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How Effective Are Emotional Freedom Tapping Techniques in Addressing Limiting Beliefs in Females With Unexplained Infertility

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How Effective Are Emotional Freedom Tapping Techniques in Addressing Limiting Beliefs in Females With Unexplained Infertility

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I CERTIFICATE OF APPROVAL

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TABLE OF CONTENTS

List of Tables iv

Acknowledgements 1

Abstract 2

Chapter 1: Introduction 3

Problem Statement 5

Structure of the Thesis 6

Chapter 2: Literature Review 8

Introduction 8

Unexplained Infertility of Unknown Origin 10

Limiting Beliefs 12

Emotional Freedom Techniques 19

Conventional Uses of EFT 27

Efficacy of EFT 31

EFT and Limiting Beliefs 34

Limitations 38

Where Next for EFT 41

Fertility Belief Questionnaire (FBQ 43

The Development of Measurement Tools 43

Criticisms and Limitations 47

Future Directions 48

The Proposed Research Question 49

Chapter 3: Research Methodolody 50

Research Design and Methodology 50

Intervention 51

Participants 51

The Recruitment Process 52

The Sampling Method- Inclusion and Exclusion Method 52

Instrumentation 54

Subjective Units of Experience 55

Instrumentation and Data Collection 56

Data Collection Methods 56

Data Collection 58

Data Analysis Plan 59

The Independent Variable for this Study 60

Ethical Considerations 61

Limitations of the Study 61

Expected Outcome 62

Declaration of Conflicting Interests 62

Chapter 4: Research Results 63

Demographics and Narratives 63

Possible Causes 66

Identified Beliefs 68

FBQ Energy EFT Results 69

Subjective Units of Experience 79

Limitations of Research 81

Discussion – Significance and Conclusion 82

Chapter 5: Discussion and Recommendations 84

Discussion 84

Limitations 86

Future Research 87

Findings Related to the Literature Review 88

Recommedations 90

Appendices .....

Appendix A: Participation Information Sheet 95

Appendix B: Consent Form 100

Appendix C: EFT Tapping Protocol and SUE Scale 102

Appendix D: Email Correspondance for Both Groups 103

Appendix E: Instrumentation Table 119

References 126

List of Tables

Table 1: The Fertility Belief Questionnaire 119

Table 2: EFT Intervention and Data Collection Protocol and Time Line 56

Table 3: Unexplained Infertility Demographics for both Groups 64

Table 4: Five Rejected and Accepted Causes For Intervention 67

Table 5: The Top Top Ten Limiting Beliefs for Both Groups 68

Table 6a: Comparative Descriptive Statistics for Each Item on the FBQ 70

Table 6b: Further Analysis of Group Differences 77

Table 7: Subjective Units of Experience (SUE) 80

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ABSTRACT

The study's objective is to investigate the impact of Energy EFT (also known as Modern Energy Tapping) as a primary care solution to address limiting beliefs in women experiencing unexplained infertility. Before 2017, quantitative studies and techniques lacked measuring beliefs about infertility. The research's objective was to determine whether Energy EFT effectively addressed limiting beliefs in females with unexplained infertility. Thirty-five of the 43 volunteers were involved. Seventeen were randomly assigned to the intervention group and 18 to the control group. The intervention group participants attended two 90-minute online Energy EFT sessions over two weeks, supported by an instructional EFT tapping sheet and video protocol. Data was collected via a website curated for the study containing a consent form, a demographic survey, and the Fertility Belief Questionnaire (FBQ), which participants completed pre-, post-, and one month after the research intervention. The t-test was utilized to examine and analyze the data. Analysis revealed that the intervention group showed a statistically significant reduction in negative beliefs about infertility compared with the control group. Furthermore, there was a significant difference in the SUE (Subjective Units of Experience) scale before and after the tapping intervention. The findings support the hypothesis that Energy EFT is an effective behavioral intervention for reducing limiting beliefs in women facing unexplained infertility. The study contributes valuable insights into addressing the psychological aspects of infertility, emphasizing the potential of Energy EFT as a therapeutic approach in this context.

Key Words: Unexplained Infertility, EFT, Emotional Freedom Techniques, Beliefs in Unexplained Infertility, Emotions Infertility

CHAPTER 1: INTRODUCTION

Emotional Freedom Techniques (EFT) is a non-invasive energy psychology therapy that combines cognitive and somatic approaches that may be self-administered. EFT is a therapeutic technique known to help with psychosocial, emotional, and physical issues. It was introduced and used in 1995 by its developer, Gary Craig, and was drawn from the teachings of Dr. Roger Callahan's Thought Field Therapy (TFT) in the 1980s. However, several lines of evidence suggest its origins go back to the key principles within Traditional Chinese Medicine 3,200 years BC. (Dorfer, et al., 1999). Studies suggest that EFT techniques can have a significant impact on improving multiple physiological markers of health. According to Bach et al. (2019), health markers can be seen in over 100 published studies demonstrating its efficacy. To support this further, Feinstein states that out of the "100 peer-reviewed outcome studies -51 of which are randomized controlled trials provide an evidential base for evaluating the claims and criticisms surrounding the approach" (Feinstein, 2019, pp. 340-351).

In addition to systematic studies and randomized control studies (RCTs), Boath (2022) indicates that EFT has gained traction since 2018, supported by objective biological measurements and a growing body of evidence, with sixteen EFT case studies and three EFT case series up to 2021, published in peer-reviewed professional journals that cover revision of past EFT case research and lead research work from the collaborative efforts of David Feinstein Ph.D., Dr. Elizabeth Boath, Dawson Church, Ph.D., and Dr. Peta Stapleton, among other scholars.

In part, this study was motivated by observing recent increases in women seeking alternative therapies to cope with their infertility and whether EFT is a useful and effective treatment for this population. For example, this author has witnessed many women in private

practice presenting with multiple limiting beliefs about why they may not have conceived, and we have had some successes in applying EFT to support and reverse limiting beliefs in women struggling to conceive. In addition to using Energy EFT to change these limiting beliefs, little is known about the impact of beliefs and how they may be addressed with women with unexplained primary infertility looking to conceive. We also know relatively little about how far these negative beliefs may hinder conception. Recent theoretical developments in psychology and other medical sub-disciplines have convincingly demonstrated that negative thinking can lead to poor health outcomes, and these insights could potentially implicate negative thinking about fertility in infertility.

Unexplained infertility, which refers to the inability to pinpoint causes of infertility as described by Ray et al. (2012), affects individuals globally, leading to considerable emotional strain. The resulting emotional burden can give rise to the development of beliefs that may impact one's wellbeing and hinder the ability to conceive. This research framework outlines how Emotional Freedom Techniques (EFT) can assist in addressing these limiting beliefs among women facing infertility. By addressing beliefs associated with stressors such as traumas, fear of failure, societal pressures, and emotional challenges related to infertility, EFT offers a promising therapy for women navigating their fertility struggles. While conclusive studies on the effects of Emotional Freedom Techniques (EFT) on limiting beliefs related to infertility are lacking, research suggests that EFT could potentially improve emotional well-being and overall physical health.

As well as a comprehensive overview of EFT studies in this area, this thesis also reports the results of a controlled trial that tested the effectiveness of EFT on limiting beliefs with a cohort of women struggling with infertility issues. The study used Energy EFT tapping to target,

and change limiting beliefs identified using the Fertility Belief Questionnaire (FBQ) and measurement scales, Likert and Subjective Units of Experience (SUE). The results show that EFT can help decrease a lot of these limiting beliefs and the associated psychological distress.

Problem Statement

Numerous studies, including those by Stefano et al. (2018), Bala et al. (2021), Fontana and Torre (2016), have examined stress, anxiety, depression, lifestyle-related factors and diseases, psychological distress, nutrition, diet, and physical activity in relation to unexplained infertility. However, these studies have not extensively examined belief systems and their potential contribution to unexplained infertility.

When a woman is experiencing infertility, it is imperative to look at and address any limiting beliefs as part of an integrative treatment, as they can shape how a woman interacts with herself in her ability to believe that she can conceive**.** Before 2017, quantitative studies and techniques for measuring beliefs about infertility were lacking as part of an integrative treatment, as they can shape how a woman interacts with herself in her ability to believe that she can conceive. A study was conducted by Naab et al. (2013) to create the Fertility Belief Questionnaire (FBQ) based on the Common Sense Model (CSM) to evaluate the validity of the FBQ. To date, no studies address how to evolve these limiting beliefs. This research study will help bridge this gap in addressing limiting beliefs by applying Energy EFT tapping techniques as a contributing primary care solution to change beliefs in women experiencing primary infertility of unknown origin. It is envisaged that the findings gained from the research can now be added to the existing body of EFT knowledge. Professionals can also use EFT as a transferable skill to address unresolved limiting beliefs around unexplained infertility.

Over the course of eight weeks, this non-pharmaceutical quantitative research study

examined the effects of using Energy EFT as an intervention on women who were experiencing limiting beliefs about their inability to conceive naturally. Ten out of 30 most identified beliefs from the FBQ were addressed, which may impact women with unexplained primary infertility of unknown origin. Each chapter of the dissertation's structure is shared in each of the following chapters.

The Structure of The Thesis

This thesis follows a conventional format, consisting of a literature review, an outline of the study's methodology, results, and conclusions. The literature review delves into the origins and setting of infertility, as well as the emotional weight it carries, and highlights how Emotional Freedom Techniques (EFT) could help women with limiting beliefs. It presents a broad overview of the associated EFT literature, emphasizing its potential for therapy and the supporting evidence. As shown in the literature review, EFT is an increasingly widespread, if sometimes controversial, therapy that can address a range of psychological disorders and ease mental health complaints. However, to date, relatively few studies have explored whether and how EFT might help ease the psychological distress associated with infertility. Moreover, existing studies have not used appropriate scales and measurement tools to measure infertility distress, and the thesis identifies the Fertility Belief Questionnaire (FBQ) associated with Naab et al. (2017) as a potentially useful way to measure and assess the salience of negative thinking among women suffering with infertility.

Subsequently, the research methodology describes a controlled EFT intervention undertaken by the author that measures the salience of negative beliefs before and after EFT. The recruitment and selection process involved women who were looking to conceive and had a diagnosis of unexplained infertility. Recruitment efforts targeted fertility clinics, support groups,

and online forums focusing on infertility topics. Interested individuals received information and were directed to a website about the study's purpose, procedures, potential advantages, and risks before being asked to consent to participate. The methodology chapter outlines how the FBQ measures beliefs, the specifics of the intervention, the sampling strategy, and methods for collecting and analyzing data. Ethical concerns and study limitations are addressed, followed by a summary of findings and their implications. It emphasizes the importance of addressing limiting beliefs in infertility through EFT, as well as how this study contributes to existing knowledge in this area.

The ethics committee from Lifestyle® Prescriptions University approved the research. Ethical considerations were undertaken to ensure informed consent, data safeguarding, confidentiality, and freedom to leave the study at any time. To maintain ethical guidelines, the control group received two 90-minute sessions of Energy EFT Tapping after the study data collection period was completed. The results chapter of the intervention group outcomes revealed improvements in their views regarding positive beliefs about fertility and reductions, with negative beliefs showing more substantial positive changes on the Likert scale than the control group. Additionally, the Subjective Units of Experience (SUE) scale demonstrated a decrease in emotional intensity after EFT sessions. Finally, the conclusion chapter summarizes findings, conclusions, recommendations for future practice, and findings related to the literature review.

In summary, this chapter lays down the groundwork that was undertaken to build upon the collaboration of existing studies of EFT techniques by addressing the gap in the literature involving the exploration and investigation of limiting beliefs through the application of Energy EFT. Energy EFT was also undertaken to test if Energy EFT will strengthen women's inner

resources and enhance the management of emotions while looking to conceive employing a practical, non-pharmacological, and non-invasive intervention that can be applied and implemented easily. A detailed explanation is given about the thesis structure, encompassing a review of studies, the research methodology employed, findings from the study, and conclusions drawn from them. It also highlights the emphasis on utilizing EFT to empower women to reshape their perspectives on fertility. In total, this study seeks to enhance the impact of EFT in tackling beliefs among women in this group.

CHAPTER 2: LITERATURE REVIEW

Introduction

The review outlines key insights relevant to unexplained infertility and its associated psychological impacts: Unexplained primary infertility of unknown origin poses a significant challenge and can be a frustrating and emotionally taxing experience for couples trying to conceive. Despite various tests and evaluations, the cause of infertility remains unidentified, making it difficult for doctors to recommend effective treatment options and for couples to navigate the process of trying to conceive. The primary goal of this literature review is to explore two aspects: (1) the role of limiting beliefs in understanding primary infertility by focusing on how such beliefs may impede a woman's ability to conceive and (2) the potential efficacy of Emotional Freedom Techniques (EFT) in addressing these beliefs. While EFT is commonly known for its effectiveness in managing stress and trauma-related issues, the review reveals a deficiency in addressing limiting beliefs in EFT in the psychological dimension of care. The literature shows that EFT as a targeted intervention is promising in offering substantial psychological relief in coping with the emotional distress of infertility by assisting

women in reducing identified limiting beliefs from the Fertility Belief Questionnaire (FBQ) measurement tool for the first time.

The following literature is thematically organized with an introduction, a defined explanation of unexplained infertility of unknown origin, a review of Emotional Freedom Techniques content, and a conclusion or recommendation to address the gaps in existing knowledge around unexplained infertility of unknown origin. Using the Fertility Belief Questionnaire, limiting beliefs were addressed as one aspect of unexplained infertility, as well as how emotional freedom techniques can contribute to transforming these limiting beliefs.

Key Words: Unexplained Infertility, EFT, Emotional Freedom Techniques, Limiting Beliefs in Unexplained Infertility, Emotions Infertility

Data Collection Process

A comprehensive literature review was undertaken for document retrieval in electronic format. In cumulative index, the author has conducted human studies primarily since 2014. Articles were restricted to English. Snowballing was used to identify relevant information by searching through articles of interest and studies undertaken by prominent persons, predominantly in the field of Emotional Freedom Techniques. Threads were followed through citations and references within the studies relevant to the research to gain greater insight and depth of knowledge. The databases searched were PubMed, Google Scholar, CORE, and the Cochrane Database of Systematic Reviews. Articles searched and reviewed were weighted based on their significance, ranging from randomized controlled studies, meta-analyses, systematic and comparative reviews, and survey studies to anecdotal reports and theoretical studies. The criteria involved collecting peer-reviewed articles pertinent to the infertility population, encompassing aspects such as beliefs, Emotional Freedom Techniques (EFT), and various questionnaires. An initial screening of titles and abstracts was conducted on 1,150 to

eliminate irrelevance, with a secondary screening on study design, relevance, and methodological rigor of 736 articles, ultimately retaining 121 relevant articles that were both relevant and methodologically sound, published within the last decade.

Unexplained Infertility of Unknown Origin

The World Health Organization (WHO) defines infertility as a disease of the reproductive system defined "by the failure to achieve a clinical pregnancy after a period of 12 months or more of regular unprotected sexual intercourse" (Borght & Wyns, 2018, pp. 2-10). "Unexplained infertility is defined by the absence of identifiable causes of infertility" (Merviel, et al., 2022, p. 1241), and to support this further, García-Giménez et al. (2022) state that between 48 million couples and 186 million individuals experience unexplained infertility in the developing world during their reproductive timeline.

Furthermore, Corley-Newman (2017) presents findings that every year, the levels of unexplained infertility continue to rise, creating psychological distress and anguish that is equivalent to post-traumatic stress disorder or similar to a life-threatening medical condition. The cause of infertility is often unknown and cannot be explained either medically or structurally, which can add to one's frustration and emotional distress for those affected. According to Wang et al. (2020), predominantly, couples who are experiencing unexplained infertility without a medical diagnosis are often directed to fertility clinics for Assisted Reproductive Technologies (ART) to enhance conception rather than exploring other potential treatment strategies.

However, in addition to ART and the lifestyle changes discussed so far, there are many alternative treatment strategies to help reduce psychological distress while trying to conceive that may be less invasive and aggressive than biomedical treatments. For example, in the

holistic field, a healthcare intervention treatment may help women experiencing infertility of unknown origin with conception. In a systematic review of holistic therapies and infertility, Armah et al. (2021) uncovered 18 articles between 2010 and 2018. This systematic review consisted of a comprehensive evaluation of healthcare interventions that take into account the whole person, encompassing a range of therapeutic techniques that include a variety of approaches such as counseling, cognitive behavioral therapy, acceptance and commitment therapy, educational interventions, spiritual interventions, emotionally focused therapy/intervention, and integrative body-mind-spirit interventions. Armah et al. (2021) concluded from the research that women experiencing unexplained infertility were under-researched. Furthermore, Rooney and Domar (2018) share that although many meta-analysis studies fail to agree on the efficacy of psychological healthcare interventions, have nevertheless proven helpful in reducing psychological distress and improving outcomes in pregnancy and marital happiness. As such, the paper underlines the significance of providing these patients with psychological interventions and emotional support, highlighting the necessity for infertility providers and counselors to offer assistance (Rooney & Domar, 2018).

As mentioned, psychological and emotional support is important to address as unexplained infertility can be multi-factorial. According to Abdallah et al. (2020), the authors' investigations and multiple studies state that up to 30% of couples worldwide experience unexplained infertility of unknown origin. Many couples dream of having children, and the inability to conceive can create negative emotional states and beliefs in women that can affect their psychological well-being, physically, mentally, and emotionally. Unexplained primary infertility may also trigger limiting beliefs, which can disrupt and decrease the quality of life (QoL) and be stressful and challenging to mental health and well-being, (Shahraki et al., 2018).

Negative and positive beliefs are based on what we believe or disbelieve, which can shape how we think and feel about ourselves and the world around us.

The importance of negative beliefs was underlined in a study undertaken by Duffy et al. (2021), which documented the top ten research priorities for infertility that remain under-researched. Their research emphasized the significance of conducting research that has frequently been disregarded, such as investigating the emotional and psychological consequences of infertility. They also propose their research delving into the emotional health and well-being of women impacted by unexplained infertility, which may unveil new avenues to help women achieve pregnancy and improve their psychological well-being, physically, mentally, and emotionally, Duffy et al. (2021). Limiting beliefs is one such avenue that has yet to be studied.

Limiting Beliefs

The impact of negative beliefs on fertility is a complex issue influenced by various factors, all of which hinge on the importance of defining "beliefs." The (Oxford English Dictionary, 2024, p. NP) defines beliefs as "Acceptance that a statement, supposed fact, etc., is true; a religious, philosophical, or personal conviction; an opinion, a persuasion…". For example, the relationship between beliefs and infertility is a complicated and multifaceted issue that includes psychological, social, and cultural influences that have been explored in several studies detailed below.

For instance, negative beliefs about infertility and its consequences can significantly impact individuals' mental well-being and health-related behaviors. Studies have indicated that negative beliefs and psychosocial factors can contribute to the experience of unexplained infertility. For example, Naab et al. (2013) highlighted the negative social consequences of

infertility, such as marital instability and stigma, which can be associated with negative beliefs about infertility. Furthermore, Oti-Boadi and Asante (2017) discovered that the emotional stress of infertility can cause women to use both positive and negative religious coping mechanisms. This shows how negative beliefs can affect coping strategies. The authors came to the conclusion that infertile women in Ghana have mental and physical health issues that are connected to the beliefs they hold about infertility.

Furthermore, positive and negative beliefs can manifest across various dimensions of well-being and emotional health, especially when one has difficulty trying to conceive for some time. Limiting beliefs are negative, repetitive thoughts or oscillating attitudes that people hold about themselves, others, or the world around them, which can prevent them from achieving their goals. Psychological and mental health studies support this characterisation of limiting beliefs, with Davis et al. (2016) pointing out that negative, repetitive thoughts may adversely affect one's health, well-being, and ability to function. Additionally, Klinger and Koster (2018) delve into the relationship between spontaneous thoughts and goal pursuit, highlighting the connection between individuals' thought patterns and their pursuit of goals, which can indicate limiting beliefs affecting goal achievement. Moreover, Magson et al. (2019) highlight that repetitive negative thinking is a key feature of many emotional disorders, indicating its potential to hinder individuals from achieving their goals.

These studies collectively support the understanding that individuals beliefs and attitudes influence their reactions, behaviors, and well-being, potentially hindering them from achieving their goals. One such goal is conception. When women experiencing unexplained infertility have difficulty conceiving, it is critical to address the process of updating their limiting beliefs, which include the impact of their psychological surroundings, cultural

influences, conversations with peers, things they read, observations of other expectant mothers, and their own internal emotions.

In addition, the impact can lead to a sense of isolation, loss of identity, and an intense awareness of one's reproductive capabilities, which is subsequently reinforced each month without pregnancy. Such identity challenges combine with emotional dysregulation states such as denial, anxiety, fear, sadness, shame, guilt, loneliness, depression, and anger, which all play a significant role in the formation of these beliefs and further enforce them. Furthermore, studies have investigated the relationship between limiting beliefs and unexplained infertility. One such study by Simionescu (2021) found that couples experiencing unexplained infertility exhibit higher levels of psychological distress, such as heightened anxiety, stress, and depression, compared to couples without fertility challenges. They also assert that it is not unusual for couples struggling with infertility to keep their emotions, ideas, and beliefs to themselves, given that infertility is still regarded as a sensitive matter (Simionescu, 2021).

Similar findings were reported in a study on male infertility by Ilacqua et al. (2018), in which stress and quality of life were negatively impacted by male infertility. This study offers insights into how stress and psychological factors can also impact fertility, beliefs, and their influences on psychological well-being and shows that this is a phenomena experienced across the sexes.

Despite infertility being a private and sensitive subject, in recent years there has been an increasing amount of literature documenting the "links between emotion, beliefs, and a wide range of emotional, interpersonal, and clinical outcomes" (Ford and Gross, 2019, p. 74). Molden and Dweck (2006) share that beliefs about emotions are a desirable focus for clinical intervention due to their potential for change, and to support this further, in their study, Kube

and Rozenkrantz (2020) highlight the importance of updating the concept of belief, a growing field that explores how people adjust their beliefs when they encounter new information. The authors noted that belief updating had been explored across various psychological disciplines, though it has yet to be formalised, indicating a fragmented approach to its investigation. Their research proposes a new integrative model for belief updating and identifying potential avenues for future research (Kube & Rozenkrantz, 2020).

To support this further, a progress report on the science of beliefs presented by Porot and Mandelbaum (Porot & Mandelbaum, 2020) states that the study of belief through empirical methods is experiencing swift growth, integrating research from various domains within cognitive science. The use of belief in the understanding and anticipating human behavior is extensive. Examples can be found, inter alia, in the placebo, attribution theory, theory of mind, and comparative psychological literatures" (Porot & Mandelbaum, 2020, p. 1). Various theories relevant to the relationship between beliefs and infertility, such as the Theory of Planned Behavior (TPB), a well-established framework that examines and modifies the intricate relationship between beliefs, attitudes, and health behaviors, provide examples that can help define the individual needs of women dealing with infertility, (Ajzen, 2020). When analyzing the beliefs of women regarding infertility and sexual conduct, TPB can play a role in explaining the relationship between beliefs and health in the context of infertility, and it offers a structured approach to scrutinize the impact of attitudes, subjective norms, and perceived behavioral control on intentions and behaviors concerning fertility issues Bokaie et al. (2016).

In addition, Luk and Loke (2015) conducted a comprehensive systematic review of 20 articles examining the impact of infertility on couples' "psychological well-being, marital relationships, sexual relationships and quality of life" (Luk & Loke, 2015, p. 610). This study

provides insights into the aspects of infertility and how they influence individuals' beliefs and behaviors regarding fertility and reproductive health. In addition, there is the Religious Coping Theory, where Jakubowska and Gana (2016) explored a sample of 150 infertile patients' relationship between infertility-related stress, emotional distress, and marital satisfaction. This study provides insights into how religious beliefs influence individuals' coping mechanisms and mental well-being in the face of infertility, aligning with the Religious Coping Theory. Another study that focused on the role of religion is Oti-Boadi and Asante (2017), who examined the positive and negative relationship between infertility and religion to assess psychological health associated with infertility. Their recommendation included the need for healthcare providers who administer treatments for females experiencing infertility to consider their religious beliefs as this may influence their mental health and well-being.

Faramarzi et al. (2014) used a survey to look at how infertility and self-efficacy were related to mental health scales in infertile women and how they related to the theory of emotional appraisal and coping. This study provides insights into how individuals appraise and cope with emotionally challenging situations related to infertility, aligning with the Theory of Emotional Appraisal and Coping. Further, Faramarzi et al. (2014) investigated the correlation between self-efficacy in managing the condition of infertility and the scales measuring behavioral well-being. This hypothesis implied there might be a link between having confidence in oneself and experiencing health when dealing with infertility. It suggests that interventions addressing self-efficacy could improve an individual's self-confidence and belief in their ability to positively impact their fertility. Hoyle et al. (2020) examined the relationship between attributes that offer protection and the state of psychological distress in women experiencing infertility. Their research explored how emotion regulation strategies could mitigate the

negative impact of repeated failed attempts to conceive on the well-being of women with primary infertility, providing insights into the psychological resilience of women facing infertility. These sources give information about the connection between negative beliefs, self-efficacy, religion, and overall health in women experiencing primary infertility. They talk about psychological, emotional, and mental health issues that might affect unexplained infertility.

Another promising research angle has begun exploring the link between belief systems and biological functioning. For example, the cell biologist Bruce Lipton (2005) presented a new understanding of how genes and DNA can be influenced by our beliefs and thoughts, empowering individuals to take control of their health and well-being. Lipton's arguments force a consideration of the role of beliefs in influencing biology. If true, the idea that belief can impact biology is potentially revolutionary and upends the historical assumption that the source of ill health is located inherently in the body. By extension, if we hold false negative beliefs, they may alter processes at the biological level. Taken to its logical end point, such a theory would suggest addressing the psychosocial predicates of negative thinking and the link between unconscious thought and unexplained infertility. Although (Lipton, 2005) has published no new scientific studies in a medical journal for over 30 years, his book *The Biology of Belief* is a seminal work that explores the intersection of biology and belief systems. While the book provides a comprehensive understanding of beliefs' impact on human biology, it does not directly address the psychosocial effect of negative beliefs on unexplained infertility.

Furthermore, positive thinking has attracted much attention in health psychology due to its perceived ability to impact a person's sense of wellness, including reducing depression, lowering pain levels, and enhancing the longevity of life. For example, the theoretical framework drawn from positive psychology on "The Value of Positive Psychology for Health

Psychology: Progress and Pitfalls in Examining the Relation of Positive Phenomena to Health" by Aspinwall and Tedeschi, (2010) proposes that beliefs have the potential to impact one's health on a cellular scale, implying that beliefs serve as not only an outcome but also a precursor to cause ill health (Aspinwall & Tedeschi, 2010). Additionally, studies by Dong et al. (2020) have indicated that an optimistic mindset is linked with several health advantages, including decreased symptoms of depression, heightened longevity, diminished perception of pain, and healthier aging. Moreover, treatment interventions involving positive thinking processes have demonstrated efficacy in managing mental health conditions like depression, anxiety, stress, and reduced self-worth. For example, Ismail's (2023) study on the impact of positive thinking on health outcomes examines the implications of optimistic thoughts on health results, emphasizing the potential for positive emotions to stimulate a rise in the generation of antibodies and various indicators of the immune system.

Additionally, (Song et al., 2020) discuss targeting senescent cells for healthier aging, emphasizing the importance of cellular processes in overall health. Furthermore, treatments involving positive thoughts have shown effectiveness in addressing psychological issues such as depression, anxiety, stress, and low self-esteem. This aligns with the theoretical perspective that beliefs can impact health at the cellular level at all ages. This theoretical viewpoint supports the link between positive thinking and how health outcomes can affect health on a cellular scale and shape one's general state of health.

Although these sources are not directly connected to infertility, collectively they provide insights into the important theoretical viewpoints for comprehending the intricate relationship between beliefs, emotions, coping mechanisms, and decision-making regarding infertility, emphasizing the need for comprehensive support and interventions to address the psychological

aspects of infertility issues. Overall, there seems to be some evidence that indicates women who experience the above states of emotional dysregulation around not conceiving may lead to the development of limiting beliefs, which can further exacerbate emotional distress and negatively impact the couple's ability to conceive.

Developing, addressing, and updating any underlying beliefs in the treatment plan is important when working with clients. Several theories and methods exist to approach and address fertility-related issues, namely limiting beliefs developed in psychology, neuroscience, and self-help. Devika et al. (2021, pp. 37-45) assert that mental health experts can effectively tackle these issues by employing a meticulously designed psychotherapeutic framework. One such integrative psychotherapy model of belief updating in women experiencing unexplained infertility could be the incorporation of Energy EFT so that limiting beliefs can be identified, addressed, and updated through emotional freedom tapping intervention that may modify and process women's emotional behavior and response in how they update their beliefs in response to the challenge of unexplained infertility.

Emotional Freedom Techniques

Given the focus on updating underlying beliefs to address challenges like unexplained infertility, using Emotional Freedom Techniques (EFT) emerges as a promising intervention, offering a targeted approach to identifying and modifying limiting beliefs through tapping interventions that can reshape emotional responses and cognitive patterns. The review below begins with an overview of EFT and its growth as a therapeutic approach, emphasizing the shift from controversy to acceptance within mainstream and clinical settings. The review also examines data collection, intervention studies, and the method's limitations. Finally, it highlights the evolution of EFT from controversy to a well-supported therapeutic approach

based on empirical evidence in treating psychological and physiological issues, along with uncertainty regarding how it works and its inconsistent results compared to treatments that may impede its widespread adoption in psychology and medicine.

Emotional Freedom Techniques (EFT) have developed into an evidence-based therapeutic approach that can treat and alleviate various psychological and physiological issues. Initially stemming from Thought Field Therapy (TFT) principles, Emotional Freedom Techniques has progressed into an independent modality substantiated by scientific investigations and empirical studies, Church (2013). EFT involves a combination of somatic tapping on specific meridian acupoints that can be self-administered easily on the body along with cognitive reframing, making it an acupuncture-based psychotherapy, Choi et al. (2023). As there is minimal research to date on addressing limiting beliefs in EFT, along with no research on EFT addressing limiting beliefs with women experiencing unexplained infertility, this part of the literature review evaluates the evolving body of evidence that demonstrates the effectiveness of EFT in addressing both psychological and physiological conditions in a variety of analogous conditions, which may be translated across to addressing limiting beliefs.

Energy psychology (EP) is a therapeutic approach that utilizes physical and cognitive techniques to induce positive changes in targeted emotions, thoughts, and behaviors. This emerging field emphasizes the relationship between energy fields, such as electromagnetic signals and brain waves, and adaptation to various psychological conditions, Livneh (2022). One such therapeutic approach within EP is EFT, a meridian-based intervention that is primarily addressed in this literature review. Although some critics have fostered skepticism about the evidence-based credentials of EP within health settings (Bakker, 2013), energy psychology has continued to expand with improvements in quality, efficacy, and research methods since 2014.

EFT's background can be traced from its mid-eighties introduction, marked by skepticism and dismissal, to its present status-based practice. For instance, early studies by Gaudiano and Herbert (2000) were skeptical about the effectiveness of meridian-based interventions, highlighting methodological weaknesses, distortions of the concept of energy utilized within the scientific community, lack of empirical research, and online marketing. They raise concerns about TFT and EFT's effectiveness and claims to cure via testimonials and web postings in the absence of controlled studies, treatments, placebo, or any control on measurements, statistical analysis, or timelines. As such, Gaudiano and Herbert (2000) conclude that TFT and EFT fall into the category of pseudoscience, which is not supported by scientific evidence. However, this initial skepticism has since stimulated the search for truth, and a more committed research community has developed around Emotional Freedom Techniques.

Feinstein (2019) provided a historical development of EFT, which can be traced back to the origins of Thought Field Therapy (TFT) in 1997 and the successful application of tapping on specific meridian acupoints influenced by the principles of acupuncture, which eventually led to the emergence of EFT in the 1980s, a period characterized by doubts, controversy, misinterpretation, lack of efficacy, and disregard for acceptance in clinical settings as cited in Feinstein's work, (Bakker, 2013; Bakker, 2014; Devilly, 2005; Kline, 2001; McCaslin, 2009)

Furthermore, Bakker (2013) postulated that several hundred identified forms of psychotherapy exist, and most of these models persist despite the absence of supportive evidence. Despite this, EFT frequently ranks within the upper decile of research studies for psychotherapy modalities, often surpassing expectations (Sebastian & Nelms, 2017). These controversies have highlighted the need for further research and critical evaluation to address the conflicting perspectives and establish an evidence base for understanding the effects of EFT.

Despite widespread dismissal, the quest for truth in advancing and understanding EFT has persisted. Data from the 1990s on its application has been collected, and over the last ten years, meta-analyses, systematic reviews, RCTs, and secondary data in energy psychology have continued to demonstrate its effectiveness, providing consistent evidence in various health aspects (Bach, et al., 2019; Callahan, 1985; Diamond, 1980; Feinstein, 2021; Scientific Research, 2023). On behalf of the Association of Energy Psychology (ACEP), Freedom and Feinstein (ACEP, 2023b) undertook a comprehensive search of current evidence on the application of EFT. As of August 2023, they had identified 88+ randomized control trials, over 88 pre-post clinical outcome studies, five fMRI studies documenting neurological changes after EFT, and energy psychology interventions. Over 200 investigators from over 12 countries published six meta-analyses and 10 systematic reviews on Energy Psychology in English-speaking, peer-reviewed journals (Energy Psychology).

Furthermore, according to the ACEP (2023a) overview of the science behind Energy Psychology, the literature shows a 99% improvement in efficacy out of the combined RCTs and clinical studies of energy psychology, for example, "gene expression, immunological changes, and stress biochemistry" (ACEP, 2023a, p. 1). In addition, the review found over 390 review articles, research studies, and meta-analyses published in scholarly, peer-reviewed journals (ACEP, 2023b). The findings are further corroborated in a study by Rancour (2016), which found that 98% of the studies showed EFT to be effective in addressing psychological distress, physical conditions, and performance issues across 60 studies. Rancour also described the potential use of EFT as a clinical procedure for relieving psychological distress, which is directly related to negative beliefs about emotions and well-being. Moreover, an earlier review supported by the American Psychological Association (APA) critically evaluated 18 randomized controlled

trials that showed substantial effect sizes and other statistically significant positive results that go well beyond what could be expected by chance, even after a relatively small number of treatment sessions (Feinstein, 2012). Additionally, Division 12 of the APA criteria for evidenced-based interventions was also applied and found to be met for a number of anxiety-related disorders, including PTSD (Feinstein, 2012, pp. 364-380).

Moreover, previous research has established that EFT is non-invasive, easy to apply, and used on millions of people, with no known adverse side effects (Church et al., 2022a). For instance, (Church et al., 2018a) conducted a critical analysis and presented a comprehensive evaluation of multiple EFT treatments, reporting no adverse events across studies involving over a thousand subjects. Furthermore, Church et al. (2018b) indicate that EFT has been used by a substantial number of individuals, both independently and some in medical and mental health settings; for instance, a survey was undertaken on 149 professional psychotherapists, revealing that 42% of them either utilized or contemplated using acupressure-based methods. Furthermore, Church et al. show that EFT has been introduced into medical settings such as Kaiser Permanente in the United States and National Health Services in the United Kingdom. In addition, Church (2017) asserts that the United States Veterans Administration (VA) has approved Emotional Freedom Techniques as a therapy that is "generally safe" alongside other therapeutic interventions, such as Cognitive Behaviour Therapy (CBT) and Eye Movement Desensitization Reprocessing (EMDR). For instance, EFT has gained attention and has been subject to comparison with various interventions, most notably (CBT) and (EMDR). One such study by Stapleton et al. (2017a) examined the treatment of EFT and CBT using standardized protocols for food cravings over 18 months.

The primary distinction between the two protocols lies in the fact that EFT employed a tactile approach with tapping, while CBT employed written strategies. Overall, the study's findings concluded no statistical difference between EFT and CBT interventions, and sustained improvements were maintained at the six and 12-month markers. The efficacy of both interventions demonstrated comparability. The limitations cited included a predominantly female population, a small sample size, and the fact that the final benefits from non-responders were unknown. Additionally, Gaesser and Karan (2017) undertook a pilot study using EFT and CBT to reduce anxiety in 10 schools, receiving three treatments. Both groups showed a similar reduction in anxiety.

Additionally, (Jasubhai, 2021) did a study on the effectiveness of EFT and CBT for stress, anxiety, and depression. The study used a small sample of 14 participants and treatments lasted eight weeks. The results showed that while EFT did help with therapy, the CBT program was better than the EFT group. However, these findings were based on a small sample, suggesting that a larger sample size would have improved the effectiveness and variability of EFT and CBT interventions. Despite these results, further studies conducted by Bach et al. (2019) suggest that when conducting investigations between EFT and CBT, it is crucial to ensure a minimum of 44 individuals per group are included in the study in order to detect meaning alterations in various physiological indicators.

EMDR is another cognitive exposure method used in conjunction with EFT in terms of effectiveness. For instance, Karatzias et al. (2011) conducted the initial controlled comparative study in which 46 participants affected by PTSD were randomly assigned to either EMDR or EFT. Participants underwent evaluations at the commencement and subsequently reevaluated following an 8-week waiting period, posttreatment with a twelve-week follow-up. Both

interventions showed significant therapeutic gains in an equal number of sessions. Treatment effect sizes were similar in both groups. More patients in the EMDR group showed substantial clinical changes compared to the EFT group, indicating that the efficacy of EFT may not always match that of established treatments. Karatzias et al. (2011) also recommended that future research examine EFT's active ingredients. Also, Nicosia et al. (2019) did a longitudinal case study on one survivor who had long-lasting PTSD from the collapse of the Twin Towers. They used a modified form of EMDR along with standard EFT protocol, with a total of 15 treatments over 12 weeks (the first seven were EFT only and then combined with EMDR to bring up repressed images), followed by another six sessions over four months and two final follow-up assessments. The results concluded significant T-scores across all physiological measures. This individual could resume their career following six years of disability. Furthermore, Baghini et al. (2020) conducted a comparison study on the tri-ad of EMDR, CBT, and EFT. The study included a pre-test, post-test, and control group with an eight-week follow-up of 486 PTSD patients divided into 4 groups with six sessions lasting 45 to 60 minutes. The study's sole focus was to reduce anxiety. Although EMDR was the most effective in addressing anxiety, both CBT and EFT provided an improvement in reducing anxiety. Overall, the above findings show promising effects of using EFT as a cognitive strategy in addressing and treating psychological and physiological issues.

While there are many variations in Emotional Freedom Techniques for treating psychological and physiological issues, Church et al. (2018b) noted in their review that there is no central governing body that exercises or controls the intellectual property rights to EFT, potentially leading to confusion about its exact definition. Additionally, Clinical EFT is the only empirically supported version with clinical guidelines that follow the original APA standards,

comprising seven criteria: namely, (1) randomized controlled trials (RCTs), (2) adequate target sample size, (3) clearly defined population, (4) reliable and valid assessment tools, (5) interview assessments, (6) treatment manual, and (7) sufficient data. Although Clinical EFT continues to utilize the original seven criteria established by Chambless and Hollon (1998) developed by the APA to evaluate efficacy and quality control in meta-analytic research, randomized controlled trials (RCTs), or similar studies, the current criteria developed by Tolin et al. as cited in Chambless and Hollon (1998) have reclassified the available evidence in order to bridge the substantial time gap of over two decades between Chambless and Holmes' work and the evolution of APAs evidence-based treatment guidelines. Consequently, at present, EFT remains in a state of anticipation due to the complexity of evaluation methods, as it awaits evaluation based on the second set of criteria using the SCP's Manual for the Evaluation of Psychological Treatments, using the Tolin Criteria.

Since 2017, the number of studies with follow-up assessments has increased significantly, including the successful treatment of various psychological disorders, including phobias, anxiety, depression, and PTSD. Feinstein says that people who take part in EFT studies that have a follow-up assessment keep managing their symptoms, and the recovery phase lasts for three months to two years, according to NG and NICE Guidelines (2018). In one example, Church et al. (2022a) looked through a lot of current literature to find randomized controlled trials (RCTs) and meta-analyses about emotional freedom techniques. These studies supported what Church (2013, p. 651) had found in earlier research: clinical EFT is a good way to treat both mental and physical conditions.

Moreover, Emotional Freedom Techniques have developed into an evidence-based practice over the past three decades. The use of Emotional Freedom Techniques in primary care

settings is seen as a secure, prompt, reliable, and effective treatment for psychological and medical diagnoses that are steadily increasing, Church et al. (2022a). Additionally, Church and colleagues cite that increased research has led to eight systematic reviews with meta-analyses being conducted, leading to a more defined understanding of EFT's therapeutic effects. More of these studies will be discussed under conventional uses for EFT. Finally, many Energy Psychology (EP) and EFT websites, such as Gary Craigs, are available to the public, filled with over 3,000 articles on Emofree from 1995 to 2023. Some of the most up-to-date and complete lists of studies are EFT (Universe, 2023), EFT International (2023), and ACEP (2023b). These lists are organized and checked to make sure they follow the highest standards of science and methodology. They include case studies, randomized controlled studies, meta-analyses, systematic and comparative reviews, mixed-method trials, survey studies, anecdotal reports, and theoretical and literature review articles.

Conventional Uses for EFT:

This section looks at published studies and the efficacy of using EFT in addressing a range of psychological and physiological conditions. Techniques like EFT have been shown to help people with anxiety, depression, PTSD, stress, and pain (Bach et al., 2019; Church, 2013; Church et al., 2018a; Clond, 2016; Dong et al., 2020).

Various patient groups, including nursing students, individuals with diabetes, those with kidney disease, hypertension, stress, anxiety, burnout, and expecting mothers have demonstrated the effectiveness of EFT (Cholifah et al., 2019; Dincer & Inangil, 2021; Iliani et al., 2021; Lestari et al., 2022; Tambunan et al., 2023; Wati et al., 2021). EFT has also shown promise in managing conditions such as hypertension and cancer-related cognitive impairment (Cholifah et al., 2019; Tack et al., 2021).

The literature on Emotional Freedom Techniques (EFT) has been steadily growing, with research demonstrating its effectiveness in addressing various psychological and physiological conditions that may also contribute to biomedical science. For example, the "effectiveness of EFT in reducing stress in diabetic patients" (Lestari, et al., 2022, p. 555) implemented a Quasi Experiment Pre-Posttest to assess stress levels in individuals with diabetes. EFT was used to lower cortisol and blood sugar levels. The findings exhibited an improvement of 17 for cortisol and a 9.5 improvement in blood sugar scores prior to EFT. This research demonstrated that EFT was more effective than antidepressant medications and psychotherapy in reducing stress and cortisol levels in diabetic patients. The limitation expressed was that the study timeline could be applied for a longer period.

Also, Bach et al. (2019) talk about how biological markers of health got better in 31 participants. They found that pain got 57% better, stress got 40%better, depression got 35% better, and PTSD got 32% better. Happiness got 31% better, showing that EFT had a positive effect on biological markers and could be useful in biomedical science. To support this further, a quantitative with cross-sectional design research was undertaken by Tambunan et al. (2023) on the effect of EFT on 42 patients who were subjected to isolation as a result of being diagnosed with COVID-19, suffering from anxiety, depression, and insomnia. Four sessions were administered, and the findings showed the efficacy of EFT in addressing the psychological distress above in patients who tested positive for COVID-19.

While many reviews have investigated tapping as an intervention, others claim that EFT facilitates targeted shifts in the neural pathways underlying psychological difficulties. For example, Leskowitz (2018) proposes that although there is a lack of established practices in the physiologic mechanisms of EP, interventions, and acupoints, meridians are being reviewed as

intersections of connective tissue planes and as fascial planes themselves and how tapping may induce a paradigm shift in biomedicine. This paradigm shift is supported by empirical evidence from various studies. For instance, Stapleton et al. (2020b) replicated the methodology of Church et al. (2018a) in an RCT of 83 participants, studying the effect of emotional freedom techniques on stress biochemistry. The study involved 53 participants who underwent three 60-minute treatments, during which they measured their cortisol levels. The results showed further decreased cortisol levels than the original study, suggesting that EFT effectively reduces some biological stress indicators. In addition, Stapleton et al. (Stapleton et al., 2020b) assert that one hour of tapping has the ability to modify 72 genes within the human body and cortisol levels by 24%, supported by research indicating notable alterations observed in the biochemistry of stress and the manifestation of psychological distress symptoms after the implementation of EFT sessions. These sources highlight the potential impact of EFT on biomedical science, including reductions in cortisol levels, modulation of stress hormones, and alterations in gene expression related to stress and immune function, which may support the acceptance of EFT in mainstream psychology and medicine.

Furthermore, EFT has been explored from an epigenetic perspective; Church and Feinstein (2017) discuss the enhancement of immunity-related genes, the reduction of inflammation-related genes, and the ability of Clinical EFT to modulate stress hormones, limbic function and enhance a range of neurologic indicators of overall health, Church and Feinstein (2017, p. 194). For instance, Church et al. (2016) investigated the impact of Emotional Freedom Techniques on stress-related genes in a group of 16 military veterans. By employing a collection of stress-related genes, the scientists observed that a ten-session treatment program reduced gene expression from the interleukin family, which has been linked to stress. The

treatment was found to increase the activity of multiple immune function genes. These gene expression variations were accompanied by a reduction in symptoms of post-traumatic stress disorder (PTSD) and other psychological issues. Changes were not observed in the control group. In addition, Church and Feinstein (2017) looked at more than 40 clinical trials and four meta-analytic reviews on EFT interventions that have had a big effect on a wide range of medical conditions, including pain and PTSD in both civilian and military veterans. Moreover, individuals in these populations commonly experience phobias, anxiety, and depression. Treatments were brief yet effective within one to ten applications, with sustained gains at the three-month and six-month follow-up periods. Additionally, a study by Bach et al. (2019) showed that resting heart rate (8%, P ¼ .001), cortisol (37%, P < .000), systolic blood pressure (BP) (6%, P ¼ .001), and diastolic BP (8%, P < .000) all changed in important ways. The study observed encouraging patterns regarding heart rate variability and coherence. The benefits were sustained during subsequent evaluations, suggesting that Emotional Freedom Techniques yields positive health outcomes and enhanced psychological well-being (Bach, et al., 2019). The above provides some evidence of the physiological and epigenetic effects of EFT on stress and PTSD biomarkers, supporting its impact on emotional and physiological well-being.

Although it is imperative to have clear and transparent criteria for determining whether a therapeutic approach can be considered "evidence-based," it is important to note that even when research demonstrates the effectiveness of EFT as a method, there is a significant delay in its integration into primary care settings. A study by Morris et al. (2011) examined the literature that explains and assesses the delays in the process of translating health research, where the author's analysis reveals that, on average, there is a translational gap of 17 years between the identification of efficacious novel therapies and their implementation in primary healthcare.

Only 30% of newly developed treatments successfully bridge this gap, which has been referred to as the "quality chasm" in the report by the Institute of Medicine (2001). Regrettably, patients are unable to benefit from the potential advantages of the remaining 70% of therapies. While Feinstein highlights that reviews have been highly critical of tapping as an intervention, there are also suggestions that this is the new wave of psychotherapy as cited that "Some have gone so far as to suggest that the approach represents a "4th Wave" of psychotherapy—purportedly more effective than psychodynamic, behavioral, or cognitive approaches—with claims of strong efficacy, unusual speed, and special strengths in facilitating targeted shifts in the neural pathways that underlie psychological difficulties." (Feinstein, 2019, pp. 340-351). This standpoint is verified by the National Institute for Health and Care Excellence (NG & NICE Guideline, 2018), leading to a new category that supports using EFT as an effective somatic and cognitive restructuring therapy.

Efficacy of EFT

The following research from the last ten years demonstrates the efficacy of EFT in improving physiological markers of health, reducing stress and anxiety, and regulating mental health conditions such as PTSD. Five meta-analyses were undertaken between 2015 and 2023, and several systematic reviews document the efficacy of EP methods. For example, the first systematic review of the literature was undertaken by Gilomen and Lee (2015), conducted in April 2013, encompassing three decades preceding the search, where 18 controlled trials in peer-reviewed journals with 921 participants were identified. Due to deficiencies in the methodology employed, it was impossible to ascertain whether the resultant impact was attributable to acupoint stimulation or merely a consequence of treatment components shared with alternative therapies.

Secondly, Nelms and Castel (2016) conducted an online search and evaluated outcome and RCT studies in individuals in the last decade, who experienced depression, using meta-analyses to compute effect magnitudes at three distinct time points; post-test, follow-ups shorter than 90 days, and follow-ups exceeding 90 days. Twelve RCTs and eight outcome studies qualified. Overall, EFT was efficacious, with treatments spanning one to ten sessions. The mean symptom decline was 41% across all inquiries, with participants preserving their progress over time. Overall, EFT demonstrated some equivalence or superiority to both treatment as usual (TAU) and other active treatment controls. Although the outcome was positive, there were several limitations. (1) The conclusions drawn from these meta-analyses should be approached with care due to the limitations of meta-analyses as a whole. (2) Determining the selection of trials or studies to incorporate and those to omit is a crucial decision in research. (3) All pertinent studies, regardless of their research objectives, were incorporated. In addition, a systematic review with meta-analyses on anxiety was retrieved, for quality using the seven-step criteria developed by the APA Division 12 Task Force on Empirically Validated Treatments (APA) Clond (2016). Fourteen out of twenty-six studies and 658 participants met the criteria. The EFT showed a decrease in anxiety scores. However, insufficient data existed to compare EFT to established treatments.

Furthermore, Sebastian and Nelms (2017) conducted a database analysis on RCTs to evaluate the efficacy of EFT in the treatment of PTSD using meta-analyses of existing RCTs. Seven RCTs were identified, as they met the APA criteria. The five studies using treatment as usual as a comparison group, found a significant positive effect of EFT treatment on PCL scores, anxiety, and depression. The effect size for the two studies without a TAU control group was also calculated and found to be significant. The effect sizes for PTSD, anxiety, and

depression were greater than 0.69. The effect sizes for HSCL and HTQ were all greater than 1.2. The overall effect size for PTSD across all seven studies was 2.96. In terms of its effectiveness in addressing PTSD, the study met the objective of these meta-analyses. The analysis of 7 studies meeting the criteria indicated that EFT is a safe and effective treatment, producing significant and enduring benefits in 10 sessions or less across diverse populations. Although not a criterion, studies with a minimum of 30 participants in each group are preferred, yet two groups had 8 participants with significant treatment change who also met the APA criteria. Overall, Sebastian and Nelms's findings suggested that further comparative studies are required to establish EFT's superiority over other PTSD treatments; the current analysis presents promising findings. Additionally, a systematic review and meta-analyses of comparative studies were undertaken by Church et al. (2018b) to review if acupressure was effective as a component of EFT. Six studies were compared with participants experiencing psychological or physical symptoms (n = 403), and three (n = 102) were chosen as they met the quality control standards. Across the three studies and six outcomes evaluated, positive effect sizes associated with the full EFT with tapping regimen were consistently observed. Effect sizes ranged from small to medium to large. Although the original data contained computation errors, the revised and corrected numbers provide evidence for the effects of acupressure. In addition, five criticisms of the methodology were addressed. The outcome suggests that acupressure is an active component in meta-analysis and was not solely due to placebo, nonspecific effects, or non-acupressure components. Their revised analysis confirms the initial conclusion that acupressure in the EFT protocol has positive health effects, especially during follow-up assessment after pre- and post-assessment. The author's findings align with the six individual studies and the extensive literature on EFT efficacy.

Finally, the most recent systematic review and meta-analysis was with Stapleton et al. (2023), where ten databases were examined for quantitative evaluations, and six fulfilled the criteria for inclusion. As there was only one meta-analysis on EFT for PTSD, it included systematic reviews, randomized controlled trials, and quantitative reviews. To represent the latest research, unpublished literature was added. Similar outcomes were observed between Clinical EFT and the evidence-based therapies EMDR, Narrative Exposure Therapy (NET), and CBT. However, limitations include modest sample sizes and possible publication bias, alongside the indeterminate quantity of unpublished studies. Their research shows that Clinical EFT has significant effects on PTSD, anxiety, and depression. EFT is more effective than the usual treatment or wait-list. EFT affects stress hormones, gene expression, brain regulation, and biomarkers.

To support the efficacy of Emotional Freedom Techniques further, according to Church et al. (2022a), Division 12 of the APA introduced a set of standards for "empirically supported treatments" in the mid-1990s to address existing problems and enable the evaluation of clinical modalities. The study's authors reviewed these criteria, highlighting the strengths of these factors and examining their impact on the translational gap. They used the development of Emotional Freedom Techniques (EFT) as a case study to illustrate their points. Furthermore, the study proposed twelve specific recommendations for updates to the Division 12 criteria, drawing from the lessons learned from adopting EFT within the clinical community. These recommendations aimed to expedite the transition from the research setting to clinical practice, enhance transparency, integrate recent scientific advancements, and improve the ability to make concise comparisons among treatments, Church et al. (2014). Additionally, specific attention is given to the significant number of studies, categorized and verified by reputable institutions

such as ACEP, demonstrating the diverse applications of EFT in addressing a range of conditions, from anxiety and depression to PTSD and unexplained infertility.

EFT and Limiting Beliefs

Studies have explored using Emotional Freedom Techniques (EFT) to address limiting beliefs in various contexts. For example, the investigations by Kalla et al. (2018) explored the experiences between EFT practitioners and clients, from the management of a medical condition to the beliefs held about the illness. The effects on a client's health-related actions and overall physical condition and wellness across different scenarios within the realm of EFT and its application in supporting chronic disease management in healthcare involves emphasizing the biomedical model's distinction between mind and body. It also proposes using George Engel's (2012) comprehensive biopsychosocial approach to tackle the adverse effects of biomedical treatments.

Additionally, from a practitioner's perspective, addressing clients limiting beliefs is crucial in managing chronic distress and can hinder the healing process. Furthermore, the authors highlight that limiting beliefs may also affect physical symptom management. Moreover, EFT practitioners emphasize that beliefs about pain and limitations worsen symptoms. Addressing these beliefs, clients may experience reduced pain and enhanced physical function. Additionally, the study by Kalla et al. (2018) emphasizes a holistic, patient-centered healthcare approach. Addressing the psychological aspects, including limiting beliefs, is essential for comprehensive chronic disease management. To conclude, the study documents the importance of effectively addressing limiting beliefs within a biopsychosocial framework using EFT by practitioners to support chronic disease clients.

Furthermore, Church (2009) conducted a randomized controlled blind trial to investigate the effect of EFT in addressing limiting beliefs that may influence athletes' performance. The study interviewed athletes who felt limiting and global beliefs around their performance, from "I'm a poor athlete, but the team needs me because I shoot well." to "I've never been a good jumper." (Church, 2009, p. 3) In conclusion, the study revealed that addressing these beliefs with EFT was found to have a positive impact on athletic free throw scores and physiological performance.

Moreover, in 2017, (Stapleton et al., 2017) investigated the effectiveness of EFT, showing a noteworthy enhancement in academic achievement that persisted in the 12-month monitoring period. The results revealed a notable improvement in academic performance among participants in the Social and Emotional Learning (SEL) program, with an 11-percentile advancement compared to the control cohort. Additionally, those involved in SEL manifested improved social and emotional competencies, conduct, and mindsets. Four sessions were conducted to address the efficacy of EFT by targeting academic fear and failure. Session 4 (Stapleton, et al., 2017, p. 17) addressed four limiting beliefs on academic and athletic performance. Although further research was suggested, these findings propose that integrating EFT interventions within educational environments could benefit students' educational and athletic excellence, limiting beliefs and overall wellness. Additionally, a single case study by (Podgornik, 2022, pp. 180-193) on the application of EFT describes the importance of how using EFT helped the client adopt healthier beliefs and behaviors by addressing limiting beliefs of failure, expectations, performance pressure formed early in life due to negative experiences that were playing out in many aspects of the client's life alongside psychotherapy.

Although EFT has gained recognition over the last ten years in addressing various psychological and physiological conditions, there is a lack of research on addressing limiting beliefs. The literature has explored the association between EFT and negative beliefs. For instance, Ford and Gross (2019) examine the quality of positive and negative beliefs, their impact on psychological health, and how one can regulate emotions using psychological disciplines. In addition, Dincer and Inangil (2021) investigated the impact of Emotional Freedom Techniques on nurses' stress, anxiety, and burnout levels amidst the COVID-19 pandemic through a randomized controlled trial. The research pilot study adhered to the regulations checklist by Consolidated Standards of Reporting Trials (CONSORT). Seventy-two nurses were randomly assigned, 35 to the intervention group and 37 to the control group. Different measurement scales were used, from Subjective Units of Distress (SUD) to the State-Trait Anxiety Inventory (STAI tx-1) and burnout scale. The IG, divided into 7 subgroups of 5 nurses each, received a 20 minute EFT session online that resulted in lower stress, anxiety, and burnout scores. The pilot study also highlighted the relevance of beliefs about negative emotions and helplessness in the context of professional stress and psychological wellbeing in the workplace. The limitations of Dincer and Inangil (2021) are: 1. It is a pilot study. 2. One of the researchers is part of the research team, and finally, how durable will the benefits of tapping be in the long term? Despite this, the overall conclusion showed a positive outcome in reducing stress, anxiety, and burnout, which supported three hypotheses within this study.

These studies indicate the importance and efficacy of incorporating EFT into psychotherapy models. These sources provide insights into the relationship between Emotional Freedom Techniques (EFT) and their impact on addressing limiting or negative beliefs. They cover various topics, including emotion regulation, psychological wellbeing, and the practical

applications of EFT in various situations. Examining and challenging unfavorable beliefs has constituted a fundamental aspect of Emotional Freedom Techniques (EFT) interventions across various scenarios such as post-traumatic stress disorder (Sebastian & Nelms, 2017), stress biochemistry (Church et al., 2012; Stapleton et al., 2020b), performance anxiety (Church, 2009) treating various psychological and physiological conditions, emphasizing its evidence-based nature, (Church, 2013) and even enhancing the psychological wellbeing of pregnant women, Ariska and Widaningsih (2023, pp. 6-12). Nevertheless, a research void exists in the current body of literature regarding the targeted reduction of negative beliefs as the principal metric of interest.

As mentioned, the above sources are not directly related to fertility. However, there is a lack of information on the context of beliefs in general across all EFT topics. The studies carried out by numerous academics, as those shared above, provide evidence that the Emotional Freedom Technique (EFT) is a beneficial intervention for individuals holding limiting beliefs, given its demonstrated effectiveness in treating diverse psychological disorders and enhancing general welfare. One can, therefore, build on this knowledge, suggesting that beliefs may play a role in medically unexplained symptoms, such as unexplained infertility, which may be targeted with emotional regulation strategy targets, namely EFT.

Limitations

Although Emotional Freedom Techniques (EFT) has been acknowledged as an approach to therapy that focuses on alleviating distress, anxiety, and other psychological and physiological conditions and enhancing overall well-being, there are limitations to the systematic studies in Emotional Freedom Techniques. For example, despite indications of its potential effectiveness in certain studies, such as Clond (2016), numerous constraints, issues,

and deficiencies exist in the systematic investigation of EFT. For example, a primary concern pertains to the absence of extensive, prominent, randomized controlled trials that could substantiate the efficacy of the method across various demographics and circumstances. Although certain studies have indicated favorable outcomes, the overall credibility of the evidence might be compromised by insufficient sample sizes, lack of a control or comparison group, absence of extended follow-up periods, and potential partiality in research frameworks (Geronilla et al., 2016; Stapleton et al., 2020b). Additionally, the diversity in research methodologies and outcome metrics presents a significant obstacle when comparing findings from various studies and establishing conclusive judgments regarding the efficacy of EFT (Stapleton & Stewart, 2020; Stapleton, et al., 2019)

Moreover, the potential for generalizability of results derived from prior research efforts could be constrained due to the narrow scope concerning particular demographic groups or circumstances. Specifically, the research on systematic studies has primarily concentrated on examining various conditions such as anxiety, depression, and stress while allocating lesser attention to exploring its effectiveness in addressing alternative psychological or physiological challenges (Bustamante-Paster, 2022; Church & House, 2018). This narrow focus restricts the broader applicability of EFT and highlights the need for more comprehensive research across various health conditions.

Moreover, most of the research studies that have been done on Emotional Freedom Techniques have only looked at short-term results, giving us little information about how well they work over a longer period of time. The absence of extended follow-up evaluations introduces uncertainties regarding the persistence of any advantages gained from EFT in the long run, leading to inquiries about the enduring or temporary nature of these advantages (Bach et al.,

2019). Furthermore, these scholars illustrate how certain investigations indicate positive immediate outcomes concerning health metrics like anxiety, stress, and pain, yet there exists a gap concerning the lasting impacts of EFT. As an illustration, an analysis that focuses on EFT for alleviating depression displayed a notable effect size, indicating the potential efficacy of this technique in the short term, as noted by Church and David (2019). Nonetheless, the sustainability of these outcomes remains uncertain due to lack of prolonged assessments. Despite the demonstrated immediate advantages of EFT on diverse health results, there exists a crucial necessity for additional research endeavors integrating extended post-intervention evaluations to ascertain the enduring effectiveness of EFT interventions. Comprehending the persistent influence of EFT is imperative for solidifying its position as a viable therapeutic strategy in fostering holistic wellness.

Additionally, there is the limitation in the heterogeneity of participants in Emotional Freedom Techniques research studies who exhibit a wide array of backgrounds, conditions, and levels of symptom severity, thereby complicating data analysis and interpretation; for example, in Clond's (2016) study, limitations were due to heterogeneity in treatment groups and control subjects. Similar anxiety assessment scales improved the validity. Small sample sizes increase uncertainty in effect size estimates. There may be bias and limitations in the quality of original studies—some data is not peer-reviewed. Negative studies were excluded, which may overestimate effect size. Observer bias and subject expectancy bias may have influenced the results. Overall, the data demonstrated positive gains with participants compared with baseline or controlled conditions, along with further studies recommended on patient satisfaction, patient preference, accessibility, cost saving, and comparison to standard of care due to the positive results (Clond, 2016).

Although the efficacy of EFT is well documented, with reviews in meta-analyses, RCTs, and additional studies supporting effectiveness in the treatment of many conditions - it is cited as "highly controversial, with its efficacy, purported speed, and explanatory models all questioned. Nonetheless, its utilization within clinical settings and as a self-help method has expanded since it was introduced over three decades ago" (Feinstein, 2019, pp. 340-351). Although these findings suggest that there are controversies surrounding efficacy, research methods, and a lack of empirical research meridian-based interventions, EFT has demonstrated positive outcomes in treating psychological and physiological health issues. In conclusion, although EFT has displayed potential in enhancing aspects of health, the constraints in research, like the absence of extensive trials, inconsistencies in methodology, and restricted applicability, emphasize the necessity for more investigations to confirm the effectiveness and underlying mechanisms of EFT across various groups and health issues.

Where Next for EFT

To address criticisms and advance EFT research, several steps can be considered. EFT can continue to contribute to a spectrum of psychological and medical conditions by further investigating its overall efficacy and consolidating findings. Additionally, RCTs with active control groups could be designed to compare further EFT against established treatments like cognitive behavioral therapy, relaxation and breathing techniques, EMDR, and journaling, clarifying whether observed effects are specific to EFT or are due to non-specific factors like the placebo effect. Additionally, studies assessing the durability of EFT and its effects over a longer period can reveal whether improvements are sustained beyond the immediate post-treatment period. Furthermore, investigating EFT mechanisms using neuroimaging, psychophysiological measures, or biomarkers can provide insight into how EFT works at physiological and

psychological levels. Additionally, robust replication of studies can strengthen the evidence base while examining EFT's effectiveness across diverse populations and health conditions can assess its generalizability. Despite progress, EFT research is acknowledged to have limitations. Future investigations should consider smartphone-based data collection, large-scale group therapy, and biomarker integration, as Church (2013) proposed. Advancements could also involve assessing EFT's effects on conditions like cancer, heart disease, and cognitive decline using mobile application data and virtual platforms, practitioner consultations, artificial intelligence entities, online educational programs, applications, virtual reality environments, and standardized group counseling Church et al. (2022a).

EFT's next frontier involves replicating studies and exploring physiological changes during EFT using gene expression analysis, imaging technologies, and qualitative methods to understand participant experiences, perceptions, and attitudes toward EFT, which may provide valuable insights into the subjective impact of EFT beyond quantitative outcome measures. Challenges inhibiting EFT's widespread adoption include cost, availability, and patient acceptance. Emphasis should be on EFT's growing acceptance in mainstream psychotherapy, addressing criticisms through evidence-based research as (Bach et al., 2019; Church, 2013; Church et al., 2022a) proposed.

As a result, while we can acknowledge the historical controversy surrounding EFT and recognize that more still needs to be done, emphasis should be placed on its growing acceptance within mainstream psychotherapy. By pursuing these research directions, the field of EFT can address criticisms, strengthen its evidence base, and further demonstrate its potential benefits for emotional well-being and psychological health. Implementation studies can address practical obstacles and resistance to widespread use.

Finally, EFT can be explored with unexplained infertility concerns and be addressed in many ways, one regulation strategy approach is Energy EFT, which aims to change negative cognitive distortions by identifying, tapping, and changing one's mindset on thinking and feeling around limiting beliefs. Several studies above share that women looking to conceive experience psychological distress because of unexplained infertility, which can increase cortisol levels and contribute to negative limiting beliefs. Based on the author's research, knowledge, and efficacy of EFT, introducing participants to Energy EFT involves targeting the belief and the emotion connected to that belief, and simultaneous somatic tapping stimulation can reduce both psychological distress and cortisol levels and limiting beliefs simultaneously.

The selected references above offer valuable insights into how EFT can be used as a strategy to regulate psychological well-being. These references contribute to our understanding of the psychological and behavioral effects of negative beliefs in unexplained infertility, which can be addressed using Energy EFT and the Fertility Belief Questionnaire.

Fertility Belief Questionnaire (FBQ)

The Development of Measurement Tools

Before 2017, according to Naab et al. (2017), there was a notable scarcity of quantitative studies addressing the relationship between fertility beliefs and psychosocial well-being, signifying a pronounced research gap. The inception of the FBQ can be attributed to Naab et al., who aimed to bridge the gap in scholarly literature. The foundational framework for the FBQ comes from the Common Sense Model (CSM), which involves applying practical knowledge in everyday situations acquired through interactions, experiences, and observations. It aids in prediction, problem-solving, and event interpretation, encompassing implicit knowledge like social norms and cause-and-effect relationships essential for daily life. The cultural influences

shape specific aspects of common sense understanding. It possesses broad applicability across settings and societies, serving as a fundamental basis for comprehending interpersonal connections, communication patterns, decision-making processes, and effective problem resolution.

The CSM constructs were incorporated by Naab et al. into the development of the FBQ to address this gap with the formation of an expert panel, including specialists in quantitative research methods, women's health, and instrumentation development, as it explains how patients become aware of health threats, manage emotional responses, form perceptions of threats and treatments, develop action plans and evaluate the efficacy of these plans (Leventhal et al., 2016).

Further, it was developed by Naab et al. (2017) as a tool to evaluate individuals' beliefs and attitudes on fertility and family planning. The FBQ's purpose is to understand different beliefs about fertility and reproductive behavior in unexplained infertility. Researchers can utilize the FBQ to acquire valuable insights into the various factors influencing fertility rates. It can also identify areas for improving knowledge about fertility and gauge individuals' perceptions of parenthood. While the FBQ is an established measure, it is not necessarily designed to challenge other studies but rather to provide a tool for assessing an individual's beliefs about fertility.

Naab and colleagues aimed to create the Fertility Belief Questionnaire (FBQ) based on the Common Sense Model (CSM) components and evaluate its reliability. Naab et al. (2017) further demonstrated that they designed the FBQ by revising an existing illness perception questionnaire (IPQ-R) through pilot testing, literature examination, and feedback from a multidisciplinary panel of experts. As a result, 57 items, of which 30 were FBQ limiting beliefs, were psychometrically tested to enable the survey to collect responses that could highlight the

relationship between limiting beliefs and how they may contribute to women experiencing unexplained infertility. The authors' research involved looking at various factors, such as the couple's lifestyle and behaviors, possible causes, their views and personal control about conception, medical history, and any other relevant information using the application of the CSM through a questionnaire. To further support this, Leventhal et al. (2016) shared that over 50 years of research and theoretical development have shown that the CSM is widely used so that researchers can discern patterns and correlations that might not be immediately obvious and develop hypotheses about possible causes of infertility.

The period from 2017 to 2021 saw the amalgamation of the Common Sense Model (CSM) into the FBQ to identify and propose interventions such as Energy EFT to address limiting beliefs. Devika et al. (2021) suggest that men and women have different viewpoints and concerns about fertility issues, which influence their strategies for addressing these worries. Mental health practitioners can address these concerns using a specially tailored psychotherapeutic model, one of which is CSM.

The CSM self-report measure was developed to assess an individual's beliefs about fertility. They are designed to assess whether an individual believes that fertility is under personal control and perceived barriers to achieving pregnancy. Previous studies have suggested that the literature lacks suitable fertility-related questionnaires for research purposes (Mousavi et al., 2013), making the FBQ a notable exception having demonstrated satisfactory psychometric characteristics that will facilitate the analysis of connections between beliefs and psychosocial health issues in women experiencing infertility (Naab et al., 2017).

Several researchers have identified a specific deficiency in the literature regarding quality-of-life indicators and patient-centredness (Koert et al., 2021; Mousavi et al., 2013;

Webair et al., 2021). Accordingly, in 2021, Koert et al. (2021) found only one validated survey related to patient-centeredness for infertile women. Furthermore, Mousavi et al. (2013) conducted a review to determine how Quality of Life (QoL) survey tools are used in the context of infertility. Though they find several general infertility surveys used to assess the psychological and social consequences of infertility, studies rarely focus specifically on quality of life indicators. The study highlighted the importance of using valid instruments to support couples facing infertility challenges.

Aside from that, Koert et al. (2021) state that not many fertility questionnaires include QoL. To back this up, Webair et al. (2021) say that there was only one infertility questionnaire study on patient-centeredness for women. Currently, part 2 is in development, and will be testing part 1; at the time of writing, the findings have yet to be published. In addition to Mousavi et al. (2013), a study was undertaken by Naab et al. (2017) to develop a psychometric instrument FBQ based on the Common Sense Model (CSM), as well as the examination of FBQ content and construct validity. Naab et al.'s (2013) study concluded that the FBQ showed satisfactory psychometric properties, facilitating the investigation of beliefs and psychosocial health issues related to infertility. To support this further, Mousavi et al. (2013) stated that psychometric tools are deficient in assessing individuals' perspectives on infertility. The result of this finding opened the opportunity to take ten out of 30 of the most identified beliefs that were rigorously developed from the FBQ that have not yet been addressed with emotional self-regulation Ortner et al. (2017) namely, beliefs using Energy EFT as the behavioral intervention regulation strategy.

From the questionnaires searched for this research, many aspects were covered related to fertility problems and infertility care, such as the Fertility Quality of Life tool and Cardiff Fertility knowledge scale (Webair, et al., 2021), yet only one related explicitly to beliefs (Naab et

al., 2017). The overall findings of this research on the FBQ by Naab F. Brown is generally considered high quality, providing strong evidence for the measure's validity and reliability.

Criticisms and Limitations

Nevertheless, several criticisms can be leveled at both the FBQ as a tool and the broader research that has used it. Firstly, the FBQ has not been used with significant sample sizes, affecting the generalizability of its conclusions. Secondly, the FBQ cross-sectional design reflects beliefs at a single point in time without considering changes that may occur over time. Furthermore, the FBQ may struggle to differentiate between beliefs relating to fertility and the actual state of fertility since it solely gauges beliefs and does not directly evaluate fertility. Like other survey-based research tools, the FBQ is necessarily subjective in form and may occasionally evoke negative emotional responses for participants, especially considering the emotive subject matter. Finally, but by no means least important, the FBQ was developed for use in Western medicine and represents the fertility concerns and belief systems related to the Western experience of infertility. While it could be applied in other cultural, linguistic, and demographic contexts, its validity may be compromised if utilized in an alternative context.

Nevertheless, despite these weaknesses, the FBQ does provide a concrete and consistent tool for use in research related to negative beliefs and unexplained infertility. It boasts comprehensive coverage of fertility beliefs, good internal consistency, and test-retest reliability. Naab et al.'s (2013) study has presented that the FBQ results demonstrate satisfactory psychometric properties. Additionally, it is crucial to understand that the FBQ is not meant for diagnosing infertility. It is a tool for assessing an individual's beliefs about fertility, which can help understand their emotional response to infertility and in developing interventions.

Future Directions

The research findings suggest that integrating Energy EFT as a behavioral intervention approach may offer insights into beliefs originating from the FBQ concerning emotion regulation, consequently impacting individuals' choices to pursue help for infertility. Expanding upon this point, the literature emphasizes the need for further investigation of limiting beliefs regarding fertility.

Given the FBQ's acceptable psychometric properties, new avenues have been opened for investigating the relationship between beliefs and psychosocial health problems in women facing infertility. One such avenue is to incorporate Energy EFT into addressing such limiting beliefs. Notably, the review acknowledges the FBQ as a non-diagnostic tool rather than a means to understand emotional responses and develop interventions, namely Energy EFT.

Furthermore, the FBQ provides a comprehensive method for assessing fertility beliefs and attitudes. Professionals can use the FBQ to investigate the nature of beliefs and attitudes toward fertility, as well as decision-making processes related to the emotional and psychological impact around conception. Finally, they can use the clients' identified limiting beliefs from the questionnaire and an intervention of choice, such as Energy EFT, to address the impact of such limiting beliefs. This timeline summarizes the development and evolution of the FBQ, highlighting key milestones and ongoing research needs in fertility beliefs and psychosocial health.

To conclude, the study's findings propose that incorporating Energy EFT as a behavioral intervention strategy can provide valuable perspectives on addressing beliefs in females with unexplained infertility derived from the FBQ pertaining to changing these beliefs and regulating emotions, thereby influencing individuals' decisions to seek assistance for infertility. Building on this argument, existing literature underscores the necessity to delve deeper into constraining

beliefs related to fertility from the inception of FBQ. The research study aims to bridge this gap by using Energy EFT to address limiting beliefs, thus contributing to the exploration of the aspects associated with infertility.

After reviewing a range of literature, the next chapter will explain the research design and methodology applied to this study. It will cover the intervention and participants chosen, how they were recruited, the criteria for sampling methods, the tools used for data collection, and the analysis plan used to assess how EFT influences limiting beliefs regarding infertility. The chapter will also touch on considerations, limitations, and anticipated outcomes. This framework is critical for understanding the processes and thoroughness involved in evaluating the proposed research question and EFT's effectiveness.

Proposed Research Questions

The study sought to examine the following research questions:

1. What kinds of limiting beliefs do women experiencing unexplained infertility hold?
2. Do emotional freedom tapping techniques (EFT) prove efficacious in mitigating limiting beliefs among women experiencing unexplained infertility compared to a control group?
3. Which limiting beliefs identified in the FBQ are most impacted by EFT?

CHAPTER 3: RESEARCH METHODOLOGY

Introduction

This research was prompted, in part, by the author's personal clinical observations of the challenges healthcare providers encounter while assisting women experiencing infertility, especially in the older age group, as they tend to reach out for help with the awareness that their fertility prospects are coming to a closure. As part of the secondary research outcome, I completed a quantitative time series study that identified the top ten beliefs of women who are trying to become pregnant and have been diagnosed with unexplained infertility. The study uses a static control design, with 17 participants in the treatment arm and 18 in the control group.

As shown across the chapter, the research makes several novel methodological contributions. Firstly, the incorporation of Energy EFT as the new tapping modality in addressing limiting beliefs for the first time in conjunction with FBQ-identified beliefs has also been addressed for the first time.

The remainder of the chapter outlines the methodology for a static control study, which evaluates the impact of EFT on negative beliefs about infertility using the FBQ. Throughout the chapter, I provide detailed information about the research and design rationale, the scope of the intervention, the participants and recruitment process, the selection criteria, the instrumentation used, the data collection process, the data analysis elements, ethical considerations, and potential research limitations of the study. The FBQ is presented here, with expected outcomes and potential contributions to addressing limiting beliefs with women looking to conceive with unexplained infertility through the tapping application of Energy EFT.

Intervention

As mentioned above, the intervention I provided for my participants was Energy EFT. I video-recorded three sessions—an introduction to the technique, a tapping protocol, and two instructional sessions. In addition to using a validated measurement tool (FBQ) and the Likert scale. I used a non-validated psychometric process scale, "Subjective Units of Experience (SUE)" (Hartmann, 2012), a self-administered scale that showed the client how they progressed before and after each belief was addressed. Participants had one week to review the tutorials, practice the tapping technique protocol provided (see Appendix C), and complete the Fertility Belief Questionnaire. (see Appendix E Table 1).

Data collection took place for the IG at three points: the pre-test stage, the end of the intervention, and a second post-test four weeks later to assess whether the impact of EFT on beliefs persisted over time. For the CG, data was collected at two points one month apart with no intervention.

In three online instructional sessions, participants in the treatment arm received coaching on using the Energy EFT technique. The data analysis sought to determine the extent to which the intervention impacted views on fertility, which views showed the greatest change, and whether those changes persisted over time.

Participants

Eligible women were approached through online platforms, support groups, fertility forums, fertility and wellness clinics, social media, acupuncture clinics, holistic fertility sites, Lifestyle Prescription® University (LPU), students' portals, and EFT Organizations and colleagues. They were guided to the website http://www.aislingkilloran.com that explained the study's purpose, procedures, and voluntary nature. Women interested in participating were

provided with detailed information and a consent form. Ethical considerations of confidentiality and anonymity were maintained throughout the study. Before taking part, participants were asked to give their consent. They were informed of their entitlement to withdraw from the research at any point freely.

The Recruitment Process

The strategy was designed to investigate women who are facing unexplained infertility, even after undergoing a medical assessment that failed to identify any clear causes for their infertility. This condition can be multifactorial, along with uncertainty, challenges, and frustrations, leading women to look at alternative avenues that may help them conceive. A dedicated website, http://www.aislingkilloran.com, was designed, created, and published to conduct the study with the help of Terry Byrne, an IT professional.

Sampling Method - Inclusion/Exclusion Criteria

The selection of women aged 35 to 45 was based on their tendency to delay their first pregnancy, with the average age of over 29.7 years in European countries, and an increasing fertility rate for those over 35 (Eurostat, 2024). Women who had been actively trying to achieve pregnancy for two years were the population targeted. The rationale behind the age choice lies in the tendency of women younger than this demographic to be less likely to explore alternative fertility assistance beyond in vitro fertilization (IVF). The demographic targeted exhibited a profound understanding of the subject matter concerning unexplained infertility, having delved into various dimensions encompassing stress, anxiety, lifestyle-related variables, nutrition, dietary patterns, and physical exertion. The majority of pathways investigated were thoroughly traversed, with the realization dawned that their prospects for reproductive success were

dwindling. These women were emotionally and psychologically willing to engage in the research and Energy EFT sessions.

The exclusion criteria consisted of females below the age of 35, individuals with a background of psychiatric or persistent mental health conditions, or those engaged in assisted reproductive techniques (ART). The justification for selecting this age threshold is rooted in the observation that women under this demographic are typically disinclined to seek out alternative fertility interventions aside from in vitro fertilization (IVF).

The sampling strategy used to explore how effective emotional freedom techniques are in addressing limiting beliefs in females with unexplained infertility was quantitative, with purposive and demographic sampling used to select participants based on women diagnosed with unexplained infertility of unknown origin, trying to conceive for 2 years or more, with an interest in holistic wellness and demographics; age, ethnicity, education, and willingness to participate in the study who could provide rich and meaningful data into the psychosocial impact of limiting beliefs on their infertility. For both groups, a sample size of 20 women was considered suitable, providing sufficient information while ensuring practical feasibility for data-gathering purposes. A t-test was used to analyze the data.

Quantitative data collection was conducted online through a validated FBQ questionnaire to gather numerical data on how their limiting beliefs may have changed after the application of Energy EFT treatments. Data was analyzed by employing thematic analysis, demographic variables, and a self-administered questionnaire on personal views on statements about their fertility problem consequences, illness coherence, personal control, and possible causes of infertility to review and identify any changes in one’s limiting beliefs following the Energy EFT intervention.

The sample and approach to sampling utilized in this study combined a structured, empathetic approach with a validated questionnaire tailored to address the research objectives in addressing limiting beliefs through the application of EFT effectively, contributing to the validity and reliability of the study findings, which may help researchers acquire a deeper comprehension of the complexities and psychosocial aspects of unexplained infertility. By adopting this approach, there is potential for enhancing well-being and fertility outcomes by alleviating limiting beliefs. Additionally, healthcare professionals could benefit from gaining perspectives for crafting tailored support and interventions for women struggling with limiting beliefs. To conclude, the sample selection and sampling methodology were meticulously formulated to fulfill the research aims, thereby supporting the credibility and reliability of the study findings concerning women struggling with infertility of unknown origin.

Instrumentation

Before 2017, tools for measuring beliefs about infertility were nonexistent. Then, in 2017, "the Fertility Belief Questionnaire (FBQ) based on the constructs of the Common Sense Model (CSM)" was drawn from the model to assess the development of the FBQ. All participants in the research study were asked to complete the FBQ--an electronic, computer-assisted, self-administered survey. To measure beliefs about infertility, It was administered to the intervention and comparison groups.

The FBQ consists of two sections drawn (As shown in Appendix E, Table 1) from Naab et al. (2017). The first consists of 30 items that participants rate on a six-point scale from strongly disagree (0) to strongly agree (5). These items seek to understand personal views of their fertility problem. It has five subscales: timeline (chronic/acute 3 items), consequences (11 items), illness coherence (5 items), personal control (5 items), treatment experimental (3 items),

and cause (27). The second section, which each participant completed only at the first administration of the FBQ, focuses on the causes of infertility. Participants rated its 27 items on a three-point scale--yes (2), not sure/don't know (1), and no (0) Naab et al. (2017). These items measure beliefs about stress, hereditary, sexually transmitted diseases, bad luck, poor medical care in the past, thinking negatively about life, worrying about family problems, the person's emotional state, getting old, drinking alcohol, smoking, accident or injury, past sexual behavior, witchcraft, failure of husband to pay bride price, use of family planning pills, punishment from God, a curse from ancestors, husband's refusal to see a doctor, overweight, underweight, poor diet, high blood pressure, irregular menses, thyroid problems, diabetes, husband's infertility. Participants were instructed by Naab et al. (2017) that their answers should represent their beliefs about the causes of fertility problems, not other peoples' opinions. This part of the FBQ was completed only once to reduce questionnaire fatigue because changing these beliefs was not a focus of the Energy EFT Intervention.

Subjective Units of Experience

"Subjective Units of Experience" (SUE) scale (Hartmann, 2009, p. np). https://suescale.com/sue_scale_modern_energy_chart.htm. This non-validated psychometric process scale is self-administered and enables clients to track their progress before and after addressing each belief. The SUE scale measures subjective intrapersonal experiences on a spectrum from -10 to +10, providing a tangible sense of change. A score of +10 signifies a positive threshold shift, representing an energized state that is the inverse of the initial problem, indicating positive change. The SUE scale was chosen over the more widely used, yet similarly non-validated, Subjective Units of Distress (SUD) scale (Wolpe, 1969) because of its contemporary design and client resonance. The SUE scale allows people to track their progress

by assessing where they stand on the scale, providing real-time feedback from -10 to +10. Additionally, the SUE scale gave participants a tailored insight into their experiential states. While the SUE scale hasn't been mentioned in academic studies, it has shown its value as a self-assessment tool in my work ever since it was introduced in 2009, as clients find it helpful as a tool for enhancing personal awareness and accountability. It aligns with advancements in psychological assessment methodologies while facilitating effective emotional management and intervention strategies. (Table 7)

Instrumentation and Data Collection

Data Collection Methods

Over approximately eight weeks, the research study's data was collected via the FBQ. Table 2 illustrates the timing of the FBQ administration with the Energy EFT intervention.

Table 2

EFT Intervention and Data Collection Protocol and Time Line

	Intervention Group	Comparison Group
Step 1 (week 1): Both groups were sent the FBQ to complete, which was returned within 1 week.	X	X

	Intervention Group	Comparison Group
Step 2 (week 2): EFT video Introduction for Intervention Group + tapping protocol (1 week before intervention)	X	
Step 3 (week 3): EFT session #1 was delivered via Zoom for the Intervention Group; participants worked through the first 5 chosen beliefs.	X	
Step 4 (week 4): EFT session #2 was delivered via Zoom for the Intervention Group; participants worked through the second set of 5 chosen beliefs. Second administration of FBQ to both groups.	X	
Step 5 (week 5): EFT video Introduction for Comparison Group (1 week before intervention)		X
Step 6 (week 6) EFT session #1 was delivered via Zoom for Comparison Group.		X

	Intervention Group	Comparison Group
Step 7 (week 7) EFT session #2 was delivered via Zoom for Comparison Group.		X
Step 8 (Week 8) FBQ—third administration of FBQ (1 month after session #2) The Intervention group completed and returned within one week.	X	

Data Collection

The website provided step-by-step instructions on timelines, the application form, research schedules, and surveys that included frequently asked questions (FQA) about emotional freedom techniques. One week before the Energy EFT intervention began, both the intervention and comparison groups received the FBQ questionnaire. They completed and returned the questionnaires within a week. Before the first intervention session, participants in the intervention group were given an orientation through a pre-recorded online video and a tapping protocol instruction card (see Appendix C). They then participated in two live Energy EFT instructional sessions. After the second session, participants completed the FBQ again. One month later, they were asked to complete the FBQ for the final time, marking the third occasion they completed the questionnaire.

The comparison group, meanwhile, received the same orientation video and tapping protocol instruction card in the fifth week. To maintain ethical standards, they received the two

Energy EFT intervention sessions only after the research data had been collected from them. Consequently, the comparison group completed the FBQ on two occasions. This structured timeline guaranteed that each group received all the details to engage effectively, allowing time to assess the impact of the Energy EFT tapping on the intervention group over eight weeks.

Both groups received a gift of fertility audios when they finished the sessions. Reminders were sent to both groups before each intervention to maximize response return. After completing the online interventions, all participants can now continue using Energy EFT as a support intervention to reduce any remaining unhelpful beliefs and use it as a relaxing and stress-reduction technique.

Links were sent to participants that informed them of the schedule of actions to be taken, from the beginning through to completion of the research study, along with online forms to complete that included a participation information form (see Appendix A), consent form (see Appendix B), disclaimer and contact details. All participant information was anonymous. A dedicated website and online forms were built, including the FBQ. The website contained step-by-step information on timelines, the application form, research schedules, and surveys on what was involved with frequently asked questions (FQA) on Emotional Freedom Techniques. An "About Aisling Killoran" section was provided to instill confidence, professionalism, and rapport. The consent form was published online and provided in the participant's email. A contact form was also provided on the website for any additional queries.

Data Analysis Plan

The demographic variables and all the FBQ items and data enabled me to judge the degree to which the intervention research study and comparison groups were similar/dissimilar

and explore the personal characteristics associated with certain outcomes. The statistical analysis focused on identifying the top ten beliefs concerning infertility from the FBQ's 30 items, six subscales, and 27 items on three-point scales. A professional statistician, Richard Kettner-Polley, undertook the data analysis.

The first session of the FBQ consisted of 30 items, 11 of which were positively worded (e.g., "My fertility problem will last a short time") and 19 of which were negatively worded (e.g., "My fertility problem is likely to be permanent.") The 11 positively worded items were reverse coded so that the higher the number (e.g., 5 strongly agree), the more positive the outcome. The 19 negative statements sought participants to move down the scale from 5 to 0 strongly disagree. Note that the second part of the FBQ was administered only once because the intervention was not intended to change those perceptions.

Demographic data was tabulated and presented in a (see Table 3). The validity of the FBQ scales was verified by calculating a Cronbach alpha for each scale (using the results from the combined IG and CG participants). An acceptable alpha is generally considered to be .70 or higher. We also used the combined samples to determine if any of the items or scales have outliers in either group and to evaluate them for skew and kurtosis.

The Independent Variable for this Study

For this study, the EFT intervention was the independent variable. Dependent measures are both 10 selected individual items from the first part of the FBQ and the four scales in the FBQ: "Chronic vs. Acute," "Consequences," "Personal Control," and "Treatment Control." The EFT intervention focused on the 10 items that received the highest ratings across all participants in the first administration of the FBQ (both IG and CG combined). Averages for the items in the second part of the FBQ were tabulated and discussed in the results and discussion chapters.

However, the intervention did not target these items for change, so they were completed only during the first administration of the FBQ. The second administration of the FBQ for both groups was just after the second session of the intervention. This allowed us to compare changes in the IG's beliefs to changes in the CG with the same time lag from the first to the second administration of the FBQ. This was done through a series of two-sample t-tests. For both the IG and the CG, difference scores were calculated on each of the ten focus items and the four scales. For each of these 14 measures, the t-tests assess the difference in change between the IG and the CG. This allowed us to evaluate the initial effectiveness of the intervention. The third administration of the FBQ for the IG took place four weeks after the intervention to determine whether any change in attitudes persisted a month later. This was tested using a matched t-test, comparing the first and third administrations of the FBQ for the IG.

Ethical Considerations

Informed consent (see Appendix B) was obtained from all participants in this research study. Identification codes were used for the intervention group (IG) and comparison group (CG). All identifying information was removed from transcripts and forms to assure confidentiality and anonymity. Participant records and EIRs (electronic information resources) will be deleted once the research has fulfilled its purpose. All electronic data, including cloud storage, will be deleted from all online systems. The guidelines on good data protection practices in research to protect personal privacy while sharing the research data were followed by the European University Institute. Data may be used in an anonymous capacity to report general results of the findings (e.g., Presentations at conferences or written scholarly journals). Data protection for non-EU participants complied with the country's respective data and privacy protection requirements.

Limitations of the Study

Because infertility is a sensitive topic, recruiting subjects was challenging. The key limitation of this research study was its small sample size. A study sample of 40 reflects both the limits of what a single researcher is able to manage as well as the difficulties recruiting participants and retaining them throughout the study period. Despite this limitation, the research study will add to our understanding of how the Energy EFT intervention can address limiting beliefs concerning infertility.

Expected Outcome

The working hypothesis for this study is that the application of EFT will reduce limiting beliefs among women suffering from infertility more than the control group, highlighting the need to provide support in addressing negative limiting beliefs with those still looking to conceive and should be included in the psychological assessment of unexplained infertility.

Declaration of Conflicting Interests

The principal investigator receives financial income from training, runs a private clinic, and uses Energy EFT to address couples experiencing infertility distress.

Funding. The author did not receive any funding for the research or publication.

Ethical Approval. All interventions with participants were in accordance with the ethical standards of Lifestyle Prescriptions®University.

Informed Consent. All participants in the research study gave their consent. (Appendix B)

Emails. All emails sent to participants are in (Appendix D)

In summary, this research study has made a novel contribution in its methodological approach by highlighting the advancements in addressing limiting beliefs among women facing

unexplained infertility through the application of Energy EFT techniques. This research marks a milestone by combining Energy EFT with the Fertility Belief Questionnaire (FBQ), an established tool for assessing infertility beliefs. Moreover, for the first time in research, the study incorporates the Subjective Units of Experience (SUE) scale, a psychological tool to provide instant feedback on participants' development during the EFT tapping intervention, a unique aspect of this fertility study. This innovative approach of combining Energy EFT, FBQ, and the SUE scale contributes to the advancement of psychological interventions for infertility.

CHAPTER 4: RESEARCH RESULTS

Introduction

As stated in Chapter 1, the research study reported here examined the effectiveness of Emotional Freedom Techniques in addressing limiting beliefs in females with unexplained infertility. The objective of this quantitative study over an 8-week, internet-based period was to identify, address, and reduce the most reported top ten limiting beliefs from the FBQ using Energy EFT on women between the ages of 34 and 45 around their ability to conceive naturally.

The study concludes that Energy EFT successfully addressed and reduced the top ten limiting beliefs and could be integrated as a primary care solution to change beliefs. This chapter lays out the following process and results in order.

Demographics and Narratives

The following demographic information was gathered: age, city, country, religion, employment, income, marital status, and education. All participants shared similar ethnic and religious backgrounds. (Table 3) presents the demographic breakdown for the intervention and control groups. The majority of women in both groups belonged to the age bracket of 40-49

years, although the intervention group had a slightly more balanced distribution between the 30-39 and 40-49 age brackets compared to the control group.

In terms of relationship status, all participants in both groups identified as either married or de facto (In a committed relationship), with the majority specifically identifying as married. In terms of educational background, we can see in the table below that the sample has a strong bias towards professional and highly educated individuals. This is firstly noted in that most individuals in both groups report having either a Bachelor's or Master's degree. One participant in the intervention group held a PhD, whereas only one participant in the study (in the control group) had received only a high school education level. Furthermore, two individuals from each group had completed vocational education degrees. Despite minor variations across all demographic categories, the characteristics of both groups are broadly similar, and demographic variation is not likely to introduce confounding into the statistical analysis.

Table 3

Unexplained Infertility Demographics for both Groups.

		Intervention Group		Control Group	
		N	%	N	%
Age					
	30-39	7	41.18%	5	27.78%
	40-49	10	58.82%	13	72.22%
City					
	Dublin	3	17.65%	5	27.78%
	Galway	3	17.65%	0	0.00%
	Other	11	64.71%	13	72.22%

		Intervention Group		Control Group	
Country					
	Ireland	14	82.35%	15	83.33%
	N. Ireland	2	11.76%	1	5.56%
	Other	1	5.88%	2	11.11%
Religion					
	Christian	12	70.59%	14	77.78%
	Not a Follower	5	35.29%	4	22.22%
Employment					
	Employed	13	76.47%	12	66.67%
	Sabbatical	2	11.76%	1	5.56%
	Self-Employed	3	17.65%	3	16.67%
	Unemployed	0	0.00%	2	11.11%
Income					
	0-49999	9	52.94%	11	61.11%
	50000-99999	7	41.18%	7	38.89%
	150,000+	1	5.88%	0	0.00%
Marital status					
	Married	14	82.35%	11	64.71%
	De facto	3	17.65%	6	35.29%
Education					
	HS	0	0.00%	1	5.56%
	BA	6	35.29%	8	44.44%

	Intervention Group		Control Group	
MA	7	41.18%	7	38.89%
Doctoral	2	11.76%	0	0.00%
Voc Ed	2	11.76%	2	11.11%

Note. This table presents the demographic breakdown for the intervention and control groups.

Possible Causes

At the start of the study, the participants responded to 27 possible causes of infertility. The two groups are in complete agreement on likely causes and rejected causes. Both groups attribute fertility issues to psychological accepted causes and reject the more familial and religious causes. Their answers were coded by the authors as follows: No = 1, Not sure/Don't know = 0, Yes = 1. The data was tabulated separately for the intervention and comparison groups, and the items with the 5 highest and 5 lowest averages in each group are reported in (Table 4). While the order varies, the five most accepted and most rejected causes were the same for the two groups. For example, "Failure of husband to pay bride price" yielded the strongest rejection for the (IG), while "Witchcraft" yielded the strongest disagreement for the (CG). However, both causes were among the top five reasons for the most rejection in both groups. Possible causes of unexplained infertility vary significantly outside of Europe based on cultural differences, race, religion, witchcraft, curses, customs, and bride dowry.

Table 4

The five most consistently rejected causes (negative numbers) and the five most accepted causes (positive numbers) for the intervention and comparison groups.

Item Number and Content	Intervention	Comparison
C15: Failure of husband to pay bride price:	-0.82	-.77
C14: Witchcraft (curse):	-0.71	-.89
C13: Past sexual behavior:	-0.59	-.50
C18: A curse from ancestors:	-0.53	-.83
C17: Punishment from God:	-0.47	-.83
C6: Thinking negatively about life:	0.53	.28
C7: Worrying about family problems:	0.53	.33
C8: A person's emotional state, for example, feeling down, lonely, anxious, empty:	0.65	.67
C9: Getting old:	0.82	.83
C1: Stress:	0.88	.89

Identified Beliefs

Table 5 presents the selected results of the intervention and control groups based on the ten most identified beliefs. Five of the beliefs are positive, and five are negative.

Table 5

The Top Ten Identified Beliefs for Both Groups

Positive Negative	IP number
P	IP 1: My fertility problem will last a short time
N	IP 5: My fertility problem has major consequences for my life
P	IP 6: My fertility problem does not have much effect on my life
N	IP8: My fertility problem has serious financial consequences
N	IP9: My fertility problem causes problems for others close to me
N	IP11: My fertility problem makes me incomplete
N	IP15: My fertility problem in confusing to me
P	IP19: I have a clear understanding of my fertility problem
P	IP22: The outcome of my fertility problem depends on me
P	IP29: Hospital treatment will be effective in curing my fertility problem

FBQ - Energy EFT Results

Group Comparison

Table 6a presents comparative descriptive statistics for each item on the Fertility Belief Questionnaire and provides the mean average for the control and intervention groups at both pre- and post-test stages. This allows an initial exploration of the differences across time for each group. All responses were rated on a Likert scale ranging from 0 (Strongly Disagree) to 5 (Strongly Agree). As follows: Strongly Agree = 5, Moderately Agree = 4 ,Slightly Agree = 3, Slightly Disagree = 2, Moderately Disagree = 1, Strongly Disagree = 0. As can be seen in these summary statistics, there was a considerably larger shift in attitudes among the intervention group than the control group on many of these survey items. For means of clarity it is worth re-stating that some FBQ survey items are coded negatively, while some are coded positively. As such, what counts as an improvement is dependent on the nature of the question and its wording. With that in mind, it is possible to observe a large shift in a number of the FBQ items. For example, on IP no. 2, which asks participants about the permanency of their fertility problem, the mean score between the pre and post test fell from 3.18 to 2.12. This amounts to a move across the intervention group from slightly agreeing that their infertility is permanent to slightly disagreeing. Meanwhile, the control group registered a slight increase on this scale, suggesting they became more pessimistic between pre and post tests. Similar shifts in the intervention group can also be seen in IP6 (effect on life), IP8 (financial consequences), IP9 (impact on others), and IP14 (relationship with inlaws), where the intervention appears to be associated with a shift in 1 point or more on the 6 point scale.

However, judging from these descriptives, the intervention has not had much effect on some of the other questions on the FBQ. This is particularly true of the domain related to

infertility and health behaviors, such as praying or using herbs. There was little change in either group on these measures across the intervention, though this is likely because neither group used prayers/healing or believed these to be effective ways to monitor or change infertility-related problems at the pre-test stage.

Table 6a

Comparative Descriptive Statistics for Each Item on the Fertility Belief Questionnaire. Positive = P Negative = N. Bold font = Ten Beliefs Identified for the Intervention.

Positive Negative	IP number	group	pre test scores	post test scores	Difference
P	**IP 1: My fertility problem will last a short time**	control	2.39	2.17	-0.22
		intervention	1.88	2.53	0.65
N	IP 2: My fertility problem is likely to be permanent	control	2.28	2.56	0.28
		intervention	3.18	2.12	-1.06
P	IP3: My fertility problem will improve in time	control	3.44	3.22	-0.22
		intervention	2.71	3.18	0.47
N	IP4: My fertility problem is a serious condition	control	3.22	2.89	-0.33
		intervention	2.71	2.76	0.05
N	**IP 5: My fertility problem has major consequences for my life**	control	3.78	3.5	-0.28
		intervention	4.24	3.41	-0.83

Positive Negative	IP number	group	pre test scores	post test scores	Difference
P	**IP 6: My fertility problem does not have much effect on my life**	control	1.22	1.61	0.39
		intervention	0.471	1.71	1.239
N	IP7: My fertility problem affects how others see me	control	2.39	2.44	0.05
		intervention	2.94	2.76	-0.18
N	**IP8: My fertility problem has serious financial consequences**	control	3.22	3.39	0.17
		intervention	4.47	3.29	-1.18
N	**IP9: My fertility problem causes problems for others close to me**	control	2.56	2.39	-0.17
		intervention	4.12	2.94	-1.18
N	IP10: I can be divorced because of my fertility problem	control	0.833	1.39	0.557
		intervention	1.71	1.06	-0.65
N	**IP11: My fertility problem makes me incomplete**	control	3.72	3.5	-0.22
		intervention	3.88	3	-0.88
N	IP12: I don't interact with other children because of my fertility problem	control	1.33	1.39	0.06
		intervention	2.35	1.71	-0.64

Positive Negative	IP number	group	pre test scores	post test scores	Difference
N	IP13: It is difficult to interact with the community because of my fertility problem	control	1.56	1.5	-0.06
		intervention	2.47	2.06	-0.41
N	IP14: My fertility problems causes problems with in-laws	control	0.833	1.17	0.337
		intervention	2.29	1.29	-1
N	**IP15: My fertility problem in confusing to me**	control	3.56	4.11	0.55
		intervention	3.82	3.18	-0.64
N	IP16: My fertility problem is surprising to me	control	3.44	3.67	0.23
		intervention	3.41	3	-0.41
N	IP17: I don't understand my fertility problem	control	3.5	3.94	0.44
		intervention	3.12	2.53	-0.59
N	IP18: My fertility problem doesn't make any sense to me	control	3.17	3.56	0.39
		intervention	3.29	2.88	-0.41
P	**IP19: I have a clear understanding of my fertility problem**	control	1.78	2.06	0.28
		intervention	2.29	2.88	0.59
P	IP20: There are things I can do to control my fertility problem	control	2.72	3.22	0.5

Positive Negative	IP number	group	pre test scores	post test scores	Difference
		intervention	2.88	3.82	0.94
P	IP21: What I do can effect whether my fertility problem gets worse or better	control	3.22	3.39	0.17
		intervention	3.35	3.53	0.18
P	**IP22: The outcome of my fertility problem depends on me**	control	2.83	2.72	-0.11
		intervention	2.53	2.76	0.23
N	IP23: Nothing I do will affect my fertility problem	control	1.22	2.28	1.06
		intervention	1.76	0.882	-0.878
N	IP24: My actions will have no effect on my fertility problem	control	1.22	1.56	0.34
		intervention	1.29	1.24	-0.05
P	IP25: The use of herbs can treat my fertility problem	control	3	3.22	0.22
		intervention	2.41	2.94	0.53
P	IP26: I use prayer to solve/ cure my fertility problem	control	2.22	2.56	0.34
		intervention	2.53	2.71	0.18
P	IP27: I combine herbs, prayers, and hospital treatment for my fertility problem	control	2.44	2.67	0.23
		intervention	2.47	2.71	0.24

Positive Negative	IP number	group	pre test scores	post test scores	Difference
N	IP28: There is little that can be done to improve my fertility problem	control	1.5	1.94	0.44
		intervention	2.94	2	-0.94
P	**IP29: Hospital treatment will be effective in curing my fertility problem**	control	2.06	2.72	0.66
		intervention	2.12	2.24	0.12
N	IP30: There is nothing that can help my fertility problem	control	1.44	1.72	0.28
		intervention	2.41	1.76	-0.65

The results shown in Table 6b provide a further analysis of group differences, as well as the results of statistical tests undertaken. The analysis in table 6b uses the calculated difference between pre and post tests and tests these differences using an independent samples t test, or "student's" t test. This allows us to effectively compare the mean difference for each survey item in the control group with the mean difference for each survey item for the intervention group. For this test, the p value will return a value close to 0 if the difference between the means of the control and intervention group are significantly different.

As can be seen from an initial inspection of these data, the results are not statistically significant for all survey items. Of course, this should be expected for some items, such as those related to herbal remedies and prayer, where means for the two groups were quite close together at both test periods. Though, even on items where some differences between the control and intervention groups were noted in the descriptive statistics— for example, IP6 (effect on life) and

IP1 (time infertility will last) - the differences between the control group means and intervention means are not large enough to be assured that these results are not the result of sampling error or chance.

It is worth noting here that just because the t test does not return a low p value does not mean that the intervention had “no effect”. Rather, the p value is an indication of how much confidence we can have in the results. In this sense, p values take account of three related factors; sample size, standard deviation, and confidence levels. Since the samples in this study are relatively small, the statistical test will be sensitive to this. Similarly, the spread, or standard deviation is quite high on many of these survey items, suggesting that there is quite a large spread in how participants viewed their infertility across these domains. A large standard deviation subsequently expands the 95% confidence levels; as seen in table 6a, 95% confidence levels are typically quite broad, encompassing several data points on the scale, even for the statistically significant items. Given these parameters, the differences between the control and intervention means will need to be quite large to satisfy the test’s conditions.

However, despite these reservations, there are several statistically significant observations that can be drawn from this analysis. The tests show that the intervention is significantly associated with item 2 (attitude towards permanence), item 8 (financial consequences), item 9 (effect on others), item 10 (divorce), item 14 (relationship with in-laws), item 15 (confusion), item 17 (understanding infertility), and items 23, 28, and 30, all of which relate to whether the participant can change anything with their fertility. Taken collectively, these factors encompass many of the limiting beliefs and issues that women in Western contexts face when dealing with infertility.

However, the results are potentially more interesting when broken down in each domain. Firstly, it is disappointing that aside from item 2, the results in domain 1, relating to beliefs about the time infertility will persist and beliefs about permanency, have not reached statistical significance. Similarly, the results for domain 3 relating to beliefs about how much control participants have over fertility were inconsistent, despite some notable improvement in some areas. By contrast, it is noteworthy that the statistically significant results tended to be clustered in the second domain of the FBQ, which relates to views about consequences. This would suggest that EFT has been quite helpful in reducing emotional strain related to overthinking the range of consequences - financial, social and emotional - that might follow from unexplained infertility.

Table 6b

Further Analysis of Group Differences. Positive = P Negative = N. Bold font = ten beliefs selected for intervention.

Positive Negative		Statistic	df	p	Mean difference	Lower 95% CI	Upper 95% CI
P	**IP1 Difference**	-1.4693	33	0.151	-0.8693	-2.073	0.334
N	IP2 Difference	2.9176	33	0.006	1.3366	0.4045	2.269
P	IP3 Difference	-1.0863	33	0.285	-0.6928	-1.9903	0.605
N	IP4 Difference	-0.7909	33	0.435	-0.3922	-1.401	0.617
N	**IP5 Difference**	0.9767	33	0.336	0.54575	-0.5911	1.683
P	**IP6 Difference**	-1.3877	33	0.175	-0.8464	-2.0873	0.395
N	IP7 Difference	0.4664	33	0.644	0.23203	-0.7802	1.244
N	**IP8 Difference**	2.8304	33	0.008	1.34314	0.3777	2.309
N	**IP9 Difference**	2.7476	33	0.01	1.0098	0.2621	1.758
N	IP10 Difference	2.1986	33	0.035	1.20261	0.0897	2.315
N	**IP11 Difference**	1.0284	33	0.311	0.66013	-0.6458	1.966
N	IP12 Difference	1.2663	33	0.214	0.70261	-0.4263	1.831
N	IP13 Difference	0.801	33	0.429	0.35621	-0.5486	1.261

Positive Negative		Statistic	df	p	Mean difference	Lower 95% CI	Upper 95% CI
N	IP14 Difference	2.1211	33	0.042	1.33333	0.0545	2.612
N	**IP15 Difference**	3.5928	33	0.001	1.20261	0.5216	1.884
N	IP16 Difference	1.2254	33	0.229	0.63399	-0.4186	1.687
N	IP17 Difference	2.0592	33	0.047	1.03268	0.0124	2.053
N	IP18 Difference	1.536	33	0.134	0.80065	-0.2599	1.861
P	**IP19 Difference**	-0.5567	33	0.581	-0.3105	-1.4451	0.824
P	IP20 Difference	-1.088	33	0.284	-0.4412	-1.2662	0.384
P	IP21 Difference	-0.0169	33	0.987	-0.0098	-1.1893	1.17
P	**IP22 Difference**	-0.6465	33	0.522	-0.3464	-1.4366	0.744
N	IP23 Difference	3.9145	33	< .001	1.93791	0.9307	2.945
N	IP24 Difference	0.6382	33	0.528	0.39216	-0.858	1.642
P	IP25 Difference	-0.6773	33	0.503	-0.3072	-1.2299	0.616
P	IP26 Difference	0.3484	33	0.73	0.15686	-0.759	1.073
P	IP27 Difference	-0.0265	33	0.979	-0.0131	-1.0164	0.99
N	IP28 Difference	2.3147	33	0.027	1.38562	0.1677	2.604

Positive Negative		Statistic	df	p	Mean difference	Lower 95% CI	Upper 95% CI
P	**IP29 Difference**	0.9631	33	0.343	0.54902	-0.6108	1.709
N	IP30 Difference	2.2795	33	0.029	0.92484	0.0994	1.75

Subjective Units of Experience Scale (SUE)

Table 7 shows the changes in positive (P) and negative (N) beliefs before and after two intervention sessions, focusing on emotional intensity and outlook on fertility. Intervention one dealt with IP1, IP5, IP6, IP8, and IP9. The second session targeted IP11, IP15, IP19, IP22, and IP29. A negative score on an item indicates a negative/sympathetic stress phase. A positive score indicates healing and regeneration / parasympathetic phase. The variables included mean and variance before and after the intervention. N: The total number of participants for each belief. Paired t: t-test statistics for paired samples before vs. after and p-value shows the statistical significance of the difference (2-tailed). The findings show a significant shift in mean scores in positive and negative beliefs, indicating a positive change and improvement in emotional intensity. The results are significant in that the p-values for all items are less than .001, indicating changes in both positive and negative beliefs, and the corresponding t-values are larger, ranging from -4.34 to 8.46, further supporting that the observed differences are substantial. Positive beliefs show a significant change; for instance, the mean of IP1 changes from -4.75 to 1.06, reflecting a significant positive change. The variance for most positive belief items increases slightly, suggesting that while the average belief becomes more positive, individual differences in belief changes become more spread out. Meanwhile, the negative

beliefs show a significant reduction in negative intensity, with means increasing from strong negative values towards more neutral or positive score. For instance, the mean of IP5 changes from -4.24 to 0.88, showing a significant reduction in emotional intensity. The variances for negative beliefs before and after the intervention remain high, implying that the participants' shifts in negative beliefs are more variable. The intervention results highlight the effectiveness of reducing the intensity of negative beliefs and increasing positive emotional experiences. This study suggests that the intervention helped participants in the intervention group regulate and shift their emotional responses. Overall, the data indicates that the intervention had a strong and statistically significant effect on addressing positive and negative beliefs. The p-values (<.001 for all beliefs) suggest the intervention was highly effective across all sessions. These measures were taken just before and after the indicated sessions so that they may represent a transitory improvement rather than a permanent one.

Table 7

Subjective Units of Experience. Five items were measured before and after the first session for the intervention group, and five were measured before and after the second session. P = Positive Belief. N = Negative Belief.

		Before		After				
Belief	Item	Mean	Variance	Mean	Variance	N	Paired t	2-tailed p
P	IP1	-4.75	9.67	1.06	10.6	16	-8.20	<.001
N	IP5	-4.24	16.44	0.88	17.36	17	-4.34	<001
P	IP6	-4.65	17.99	2.06	11.31	17	-7.18	<.001
N	IP8	-5.29	17.98	2.35	9.74	17	-4.98	<.001
N	IP9	-5.17	14.65	2.65	8.74	17	-8.43	<.001

		Before		After				
Belief	Item	Mean	Variance	Mean	Variance	N	Paired t	2-tailed p
N	IP11	-3.12	6.25	3.00	9.07	16	-8.20	<.001
N	IP15	-6.69	11.16	1.19	17.23	16	-7.43	<.001
P	IP19	-5.18	15.36	1.06	18.60	16	-5.74	<.001
P	IP22	-3.62	10.38	2.25	17.13	16	-8.46	<.001
P	IP29	-3.69	15.56	2.38	8.25	16	-6.26	<.001

Energy EFT was successful in addressing beliefs. Using the Likert scale as a measurement and incorporating the SUE scale as a self-report measure on emotional intensity, from -10 to 0 to +10, while -10 indicated strong negative emotion to a belief and 0 neutral and up to +10 indicated a positive emotion and energy flow.

Limitations of the Research

Even though the researcher followed the research plan, there were some challenges in this research. Due to infertility being a sensitive subject, the study was restricted to women only, with 20 participants in the control group and experimental group, respectively. Despite this limitation, the study will contribute to our understanding of how beliefs can be addressed through the Energy EFT intervention.

Although 10 beliefs were addressed in two 90-minute sessions, it would have been more appropriate to have reduced this to six only to allow more time to address these beliefs more thoroughly. In private practice, it is common to address two or three beliefs over a 90-minute session. Zoom, an online platform, proved to be a great medium, time-saving, and easy for the intervention group to log in and participate in the professional delivery of two 90-minute

tapping interventions, with the option to have video on/off. Although the groups were friendly, the limitation was that less than five had their camera on, which reduced the author's ability to observe body language or any distress that may have been present with other participants.The SUE scale was used pre and post-tapping intervention but did not include a follow-up one month after the study ended, which would have been beneficial in checking the study's long-term results.

There is limited research on beliefs around unexplained infertility, and these findings suggest an opportunity to explore the underlying primary and secondary beliefs in addition to the identified 30 beliefs (Naab et al., 2017). A pilot study could address examples of these underlying limiting beliefs."It's not safe for me to conceive." "I don't deserve to conceive," I'm not ready to conceive," "I don't trust my body to conceive," “I'm not worthy to conceive," "I feel like a failure," "I'm afraid to get pregnant," "I have a fear of giving birth."

Discussion – Significance and Conclusion

The purpose of this study was to identify if the application of Energy EFT could reduce women's beliefs about unexplained infertility. The application of two 90-minute Energy EFT sessions in this research has successfully demonstrated a reduction in women's beliefs about unexplained infertility. In summary, two scales of measurement were used, the first was the Likert scale of measurement used in the FBQ, which showed a significant difference between the intervention and the control group on a substantive number of FBQ items. For example, the intervention group (IG) experienced a shift in one or more on the 6-point Likert scale, showing an improvement in positive belief changes and a reduction in negative beliefs. In contrast, the control group (CG) remained the same. The FBQ showed positive differences in many beliefs between the control and experimental groups. For example, in "My fertility is likely to be

permanent" (IP2), the mean score for the IG decreased from 3.18 to 2.12, indicating a shift from slight agreement to slight disagreement, showing a reduction of 1.06 points on the Likert scale, while the CG became more pessimistic. Additionally, significant reductions were found on the financial aspects of infertility (IP8), with a mean change of 1.18 points in the IG, and the belief that infertility causes problems for others (IP9), which also shifted by 1.18 points. Both changes were significant at $p > 0.01$., indicating the efficacy of Energy EFT in addressing beliefs, identified from the FBQ that has helped bridge this gap in understanding limiting beliefs.

The second measurement scale, the SUE scale, additionally showed a marked increase in the emotional well-being of participants who had experienced Energy EFT in addressing all ten beliefs and showed significant differences between the pre and post-test in reducing emotional intensity, as shown in the SUE scale (Table 7). For example, "my fertility will last a short amount of time" (IP1), before -4.75 and after 1.06, "My fertility problem has major consequences on my life" (IP5) saw a shift from -4.25 to 0.88, and "the outcome of my fertility depends on me" (IP22) moved from -3.62 to 2.25. The changes in emotional intensity were statistically significant for all items measured ($p<0.001$). Overall, the shifts in positive and negative beliefs for the experimental group show an improvement in the participants post-intervention. In contrast, the control group's belief systems remained the same, highlighting the need to provide more support to women with negative limiting beliefs.

In summary of this studys findings, the research supports the efficacy of EFT in reducing psychological distress, which also supports the application of Energy EFT in addressing limiting beliefs, identified from the Fertility Belief Questionnaire, in an under-researched topic, helping to bridge this gap adding to our understanding of unexplained infertility, suggesting that Energy EFT serves as a viable primary care intervention to modify

participants' beliefs. This approach facilitates the integration of new information into the established empirical knowledge base. It can be utilized as a self-help methodology, representing a transferable skill for addressing unresolved limiting beliefs regarding unexplained infertility. Overall, the study demonstrates the need for further exploration on the emotional aspects of infertility and how Energy EFT or similar interventions could be integrated into primary care models to address limiting beliefs. Although becoming pregnant was not part of the study, three participants became pregnant, one through IVF, and the other two participants conceived naturally.

CHAPTER 5:DISCUSSION AND RECOMMENDATION

Discussion

This final chapter combines the findings, conclusions, and recommendations derived from the data presented in the preceding chapters, which examine the methodology and pertinent results correlated with the data. The research aimed to explore for the first time how Energy EFT Tapping can help women with infertility by addressing their limiting beliefs. Using the Fertility Belief Questionnaire (FBQ), Likert Scale, and Subjective Units of Experience (SUE) scale, the study involved 35 participants randomly assigned to either the intervention or control groups. The results showed improvements in the intervention group, supporting the idea that Energy EFT is effective in reducing limiting beliefs among women facing unexplained infertility. The focus was on identifying, acknowledging, and alleviating ten of the 30 most identified limiting beliefs meticulously formulated from the FBQ, which for the first time were addressed in the context of emotional self-regulation, that could impact these women over a two-month period. These results imply that Emotional Freedom Techniques (EFT) could serve

as a valuable behavioral intervention regulation strategy for alleviating the psychological obstacles linked to infertility. The FBQ could be integrated into intervention studies to evaluate the effectiveness of Energy EFT in addressing identified beliefs.

As shown in Chapter 3 of the research and design methods, a quantitative static control study was chosen with a comparison group over two months with a pre-test and post-test included. A selection and exclusion criteria were chosen with women aged 35 to 45 with unexplained infertility, recruited from social media, online platforms, and various sources. A website was designed, and all correspondence and material was sent via email and virtual attendance for the administration of Energy EFT intervention. The intervention was delivered successfully online and positively impacted reducing limiting beliefs in women trying to conceive while using Energy EFT. The numerical data collection was undertaken after the intervention to see what changes occurred through the validated FBQ, as seen in Chapter 4.

For the first time in academic research, a new self-administered measurement (SUE) scale for targeted belief intervention was chosen for participants to monitor their progress before and after the intervention. While the Subjective Units of Distress (SUD) scale developed by Wolpe (1969) is more commonly utilized in research, a more recent Subjective Unit of Experience (SUE) scale created by Hartmann (2009) was employed, aiming to bring it to academic attention for further exploration as it corresponds with advancements in psychological assessment techniques while promoting effective emotional regulation and intervention strategies. The research results showed significant positive transformations after each tapping session for the above, which can be seen in Chapter 4 (Table 7).

While unexplained infertility can be multi-factorial, studies have not delved deeply into the role of belief systems, how to evolve them, and their potential impact on infertility. This study

has opened up the opportunity to address this gap by evolving such beliefs and applying Energy EFT to change limiting beliefs. The study's findings successfully addressed this gap and demonstrated the effectiveness of Energy EFT in addressing limiting beliefs in females with unexplained infertility of unknown origin, as indicated in the results section. The thesis also provided an initial exploratory analysis, indicating which of those beliefs are most susceptible to change using these techniques. As demonstrated in the results chapter, EFT appears to be particularly well positioned to address negative thinking in relation to the consequences of infertility. This was demonstrated by the intervention being statistically significant when addressing concerns about how others think about infertility, the impact on family relationships, and the financial consequences of infertility. The analysis showed that EFT may also be effective in other domains of negative beliefs, and a larger sample would likely have provided more robust results in relation to beliefs about the chronic nature or permanence of infertility.

Limitations

Although the research outcome was favorable, as illustrated in the results chapter, there were limitations pertaining to the sensitive nature of infertility that impacted the recruitment process, as the sample size was limited to 20 participants within each group. While carrying out the time-effective intervention online through Zoom, the author's visual ability was limited to only those who voluntarily turned on their camera, hindering observation of the body language or any emotional distress. Furthermore, despite the fact that the FBQ addressed the ten most identified beliefs, it would have been more beneficial to address six more thoroughly within 180 minutes. During the reviews, it would have been helpful to have a follow-up assessment at three and six months to evaluate the intervention's effectiveness over the long term efficacy. Nevertheless, this extended timeline could create response fatigue. The consensus across the

literature reviews in EFT was that sample sizes were too small compared to larger sizes, which would have improved the effectiveness and variability of interventions. Furthermore, the review reveals constraints associated with systematic reviews that could compromise the credibility of evidence, such as a sample size, lack of control or comparison groups, and absence of extended follow-up periods. Finally, the findings of the literature do not necessarily contradict previous literature, but rather provide a more specialized perspective on the psychological aspects of unexplained infertility. The study augments existing knowledge rather than challenging established findings.

Although the research acknowledges the lack of fertility questionnaires, the Fertility Belief Questionnaire has contributed to the existing literature by addressing the gap in understanding limiting beliefs in unexplained infertility. However, it has not been used with significant sample sizes. Despite this, the FBQ is a valuable tool with its strengths and weaknesses, as outlined in the review chapter, for assessing fertility beliefs, which are considered to have acceptable psychometric properties, allowing for an examination of the relationship between beliefs and psychosocial health problems in infertility.

Future Research

In reference to future research regarding the FBQ and addressing beliefs, it would be more beneficial for professionals to focus on addressing fewer beliefs with participants over two 90-minute sessions to improve individuals' overall well-being. As demonstrated in the literature review, there is a lack of documented research on both assessing and addressing limiting beliefs around unexplained infertility. Although the study on the Fertility Belief Questionnaire demonstrates strengths in assessing fertility beliefs, further research is needed to explore and expand the empirical body of knowledge in this area by accessing and addressing additional

underlying primary and secondary beliefs, such as "it is not safe for me to conceive," "I do not deserve to conceive," I am not ready to conceive," "I do not trust my body to conceive." The application of EFT and/or other intervention treatments can then address these beliefs.

Although the FBQ was carried out in infertile women from Ghana only, the research as shown in the demographics location shows that the FBQ can be replicated and used globally in addressing limiting beliefs in infertility with women from all nationalities across different cultures and languages, which could contribute to overall findings across diverse populations. Comparative studies can further validate the impact of interventions on emotional well-being. Further research is recommended to explore the sensitivity of the FBQ over time. Longitudinal studies can provide insights into how fertility beliefs evolve and whether the FBQ remains reliable over extended periods. The FBQ could be integrated into intervention studies to evaluate the effectiveness of strategies, such as Energy EFT or other intervention approaches in addressing identified beliefs.

In summary, we need to focus on developing more effective tools that capture a whole range of negative thoughts associated with infertility, as the FBQ does not cover all types of negative beliefs. New tools could be designed to address primary and secondary beliefs, such as “It’s not safe for me to conceive,” I don’t deserve to conceive,” “I’m not ready to conceive,” or I don’t trust my body to conceive. These beliefs could then be addressed using Energy EFT to promote positive thinking.

Findings Related to the Literature Review

Prior to this research, the authors’ work on supporting women with unexplained infertility revealed a pattern of unaddressed limiting beliefs about why they were not conceiving.

This motivated the need to delve deeper into helping women resolve such beliefs by examining what research and treatment strategies have been established to identify and address these beliefs. Although there is a thorough assessment of healthcare methodologies for women conceiving in general (Armah et al., 2021; Rooney & Domar, 2018) concluded in the literature that women experiencing fertility challenges were under-researched in improving pregnancy outcomes, emphasizing the necessity for psychological interventions and emotional support from professionals. The study revealed ten research priorities that remain under-researched, namely, addressing the emotional health and well-being of women experiencing infertility challenges, which may lead to innovative methods to support women in becoming pregnant. The literature review has illustrated the need for comprehensive support and interventions, and as a result of these findings, the avenue chosen to be explored and addressed with an intervention for the first time was the role of limiting beliefs in women experiencing unexplained infertility of unknown origin and how addressing beliefs may assist women across various dimensions of well-being and emotional health in attaining pregnancy. The review suggests that women dealing with challenges might form beliefs that hinder their path in conception. These findings have provided the opportunity to update limiting beliefs in response to the challenges women experience with the incorporation of Energy EFT as a potential intervention that is innovative, differentiating this study from earlier works as, to date, there is minimal research addressing limiting beliefs and no research on EFT addressing limiting beliefs with women experiencing unexplained infertility.

Although there has been much controversy in EFT, with no central governing body, the literature review has illustrated a comprehensive evaluation from systematic reviews, RCTs, and secondary data on EFT's efficacy in managing psychological and physiological issues across multiple studies, predominantly since 2017, potentially making EFT applicable to overcoming

limiting beliefs. Additionally, although EFT has been introduced into medical settings, namely the National Health Services in the UK and Kaiser Permanente in the United States, it has yet to be fully acknowledged and approved as a therapy for practice.

Furthermore, EFT has been compared with CBT and EMDR; studies concluded that there was no statistical difference between EFT and CBT, and although EMDR and EFT showed therapeutic gains, EMDR was most effective in addressing anxiety. However, it is suggested that larger sample sizes are required and further studies be conducted, a common theme shared across the literature review of most case studies to date. Additionally, while EFT can be impactful independently, combining it with approaches such as EMDR could potentially enrich outcomes within environments.

Although many studies in the literature review support the efficacy of EFT, it is worth noting that the only EFT empirically supported to date and recognized by the original APA standards is Clinical EFT. Since then, a second criterion has been established, and due to complexities, EFT still awaits evaluation. Despite this, EFT has been shown to reduce biological stress and show promising effects as a cognitive strategy for addressing mental and physical health conditions, which may support the acceptance of EFT in mainstream psychology and medicine, as cited in the literature review. The controversies have highlighted the need for research and thorough evaluation to address perspectives and build a strong factual basis for understanding the impacts of Emotional Freedom Techniques (EFT).

Recommendations

Despite all the progress in Emotional Freedom Techniques, the literature review acknowledges limitations in systematic studies and insufficient sample sizes. It highlights the need for ongoing research into both physiological and psychological issues. Additionally, the

literature proposes future investigations looking at the online data-based collection and virtual platforms undertaken in this study, along with a need for larger-scale group therapy and biomarker integration. Additionally, the literature suggests that further advancements in online education programs and practitioner-led group counseling would be beneficial. Furthermore, there is a gap concerning the lasting impact of EFT due to the absence of follow-up, offering restricted insights into its efficacy over a longer duration. Future research could explore the long-term efficacy of EFT through three-, six-, and nine-month follow-ups, as the long-lasting effects could influence the future integration of EFT into mental health treatment. Research also suggests that studying the mechanisms of Emotional Freedom Techniques (EFT) through brain imaging, physiological assessments, or specific biological markers could help us understand how EFT works on both mental levels. Additionally, rigorously repeating research studies can strengthen the existing evidence. Assess how effective EFT is for groups of people and health issues, exploring its usefulness across broader contexts.

As seen in the review, doctors struggle to recommend effective treatment options for couples struggling to conceive. The results from this study suggest that Energy EFT can be recommended as an effective treatment option for couples trying to conceive. Furthermore, Armah et al. (2021) concluded from their research that women experiencing unexplained infertility were inadequately researched. The research shows from the results section how Energy EFT can help improve one's mental distress. The investigation consistently posits within the literature review that Emotional Freedom Techniques (EFT) necessitate enhanced demonstrated efficacy. Additional randomized controlled trials (RCTs) incorporating active control groups, larger sample sizes, and further comparison with pre-existing therapeutic interventions, as referenced in the scholarly dialogue, are imperative. Furthermore, utilizing internet-based

software facilitates the prospect of engaging in global research with larger sample sizes encompassing a variety of populations, thereby overcoming challenges in widespread adoption, cost, and time and representing a viable method that is both economically efficient and time-saving in terms of participant engagement.

While prior studies explored holistic healthcare interventions, the current research has a narrowed focus on limiting beliefs and introduces the Fertility Belief Questionnaire (FBQ). The incorporation of Emotional Freedom Techniques (EFT) for addressing limiting beliefs is a distinctive feature not extensively covered in earlier literature, highlighting differences from previous studies. The literature review aligns with previous research recognizing the psychological impact of unexplained infertility. However, it contributes by delving deeper into limiting beliefs, demonstrating their connection to emotional distress. Using Energy EFT as a potential intervention is novel, differentiating this study from earlier works. Finally, the review of existing literature highlights the need for research to showcase the advantages of the Emotional Freedom Technique (EFT) in supporting emotional wellness and mental health to be accepted into mainstream psychotherapy.

As previously stated, the aforementioned sources do not have a direct connection to fertility. Nevertheless, there is limited information regarding the context of beliefs in general across all subjects associated with EFT. As mentioned above, the studies performed by diverse academics demonstrate that the Emotional Freedom Technique (EFT) acts as a significant intervention for individuals harboring limiting beliefs, given its validated success in tackling a broad spectrum of psychological issues and fostering improved well-being. Consequently, one can expand upon this understanding, positing that beliefs might influence medically unexplained symptoms, such as unexplained infertility, which could be addressed through emotional

regulation strategies, particularly EFT. Though that will undoubtedly be part of the research agenda going forward, the findings of this research affirm that Energy EFT is beneficial in addressing beliefs and improving well-being in women with unexplained infertility, suggesting its potential as a key treatment option for this population.

In summary, the research on addressing limiting beliefs in women experiencing unexplained infertility has contributed to the study undertaken by (Armah et al., 2021; Rooney & Domar, 2018), which pinpointed ten under-explored priorities in addressing the emotional health and overall well-being of women struggling with infertility-related challenges. The study's findings showed that the application of Energy EFT played a significant role in transforming limiting beliefs after each tapping intervention session. Additionally, the dissertation presented a preliminary exploratory assessment to identify which beliefs were to be targeted during the application of EFT. Furthermore, the research confirmed that Energy EFT, which is being introduced into academic discourse for the first time, has contributed to the alleviation of limiting beliefs for the first time in women with unexplained infertility, with the beliefs identified from the FBQ being addressed for the first time with the EFT intervention. Although the Subjective Units of Distress (SUD) have been predominately used in scholarly research for the past five decades, the investigation has also contributed to the advancement of methodologies and instruments by incorporating self-administered Subjective Units of Experience (SUE) for the first time, illustrating a decline in emotional intensity alongside an increased positive mindset, thereby drawing academic attention for the first time in the progression of psychological assessment methodologies, while concurrently promoting effective emotional regulation and intervention strategies.

In conclusion, this research has presented significant progress in addressing the emotional health and well-being of women experiencing unexplained infertility by focusing on limiting beliefs using Energy EFT tapping techniques. By identifying and targeting specific beliefs with the assistance of the unique Fertility Belief Questionaire (FBQ) and incorporating Energy EFT as a regulation strategy for this population, this study represents a significant step forward in therapeutic approaches and academic understanding of emotional regulation strategies for women of this demographic. Additionally, the innovative use of the Subjective Units of Experience (SUE) further advances psychological assessment methodologies, providing new insights into reducing emotional distress and promoting a positive mindset in women experiencing infertility-related challenges.

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Appendices

Appendix A

Participation Information Sheet

Research Title

How Effective Are Emotional Freedom Tapping Techniques

In Addressing Limiting Beliefs in Females with Unexplained Infertility

Purpose of the Research Study

You are invited to partake in this noninvasive online research study that incorporates the use of EFT, Emotional freedom tapping techniques that may help you and other women reduce limiting beliefs around unexplained infertility while at the same time strengthening your inner resources whilst looking to conceive.

My name is Aisling Killoran; I'm a licensed trainer and principal investigator conducting this non-pharmaceutical research. I specialize in women's health and well-being, with a special interest in helping women conceive for over twenty-three years.

What is EFT Emotional Freedom Techniques?

Emotional Freedom Techniques (EFT) fall under the umbrella of Energy Psychology. EFT is safe and has been around since the mid-'90s; this noninvasive tapping intervention helps reduce negative thoughts, feelings, self-limiting beliefs, and feelings with the added benefit of feeling relaxed. It is like acupuncture to the body with no needles! Energy Psychology

How does EFT Work?

EFT involves tapping points on the hands, face, and chest. The combination of tapping

and words and focusing on issues begins to clear the 'emotional block' from a person's 'Bioenergy System.' It restores balance to the body, leaving you feeling relaxed and positive! Using specific phrases on how you feel to relieve anxiety and stress—focusing on where you feel the discomfort in your body, any images, etc.

Why get Involved in This Research Study?

There is a lack of studies and techniques to address limiting beliefs, and to date, there are no studies on the effect of using EFT tapping techniques to address and reduce limiting beliefs in women looking to conceive. When working with clients looking to conceive, they tend to present with limiting beliefs about why they have not conceived yet. Little is known about the impact of beliefs or how they may be addressed with women with unexplained infertility looking to conceive. Eliminating these beliefs may increase one's chance of conceiving. By participating in this valuable research study, you will be contributing to research in helping women address limiting beliefs, along with any that you might have, by using Energy EFT as the intervention.

Are There any Associated Risks?

There are no known side effects in any of the studies to-date. The author will ensure that participants experience a relaxed state of being during the tapping interventions. However, should you experience emotional discomfort, arrangements will be made for you to access an EFT expert outside the research study.

How Long Does the Research Study Take?

If you are in the Intervention Group:

Weeks one and two – are up to 15 minutes, and weeks three and four are up to 90 minutes each. There will be a gap of three weeks followed by week eight, which will be 15

minutes; the entire timeline is four sessions, to include two self-administered questionnaires, one in-person with Aisling Killoran, within an approximate time frame of four hours over two months.

If you are in the Comparison Group:

Week one – is up to 15 minutes. Week four – is 15 mins one month after session one. The entire timeline is two sessions, using a self-administered questionnaire within a timeframe of less than 30 minutes over two months. In addition, an opportunity will be provided to attend two in-person online tapping sessions with Aisling Killoran on weeks seven and eight, lasting up to 90 minutes each.

When Does it Start?

20th April 2023

What will Benefit me Should I Decide to Participate in the Study?

Emotional Tapping Techniques have profound positive psychological effects on addressing and clearing emotional feelings, mental health, and well-being. Tapping is akin to emotional first aid; it calms and de-stresses the body, thoughts, and beliefs so that you feel better and think more clearly. It calms the nervous system. It releases deep-seated limiting beliefs, and there are no known side effects. The result of emotional freedom tapping is lasting and accompanied by positive changes in one's mental health.

How do I Know if I Qualify?

If you would like to participate in this exciting research, please confirm the following.

- I am aged between 35 to 45 years
- I have been trying to conceive for two years or more
- I have an interest in holistic and complementary therapies

- I have no mental health illness
- I am fluent in English
- I am not currently undergoing any ART (assisted reproductive technique)

What will the Research Study Involve?

Intervention Group

Completing an online fertility belief questionnaire in your own time one week prior to EFT intervention. Participation in the intervention group involves four sessions. Week One will take approx. 15 minutes.

The first questionnaire will be used to identify the top ten beliefs among all participants out of 30 beliefs rated on a six-point scale from strongly disagree to strongly agree and 27 possible causes, rated yes, no, don't know. The second and third questionnaires will be re-evaluated and rated based on the 30 beliefs.

Sessions two and three will last (up to 90 minutes) each. The group will include ten to twenty participants, led by Aisling Killoran, the principal investigator, through an Energy EFT tapping intervention and re-evaluation of the fertility belief questionnaire before the close of session #2.

One month after session two, you will be asked to complete an online fertility belief questionnaire in your own time to see if there are any additional changes. (approx. 15 minutes)

As a thank you for your participation, you will receive four fertility hypnosis relaxation audios after the research study is completed.

Your participation will be voluntary. All participants will be selected using a random generator. All correspondence will be done online. The research will be anonymous and confidential. You can withdraw at any time. You may experience relaxed tiredness by the end of

each session. There is no financial investment involved – it is entirely 100% Free. The research will be submitted to Lifestyle Prescriptions® University.

Comparison Group

Participation in the comparison group involves each participant undertaking two private sessions of approx. 15 minutes each, completing an online fertility belief questionnaire twice: once before the intervention group and the second one at the same time as the intervention group over two months. The first questionnaire will be used to identify the top ten beliefs among all participants out of 30 beliefs rated on a six-point scale from strongly disagree to strongly agree and 27 possible causes, rated yes, no, don't know. The second questionnaire will be rated again based on the 30 beliefs.

As a thank you for your participation, one month after the research study is completed, you will be invited to attend an online Energy EFT self-help tapping technique with the comparison group of approx. Ten to twenty participants, which may also be used on yourself thereafter, along with four fertility hypnosis audios.

Your participation will be voluntary. All participants will be selected using a random generator. All correspondence will be done online. The research will be anonymous and confidential. You can withdraw at any time. You may experience relaxed tiredness by the end of each session. There is no financial investment involved – it's entirely 100% Free. The research will be submitted to Lifestyle Prescriptions® University. If you have any questions concerning this research, you may contact the principal investigator, Aisling Killoran, M.A +00353(0)871352122 or research@aislingkilloran.com

My Supervisors are Dr. Catherine Alter, Hazel Heath, Ph.D. FRCN, and Jane Oelke ND, Ph.D., and I are happy to discuss any concerns you may have about this research study.

What Happens Next?

If you agree to join me in this research, you will be asked to complete a short online application form before commencing the first session.

By clicking on the "next" button below, you consent to participate in this study voluntarily.

Thank you!

Participant's Signature _____ Date_____

Researcher's Signature _____ Date_____

For further information, please contact Aisling Killoran, MA Principal Investigator – Data Controller at research@aislingkilloran.com or +00353(0)871352122

Appendix B

Consent Form

Consent for Participation in Research Intervention

How Effective Are Emotional Freedom Tapping Techniques

in Addressing Limiting Beliefs in Females with Unexplained Infertility

You are invited to participate in the research project described below.

Lifestyle Prescriptions® University.

I agree to participate in a research project conducted by Aisling Killoran, the principal investigator from Lifestyle Prescriptions® University. USA, under the supervision of Dr. Catherine Alter, Hazel Heath, PhD FRCN and Jane Oelke ND, PhD

I agree to participate in a research Research study via Zoom, where I will be guided through a tapping technique that may help reduce my limiting beliefs around unexplained infertility.

- My participation in this research is completely voluntary. There is no explicit or implicit coercion whatsoever to participate. Should I choose to withdraw, I can do so at any time.

- Participation involves being a group participant guided by Aisling Killoran from Lifestyle Prescriptions® University in experiencing Energy EFT Emotional Freedom Techniques to experience a reduction in my limiting beliefs. Two or three self-administered questionnaires will last approximately 15 minutes, and two Energy EFT tapping interventions will last up to 90 minutes on Zoom. I allow Aisling Killoran to record and take notes during the interventions. I also allow recording the interventions and subsequent dialogue by audio/video recordings to be transcribed. I understand that should I not want the interventions and dialogue to be taped, I am fully entitled to withdraw from participation and the research study.
- I have the right not to answer questions. If I feel uncomfortable in any way during the Energy EFT Tapping intervention sessions, I have the right to withdraw from the intervention and ask that the data collected prior to withdrawal be deleted.
- I understand that all information I give for this research will be kept confidential, and I am guaranteed that Ms. Killoran will not identify me by name or function in any reports using information obtained from this intervention and that my privacy as a participant in this research study remains secure. Personal data will be processed in full compliance with EUI's Data Protection Policy and will be destroyed after 2 years.
- I consent that the research gathered may be used for future research or be published, provided my name or other identifying information is not disclosed.
- I am assured that this research project has been reviewed and approved by the ethics committee from Lifestyle® Prescriptions University. The Ethics Committee may be contacted through ethics@lifestyleprescriptions.tv for any questions concerning data protection. Complaints should be addressed to ethics@lifestyleprescriptions.tv.
- I have carefully read and fully understand the points and statements of this form. All my

questions were answered to my satisfaction, and I voluntarily agree to participate in this research study.



I understand a copy of this consent form will be sent to me via email.

By clicking on the "next" button below, you consent to participate in this research study voluntarily.

Please tick "Yes Please" if you want a summary of the findings when the research is completed.

Thank you for participating, Aisling Killoran.

For further information, please contact:

Ms.Aisling Killoran MA Principal Investigator – Data Controller at research@aislingkilloran.com

Research Supervisors: Dr. Catherine Alter, Dr. Hazel Heath & Jane Oelke ND, PhD

Online Application Form https://aislingkilloran.com/application (note: is now closed|

Appendix C

EFT Energy Tapping Protocol Sheet & SUE Scale for Intervention and Control Group

EFT Energy Tapping Points

- Rest hands in the center of the chest
- Deep breathe In & Out three times
- While tapping and breathing comfortably (5-7 taps) on each point from the top of the head to the side of the hand, using a positive word e.g., Calm
- Rest hands in the center of the chest for three breaths
- Repeat until you feel calm & relaxed

SUE Scale



-10 = Stressed Mind & Body + **10** = Positive & Energized Mind & Body

Appendix D

Email Correspondence for Intervention and Control Group

Intervention Group Email Correspondence:

Email 1: Demographic Application EFT Study Registration for Both Groups

First Name:

Last Name:

Date of Birth:

Age:

Telephone:

City:

Country:

Country of Origin:

Email Address:

You identify as?

Religious Beliefs:

Employment:

Marital Status:

Highest Education Level:

Income:

Accept Terms: I have carefully read and fully understand the points and statements of this form. All my questions were answered to my satisfaction. I voluntarily agree to participate in the research study. I understand a copy of this consent form will be sent to me via the email address I provided.

My Consent: I consent to participate in this research study voluntarily.

Summary of Findings: Please select if you want a summary of the findings when the research study is completed.

Email 2: Fertility Belief Research Group Application – Acceptance to the Intervention Group

Thank you for applying to participate in the Fertility Belief research study group. I am delighted to inform you that your application has been accepted. Please read the information below carefully.

We have assigned you the ID number IGXXX, which you should use when completing all surveys.

Our research study group uses a random selection system. You have been assigned to the Intervention Group.

- Your participation will require you to complete three online questionnaires that take approximately 15 minutes each within a relaxed time frame.
- Attend two online sessions of EFT tapping with me within your group, which I will record and transcribe. Your camera can be on or off.

When online, for your comfort, please have some water with you, a quiet place to work from, free from interruptions. Also, have a pen and paper too.

Your Schedule is:

Week	Date	Timeline
Week 1	Monday 24th April	15 Minutes (own time)
Week 2	Monday 1st May	15 Minutes (own time)
Week 3	Monday 8th May	7 pm to 8.30 pm (GMT) online with me
Week 4	Monday 15th May	7 pm to 8.30 pm (GMT) online with me
Week 8	Friday 16th June	15 Minutes (own time)

Please put the dates in your diary!

PDF's Attached:

- A copy of the consent agreement in included in your application.
- Your Group Schedule with more details is attached.

What's the difference between the two groups?

Intervention Group: Will experience EFT Tapping as part of the research.

Comparison Group: Tapping is optional yet recommended, as it can help you change how you think and feel about your fertility journey.

In essence, they are similar, with different timelines for filling out questionnaires and tapping!

Your Next step: If you have time now - please go to the Survey **https://aislingkilloran.com/survey** or complete it on or before the 24th of April. Please allow 10 to 15 minutes to complete.

Useful Links:

The Schedule: https://aislingkilloran.com/schedule

The Survey: https://aislingkilloran.com/survey

Thank you for your time and for participating in this important research study that can help change the beliefs of women who have been trying to conceive for two years or more.

Kind Regards,

Aisling Killoran, M.A Principal Investigator +00353(0)871352122

Email 3: Intervention Video and Female Tapping Points With SUE Scale

Dear Participant,

Thank you so much for taking part in our recent questionnaire/survey. I appreciate your time and contribution. I'm excited to invite you to the next step in this journey.

Please set aside just 12 minutes to watch a special introduction video on Energy EFT. You can tap along with me at your convenience anytime between now and Monday, May 8th. It's a wonderful opportunity to prepare for our upcoming online meeting.

To assist you, I have attached ONE PDF file: your tapping sheet and the link to the video. Simply click on the link below and use the provided passcode to access it: **Passcode:** ELM@4xv1

https://us02web.zoom.us/rec/play/p_8D2AIsCx3vStq6WPe6_wL4BBsLV_d_omEyGrAbF8ZMav5v_ZkJNVITYdYM1aTSKZHV6wS3fEdKY_Gp.cSYTKKWwCrQgAudD

As you progress, I'll send you an email with a Zoom link for our live online session on Monday, May 8th. This session will last up to 90 minutes, and I'm excited to connect with you.

Thank you again for participating in this important research study. Your involvement is greatly appreciated. Please mark the remaining dates on your calendar so you won't miss out on any future activities.

Week	Date	Timeline	
Week 1	Monday 24th April	15 Minutes (own time)	Completed
Week 2	Before 8th May	12 Minutes (own time)	
Week 3	Monday 8th May	7 pm to 8.30 pm	90 minutes online with me (GMT)
Week 4	Monday 15th May	7 pm to 8.30 pm	90 minutes online with me (GMT)
Week 8	Friday 16th June	15 Minutes (own time)	

If you have any questions or need further assistance, feel free to reach out to me. We're here to support you throughout this process.

Wishing you a positive and inspiring experience!

Kind regards,

Aisling Killoran, M.A Principal Investigator +00353(0)871352122

Tapping Points with SUE Scale – Attached as a pdf.

EFT Energy Tapping Points



- Rest Hands in the Centre of the Chest
- Deep Breathe In & Out 3 times
- While tapping and breathing comfortably (5-7 taps) on Each Point from the Top of the Head to the Side of the Hand, Using a Positive Word e.g., CALM
- Rest Hands in the Centre of the Chest for 3 breaths
- REPEAT till you Feel Calm & Relaxed



-10 = Stressed Mind & Body + **10** = Positive & Energized Mind & Body

See the Video for More Details on the Above Scale

Email 4: Reminder on Upcoming Session Monday 8th May

Hello Participant,

Thank you for being a part of this valuable study. I wanted to remind you about the upcoming live session on Monday, 8th May, from 7 pm to 8.30 pm (GMT). It's going to be an inspiring and uplifting experience as we explore the power of Energy EFT tapping to overcome limiting beliefs.

I am excited to have you join me online for this event. Here is the Zoom link you'll need to access the session. Aisling Killoran is inviting you to a scheduled Zoom meeting.

Join Zoom Meeting – all you need to do is click on the link; you do not need to download any apps, etc… just click

https://us02web.zoom.us/j/82402945339?pwd=V2ZONUR0TkR0bkdSbFRrL0JWVURZQT09

Remember to make yourself comfortable by having some water nearby and finding a quiet space where you can focus without any interruptions.

Please have a piece of paper ready with your ID number IGXXX

Feel free to check out the following useful links:

- The Schedule: Link to schedule

I'm looking forward to seeing you there and sharing this empowering experience together!

Warm regards, Aisling Killoran, M.A Principal Investigator +00353(0)871352122

Email 5: Reminder on Upcoming Session Monday 15th May

Hello Participant,

I hope you are well and that you found the last online session enjoyable.

I am sending you a gentle reminder to join me live on Monday, 15th May, from 7 pm to 8.30 pm (GMT), where you will follow along with me as we use Energy EFT tapping to reduce the last five limiting beliefs.

Please have a piece of paper ready with your ID number IGxxx

Join Zoom Meeting

https://us02web.zoom.us/j/81401884828

For your comfort, please have some water with you, a quiet place to work from, free from interruptions.

I'm looking forward to seeing you live online for our last session together.

After Monday evening's online session, please go to https://aislingkilloran.com/survey and complete the Fertility Belief Questionnaire for the second time. It will take approx. 7 – 10 minutes.

Warm regards, Aisling Killoran, M.A Principal Investigator +00353(0)871352122

Email 6: Fertility Audios and Thankyou for your Participation

Dear Participant

I would like to express my sincere appreciation for your active participation and the valuable time you have dedicated to our research study over the past few weeks. As promised, I am pleased to provide you with the following tokens of appreciation:

Four Fertility audio links: Listen to them alongside your cycle.

Baby Days 1-3

Baby Days 4 – 10

Baby Days 11-21

Baby Days 22-28

To download the audio tracks, please follow these instructions:

1. Click on the link for each track.
2. If you do not use DropBox, kindly close the login window.
3. At the bottom of the screen, select either the Blue "Download" button or the "Save to my Dropbox" button.
4. Repeat steps 1 to 3 for multiple track links.

Please note: It is essential not to listen to these audio tracks while operating a vehicle, as they may induce drowsiness. Some people find it beneficial to go to bed 30 minutes earlier and listen to recordings, which could also improve sleep quality.

I will follow up with the last email to complete the Fertility Belief Questionnaire in mid-June. Please do not hesitate to contact me if you have any further questions or require additional information. Thank you once again for your invaluable contribution.

Kind Regards,

Aisling Killoran, M.A Principal Investigator +00353(0)871352122

Email 7: Last Email to Complete the Fertility Belief Questionnaire

Dear Participant,

I hope this message finds you well. I trust that you are enjoying the sunshine we are currently experiencing.

As we approach the final stages of our research project, I kindly request your participation in the **third and <u>final</u>** questionnaire survey.

This survey holds the same level of significance as the previous two surveys conducted and concludes the study.

I would greatly appreciate it if you could find the time to complete the questionnaire by Monday, June 23rd. The estimated time required for completion is approximately seven minutes.

To access and complete the FINAL Fertility Belief Questionnaire survey, please follow the link: https://aislingkilloran.com/survey. Your unique identification code is IGxxx.

I would like to express my sincere gratitude for your time and participation in this important research study. The response from both groups has been outstanding, and we are now nearing the final stages with a completion rate of 95%. This accomplishment is truly commendable.

If you have any further inquiries or require additional information, please do not hesitate to contact me. Once again, I extend my heartfelt thanks for your invaluable contribution.

Kind Regards,

Aisling Killoran, M.A. Principal Investigator +00353(0)871352122

Email 8: Final Reminder Email – Late Responders

This email was sent to 2 participants who were delayed in responding.

Hi Participant,

I hope you are keeping well.

I am just checking in to see if you could complete the final Fertility Belief Questionnaire.

It will take no more than 5 to 7 minutes.

Why the same three questionnaires?

1. It gives us a baseline.
2. Shows any changes after the two interventions.
3. Undertaken to see if changes have remained the same since no. 2 or have changed in any way!

To access and complete the FINAL Fertility Belief Questionnaire survey, please follow the link: https://aislingkilloran.com/survey. Your unique identification code is **IGxxx.**

If you have any questions, please let me know. Many thanks for your time; much appreciated.

Aisling Killoran

Control Group Email Correspondence:

Email 1: Demographic Application EFT Study Registration for Both Groups – (see Appendix B, C) above.

Email 2: Fertility Belief Research Group Application - Acceptance

Dear Participant,

Thank you for your application to take part in **the Fertility Belief research study group. I am delighted to inform you that your application has been accepted. Please read the information below carefully.**

We have assigned you the ID number CGxxx, which you should use when completing all surveys.

Our research study group uses a random selection system. You have been assigned to the Comparison Group.

- Your participation will require you to complete two online questionnaires that take approximately 15 minutes each within a relaxed time frame.
- Attend two Optional, though recommended, online sessions of EFT tapping with me within your group, which I will record and transcribe. Your camera can be on or off.

When online, for your comfort, please have some water with you, a quiet place to work from, free from interruptions. Also, have a pen and paper with your ID number written on it.

Your Schedule is:

Week	Date	Timeline
Week 1	On or before Monday, 24th April	15 Minutes (own time)
Week 4	On or before Monday, 15th May	15 Minutes (own time)
Week 5	On or before Monday, 22nd May	15 Minutes (own time)
Week 6	Tuesday 30th May	7 pm to 8.30 pm (GMT)
Week 8	Monday 19th June	7 pm to 8.30 pm (GMT)

Please put the dates in your diary!

PDF's Attached:

- **A copy of the consent agreement is included in your application.**
- **Your Group Schedule with more details is attached.**

What's the difference between the two groups?

Intervention Group: Will experience EFT Tapping as part of the research.

Comparison Group: Tapping is optional yet recommended, as it can help you change how you think and feel about your fertility journey.

In essence, they are similar, with different timelines, for filling out questionnaires and tapping!

Your Next step:

If you have time now, please do the Survey at https://aislingkilloran.com/survey **or complete it on or before 24th April.**

Please allow 10 to 15 minutes to complete.

Useful Links:

The Schedule: https://aislingkilloran.com/schedule

The Survey: https://aislingkilloran.com/survey

Thank you for your time and for participating in this important research study that can help change the beliefs of women who have been trying to conceive for two years or more.

Kind Regards,

Aisling Killoran, M.A Principal Investigator, +00353(0)871352122

Email 3: Request to Complete 2nd Fertility Belief Research

Dear Participant,

I hope this email finds you well. I am writing to gently remind you to complete the last Fertility Belief Questionnaire survey before the deadline of Monday, 15th May. Please take the time to carefully review the information provided below.

In this study, we have assigned you a unique ID **CGxxx**, which you should use when completing all surveys.

Your participation is greatly appreciated and will be invaluable in helping us better understand fertility beliefs.

To complete the survey, kindly follow the link provided: https://aislingkilloran.com/survey. The questionnaire should take approximately 7 to 10 minutes to complete. We appreciate your time and participation in this important research study.

Once you have completed the questionnaire, we will follow up with the next steps.

If you have any questions or concerns, please do not hesitate to contact me. Thank you again for your time and participation.

Best regards,

Aisling Killoran, M.A Principal Investigator +00353(0)871352122

Email 4: Fertility Audio Tracks, EFT Video Link to Online Intervention (*optional)

Dear Participant,

I would like to express my sincere appreciation for your active participation and the valuable time you have dedicated to our research study over the past few weeks. As promised, I am pleased to provide you with the following tokens of appreciation:

Four Fertility audio links:

Baby Days 1-3

Baby Days 4 – 10

Baby Days 11-21

Baby Days 22-28

To download the audio tracks, please follow these instructions:

1. Click on the link for each track.
2. If you do not use DropBox, kindly close the login window.
3. At the bottom of the screen, select either the Blue "Download" button or the "Save to my Dropbox" button.
4. Repeat steps 1 to 3 for multiple track links.

Please note that it is essential not to listen to these audio tracks while operating a vehicle, as they may induce drowsiness. Some people find it beneficial to go to bed 30 minutes earlier and listen to recordings, which could also improve sleep quality.

Email 5 Video and Female Tapping Points With SUE Scale

Dear Participant,

Thank you so much for taking part in our recent questionnaire/survey. I appreciate your time and contribution. Although attendance is optional, I'm excited to invite you to the next step in this journey.

I recommend watching this 12-minute introductory video on EFT (Emotional Freedom Technique). Prior to our scheduled live online session, it will provide a helpful introduction to the topic. Your tapping protocol is also attached.

Here is your passcode & video link: Passcode: ELM@4xv1

https://us02web.zoom.us/rec/share/tV_yhSQzz8jPuKiHWHFVDRfxfememaplxj2o7UUTcWYcScNT2cJBSp9gnIVYh3r9.ZF-FcwGaWvmGYrOF?startTime=1682085882000

Live online session details: I will send you a reminder closer to the time

- **Tuesday, May 30th**: Join Zoom Meeting https://us02web.zoom.us/j/86262062401
- **Monday, June 19th**: Join Zoom Meeting https://us02web.zoom.us/j/85311120363

I extend my heartfelt gratitude for your time and dedication in participating in this vital research study. Your contribution holds the potential to reshape the beliefs of women who have been striving to conceive for an extended period, offering them renewed hope and a path forward.

By exploring the efficacy of EFT techniques, your involvement adds to the existing body of knowledge. It holds the potential to support other women in overcoming limiting beliefs associated with unexplained infertility while simultaneously strengthening their inner resources on their journey to conception.

Please do not hesitate to contact me if you have any further questions or require additional information. Thank you once again for your invaluable contribution.

Kind Regards, Aisling Killoran, M.A Principal Investigator +00353(0)871352122

Email 6: Gentle Reminder + Zoom Links to *online tapping intervention (*optional)

Dear Participant,

I hope you are enjoying the great sunshine we are having.

Time is flying by, and I look forward to working with you online on Tuesday, 30th May.

- Below is a link to the introductory Tapping Video with a passcode
- Zoom link to join me live from 7 pm to 8.30 pm (GMT) *Attendance is optional

Tapping Video - An introductory video on EFT (Emotional Freedom Technique): Prior to our scheduled live online session, I recommend watching this video on EFT. Although attendance is optional, it will provide a helpful introduction to the topic.

Here is your passcode & video link: Passcode: ELM@4xv1

https://us02web.zoom.us/rec/share/tV_yhSQzz8jPuKiHWHFVDRfxfememaplxj2o7UUTcWYcScNT2cJBSp9gnIVYh3r9.ZF-FcwGaWvmGYrOF?startTime=1682085882000

Zoom Link for the live online session:

- **Tuesday, May 30th**: Join Zoom Meeting https://us02web.zoom.us/j/86262062401

Please do not hesitate to contact me if you have any further questions or require additional information. Thank you once again for your invaluable contribution.

Kind Regards, Aisling Killoran, M.A Principal Investigator +00353(0)871352122

Email 7: Gentle Reminder + Zoom Links to *online tapping intervention (*optional)

I hope you are enjoying the great sunshine we are having.

We are coming to the end of the research, and I am looking forward to working with you online Monday evening,

- Use the Zoom link below to join me live from 7 pm to 8.30 pm (GMT). *Attendance is optional.

Monday 19th June: Join Zoom Meeting https://us02web.zoom.us/j/85311120363

Should you have any further questions or require additional information, please do not hesitate to contact me. Thank you once again for your invaluable contribution.

Kind Regards,

Aisling Killoran, M.A Principal Investigator +00353(0)871352122

Appendix E

Instrumentation Table

Provided to Both groups

The Fertility Belief Questionnaire (FBQ)

The FBQ that was produced by a multidisciplinary team will enable the examination of relationships between beliefs and psychosocial health problems of women with infertility Naab et al. (2017, p. 17)

Table 1

The Fertility Belief Questionnaire (FBQ)

ID…… Date…… Site……

We are interested in your own personal views of how you now see your fertility problem. Please indicate how much you agree or disagree with the following statements about your fertility problem by ticking the appropriate box.

Views About Your Fertility Problem (Timeline: Chronic/Acute)

	Agree					Disagree
Item	**Strongly Agree**	**Moderately Agree**	**Slightly Agree**	**Moderately Disagree**	**Slightly Disagree**	**Strongly Disagree**
	5	4	3	2	1	0
1. My fertility problem will last a short time						
2.My fertility problem is likely to be permanent						
3.My fertility problem will improve in time						

Views About Your Fertility Problem (Consequences)

	Agree					Disagree
Item	**Strongly Agree**	**Moderately Agree**	**Slightly Agree**	**Moderately Disagree**	**Slightly Disagree**	**Strongly Disagree**
	5	4	3	2	1	0
4.My fertility problem is a serious condition						
5.My fertility problem has major consequences on my life						
6.My fertility problem does not have much effect on my life						
7.My fertility problem strongly affects the way others see me						

8.My fertility problem has serious financial consequences
9.My fertility problem causes difficulties for those who are close to me
10.I can be divorced because of my fertility problem
11.My fertility problem makes me feel incomplete
12.I don’t interact with other people’s children because of my fertility problem
13.It is difficult for me to interact with people in my community because of my fertility problem
14.My fertility problem makes me have problems with my in-laws

Illness Coherence

Item	Strongly Agree	Moderately Agree	Slightly Agree	Moderately Disagree	Slightly Disagree	Strongly Disagree
	5	4	3	2	1	0
15.My fertility problem is confusing to me						
16.My fertility problem is surprising to me						
17.I don't understand my fertility problem						
18.My fertility problem doesn't make any sense to me						
19.I have a clear picture or understanding of my fertility problem						

We are interested in your own personal views about your fertility problem and what you can do about it. Please indicate your agreement or disagreement by ticking the appropriate box.

Personal Control

	Agree			Disagree		
Item	**Strongly Agree**	**Moderately Agree**	**Slightly Agree**	**Moderately Disagree**	**Slightly Disagree**	**Strongly Disagree**
	5	4	3	2	1	0
20.There are many things I can do to control my fertility						

21.What I do can determine whether my fertility problem gets better or worse

22.The outcome of my fertility problem depends on me

23. Nothing I do will affect my fertility problem.

24.My actions will have no effect on the outcome of my fertility problem

Treatment Control

25. The use of herbs can treat my fertility problem.

26. I use prayer as a means to solve/cure my fertility problem

27. I combine prayers with herbs and hospital treatment to solve my fertility problem

28.There is very little that can be done to improve my fertility problem

29.Hospital treatment will be effective in curing my fertility problem

30.There is nothing that can help my fertility problem

Causes of Fertility Problems:

We are interested in your opinions about the causes of fertility problems including your own views rather than those of others including doctors or family members. Please indicate yes, not sure/don't know, or no by ticking the appropriate box.

Possible Causes	Yes	Not Sure/ Don't Know	No
C1 Stress			
C2 Hereditary - it runs in my family			
C3 Sexually transmitted diseases, for example gonorrhea			
C4 Bad luck			
C5 Poor medical care in the past			
C6 Thinking negatively about life			
C7 Worrying about family problems			
C8 A person's emotional state, for example feeling down, lonely, anxious, empty			
C9 Getting old			
C10 Drinking alcohol			
C11 Smoking			
C12 Accident or injury			
C13 Past sexual behavior			
C14 Witchcraft			
C15 Failure of husband to pay bride price			
C16 Use of family planning pills			

C17 Punishment from God

C18 A curse from ancestors

C19 Husband's refusal to see a doctor

C20 Overweight

C21 Underweight

C22 Poor diet

C23 High blood pressure

C24 Irregular menses

C25 Thyroid problems

C26 Diabetes

C27 Husband's infertility

THANK YOU very much for taking the time to complete this questionnaire.

Note. Reprinted from The Belief Fertility Questionnaire, by Naab F et al. (FBQ). JAMSAT. 2017; 3(2):109-120.

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