestions are a result of normal psychological processes such as expectations, motivations, and attitude; and (d) suggestibility can be modified (Hypnosis Tools, n.d.). Non-state ideologies are founded on the belief that the hypnotic state is not an altered consciousness but a normal brain function where it releases its constraints and becomes more willing to accept suggestions.

Components of Hypnosis

Multiple factors are associated with hypnosis; the primary components include absorption, dissociation, and suggestibility (Spiegel, 2013). Absorption is attributed to one's capacity to lose oneself in whatever one's attention is focused. Highly hypnotizable individuals are able to easily immerse themselves in their experience. For them, anything they experience while in the hypnotic state of consciousness feels very real which causes realistic images, feelings, and reactions. Dissociation implicates a person's ability to split his or her mind into two streams of consciousness. Simultaneously, a person in the hypnotic state of consciousness maintains control over certain thoughts and behaviors, while others are influenced by hypnotic suggestions. When individuals dream this altered state of consciousness is similar to dissociation and described as a separation of one's awareness from one's actions. People are not 'awake' during sleep, but are still conscious and can react to their surroundings. If individuals dream they are falling, they react as though they were falling in reality causing the heart to beat faster, transudation of the body and some may wake in a anxious and fearful state. Although many dreams are forgotten after waking, many can recall or feel the influence that altered state of consciousness has left. Suggestibility refers to the degree an individual is inclined to accept and comply with hypnotic suggestions. Suggestibility decreases as age rises; a person faced with high levels of stress undergoing an overload of message units known as information and experiencing intense emotions is more receptive to suggestions because their mind is looking for

an escape from the stress; therefore, suggestibility is amplified. There is a positive correlation between suggestibility, dissociation, and absorption. As one component increases, an individual's ability to disassociate also improves, and absorption is augmented. In the hypnotic state of consciousness, individuals who are highly suggestible, have a magnified ability to disassociate and become immersed in their experience that the imagery and suggestions become their reality. Their level of absorption in their experience becomes intensified where they believe and feel the issues they are able to resolve during this hypnotic state, remain long after the sessions has ended. Although they are no longer in the hypnotic state of consciousness, these individuals are left with a profound experience that change their life.

Development of Hypnosis in Medicine

The credence of hypnosis in medicine has progressed ploddingly. In the 1950s, there were many technological breakthroughs in the medical field. They include the discovery of antibiotics and cortisone, which led to the development of other anti-inflammatory drugs. The structure of DNA was uncovered, and the elucidation of the double helix was introduced (Weisberg, 2008). These technological advancements made the medical community question the validity of alternative therapies. Medical professionals soon repudiated the study and practice of alternative medicine.

Doctors believed alternative therapies such as acupuncture, acupressure, meditation, massage, hypnosis and yoga were inept. This led to the drastic propagation of alternative medicine and alternative practitioners; this field began to develop as an entirely separate discipline.

One of the first advancements of hypnosis in medicine occurred in 1955 when the British Medical Association issued a report in the British Medical Journal endorsing hypnosis as a valid

medical intervention (Weisberg, 2008). Prior to this, hypnosis was successfully utilized as a therapeutic tool to treat “therapeutic neuroses or PTSD” during WWII (Spiegel, 2013).

By 1958, the American Medical Association (AMA) published and approved a report from a 2-year study by the Council on Mental Health. The report indicated the definite and proper uses of hypnosis in a medical and dental practice and recommended the establishment of training facilities in the United States. (Stewart, 2005, p. 513)

That same year, the Canadian Medical Association became a proponent of the legitimacy of hypnosis (Weisberg, 2008).

The American Psychiatric Association, in a position statement approved by the Council of the Association in 1961, indicated that hypnosis has definite application in the various fields of medicine and that physicians would be seeking psychiatrists for training in hypnosis. (Stewart, 2005, p. 513)

In the late 1970s and early 1980s when the AIDS epidemic was rampant in the United States, the discipline of immunology propagated (Weisberg, 2008). Doctors and scientists were compelled to develop a better understanding of the mechanism that governs the immune system.

A prominent figure leading this campaign was Dr. Robert Ader. An American Psychologist and founder of psychoneuroimmunology (PNI), Dr. Ader administered extensive studies where he ascertained, further research must be conducted to discern the complex association between the brain, nervous system, and immune system. He concluded classical conditioning could modify the immune system. (Weisberg, 2008, p. 16)

Due to advancements in PNI, scientists and researchers recognized an individual’s psychological state could influence disease progression or promote healing, and immune responses could be

modified through environmental manipulations. Hypnosis became the mechanism to facilitate these modulations. Fueled by these developments, researchers began investigating hypnosis and its role in modifying PNI parameters. Studies revealed, due to hypnosis, there was a significant increase in levels of CD4 cells, a specialized type of T cell that recognizes virus-infected cells and aids in their destruction (Weisberg, 2008). Further technological advancements, such as the creation of Magnetic Resonance Imaging (MRI), development of the Positron Emission Tomography (PET), and Functional Magnetic Resonance Imaging (fMRI), provided doctors, scientists, and researchers insight on the intricate anatomical connections of the brain. Due to these scanners, the activity of the human brain during mental activity could now be measured and visualized. Doctors were able to observe the effects of interpersonal psychotherapy on the limbic system. The discipline of Hypnosis proliferated greatly because of these technological discoveries; more studies were conducted on alternative therapies that emphasized experimental modalities. These scanners provided empirical evidence for alternative therapies. By 1996, the National Institutes of Health (NIH) issued a statement published by the AMA indicating there is “strong evidence for the use of hypnosis in alleviating pain” (Integration, 1996, p. 313). This acknowledgement of the NIH has helped establish the validity of hypnosis in the medical community. Currently, the acceptance of hypnosis in the medical field continues to spread and is incorporated in the treatment of myriad medical conditions.

Cost of Hypnosis

When hypnosis is utilized as a therapeutic intervention, it is referred to as hypnotherapy. A hypnotherapist is an individual who can perform hypnotic procedures as a result of completing an education on hypnosis and hypnotherapy and undergone extensive training provided by an institution that receives periodic accreditations. In the United States, the average cost of a 60-

minute hypnotherapy session ranges from \$50 to \$275 dollars (CostHelper.com, n.d.). The cost of a hypnotherapy session, when compared to a single cycle of IVF, is significantly less.

Women, who were previously precluded by cost in seeking alternative interventions to enhance their fertility now have an alternative. Hypnosis can optimize their chances of conception, resulting in the treatment of their infertility.

Hypnosis in Medicine

Over the past 6 decades, more research, studies, and trials have been administered utilizing hypnosis to alleviate and/or treat various medical maladies. Many of these studies supported hypnosis as an effective intervention in the treatment of pain, irritable bowel syndrome, certain dermatological conditions such as atopic dermatitis and psoriasis (Shenefelt, 2002), and side effects of cancer treatments. In the field of obstetrics and gynecology, hypnosis has been used as an adjunct in embryo transfer during IVF, labor, and delivery. Prior to its recourse, practitioners assessed and evaluated their patients to render hypnosis and its effectiveness as a viable intervention. Patients had to satisfy certain criteria to participate, including the desire to be hypnotized and the time required for conditioning. Different diseases demand specific treatments. The method of treatment implemented is contingent on the disorder and its severity, which then dictates the magnitude a patient must procure in the three components of hypnosis. Patients who are able to enter the hypnotic state of consciousness but are incapable of achieving the required depth and sustain this level of consciousness required for the completion of the procedure would be ineligible.

One of the primary medical conditions where hypnosis has become more commonly commissioned is the treatment and management of pain. When hypnosis is used as a method of anesthesia, it is referenced as hypnoanesthesia. In both the medical and dental fields,

hypnoanesthesia has been employed in selected operations and procedures where certain chemical agents are contraindicated for the patient. Some of those conditions include various forms of cardiac disease, certain respiratory diseases, allergies to anesthesia or severe and debilitating negative reactions. Additional situations when hypnoanesthesia may be implemented are during procedures that require the patient to be responsive, such as a craniotomy for the removal of a glioma (Jenkins & Crasilneck, 1959). Patients undergoing this type of surgery must be conscious to assist the surgeon in the safe removal of the tumor. Hypnosis is becoming a commonly utilized intervention incorporated in the treatment and management of pain.

Since the late 1800s when John Elliotson and James Esdaile utilized hypnosis as an anesthetic, a multitude of research has examined hypnoanesthesia in various medical fields. In a study conducted in 1994, hypnoanesthesia was used as an alternative to general anesthesia for endocrine cervical surgeries. The results were published in 1999 in the article “Hypnoanesthesia for Endocrine Cervical Surgery: A Statement of Practice” (Defechereux et al., 1999). In 2002, a meta-analysis was published by Montgomery, David, Winkel, Silverstein, and Bovbjerg, which included 22 studies and feedback from 1624 patients. Six categories were examined: (a) negative affect (e.g., anxiety and depression), measured by both self-report and observations by others (e.g., nurse); (b) pain (both self-report and observations by others); (c) pain medication (e.g., analgesics and anesthetics); (d) physiological indicators (e.g., blood pressure, heart rate, and catechol- amine levels); (e) recovery (e.g., return of muscular strength, postoperative vomiting, and fatigue); and (f) treatment time (e.g., length of procedure and inpatient stay; Montgomery et al., 2002).

Both studies confirmed hypnoanesthesia has physical and psychological benefits. Patients experience reduced anxiety and distress prior to procedure, less time in the operating room, cost effectiveness, less medication in the treatment and management of pain post surgery and faster recovery time, wounds healing sooner, earlier postoperative gastrointestinal recovery, and less side effects such as nausea. Patients were able to return to their normal daily activities earlier than anticipated.

Hypnosis has become an alternative to alleviate chronic pain. Commonly used medical interventions to treat chronic pain, defined as pain lasting 6 months and longer include medication such as nonsteroidal anti-inflammatory drugs and opioid analgesics, surgery, and physical therapy. Surgery is considered when it is medically necessary or all other treatments have failed. A side effect to prolonged use of opioids may result in opioid tolerance and opioid-induced hyperalgesia (Dillworth, Mendoza, & Jensen, 2012). Therefore, individuals who have used medical interventions but continue to suffer from chronic pain are seeking alternative therapies, such as hypnosis to better manage and assuage their pain. In the article “Neurophysiology of Pain and Hypnosis for Chronic Pain” which reviews published studies in this field with the use of hypnosis, approximately 70% of individuals experienced a short-term reduction in chronic pain during treatment, while 20% to 30% reported permanent reductions in daily pain (Dillworth et al., 2012). The effectiveness of hypnosis in the treatment of chronic pain due to fibromyalgia, arthritis, irritable bowel syndrome, headaches, as well as lower back disability-related, and cancer-related pain were examined in this article. Dillworth et al. (2012) further concluded individuals who utilize hypnosis to manage their chronic pain report a reduction of pain intensity, duration, and frequency.

Irritable bowel syndrome (IBS) is a gastrointestinal disorder that can cause extensive impairments in the daily life of afflicted individuals. It is categorized by abnormal muscle contractions that can result in painful cramps. These contractions may speed or slow the passage of stool, causing diarrhea or constipation. It impacts 14.1% of the United States population (Hungin, Chang, Looke, Dennis, & Barghout, 2005). Doctors have been unable to determine its exact cause; they hypothesized IBS may be induced from a dysfunction in the communication pathway between the brain and the intestinal tract. Studies indicated medical interventions are effective in treating 50% of individuals with this disorder (Palsson, Turner, Johnson, Burnett, & Whitehead, 2002). When medical treatments fail, individuals seek alternative interventions. Research has found hypnosis is effective in reducing 24% to 73% of the gastrointestinal symptoms that can be sustained a minimum of 10 months (Palsson et al., 2002).

The field of dermatology has utilized hypnosis in the treatment of various conditions, such as atopic dermatitis and psoriasis (Shenefelt, 2002). Atopic dermatitis is a skin condition that results in intense itchy raised red rashes; the cause of this disease remains unknown. Psoriasis, another skin condition, causes inflammation, swelling, and scaling of skin cells, and it produces painful thick patches of red skin. Individuals afflicted with this condition have selected hypnosis to assuage their symptoms or as an adjunct to medical interventions. Stress plays a significant role in the onset, exacerbation, and augmentation of these diseases. Previous studies indicated the effectiveness of hypnosis for stress management. Patients who are less stressed can abate the progression of these diseases. In the hypnotic state of consciousness, additional studies demonstrated an individual's ability to regulate autonomic functions and affect one's immune system (Stewart, 1995). Individuals are given specific suggestions to decrease their skin temperature and heart rate. A reduction in skin temperature and blood flow reduces

inflammation, which subdues the negative symptoms.

Hypnosis, more commonly administered in the cancer setting, is primarily used as an adjunct procedure to medical interventions in the prevention, diagnosis, and treatment of cancer. In the past 2 centuries, research on hypnosis has continued to support the efficacy of hypnosis in the cancer setting (Montgomery, Schnur, & Kravits, 2013). Research has concluded tobacco use, alcohol consumption, an unhealthy diet, lack of physical activity, or being overweight are some activities that can increase individuals' chances of developing the disease. Avoiding these substances significantly reduces the risk. Individuals have employed hypnosis to quit smoking, improve their eating habits, and lose weight successfully. Studies on hypnosis have showed promise in promoting these healthy behaviors (Montgomery et al., 2013). In the diagnosis of cancer, hypnosis has consistently reduced the cost and improved clinical outcomes associated with diagnostic procedures. Schnur et al. (2008) examined the effectiveness of hypnosis to control the negative feelings and emotions women undergo prior to a breast biopsy. In their study, 90 patients scheduled to undergo excisional breast biopsy were randomly assigned to either a prebiopsy hypnosis group or a prebiopsy attention control group. The women in the hypnosis group experienced less negative emotions, depressed mood, and anxiety. The hypnosis group was significantly more relaxed than the attention control group (Schnur et al., 2008). Further research within the field, Block (2010) found that if an estimated 92% of patients newly diagnosed with breast cancer in the United States (178,738 based on 2009 data) used a hypnosis intervention, then \$135,270,403 would be saved. On an annual basis, on a national level, hypnosis for breast biopsy could potentially save over \$100 million. Hypnosis has also been implemented in the diagnostic cancer procedures of lumbar puncture and bone marrow aspirations (Montgomery et al., 2013). Surgery, chemotherapy, and/or radiotherapy or a

combination are the primary medical interventions most cancer patients must undergo. As a result of these medical procedures, patients experience a molality of adverse side effects, such as pain, nausea, fatigue, anxiety, and depression—all symptoms hypnosis has been previously employed to alleviate. Doctors then incorporate hypnosis as an adjunct to treatment. In 2007, a study was administered on the use of hypnosis on women with metastatic breast cancer. Women were random assigned to the test group where weekly group therapy sessions and hypnosis were incorporated in the treatment process or the control group, which only received routine care. The results of this study revealed the test group experienced less pain, women reported improvements in their mood, and their survival time was longer when compared to the participants in the control group (Montgomery et al., 2013).

The research examined has illustrated the effectiveness of hypnosis in the treatment of various medical conditions. People are choosing to incorporate alternative therapies in their pursuit toward health. More doctors and healthcare professionals are beginning to recommend hypnosis as an adjunct to medical procedures or as an alternative when medical therapies fail to produce the desired effect.

Hypnosis and Obstetrics

The concept of hypnosis and its application in the field of Obstetrics was first introduced in the early 1940s by Grantly Dick-Readan, an English obstetrician (Stevens, 1954). Over the past 70 years, studies have been administered implementing hypnosis in various stages of pregnancy, labor and delivery; research has concluded auspicious outcomes in every stage.

As noted previously, infertility causes psychological trauma for many woman and has been referred to as one of life's most stressful events. Pregnancy is also commonly associated with psychological disturbances such as stress, anxiety, and depression (Marc et al., 2011), and

these disturbances have negative implications throughout the course of the pregnancy and the development of the fetus. Women experiencing higher levels of anxiety during their pregnancy report more adverse symptoms such as fatigue, nausea, and emesis, prompting increased doctor visits (Anderson, 2004). Psychological disturbances can influence particular negative behaviors, such as smoking, unhealthy eating habits, or the consumption of alcohol (Marc et al., 2011). High levels of stress and anxiety during a women's pregnancy further increases her risk of miscarriage, preterm delivery, postpartum depression, and mood disorders (Lee et al., 2007).

During pregnancy, women undergo physical, emotional, and psychosocial changes (James, 2009). These changes induce adverse symptoms such as morning sickness, nausea, emesis, and substandard insufficient sleep, resulting in constant fatigue. Insomnia is a condition with which many women are afflicted and enhanced by their pregnancy. Randomized controlled trials have been conducted revealing the effectiveness of hypnosis to alleviate these symptoms. Women who participated in these studies reported statistically significant reductions in their episodes of nausea and emesis (Montgomery et al., 2013). Women who have less adverse symptoms during their pregnancy experience reduced stress and increased relaxation, resulting in healthier mothers, which promotes the health of the unborn child.

Elevated levels of maternal stress and anxiety during pregnancy are pernicious toward unborn babies. Women's ability to carry to term decreases, which precipitates preterm deliveries. These deliveries may result in babies with a lower birth weight afflicted with increased health risks. Short-term complications include breathing difficulties, a compromised immune system, heart defects, low blood pressure, increased brain hemorrhage, blood disorders such as anemia, immature gastrointestinal systems and metabolic impairments (Mayo Clinic, n.d). Babies born too early are more inclined to suffer long-term health problems such as

cerebral palsy, behavioral and psychological problems, learning disabilities, visual impairments, loss of hearing, and chronic health complications (Mayo Clinic, n.d). Additional research has been conducted on babies born to women who suffered from high levels of stress during the pregnancy, examining long-term side effects. Results indicated these babies have a bigger stress reaction toward normal activities compared to babies born to mothers with lower stress levels during pregnancy. As these babies grew from infancy to toddlerhood, they exhibited heightened levels of anxiousness compared to other children. Researchers have hypothesized high levels of stress during pregnancy are permanently wiring the fetal brain toward worry and anxiety (Ellis, 2015). These results reinforce how vital it is for women, especially during pregnancy, to stay mentally, emotionally, and physically healthy.

Multiple studies depict the effectiveness of hypnosis in the management of stress, the reduction of anxiety and the induction of relaxation (Spiegel, 2007). Anxiety during pregnancy is a common feeling many women experience. It can be caused by a modality of factors, from women questioning if they will be a good mother or the uncertainty of the baby's health during development. Or, if these women struggled with infertility, then their anxiety is rooted in the possibility of losing the baby. Many women feel powerless in these situations, thereby cultivating and sustaining their anxiety. By reducing the anxiety they experience and thereby decreasing their stress level, hypnosis is able to enhance women's feelings of control and facilitate their mental health (James, 2009). Further research has substantiated that hypnosis is as effective at reducing anxiety as 1 mg of alprazolam (Spiegel, 2013). Being more mentally and emotionally healthy further enhances women's physical health, which promotes their ability to carry to term.

Hypnosis has been employed during childbirth since the 1950s and is referenced as

hypnobirthing. It begins during the third trimester and focuses on the preparation of delivery. It can be administered in several ways: (a) Women may choose to have a hypnotherapist guide them during delivery or (b) are taught self-hypnosis where they guide themselves through the delivery process. Sessions with the hypnotherapist begin several weeks prior to the anticipated delivery date. In one of the sessions, the hypnotherapist provides examples of suggestions women can implement such as having a simple quick delivery, the ability to manage and reduce the pain, and the ability to recover faster. Brown (2007) examined women who utilized hypnosis during their delivery consistently reported eliminating or greatly reducing the experienced pain of childbirth, with an effectiveness ranging from 35% to 90%, resulting in a decreased need for epidural anesthesia, (Landolt, 2007), significantly fewer complications, shortened labor time, and a shorter stay in the hospital (Stewart, 2005). These studies illustrated the multiple benefits of hypnosis when incorporated during delivery.

Additional applications of hypnosis in the field of obstetrics include the termination of preterm labor. Women pregnant with multiple gestations, or who have elevated levels of stress and are highly anxious have an increased risk of preterm labor. Reinhard et al. (as cited in Brown, 2007) investigated the use of hypnosis in the prevention of the propagation of preterm labor. Their research revealed a significant difference, in that 4.7% of women who utilized hypnosis experienced preterm deliveries vs. 10.3% of women limited to medical treatments (as cited in Brown, 2007). This study suggested hypnosis in conjunction with medical interventions is effective in terminating preterm labor.

A limited amount of research has focused on the use of hypnosis to treat infertility by enhancing fertility. In the field of obstetrics, the studies of hypnosis have primarily been on assessing its impact on the various stages of pregnancy, labor, and delivery. By the 21st century,

more studies had been directed toward enhancing fertility through hypnosis. In 2006, Levitas et al. published an article on the impact of hypnosis during embryo transfer (ET) on the outcome of IVF. Their target population included women with idiopathic infertility, a normal uterine cavity and the absence of contraindications for pregnancy. They examined two groups: control and intervention. The control included 96 couples undergoing a regular cycle of ET during IVF and the intervention group included 98 couples who incorporated hypnosis throughout ET during IVF. Levitas et al. reported that of 98 cycles, the intervention group resulted in 52 clinical pregnancies (53.1%) with an implantation rate of 28%, while the control group, which did not incorporate hypnosis obtained 29 (30.2%) clinical pregnancies in 96 cycles and an implantation rate of 14.4%. This study advocates integrating hypnosis during ET/IVF can significantly improve the outcome of IVF cycles for women in terms of increased implantation and clinical pregnancy rates. Study results encourage further research on the implementation of hypnosis in the enhancement of fertility and through the various assisted reproductive technologies.

In the field of obstetrics, numerous studies have focused on hypnosis and its use in various stages of pregnancy, labor and delivery. The results of these studies revealed benefits of incorporating hypnosis with obstetrics patients: (a) improving the rate of embryo transfer for women undergoing IVF; (b) aiding in the reduction and management of stress, anxiety, and depression during infertility treatments and pregnancy; (c) enhancing the health of the mother and unborn child; (d) diminishing the adverse symptoms women experience through the course of their pregnancy; (e) reducing the risk and may terminate preterm deliveries; (f) lessening the probability of having miscarriages; (g) better managing of uterine contractions and abates the pain and discomfort experienced during labor and delivery; (h) decreasing the need for epidural anesthesia which then decrease the undesirable post operative effects it causes the mothers and

their unborn child; (i) curtailing labor time; (j) shortening their stay in the hospital; and (k) speeding up recovery time.

Summary

The research reviewed in this chapter has elucidated the numerous advantages of incorporating hypnosis in the field of obstetrics and its effectiveness in the treatment of various medical conditions, especially pain management. The propitious results of these studies substantiate hypnosis as a legitimate intervention. Throughout these trials, in the hypnotic state of consciousness, individuals have demonstrated the ability to harness the power of the mind to alter the physical sensations they experience which then amends their physical, mental, and emotional reactions and responses. These results suggest hypnosis is a viable intervention in the treatment of infertility by enhancing women's fertility. Whereas medical treatments primarily focus on the biological nature of infertility, while hypnosis incorporates both biological and psychological components. Solely or as an adjunct to medical interventions, hypnosis can enhance fertility and improve the rate of pregnancy. As noted, the high cost of assisted reproductive technologies precludes numerous women from seeking help. Hypnosis provides these women with an alternative, cost-effective intervention to treat infertility by addressing psychological influences, and thereby enhancing their fertility.

Chapter 3 presents an outline of the fertility enhancing hypnosis workshop and the topics covered during each session. The requirements needed for tentative participants are discussed, and a brief description of what the hypnosis journey is meant to accomplish is provided.

Chapter 3

Hypnosis to Treat Infertility: The Workshop

Hypnosis to Enhance Fertility

I, a Certified Hypnotherapist, developed this workshop to provide women suffering from infertility with an additional cost-effective intervention that addresses the psychological influences of treating their infertility by enhancing their fertility. This workshop is meant to encourage self-awareness and identify participants' beliefs or unresolved issues regarding pregnancy and motherhood, located in their subconscious. This 8-week workshop will vary in length from 60- to 90-minute sessions. The maximum number of participants permitted in this fertility enhancement workshop is eight; a smaller group size facilitates intimacy. For the health and safety of all participants, prior to the beginning of the workshop, participants are required to obtain a medical clearance and referral from their doctor. Without a medical clearance or referral, women who wish to enroll in this workshop will not be permitted. The materials needed for the workshop include a notebook, a writing utensil, and yoga mat. Optional materials include pillows and a blanket. Based on the current cost of a 60-minute hypnotherapy session, this fertility enhancement workshop will be priced based on location between \$3500 and \$4500. This price, when compared to a single cycle of IVF is significantly less; therefore, women who would have been precluded from seeking additional interventions to treat their infertility now have an alternative. For optimum results, this workshop is best used as an adjunct intervention to medical treatments.

Workshop Outline

Week 1. The information covered and discussed will include:

- Brief information about Instructor
- Participant introductions
- Confidentiality and limits of workshop
- Explanation of the 8-week workshop
- Participants' expectations from workshop
- Interventions, procedures, treatments participants have used
- What participants know, believe, and experience with hypnosis
- Questions

Assignment:

- Have participants identify stressors in their life and their stress level
- Have participants think about what they do for self-care
- Have participants think about 10 things they like about themselves

Week 2. The information covered and discussed will include:

- Health conditions that influence infertility
- Negative behaviors that contribute to infertility
- Stress
- Interventions to reduce stress
- Emotional and mental health and its influence on infertility
- Developing a self-care plan
- Questions

Assignment:

- Have participants think about any concerns they have about hypnosis
- Have participants think about and identify any negative beliefs, thoughts, and feelings such as shame or guilt toward motherhood. Where it originated
- Have participants think about how they feel about being a mother and having a baby
- Bring yoga mat next week
- Do 3 things that make you happy

Week 3. The information covered and discussed will include:

- Impact of infertility on the relationship
- Methods to enhance fertility
- Develop plan to enhance intimacy and connection
- Address any concerns participants have toward hypnosis
- What is hypnosis
- Theory of the Mind

Hypnosis: Healing the inner child journey

This hypnosis imagery journey is intended to help participants resolve and/or release any negative beliefs, emotions, fears they have associated to motherhood.

Assignment:

- Do something fun!
- Bring yoga mat next week
- Do 3 things that make you happy

Week 4. The information covered and discussed will include:

- Reflection on previous session, thoughts, feelings, and reactions from participants
- Thoughts, beliefs, feelings, participants have about becoming a mother and having baby
- Family of origin & cultural influences
- Hypnosis and medicine
- Check in with participants on thoughts on workshop

Hypnosis: Happy Place Journey

This hypnosis imagery journey is intended to give participants a place to relax, replenish their energy, reconnect and release any negative emotions. This place, a sanctuary, is meant to provide safety, comfort, and lift the spirits of the participants, during stressful moments.

Assignment:

- Have participants think about what fertility means to them, and objects or situations that represent it
- Bring yoga mat next week
- Do 3 things that make you happy

Week 5. The information covered and discussed will include:

- Reflection on previous session, thoughts, feelings, and reactions from participants
- How hypnosis works
- Current research on hypnosis and obstetrics
- Up-coming medical appointments participants have and how to prepare for it
- Review stress reduction interventions
- What has worked and what has not

Hypnosis: Garden of Eden Journey

This hypnosis journey is intended to reinforce participants' belief that they are physically and emotionally ready to conceive. During this journey, participants will give themselves permission to become a mother.

Assignment:

- Have participants think about where they believe souls/babies come from or reside
- Have participants think about additional information they want or need
- Bring yoga mat next week
- Do 3 things that make you happy

Week 6. The information covered and discussed will include:

- Reflection on previous session, thoughts, feelings, and reactions from participants
- Address feelings, fears, participants may encounter
- Participants relationship with their partner
- Review methods to enhance fertility
- How to self hypnotize

Hypnosis: Moon Journey

This hypnosis journey is intended to ground participants and help them release the urgency of conceiving. To reinforce the understanding that they are right where they are supposed to be in this moment in time. During this journey, participants will invite their future baby/soul into their lives.

Assignment:

- Do something to enhance intimacy with partner
- Bring yoga mat next week
- Do 3 things that make you happy

Week 7. The information covered and discussed will include:

- Reflection on previous session, thoughts, feelings, and reactions from participants
- Review workshop
- Provide participants with additional information they requested
- Create additional suggestions they can give themselves during self hypnosis
- Time for participants to practice self hypnosis

Hypnosis: Uniting Journey

During this hypnosis imagery journey participants will manifest and connect to their fairy tale happily ever after ending. It will symbolize the union of the egg and sperm and its implantation in the uterus. It represents conception and the beginning of the participant's pregnancy.

Assignment:

- Have participants think about what they expect during their pregnancy
- Have participants think about what it will be like when they hold their baby
- Bring yoga mat next week
- Do 3 things that make you happy

Week 8. The information covered and discussed will include:

- Reflection on previous session, thoughts, feelings, and reactions from participants
- Participants' expectations during their pregnancy
- Address any final thoughts, concerns participants may have
- Review of instructor

Hypnosis: Bliss

This hypnosis imagery journey provides participants with the experience of being pregnant, each trimester, being a mother and holding their new baby in their arms. It will help reinforce their faith and belief that they will become a mother.

Assignment:

- Every day find something that makes you smile and every week do 3 things that make you happy

Chapter 4

Summary and Recommendations

Summary

Fertility, the ability to procreate is an inherent human right and for many women, becoming a mother is the basis of their female identity. Many women believe the ability to conceive, carry, deliver, and raise a child is an essential life stage and their purpose in life. Unfortunately, infertility is a condition that impacts the lives of over 72 million women worldwide. An average of 40 million women seek alternative interventions to treat their infertility. It is a multifactorial condition, influenced by myriad biological and psychological factors such as age, autoimmune disorders, stress, depression, anxiety, and the use of medication, alcohol, and tobacco. Additional factors include weight, hormonal imbalance, endometriosis, and STD's. For decades, infertility has been viewed and treated primarily as a medical condition, undervaluing if not ignoring the psychological aspects that impact infertility. Extensive research and scientific evidence have revealed infertility is influenced by an individual's emotional and psychological state. The belief that infertility is mainly attributed to a biological dysfunction is antiquated. When treating infertility, doctors and healthcare practitioners should adapt a philosophy that acknowledges the mind body connection, addressing a women's mental health in conjunction to treating the biological condition. Great advancements have been made in assisted reproductive therapies that provide women who were once faced with involuntary childlessness with options to treat their infertility and become mothers. Assisted reproductive therapies include medications that promote ovulation, intrauterine insemination (IUI) and in vitro fertilization (IVF). The cost of ART ranges from \$1,000 to \$20,000; a single

cycle of IVF precludes many women from utilizing these services. Alternative procedures to treat infertility are greatly needed that most women can utilize.

Hypnosis is a cost-effective intervention in the treatment of infertility that can result in a positive and desired outcome. Hypnotic interventions are an advantageous alternative that incorporates the psychological constituents in the treatment of infertility or as an adjunct provision to medical interventions. In the field of medicine, hypnosis has been administered and proven effective in the treatment of pain, migraines, irritable bowel syndrome, certain dermatological conditions and side effects of cancer treatments. In the field of obstetrics and gynecology, hypnosis has been used as an adjunct in embryo transfer during IVF, labor, and delivery. The results of these studies have revealed the benefits of incorporating hypnosis with obstetrics patients: (a) it improves the rate of embryo transfer for women undergoing IVF; (b) it aids in the reduction and management of stress, anxiety, and depression during infertility treatments and pregnancy; (c) it enhances the health of the mother and unborn child; (d) diminishes the adverse symptoms women experience through the course of their pregnancy; (e) it reduces the risk and may terminate preterm deliveries; (f) it lessens the probability of having miscarriages; (g) it better manages uterine contractions and abates the pain and discomfort experienced during labor and delivery; (h) it decreases the need for epidural anesthesia which then decrease the undesirable post operative effects it causes the mothers and their unborn child; (i) it curtails labor time; (j) it shortens their stay in the hospital; and (k) it speeds up recovery time. The purpose of this project was to help dispel any misconceptions and fears surrounding hypnosis and increase individuals' awareness, especially women, on infertility, hypnosis, and its various applications in the field of obstetrics. The goal is to instill hope in women, by providing

them with a cost effective alternative or adjunct intervention to treating their infertility by enhancing their fertility.

Recommendations

The precept that infertility is more than a biological condition has been established. Unfortunately, the current medical interventions to treat infertility continue to undervalue the psychological and emotional components, which influence the failure to conceive. Numerous studies have confirmed the effectiveness of hypnosis in the field of obstetrics and to treat various medical conditions or as an adjunct intervention. Although the acceptance of hypnosis in the medical community is increasing, the lack of awareness and scientific research in the field of obstetrics prevents its universal validity. Standardized definitions, parameters, and measurements within the field of hypnosis must be developed to increase the acceptance of hypnosis in the medical community. There is a need for controlled randomized clinical trials to be administered in the application of hypnosis in the treatment of infertility by enhancing fertility and the various stages of pregnancy, labor, and delivery. Further studies should be administered on the ability and efficacy of hypnosis to prevent preterm labor.

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