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COMPLEMENTARY MEDICINE AND ITS PERCEIVED EFFECTS ON CANCER  
PATIENTS

by

Madison Sundvold

A Thesis Submitted in Partial Fulfillment  
Of the Requirements for the  
University Honors Program

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Honors Department  
The University of South Dakota  
April 2023

The members of the Honors Thesis Committee appointed  
to examine the thesis of Madison Sundvold  
find it satisfactory and recommend that it be accepted.

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## **ABSTRACT**

Complementary Medicine and its Perceived Effects on Cancer Patients

Madison Sundvold

Director: Ms. Jamie Turgeon-Drake

This research examines the perceived effects of the top ten complementary medicine types on cancer patients' perceived health outcomes, when used in combination with Western or evidence-based medicine. This thesis analyzes various peer-reviewed articles as a literature review and utilizes a previous honors thesis conducted survey of the general population. It studies the depth of knowledge that people have of complementary medicine types and if they combine the resource with regular Western medicine. The purpose of this study is to examine if complementary medicine used decreases the side effects associated with cancer treatment, such as fatigue, pain, and nausea. After analyzing the results, a summary of how complementary medicine correlates with health outcomes for different patients in varying forms of treatment or procedures was completed.

Key Words: Cancer and Complementary and Alternative medicine (CAM)

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## **CHAPTER ONE**

### **Introduction**

This study will examine what the perceived effects of the top ten types of complementary medicine are on treatment tolerance for cancer patients in the United States. Cancer has been a chronic health issue for a long time, and traditional medicine seems to be the main type of treatment prescribed for patients today (Centers for Disease Control and Prevention, 2022a). Chapter two of this paper will discuss complementary and alternative medicine (CAM) types commonly used among individuals in the United States today and will also include background information about cancer in the United States. The literature review will additionally include information regarding population health, population projection, main causes of death, and determinants of health. Chapter three will discuss the use of complementary and alternative medicine by cancer patients and its perceived effects on their treatment tolerance. In Chapter four, there will be a discussion of complementary and alternative medicine utilization in other countries around the world and the utilization of CAM in different cultures. Chapter five will provide a discussion about the surveys utilized for data collection of complementary medicine's perceived effectiveness from past studies that have been conducted. Then following, chapter six will discuss the results of the surveys and include a discussion of the results found from the literature review. Chapter seven will provide limitations of the paper, what could be studied in further research, and what could have been improved. Finally, to wrap up the paper, chapter eight will conclude the findings from the background information and surveys used in the study.

## CHAPTER TWO

### Nature and Magnitude

As of July 2021, the population of the United States is 331,893,745 people (United States Census Bureau, 2020). Currently, the United States has a life expectancy of 77.0 years, which is lower than most other countries and has been trending downwards since 2019. The leading cause of death as of 2021 was heart disease, with cancer and COVID-19 not far behind. Other leading causes of death include unintentional injuries, stroke, chronic lower respiratory disease, Alzheimer's disease, diabetes, influenza, pneumonia, and nephritis. The death rate of the United States is 1,027.0 deaths per 100,000 population, which is 1.027% and the infant mortality rate is 5.42 deaths per 1,000 live births, which is 0.542% overall (Centers for Disease Control and Prevention, 2022b). In the United States, there has been a 0.1% increase in the population from April of 2020 to July of 2021. Over the years, the United States population will have more older adults than children, growing from 46 million adults over the age of 65 living in the US, and is projected to grow by almost 18 million between 2020 and 2030 (Rural Health Information Hub, 2019). According to the United States Census Bureau, nearly 80.7% of the population is living within urban areas, while the other 19.3% are living in rural areas. Income, education, employment, environmental factors, and social support are main contributors to life expectancy for an individual in the United States (2021). All of these factors contribute to making health choices including medical care, choosing housing, managing stress, and having social interactions (Country Health Rankings and Roadmaps, n.d.). In general, the higher the income an individual makes, the better housing, education, childcare, food, medical care access, and the better health outcomes

they will have (Farhud, 2015). Consequently, if an individual struggles with unemployment, choices to make a healthy living and getting adequate medical care is much more difficult. Lower socioeconomic status leads to increased risk for infectious and chronic disease, and early death (Healthy People 2020, 2020). The United States spends nearly 19.7% of their gross domestic product (GDP) on healthcare. In addition, public spending represented about 51% of the overall spending, which includes Medicare and Medicaid, and public health and research (Kurani et al., 2022).

According to the American Cancer Society, cancer is defined as the uncontrolled growth of abnormal cells that can spread throughout the body (2020). When the cells begin to spread without control throughout the body and without interventions from treatment, death can occur. There are many different factors as to why an individual develops cancer which can be, but is not limited to, tobacco use, alcohol consumption, increased body index, and heritable genetic mutations. About 80% of all cancer diagnoses are in adults over 55 years in the US but can occur at any age. In 2020, roughly 1.8 million individuals were diagnosed with cancer, with nearly 606,520 people losing their battle to cancer. Cancer is the second leading cause of death in the United States but can be prevented or detected early by regular screenings, and awareness of changes in one's body. The most common cancers in the US are breast cancer, lung cancer, and colon or rectum cancer. After a cancer diagnosis, there is a staging process to determine the best plan of treatment and prognosis. This process is determined by the size and extent of the first tumor, and if the tumor has spread to lymph nodes or other parts of the body (American Cancer Society, 2020).



Cancer has continued to be a disease that is becoming more common each year. There is early detection and better treatment options now, and since the US population is continuing to age at a steady rate, the number of cancer survivors is estimated to be nearly 20.3 million individuals by 2026 (Rhee et al., 2019). Unfortunately, nearly 1.6 million people are diagnosed with cancer each year in the United States. Of the 1.6 million, 600,000 people lose their battle to cancer, which is why cancer is the second leading cause of death in the United States (Centers for Disease Control and Prevention, 2020). Cancer causes unnecessary stress to the patient's mind and body, which can contribute to faster progression of the cancer. The sympathetic nervous system is activated by stress, which then causes a release of epinephrine and norepinephrine, resulting in higher cortisol levels. Higher cortisol levels can assist the cancer with faster multiplication and growth. Overall, stress can affect the quality of life for the patient and their family, but it can be reduced through complementary medicine and pharmaceutical drugs. Cancer patients may also feel symptoms of pain, sleep issues, depression, anxiety, impaired cognitive function, and lack of energy (Centers for Disease Control and Prevention, 2020).

Cancer can be diagnosed at any age of life, but it is most common in individuals over the age of 60 years old. Individuals under the age of 20 years old are at the lowest risk for developing cancer, with an average of 25 cases per 100,000 people. As an individual ages, their risk for cancer steadily increases, which is why prevention measures and screenings are so important as one ages (National Cancer Institute, 2021b). Prostate, lung, and colorectal cancers are most often found in men, this does not mean that women cannot develop them, but men make up the majority of these cancer

diagnoses yearly. Females often develop breast, lung, and colorectal cancers, which makes up nearly 50% of cancer diagnoses in females. Cancer mortality is higher in males compared to females. In addition, cancer mortality is highest in African American men, while Asian/Pacific Islander women have the lowest risk for cancer mortality (National Cancer Institute, 2020).

## **CHAPTER THREE**

### **Complementary and Alternative Medicine**

Complementary and alternative medicine (CAM) are therapies that are not part of evidence based medical practice. Today, CAM is commonly called “natural”, “holistic”, “home remedy”, and “Eastern medicine”, but CAM is much more than that. CAM is commonly used for cancer patients to reduce nausea, pain, fatigue, stress, and more from common cancer treatments. Complementary medicine is commonly used in addition to evidence-based medicine but is not used as a form of standard treatment (National Center for Complementary and Integrative Health, 2021). The top ten most common types of complementary and alternative medicine are natural products, such as essential oils, deep breathing, yoga or something similar, chiropractic or osteopathic manipulation, meditation, massage, special diets, homeopathy, progressive relaxation, and guided imagery. The use of CAM gives cancer patients the sense of control over their health and may help with overall health outcomes. Complementary medicine is constantly being developed and researched to fully understand the benefits of combining CAM with standard medicine (National Center for Complementary and Integrative Health, 2021).

Nearly 30-50% of individuals who have had cancer in the past, report using complementary therapy to help increase their overall health. Women who have cancer, have more intense symptoms, are younger, and exercise more frequently report higher uses of complementary medicine (Arring et al., 2021). Yoga, meditation, and other forms of exercise or complementary medicine assist at helping reduce stress and relieve some symptoms associated with cancer. A study found that breast cancer patients are more

likely than any other cancer patient to utilize complementary and alternative medicine (CAM) in their treatment plan (Gosain et al., 2020).

### **Types of complementary medicine**

There are many different types of complementary medicine, and each one is used for different parts of the body to help relieve anxiety, stress, fatigue, and more (National Center for Complementary and Integrative Health, 2021). Some types of complementary medicine are more accepted forms of therapy than others. Traditional alternative medicine has been practiced for many centuries throughout the entire world and are commonly accepted as useful types of therapy. This includes acupuncture, homeopathy, and Chinese medicine (John Hopkins Medicine, n.d.). Acupuncture is used for chronic pain, in areas including the back, neck, and joint pain by using small needles to stimulate the nervous system. In addition, it may help individuals who struggle with consistent headaches or migraines (John Hopkins Medicine, n.d.).

Touch therapy has been used since the late 1900s. It utilizes the touch to heal one's body from one spot to healing the entire body. Typically, body and touch therapy are combined with mind therapy to bring focus on healing the entire body to get back to optimum health. Types of body or touch therapy are chiropractic, osteopathic medicine, massage, tai chi, and yoga (John Hopkins Medicine, n.d.). Yoga and tai chi are used to move the body in slow, stable movements to relieve stress, improve balance, reduce pain, reduce anxiety and depression, and increase quality of life. Massage therapy is used to relax the soft tissues in the body to promote healing and wellbeing, and is one of the earliest complementary therapies used to relieve pain and discomfort. Often, massage is paired with aromatherapy, such as essential oils, to help reduce pain and anxiety in cancer

patients. Spinal manipulation or chiropractic therapy is when a provider uses their hands or a manipulation device to stabilize and adjust the bones in the body. This is typically used for better immune function, improved energy, pain reduction, and general wellness (National Center for Complementary and Integrative Health, 2021).

Diets and herbs are also used to bring wellness to the body by enriching the body with fats, oils, and complex carbohydrates. In today's diet, there are many nutrients lacking in the typical food that is consumed, thus the need for supplements. In addition, nutritional deficiency can lead to long term illness, so it is very important to ensure the body is getting the exact nutrients it needs to maintain wellness (John Hopkins Medicine, n.d.). Dietary supplements or special diets are taken by individuals to provide the body with nutrients it may be lacking or to improve their immune health (National Cancer Institute, 2021a).

The mind also plays an important role in our overall wellness. Therapy for the mind induces a connection between the mind and body to heal together, resulting in better health. Some of these therapies include meditation, biofeedback, and hypnosis (John Hopkins Medicine, n.d.). Meditation is a therapy that relaxes the mind and body, resulting in lower blood pressure, causing less anxiety and depression, and helps improve sleep patterns by focusing on breathing or repeating words to calm the mind (National Cancer Institute, 2021a). In addition, our senses help heal the body by focusing on what people hear, touch, smell, taste, and see. Guided imagery is used to focus on positive or happy images in the brain to help the body reduce negative feelings and emotions and help the body heal naturally. Complementary medicine is typically not invasive to the

body and is not used as a standard care of medicine but is used to improve comfort levels for the patient (National Cancer Institute, 2021a).

In breast cancer patients, they often get pain in their chest wall, skin, muscles, and shoulders from radiation, chemotherapy, and surgery. Physical therapists are able to improve this pain through dry needling. This is a technique that pinpoints trigger areas to release the pain associated in that area by releasing muscle tightness. Patients are able to receive pain relief through accurate placement of dry needling by reducing tightness and pain in areas around the breast. Dry needling is performed by certified physical therapists who identify trigger points of pain then put a small needle into the skin of the patient. After the needle is in the right place, they attach electrode stimulation to restart the muscles and release tension. Dry needling has been proven to reduce post-treatment pain in cancer patients and is mildly invasive (Bell et al., 2019).

According to Hart et al., complementary and alternative medicine is becoming more commonly used by cancer patients. This study found that healing touch therapy had a positive effect on the immune system and on depression symptoms. CAM is used by nearly 50% of female cancer patients and can range up to 80% in other studies. It is found that women who have had surgery or chemotherapy, are well educated, and have higher incomes, along with substantial side effects from cancer treatment, report utilizing CAM more often than others. Healing touch is considered a biofield therapy, which is used to restore the body's balance of energy. This allows the body to heal itself and restore balance in physical, emotional, mental, and spiritual health. Some benefits of healing touch include wound healing, pain relief, less feelings of anxiety, and whole-body relaxation. In addition, healing touch can improve the individual's quality of life,

emotional well-being, mental health, improve mood, and decrease fatigue. There are five different techniques involved with healing touch, which include practitioner preparation, magnetic connecting and clearing, chakra connection, liver drain and mind clearing. All these techniques were used to bring the individual's body back to center and balance. According to Hart et al, complementary medicine is beneficial when used with evidence-based medicine at treating cancer patients and reducing side effects (Hart et al., 2011).

Yoga has been known to increase an individual's health through relaxing and focusing on the breath. In a study done in 2010, twenty patients between the age of 30 and 50 years old who had breast cancer, were studied to examine the quality of life before and after eight yoga sessions by looking at their anxiety and stress levels. The sessions included breathing exercises, relaxation, and forms of meditation. In addition, the yoga sessions were completed in a warm studio environment to promote relaxation. The results of the study showed that the participant's quality of life improved after the eight sessions of yoga. Their anxiety and stress scores (STAI-I and STAI-II) decreased from their previous score that was taken prior to starting yoga. This study had a positive effect on the breast cancer patients and overall increased their quality of life, helped them perform their normal activities, and helped relax them (Ulger & Yagli, 2010). In addition, acupuncture is also a common and effective way to decrease treatment related side effects in cancer patients. This CAM therapy is done by placing needles into the skin or tissues in the body in particular patterns and places to alleviate pain by stimulating the central and peripheral nervous system. This type of therapy can specifically reduce nausea, vomiting, post-surgical pain, fatigue, insomnia, and anxiety (Lu et al., 2008).

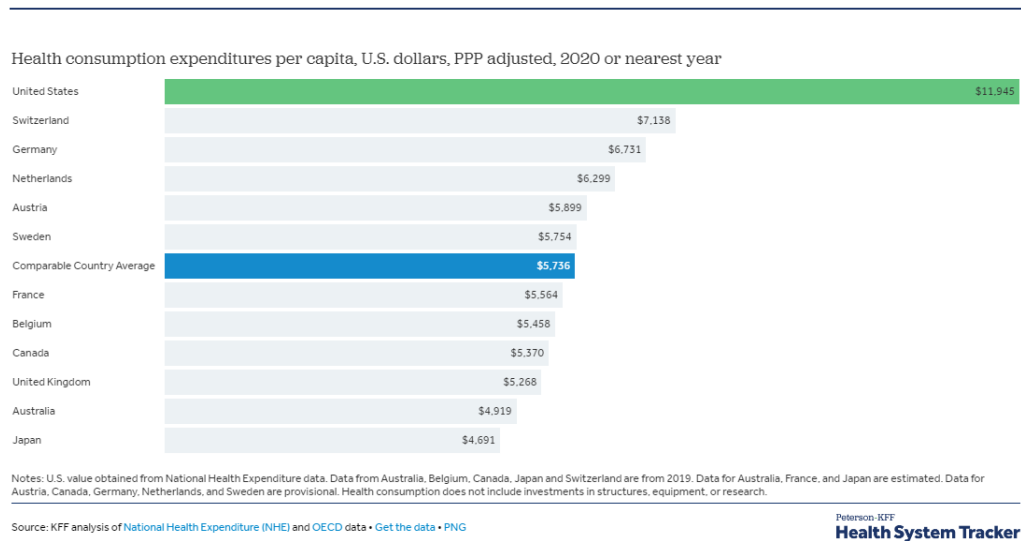
Overall, CAM has been shown to provide physical and mental support to cancer patients through different types of therapies. In addition, they can improve the quality of life for the patient and ease the side effects from cancer treatment. Although CAM is beneficial to most individuals who use them, it is still important to consult the doctor to ensure there will be no medication interactions that would cause harm to the body (Keramatikerman, 2020).



## CHAPTER FOUR

### Expenditure comparisons to other countries

Compared to other countries, the United States spends nearly \$4,000 more dollars on healthcare per person than any other developed country in the world. The United States spends approximately \$11,945 per person each year, whereas the average amount spent by other countries is roughly \$5,736 per person. As seen in the table below from the Peterson Health System Tracker, each country has lower expenditure than the United States (Wagner et al., 2022).



**Table 1 (Kurani et al., 2022)**

In addition to healthcare expenditure, Americans spend nearly \$33.9 billion dollars on complementary and alternative medicine (CAM) out-of-pocket. Since CAM is not part of evidence-based medicine, many individuals are required to pay out-of-pocket due to insurance not covering any or all of the cost. This leads to barriers regarding access to CAM when used in conjunction with conventional medicine (National Institutes of Health, 2009)

Typically, countries with higher health expenditure for example, Switzerland, Norway, Sweden, Denmark, and the Netherlands reimburse CAM at a higher rate, but still might not be full coverage. Whereas countries with lower expenditure, do not typically incorporate CAM into their healthcare treatment. This means that people with higher income have better access to CAM, causing a socioeconomic gradient in CAM usage. In addition to higher wealth, individuals with more education may be more likely to use CAM as they are more likely to research additional options for treatment to be in control of their own health (Fjaer et al., 2020).

In Australia, CAM expenditure is around 3.12 billion US dollars, with most of the expenditure coming from females aged 18-34 with higher-than-average income (Steel et al., 2018). Similarly in the United States, individuals, more specifically females with higher levels of income report higher use of CAM in their daily lives and as a secondary treatment source. This is due to easier and more readily available access to CAM due to being able to cover the expensive cost (Hart et al., 2011). For the entire world, the CAM expenditure was valued at 82.27 billion in 2020 and will grow exponentially by 22.03% by 2028 (Grand View Research, 2022).

In a survey conducted in Europe, more than a third of the cancer patients in Europe utilize CAM to assist with treatment tolerance. Nearly 60% of the participants were women who are typically young and highly educated. The typical price spent on CAM use ranges from 123 (Europe currency) to the maximum of 4,140. More than half reported no expenditure as most CAM remedies were of no cost. Majority of the patients were satisfied with their results from CAM use and would suggest it to others. Although Europe does not allocate a lot of its funds to CAM use, there is hope in the future that

there will be more research and funding available (European Society for Medical Oncology, 2005).

## CHAPTER FIVE

### Surveys Used

#### Materials

The surveys used for this thesis were from a recent graduate of the University of South Dakota's Honors program, who did research on infertility and CAM use. The surveys were conducted via SurveyMonkey.com, were voluntary, and completed online. Both of the surveys were reviewed and approved by the Institutional Review Board (IRB), which can be found below. The question types included multiple choice, free response, and select all that apply.

The participant survey began with general population questions regarding their race and age. Following the general questions, the survey went into the participant's overall thoughts and opinions on CAM use for infertility, identifying if they are a believer in the CAM or if they are hesitant of the use. The next five questions regarded the participant's relationship to infertility treatment, if they found Western and CAM methods effective, and if they believe CAM works as a treatment option for infertility. The last question on the survey was free response for any additional comments or feedback. For this survey, all of the questions were required except the last free response question mentioned above. Participants were contacted via email and social media to complete the survey. The overall survey is included in Appendix A below.

The second survey was for practitioners, which was similar but not the same as above. The first two questions of the survey collected race and age information. Then, it asked for the respondent's profession (i.e. aromatherapist, professor, physician, etc.). The following questions regarded the general thoughts of CAM (i.e. if they were a believer or

if they were hesitant). Next, the question asked if they believed the use of CAM can result in a positive pregnancy outcome, if they believe CAM methods are effective, and why or why not. The questions were set up similarly, but worded slightly differently to identify if different wording resulted in different answers. The last question asked for additional comments, and was not required. These individuals were contacted via email and by social media and the final version of the survey is listed below in Appendix B.

### **Procedure**

The surveys were conducted via online source, and were distributed to both the participants and the practitioners via email and social media. All of the survey responses were from individuals in the Midwest Region. At the beginning of the survey, there was a short description of the purpose of the survey, the target population, and a link to the survey. The survey was available to all individuals, but was weeded out by asking if the participant had used CAM for infertility and asked what area of profession the practitioner practiced in. Participants were aware of the voluntary response, and were able to close out of the survey at any time. The length of the survey was approximately 10 minutes, and individuals were able to complete it on their own time. Participants knew of their informed consent as they had to press “continue” to move onto the questions in the survey. There were no identifying questions used to keep the survey anonymous (Williams, 2019).

## **CHAPTER SIX**

### **Survey Results**

The surveys used for this literature review was from a previous University Honors student who completed research regarding infertility and CAM use. The surveys had a total of 106 participants, with three being excluded for not meeting the criteria of the surveys. Survey 1 included 37 participants who received treatment or knew of someone receiving treatment for infertility. All of the participants were from the Midwest region and was a voluntary, online survey. Of the 37 participants, all 37 identified as White or non-Hispanic (n=37) and majority were in the 31-35 age group (n=10), 36-40 age group (n=7), and 26-30 age group (n=6), while the rest of the participants filled the other age categories. The survey asked the participants if they were a believer in complementary and alternative medicine (n=30), hesitant of the use (n=5), or other (n=2). In addition to the questions above, the participants were asked about their relationship with CAM use, whether that be they have used it themselves, a family member used it, friend of someone who used CAM, or other. One person was excluded due to there being no relationship with someone who has used or uses CAM. The following question asked what type of Western or evidence-based medicine they have received (ex. IVF, IUI, hormone treatment, etc.) and what CAM therapies they have used (exercise, crystal therapy, yoga, etc.) (Williams, 2019).

For the second survey (S2), the participants included 66 practitioners who specialize or work with patients with fertility issues. All of the participants were from the Midwest region and conducted the survey via an online platform. Sixty-three participants (n=63) identified as White or non-Hispanic, while one identified as Asian (n=1), one

identified as Middle Eastern (n=1), and one participant chose not to disclose their race. Majority of the participants were in the age ranges of 31-35 (n=10), 41-45 (n=13), and 46-50 (n=13). Similar to the survey prior, each participant was asked if they were a believer of alternative therapies, and the results indicated (n=40) were, (n=15) were skeptical, and (n=10) were other. The participants were asked to disclose their profession and if they worked with patients with fertility issues (Williams, 2019).

The findings from the first survey concluded that 97.3% of the participants believed that CAM therapies could or had potential of resulting in a successful outcome, while in the second survey, the practitioners concluded that 78.4% believed in the use of CAM therapies were effective or somewhat effective. Participants who were believers in CAM therapies, were more likely to believe that the use could result in a positive outcome. Consequently, the participants who were more skeptical of the use, were more likely to say that they did not believe in the use of CAM therapies to treat infertility or could result in a positive outcome of pregnancy. More participants of survey 2 (S2) were unsure or skeptical if CAM could actually result in pregnancy (n=15, 22.7%) and were unsure if they were effective (n=25, 37.9%). The surveys used are attached below (Williams, 2019).

The surveys used also allowed for free-response questions for the participants to expand on their answers to their questions, which is listed below the survey used.

<b>Table 3: S1 Quantitative Results</b>	<b>Question</b>	<b>Count</b>	<b>%</b>
<i>S1: 1</i>	<b>With what race do you identify with? (select all that apply)</b>	<b>37</b>	
	<b>American Indian or Alaskan Native</b>	<b>0</b>	<b>0%</b>
	<b>Asian</b>	<b>0</b>	<b>0%</b>
	<b>Hispanic/Latino</b>	<b>0</b>	<b>0%</b>
	<b>Native Hawaiian or Pacific Islander</b>	<b>0</b>	<b>0%</b>
	<b>Black or African American</b>	<b>0</b>	<b>0%</b>
	<b>White/Non-Hispanic</b>	<b>37</b>	<b>100%</b>
	<b>Prefer Not to Say</b>	<b>0</b>	<b>0%</b>
	<b>Other (specify) (S1: 1a)</b>	<b>0</b>	<b>0%</b>
<i>S1: 2</i>	<b>What age group do you identify with?</b>	<b>37</b>	
	<b>18-25</b>	<b>2</b>	<b>5.4%</b>
	<b>26-30</b>	<b>6</b>	<b>16.2%</b>
	<b>31-35</b>	<b>10</b>	<b>27.0%</b>
	<b>36-40</b>	<b>7</b>	<b>18.9%</b>
	<b>41-45</b>	<b>5</b>	<b>13.5%</b>
	<b>46-50</b>	<b>5</b>	<b>13.5%</b>
	<b>51-55</b>	<b>0</b>	<b>0%</b>
	<b>56-60</b>	<b>1</b>	<b>2.7%</b>
	<b>61+</b>	<b>1</b>	<b>2.7%</b>
	<b>Prefer Not to Say</b>	<b>0</b>	<b>0%</b>
<i>S1: 3</i>	<b>What are your general thoughts regarding Alternative Therapies?</b>	<b>37</b>	



	<b>I am a believer of alternative therapies</b>	<b>30</b>	<b>81.1%</b>
	<b>I am a skeptic of alternative therapies</b>	<b>5</b>	<b>13.5%</b>
	<b>Other (specify) (SI: 3a)</b>	<b>2</b>	<b>5.4%</b>
<b>SI: 4</b>	<b>What is your relation to alternative medicine for infertility? (select all that apply)</b>	<b>40</b>	
	<b>I am a client/patient that has used alternative therapies for infertility</b>	<b>28</b>	<b>70%</b>
	<b>I am a family member of a client/patient who used alternative therapies for infertility</b>	<b>4</b>	<b>10%</b>
	<b>I am a friend of a client/patient who used alternative therapies for infertility</b>	<b>6</b>	<b>15%</b>
	<b>Other (specify) (SI: 4a)</b>	<b>2</b>	<b>5%</b>
<b>SI: 5</b>	<b>What Western medicine therapies have you/the person or people you know used for infertility? (select all that apply)</b>	<b>93</b>	
	<b>Surgery (to correct the widening of the veins in the scrotum or blockage in the vas deferens)</b>	<b>0</b>	<b>0%</b>
	<b>Antibiotics</b>	<b>1</b>	<b>1.1%</b>
	<b>Medications and counseling (to treat problems with erections or ejaculations)</b>	<b>5</b>	<b>5.4%</b>
	<b>Hormone Treatments</b>	<b>18</b>	<b>19.4%</b>
	<b>Fertility drugs/hormones</b>	<b>31</b>	<b>33.3%</b>
	<b>Surgery (to remove tissue that is blocking fertility or to open blocked fallopian tubes)</b>	<b>7</b>	<b>7.5%</b>

<b>Intrauterine Insemination (IUI)</b>	<b>12</b>	<b>12.9%</b>
<b>In vitro fertilization (IVF)</b>	<b>12</b>	<b>12.9%</b>
<b>Gamete intrafallopian transfer (GIFT)</b>	<b>0</b>	<b>0%</b>
<b>Zygote Intrafallopian transfer (ZIFT)</b>	<b>0</b>	<b>0%</b>
<b>None</b>	<b>4</b>	<b>4.3%</b>
<b>Other (specify) (SI: 5a)</b>	<b>3</b>	<b>3.2%</b>

<b>SI: 6</b>	<b>What alternative medicine have you/the person or people you know used for infertility? (select all that apply)</b>	<b>102</b>
	<b>Acupuncture</b>	<b>25 24.5%</b>
	<b>Acupressure</b>	<b>1 1.0%</b>
	<b>Aromatherapy</b>	<b>4 3.9%</b>
	<b>Chiropractic</b>	<b>16 15.7%</b>
	<b>Crystal therapy/jewelry</b>	<b>0 0%</b>
	<b>Dieting</b>	<b>18 17.6%</b>
	<b>Essential oils</b>	<b>5 4.9%</b>
	<b>Exercising</b>	<b>13 12.7%</b>
	<b>Feng shui</b>	<b>0 0%</b>
	<b>Herbology</b>	<b>3 2.9%</b>
	<b>Hypnosis</b>	<b>0 0%</b>
	<b>Meditation</b>	<b>2 2.0%</b>
	<b>Mind/body techniques</b>	<b>2 2.0%</b>
	<b>Music/Art Therapy</b>	<b>1 1.0%</b>
	<b>Reflexology</b>	<b>1 1.0%</b>

	Yoga	4	3.9%
	None	4	3.9%
	Other (specify) (SI: 6a)	3	2.9%
<i>SI: 7</i>	<b>Do you believe that alternative medicine for infertility can result in pregnancy?</b>	<b>37</b>	
	Definitely Yes	13	35.1%
	Maybe Yes	23	62.2%
	Unsure	0	0%
	Maybe No	1	2.7%
	Definitely No	0	0%
<i>SI: 8</i>	<b>How effective do you think alternative medicine for infertility is for resulting in pregnancy?</b>	<b>37</b>	
	Extremely Effective	5	13.5%
	Somewhat Effective	24	64.9%
	Unsure	5	13.5%
	Somewhat not Effective	3	8.1%
	Not Effective	0	0%

<b>Table 4: S2 Quantitative Results</b>	<b>Question</b>	<b>Count</b>	<b>%</b>
<i>S2: 1</i>	<b>With what race do you identify with? (select all that apply)</b>	<b>66</b>	

	<b>American Indian or Alaskan Native</b>	<b>0</b>	<b>0%</b>
	<b>Asian</b>	<b>1</b>	<b>1.5%</b>
	<b>Hispanic/Latino</b>	<b>0</b>	<b>0%</b>
	<b>Native Hawaiian or Pacific Islander</b>	<b>0</b>	<b>0%</b>
	<b>Black or African American</b>	<b>0</b>	<b>0%</b>
	<b>White/Non-Hispanic</b>	<b>63</b>	<b>95.5%</b>
	<b>Prefer Not to Say</b>	<b>1</b>	<b>1.5%</b>
	<b>Other (specify) (S2: 1a)</b>	<b>1</b>	<b>1.5%</b>
<b>S2: 2</b>	<b>What age group do you identify with?</b>	<b>66</b>	
	<b>18-25</b>	<b>4</b>	<b>6.1%</b>
	<b>26-30</b>	<b>4</b>	<b>6.1%</b>
	<b>31-35</b>	<b>10</b>	<b>15.2%</b>
	<b>36-40</b>	<b>7</b>	<b>10.6%</b>
	<b>41-45</b>	<b>13</b>	<b>19.7%</b>
	<b>46-50</b>	<b>13</b>	<b>19.7%</b>
	<b>51-55</b>	<b>4</b>	<b>6.1%</b>
	<b>56-60</b>	<b>5</b>	<b>7.6%</b>
	<b>61+</b>	<b>5</b>	<b>7.6%</b>
	<b>Prefer Not to Say</b>	<b>1</b>	<b>1.5%</b>
<b>S2: 3</b>	<b>What is your profession? (select all that apply)</b>	<b>72</b>	
	<b>Aromatherapist</b>	<b>2</b>	<b>2.8%</b>
	<b>Acupuncturist</b>	<b>1</b>	<b>1.4%</b>

	<b>Certified Nurse Practitioner</b>	<b>9</b>	<b>12.5%</b>
	<b>Chiropractor</b>	<b>2</b>	<b>2.8%</b>
	<b>Crystal Therapist</b>	<b>0</b>	<b>0%</b>
	<b>Doctor of Osteopathic Medicine</b>	<b>0</b>	<b>0%</b>
	<b>Doctor of Philosophy</b>	<b>0</b>	<b>0%</b>
	<b>Medical Doctor</b>	<b>14</b>	<b>19.4%</b>
	<b>Nutritionist</b>	<b>0</b>	<b>0%</b>
	<b>Nurse (RN, BSN, LPN)</b>	<b>28</b>	<b>38.9%</b>
	<b>Occupational Therapist</b>	<b>1</b>	<b>1.4%</b>
	<b>Pharmacist</b>	<b>1</b>	<b>1.4%</b>
	<b>Physical Therapist</b>	<b>1</b>	<b>1.4%</b>
	<b>Physician Assistant</b>	<b>3</b>	<b>4.2%</b>
	<b>Professor</b>	<b>2</b>	<b>2.8%</b>
	<b>Other Practitioner (specify) (S2: 3a)</b>	<b>8</b>	<b>11.1%</b>
<b>S2: 4</b>	<b>What are your general thoughts regarding Alternative Therapies?</b>	<b>37</b>	
	<b>I am a believer of alternative therapies</b>	<b>40</b>	<b>60.6%</b>
	<b>I am a skeptic of alternative therapies</b>	<b>15</b>	<b>22.7%</b>
	<b>Other (specify) (S2: 4a)</b>	<b>11</b>	<b>16.7%</b>
<b>S2: 5</b>	<b>Do you believe that alternative medicine for infertility can result in pregnancy?</b>	<b>66</b>	
	<b>Definitely Yes</b>	<b>21</b>	<b>31.8%</b>
	<b>Maybe Yes</b>	<b>29</b>	<b>43.9%</b>

	Unsure	15	22.7%
	Maybe No	1	1.5%
	Definitely No	0	0%
<b>S2: 6</b>	<b>How effective do you think alternative medicine for infertility is for resulting in pregnancy?</b>	<b>66</b>	
	Extremely Effective	8	12.1%
	Somewhat Effective	28	42.4%
	Unsure	25	37.9%
	Somewhat not Effective	2	3.0%
	Not Effective	3	4.5%

<b>Table 5: S1 Free Response Questions</b>	<b>Question</b>
<i>S1: 1a</i>	<i>S1: 1</i> With what race do you identify with? <i>S1: 1a</i> – Other (specify)
	N/A
<i>S1: 3a</i>	<i>S1: 3</i> – What are your general thoughts regarding Alternative Therapies? <i>S1: 3a</i> – Other (specify)
	I have used both in vitro fertilization and acupuncture
<i>S1: 4a</i>	<i>S1: 4</i> – What is your relation to alternative medicine for infertility? <i>S1: 4a</i> – Other (specify)
	I have used both in vitro fertilization and acupuncture We saw a fertility specialist in 1996

<i>SI: 5a</i>	<p><b>SI: 5 – What Western medicine therapies have you/the person or people you know used for infertility?</b>  <b>SI: 5a – Other (specify)</b></p>
	<p>Blood thinners for clotting disorders</p> <p>ICSI (intracytoplasmic sperm injection)</p> <p>Varicocele repair</p>
<i>SI: 6a</i>	<p><b>SI: 6 – What alternative medicine have you/the person or people you know used for infertility?</b>  <b>SI: 6a – Other (specify)</b></p>
	<p>Fertility supplements</p> <p>Individual counseling/Talk therapy</p>
<i>SI: 9</i>	<p><b>SI: 9 – Why does or why doesn't alternative medicine therapies for infertility work or not work?</b></p>
	<p><b>Responses About Treatments being a “Case by Case” Basis:</b></p> <p>Each person is different and not all the time do conventional ways work</p> <p>I don't know why they didn't work for me. They just didn't.</p> <p>It didn't work for me but I don't know why it didn't work as I know it has for others</p> <p>It just depends on how much does your taking, I was on my 3 time doing it</p> <p>Sometimes it is the persons working so hard to get pregnant that emotions get in the way.</p> <p>Undergoing continued testing to determine cause of miscarriages. No definitive known cause of miscarriages at this point.</p> <p>Unfortunately, it didn't work for me</p> <p><b>Responses About Treatments having a Placebo Effect:</b></p>

Some seem to be similar to "just relax" which I was told when I was young and struggling with infertility. Made me irritated then, like I just needed to try harder or I was too uptight to get pregnant when it turned out to be blocked fallopian tubes. Blame the victim!!

**Responses About How Alternative Medicine has a Positive Effect on the Body:**

Allows areas of the body that may not be communicating well to begin to do so

Alternative therapies may be enough to help some people and others not so much. But for example, someone who is undergoing IVF may benefit from trying acupuncture and or yoga to help decrease stress and or anxiety/depression while going through the process as it is a stressful time. I feel this can be of benefit to the and helping to conceive.

For me specifically, I had one IUI but also had my second (or maybe third) round of acupuncture. This resulted in my triplet pregnancy. I do believe that acupuncture made the quality of my eggs greater (only three eggs were of mature size (15,16,17 mm) and all three took. I am not convinced that it was solely the acupuncture that resulted in my pregnancy though, since we had a concurrent IUI and I took oral fertility meds.

I believe in a holistic approach. I think the mind is powerful and alternative medicine can be effective!

I feel it does work. In my situation I think the relaxation practices made the most difference. Because we had started the adoption process and stopped all medications when we finally got pregnant.

I got pregnant after changing my diet and chiro care

I have pcos and my husband and low motility/ low morphology. Dr. Keith Hansen, the reproductive endocrinologist at Sanford told us there was a slim to none chance of my husband and I conceiving a baby. I did acupuncture, took the herbs she recommended and so did my husband. I also dieted and exercised. We conceived



naturally after 2 months. I was also able to get pregnant 3 more times:-) We now have 3 healthy kids. 6, almost 4, and 13 months:)

I think it works because it gives the patient a semblance of perceived control over their desired outcome and that change of ownership can be powerful.

It didn't work for me as I had endometriosis, but it did help get my cycle back on track. I think it can help achieve pregnancy as it is more natural and brings your body back to the state God intended it to be.

Maybe helps make the body healthier to improve the chance to conceive.

My first time using fertility acupuncture, we got pregnant right away. This second time, we've been using and trying fertility acupuncture and fertility supplements for a couple months and haven't had any luck yet but my cycles have started becoming more predictable.

Not sure, but we were told by a fertility doctor that we couldn't have kids. We have two children and I give all of the credit to our acupuncturist.

We went through 2 separate IVF egg retrievals. The first round we did not use acupuncture it ended with a full term pregnancy but only were able to retrieve 5 eggs 1 was implanted 2 were frozen (neither worked for future pregnancies with acupuncture) the 2nd round we used acupuncture & were able to retrieve 10 eggs 7 fertilized!! Did 4 rounds of implantation 3 failed but last one resulted in twins. Also used acupuncture to try to induce labor it did not induce but made labor so much quicker had 2 previous pregnancies that resulted in 2 & 2 1-2 hours of pushing. With 3rd after acupuncture (but still induced) dilated from 4-10 in 20 minutes & pushed 3 times & labor was shortened by 5 hours compared to previous deliveries.

**Responses About how Western Medicine has a Positive Effect on the Body:**

Depends on Grade of eggs

I have seen alternative therapies be successful in fewer occasions than I have seen it be successful. Based on my personal experience, I believe that alternative therapies may not work if they are not addressing the cause of the infertility; however they may also work because of the shift from the medical model to a more holistic treatment.

Often, there seems to be an underlying medical issue on either the male or female side causing specific issues with fertility that can only be corrected through surgeries, medication, hormones, and procedures. If the diagnosis is unexplained infertility, then I think alternative medicine therapies have a better chance of helping as a specific traditional therapy may not increase the chances of success on their own. I do believe acupuncture had a positive effect on our two successful IVF procedures. However, we used acupuncture for 2 additional IVF procedures that did not take.

They may work when they put the remove what is making the body not function correctly. Being healthy makes the body function the way it was designed.

**Responses that Suggested a Mix of Western Medicine and Alternative Medicine is Best for the Body:**

Health and nutrition are a huge factor in conceiving, so alternative medication can and does help them. However there are some causes which are irreversible even with surgery, diet, nutrition, etc. There's also the fact that I believe God is the creator of life and He has an ultimate plan and purpose in everything. He's used our infertility for good and to bring an adopted boy into our home who wouldn't be here had we conceived earlier.

I believe alternate medicine is one of many factors that can contribute to pregnancy

I believe they work when the information comes from an educated source and not a direct sales essential oil marketer or a google

researcher. I believe there needs to be a plan and an action plan with strategy to get pregnant using alternative methods.

I had a healthy pregnancy after ivf with acupuncture.

I have yet to have a live birth, but have used acupuncture in all 2 of my IVF transfers. It was a very relaxing therapy and even though I didn't end in positive pregnancies... I would still recommend and plan to use on my transfer in 2019.

I'm just not sure there was a direct correlation between my acupuncture and pregnancy. I had been trying to get pregnant for 16 months. But during that time, I had also been researching ways to increase my fertility, too, so when I was getting acupuncture those last two cycles, I had also been tracking my ovulation and using pre seed, stuff like that. I sortof wonder if doing the acupuncture made me feel like at least I was doing made me feel like at least I was doing something to help, snce my ob wouldn't do testing until it hadbeen a year without a pregnancy, and I did have a miscarriage during that 16 months.

**Responses that Stated they Needed More Information:**

There needs to be more legitimate research done to prove/not prove alternative medicine works for infertility. Often times, men/women are kn so many different combinations of therapies it is hard/near impossible to pin-point what was effective.

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*SI: 10*

*SI: 10 – Other Comments?*

I also used a acupuncture pin and shocked myself for 30 days

I don't think one can will oneself to get pregnant. It is almost always a biological issue, such as low sperm count, etc.--can be hundreds of reasons but not typically something your mind can control.

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**\*Responses with invalid comments (i.e. “U”) or with no further explanation were not included**

<b>Table 6: S2 Free Response Questions</b>	<b>Question</b>
<i>S2: 1a</i>	<b>S2: 1 With what race do you identify with? S2: 1a – Other (specify)</b>
	Middle Eastern
<i>S2: 3a</i>	<b>S2: 3 – What is your profession? S2: 3a – Other (specify)</b>
	Allied Health birth doula Clinical Laboratory Scientist CNP student Doctor of Metaphysical, Reiki Master, Meditation/Mindfulness Master Healing touch Medical Doctor, Professor, Other Practitioner (specify): Reproductive Endocrinology and Infertility PTA
<i>S2: 4a</i>	<b>S2: 4 – What are your general thoughts regarding Alternative Therapies? S2: 4a – Other (specify)</b>
	Generally favor Western medicine but feel alternative therapy has a role to play I am ok with patients using them as long as they are safe with traditional medicine. I am willing to keep an open mind regarding alternative therapies I believe any therapies/treatments should be carefully evaluated for the possible risks, benefits and alternatives available. I believe it is always safest to start with the least invasive treatment first.

I believe in some. The data is somewhat tentative for most.

I believe some work - likely need more research

I m a believer that we should quit calling them alternative!

I think they are worth trying

Perhaps I would say I am a skeptical believer... I feel they can complement traditional therapies but also believe it is important to present good evidence about what we know or do not know to be true about all therapeutic options - traditional or alternative. There are risks/benefits of most things - and I do believe that patients deserve to be presented with accurate information when choosing any therapeutic path.

these therapies can have a place in Western medicine

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**S2: 7**

**S2: 7 – Why does or why doesn’t alternative medicine therapies for infertility work or not work?**

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**Responses About Treatments being a “Case by Case” Basis:**

Case by case situation.

Each individual is different providing different environments for the body to respond. What works for one may not work for another.

Effective treatments can vary for each individual

I believe each woman is an individual being, and depending on the source/cause of infertility, the modern medical model does not provide all encompassing treatment options and alternative treatments provide an additional source of therapy for infertility as well.

I feel everyone is different. Just like accepted types of treatments do not work for everyone. Alternative medicine may not work for everyone.

I think it depends on the alternative therapy.

It depends on the therapy and the patient's condition. Weight loss is effective for obese anovulatory patients. Other therapies do not have as much evidence to show benefit.

### **Responses About Treatments having a Placebo Effect:**

Effectiveness of any therapy is dependent on the readiness of the patient. Their own belief systems may be a big reason for the lack of effectiveness

I think a lot of it has to do with the belief that it will work. Kind of a placebo type effect.

Not sure but any alternative medicine has a chance to be effective if the patient believes it might work.

people try various things, and women get pregnant; but this does not mean the first had anything to do with the second. if it makes a couple feel better, and will not hurt them, I see no reason against it. But this does not mean I would endorse it.

Personal belief that it's somewhat mental aside from known physical issues. Many people are told they can't get pregnant after trying for years and then quit trying and the stress is gone and they get pregnant almost instantly.

### **Responses About How Alternative Medicine has a Positive Effect on the Body:**

A lot of alternative therapies can be traced back thousands of years. It's important to have solid scientific evidence backing any and all medicinal therapies though.

Accupuncture has had several studies done showing good results

Alternative medicine can address communication issues within the hormone system, whereas medicine rarely does. It can also identify other blockages to conception - physical, emotional, or chemical

Decreases stress, heals the body, opens channels

I am not familiar with many specific therapies but herbal, aromatic and energy therapies can assist in balancing the body which could possibly help with fertility

I do you think it's possible for patients to benefit from the alternative therapies either from the alternative Therapy itself or perhaps, as a secondary mechanism, such as the patients having decreased overall stress, perhaps from being hopeful/optimistic about these alternative therapies may work.

I have been treating infertility cases with acupuncture for years with a very high success rate. Of course, the reason for the infertility is a big key to the success. Someone who has a difficult case of endometriosis or PCOS has a much harder time than a patient that does not have a diagnosed condition. By the time the patient reaches our clinic, they have usually started into other treatments such as IVF, but have been unsuccessful. When we add alternative therapies to this treatment, it becomes much more successful. As with any treatment, it will not work for everyone, but with the success I have seen clinically, I believe it would be silly to not add alternative therapy to the treatment protocol. It is relatively inexpensive (especially considering the cost of IVF) and is almost completely pain free

I think it's very possible alternatives could assist with conception.

I think they will work to correct any imbalances in the body and provide an optimal environment for conception.

It works because it offers more chances and means for successful fertilization than a couple working with no intervention.

Some alternative therapies can enhance body function or offer protection

**Responses About how Western Medicine has a Positive Effect on the Body:**

Depends on the cause of the infertility. Male vs female cause may make a difference especially if the male sperm isn't adequate or present at all. That may not be affected by alternative therapies since they are most often applied to the female patient. I think adequate medical workup is necessary to potentially identify causes of infertility and then if a patient wishes to pursue alternative therapies, that is appropriate, but they are doing so with all the information available to them.

Every therapy has a failure rate.

I think a lot of education is needed. If following a regime self discipline necessary (example: natural family planning requires education to understand and discipline to monitor body changes such as daily temperatures.

I think it depends on the cause of the infertility and the contributing factors. For example, if a patient has a bad hormonal imbalance, some thereapies may help wheras if a male patient is considered sterile after lab testing, AMTs will likely not help.

If the alternative therapy treats the underlying cause of infertility like PCOS, it can certailing help improve the odds of pregnancy. Carrying around a crystal said to increase odds of pregnancy and only doing that, no. It doesn't treat the underlying cause of infertility. Treating that is key.

It works when it discovers the cause of infertility and removes the original problem. Often very simple things (like learning the signs of when your body is going to ovulate) can help you understand your body and remove obstacles to pregnancy

Most causes of infertility are either hormonal or due to structural problems (endometriosis) I don't think there are alternative ways to help with these issues

Not everything we use as medicine works - as a healthcare system we need to use all things - even natural substances - to get our patients the results

Sometimes it's just science that prevents pregnancy i.e. no sperm or egg available due to cancer

The ones that I know about (functional medicine) work because they address the root cause of the issues leading to infertility

There is no reason to believe that alternative medicine has a direct effect on the body. Any treatment effect is likely the result of decreased stress (from a placebo standpoint or otherwise) and an opportunity for the endocrine axis to rebalance itself.



There may be underlying medical problems not diagnosed causing the infertility that alternative treatments cannot treat.

They may be harmful and cause interactions with certain medications

Western medicine trained. Millions of dollars are spent in this department. On all sides of the story....Many friends / colleagues have tried for years, exhausting options, both western and alt, then adopted. And then got pregnant

You have alternative therapies, but you still need the body to respond to those therapies. Not only that, but you have two body systems that need to be functioning/responding in order for the alternative therapy to work

**Responses that Stated they Needed More Information:**

Don't know enough about it to have an opinion.

I am not clear on what alternative therapy options are available.

I am unfamiliar with what alternative therapies are available

I am unsure as I try to base my treatments and recommendations on research based data. Usually alternative medicine does not have that backing them up as beneficial.

I cannot say I am familiar with the data regarding the outcomes in this area with alternative medicine

I don't know much about alternative therapies for infertility.

I have never studied alternative medicine for infertility so I don't know.

I have not had enough exposure to alternative infertility therapies to have a strong opinion.

I haven't personally heard of anyone using alternative therapies being used for infertility, but would definitely be willing to try I struggled with fertility.

I've never really looked into it.

Need more info to make a decision.

No evidence in controlled studies in peer reviewed journals. Lack of statistical data or numbers showing statistical power more than chance.

Not a lot of research to back it

not well studies, difficult to control variables

There is no conclusive evidence based on controlled trials.

There is not enough research to be able to answer this question with a definitive yes/no/reason. Research needs to be done. Many people with infertility are on many "treatments" which makes it very difficult to say waht is/is not effective.

Unsure. Would need more information.

Very little research on its efficacy

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**S2: 8**

**S2: 8 – Other Comments?**

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Good study- I hesitate lumping all "alternative" therapies together as I believe the data are mixed in showing success with infertility treatment. Overall, I feel a combined approach between western and some alternative therapy is probably beneficial.

I recently cared for a patient who used alternative therapy for infertility. She had a full term baby and truly believed it helped her to get pregnant. Most of my patients use traditional infertility practices (very expensive). I definitely think it's worth trying other alternatives first.

I strongly support alternative therapies in many aspect of health. I personally don't care if it results in a placebo effect, it might help. If a modality might help and isn't harmful and the cost is reasonable for the person, I say try it. Many modalities are beginning to be researched, some extensively, and I think we will find they are more effective than once believed by Modern Medicine.

I used acupuncture while struggling to get pregnant. I had been on oral medication only for multiple months, the month I utilized acupuncture in conjunction to the meds, I conceived. Whether coincidental or the most important factor, it speaks to the power of alternatives to current medical model therapy.

Placebo effect is a real thing and therefore I do think that it is possible that simply believing can work can, in fact, be effective. I think that alternative methods are viable options if not harmful or deceptive. Infertility is painful and stressful for couples struggling to conceive - this unfortunately can put these patients in the position of being desperate to "try anything" - traditional or alternative - even when this might have low rates of success and HIGH financial cost.

There is no alternative medicine, any more than there is alternative reality. The same rules of logic and science apply to everyone.

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Data from the Surveys compiled from the following source:

(Williams, 2019)

**\*Responses with invalid comments (i.e. "U") or with no further explanation were not included**

## **CHAPTER SEVEN**

### **Limitations**

Due to time constraints, an individualized survey was not made for this research. In replacement, a survey from a past University Honors student was used to determine the effectiveness of complementary and alternative medicine. If more time was available, a specific study would have been completed by surveying previous and current cancer patients, as well as health professionals in the field. This would have given more validity to this specific research project, but using past studies and journal articles showed accurate results that could be used for the study.

Another limitation of this study was that different sites and journal articles used, had different ages of when a person typically develops cancer. Some references used 55 as the average age, while others used 60. This is a limitation of the study because there is not consistency among the references used, but both ages were given to give the audience insight from different sources.

## **CHAPTER EIGHT**

### **Conclusion**

It is known that cancer causes a lot of stress, not only for the patient, but for their support system as well. In addition, it is proven that stress increases cancer growth, so it is vital for the patient and their family to find alternative ways such as complementary and alternative medicine to decrease their stress, fatigue, anxiety, and depression. CAM is able to provide patients with the mindset that they have control in their own health and can find ways that aid in the reduction of treatment side effects. In addition, if cancer patients are calmer and more relaxed during and after treatments, they will have better cancer outcomes due to the lowered stress levels, which is known to slow down tumor growth and spread. Yes, it is hard to know exactly if CAM will harm the patient in any way during cancer treatment, but for the most part, it is a safe alternative to help the well-being of the cancer patient (National Cancer Institute, 2021a). It is important to talk to the primary provider and others in the care team to find the best CAM therapy that will work with the cancer treatments already present. Some CAM options that are proven to help treat pain, stress, and fatigue are dry needling, healing touch, acupuncture, and massage therapy. So many individuals in the United States are diagnosed with cancer each year, so there should be more education to the providers and patient advocates to promote CAM therapy more often to their patients to help with the awful side effects that treatment can cause and help their patients with an increased quality of life through cancer treatments.

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