

**THE EFFECTS OF BIO-INTRINSIC TRANSFORMATIONAL
THERAPY™ ON DEPRESSION AND ANXIETY IN
ADOLESCENTS**

By

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The findings reported in this thesis are original, and the work and research were carried out solely by Robin Reeves-Oppenheim with the acknowledged direction and assistance from her colleagues and mentors.

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DEDICATION

I dedicate this humble work to the Lord of Love, Silent Master, Teacher, Guide, and Friend, Avatar of the Age Meher Baba, for whom I took this incarnation to serve and praise. (Avatar Meher Baba Ki Jai)

Throughout my life, since my first conscious mystical experience as a teenager, I regarded mysticism as the opposite of science and the intellect. In the emerging field of Neurotheology (Newburg, 2010; Hagerty, 2009), researchers explain in objective and scientific terms what happens to the mechanical functioning of the brain when human beings have subjective experiences of the Divine.

Meher Baba (b.1894-d.1969), the Avatar of the Age and great mystic of our time, explains in His *Discourses* that spiritual experience is not antithetical to science. Spiritual experience is often called mysticism. Meher Baba explains that “Mysticism is often regarded as something anti-intellectual, obscure and confused, or impractical and unconnected with experience” (Baba, 2007, p. 7). Many scientists and scholars believe that mystical experiences are irrational and not rooted firmly in science. Meher Baba teaches that true mysticism is “a vision of Reality.” In His discourse on the “New Humanity”, Meher Baba says that true mystical experience is “a form of perception which is absolutely unclouded” direct knowing, clear sight, clairvoyance. Meher Baba states that true mysticism is practical and can be “lived every moment of life and expressed in everyday duties.” It is so deep and real and practical that “it is the final understanding of all experience” (Baba, 2007, p. 7).

I live in two interpenetrating worlds, the world of the seen and the unseen. I grasp and assimilate knowledge with my cognitive mind and my visceral senses. I make judgments about the nature of things based on solid, scientific facts.

I also live in the world of the spirit. I feel the push and pull of electromagnetic fields pulsating through and around me. I hear sound vibrations that permeate the physical and non-physical worlds. I am a powerful transmitter and receiver of energy and spiritual information from the unified field, the collective unconscious; of archetypes and symbols; of Light; of Love, with palpable electrical currents surging through me from head to toe.

Meher Baba reveals that humanity is in a period of “a new awakening of consciousness” (Baba, 2007, p. 4). The “qualities of energy and awareness” that were once only experienced by rare, advanced souls are now available for all of humanity. What Meher Baba once predicted is coming true. “Life, as a whole, is stepped up to a higher level of consciousness, is geared to a new rate of energy. The transition from sensation to reason was one such step: the transition from reason to intuition will be another” (Baba, 2007, p. 4).

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To my extraordinary husband and partner on the spiritual path, Dr. James Harold Oppenheim, and my children, Joshua, Jonathan, Andrew, and Christopher. Thank you for your support and understanding. Without you, I could not have accomplished this dream.

ABSTRACT

Purpose. The aim of this proof-of-concept (PoC) study was to assess the feasibility of the methods, procedures and intervention used to evaluate *The Effects of Bio-Intrinsic Transformational Therapy™ on Depression and Anxiety in Adolescents*.

Background. Data shows a steady increase in the prevalence of depressive and anxiety disorders in children and adolescents over the past two decades, causing detriments during critical developmental stages with long-lasting damaging effects. There are few effective evidence-based mental health treatment options for adolescents with depression and anxiety, especially in the areas of complementary and alternative medicine, energy psychology, and biofield therapies.

Method. This randomized controlled trial utilized a multiple group design with a pre-test/post-test and a wait-list control group. A sample of convenience was randomly assigned to treatment and control groups. A 2 X 2 Mixed ANOVA with repeated measures was used to evaluate the research design's efficacy and interpret the collected data. The Statistical Package for the Social Sciences (SPSS), Techopedia (n.d.), provided a statistical analysis of the raw data.

Results. Results show decreases in anxiety and depression in adolescents in the experimental group as hypothesized. Even with a small sample size, the pattern of means for between-group effects show steep declines for both depression and anxiety. Trends in all measures showed a promising pattern in the hypothesized direction. There was a precipitous drop in plot lines for the experimental group. Profile plot lines for the control group remained flat or were elevated.

Conclusions. This PoC study validates the safety and efficacy of the intervention to be used in a large-scale investigation to evaluate the effects of Bio-Intrinsic Transformational Therapy™ in depression and anxiety in adolescents. Further investigation is necessary for clinical application

and more conclusive results of Bio-Intrinsic Transformational Therapy™ as an evidence-based treatment of depression and anxiety in adolescents.

Keywords: adolescent, anxiety, biofield therapies, complementary and alternative medicine, depression, energy psychology, electromagnetic field, psychophysiological coherence, psychotherapy, subtle energy, transformational psychology

CHAPTER 1: INTRODUCTION

Statement of the Problem

There has been a steady increase in depressive and anxiety disorders in children and adolescents over the past two decades. Depression and anxiety disorders during childhood and adolescence not only cause detriments during critical developmental life stages but has long-lasting damaging effects across the lifespan (Breggin, 2013). Numerous studies show ongoing adverse consequences such as low social and vocational functioning, increased risk of suicide and self-harm, and severe impairment in children and adolescents with some form of depression and anxiety (Parker, Hetrick, Jorm, Mackinnon, McGorry, Yung, Scanlan, Stephens, Baird, Moller, & Purcell, 2016).

Statistics from The National Institute of Mental Health (NIMH, 2019, February), the Substance Abuse and Mental Health Services Administration (SAMHSA, 2014, 2017a, 2017b, 2018); and the Australian Bureau of Statistics (2010, July 26), confirm that despite the significant rise in depression and anxiety in children and adolescents, many youths still go untreated or have a narrow range of effective therapeutic choices. National data reporting over the past several decades shows that consumers of mental health services commonly utilize complementary and alternative medicine (CAM) approaches in addition to traditional treatments. Research studies and journal articles published in Australia and other international countries reported that as early as 2004, a significant percentage of children and adolescents were already using complementary and self-help treatments in addition to traditional methods despite the lack of hard, empirical, evidence-based data (Jorm, Allen, O'Donnell, Purcell, & Morgan, 2006).

More recent data from the National Center for Health Statistics (NCHS, 2015, November 6) shows a significant rise in the use of complementary therapies by children and adolescents in

the United States since 2012 (Black, Barnes, Clarke, Stussman, & Nahin, 2018, November). This increase raises the question of why it has taken more than a decade for peer-reviewed, empirical research on CAM and integrative approaches to be accepted and published in U.S. journals. In a clinical report on Pediatric Integrative Medicine, the authors (McClafferty, Vohra, Bailey, Brown, Esparham, Gerstbacher, Golianu, Niemi, Sibinga, Weydert, Yeh, 2017) opine that the ideal approach to the integration of complementary and conventional therapies for the maximum therapeutic benefit to the patient “...would depend on the same evidence-based decision-making used with conventional therapies” (p. 4). This call for high-quality randomized controlled trial (RCT) studies in the field of CAM and integrative therapies reflects the consumer-driven need to find safe and effective nonpharmacological approaches despite the lack of peer-reviewed, evidence-based research studies published in the United States. Therefore, an open question remains. Why is the U.S. medical community so resistant to scientific exploration that integrates knowledge of ancient healing practices into Western medicine and psychology?

Many neurobiological researchers worldwide studying child and adolescent brains agree that psychiatric medication alone should not be the standard recommended treatment for depression and anxiety in psychiatric patients younger than 18. Professor Anthony Jorm, in the division of Medicine, Dentistry and Health Sciences at the University of Melbourne, along with Allen, O'Donnell, Purcell, Morgan (2006), Dr. M.S. Bhatia and Dr. A. Goyal (2018) in India, and the World Health Organization (WHO, 2018, March 22) all recommend using psychotherapy and nonpharmacological methods in most cases involving youth mental health. In an article published in the *Journal of Postgraduate Medicine* (2018), Bhatia and Goyal, researchers in the Department of Psychiatry at the University College of Medical Sciences in New Delhi, recommend the need for early detection and treatment for children with anxiety disorders. In a

large multicenter study observing children with anxiety disorders, a combination of Cognitive Behavioral Therapy (CBT) and sertraline produced better results than with the use of pharmacotherapy alone. Researchers concluded that pharmacotherapy was the recommended treatment only in exceptional cases, such as during an acute or very severe phase or with children who exhibit an inadequate response to CBT. Otherwise, the treatment of choice for childhood anxiety disorders remains a nonpharmacological approach.

However, the justification for the widespread use of psychiatric medication as the standard treatment for children and adolescents in the United States focuses solely on the results of a 2010 NIMH-funded clinical study of 439 adolescents with major depression. Data from this study showed that a combination of medication and psychotherapy was the most effective treatment option (Merikangas, He, Burstein, Swanson, Avenevoli, Cui, Benjet, Georgiades, & Swendsen, 2010 October). The NIMH touts the use of psychiatric medication as the treatment of choice for youth, despite current WHO (2018) recommendations and evidence to the contrary. Dr. Peter Breggin, a National Institutes of Health (NIH) researcher who studied the effects of neuroleptic medication on brain function, found that psychiatric medication is detrimental to child and adolescent brain development (Breggin, 1999a, 1999b, 2008 & 2013). Despite black box warnings against the long-term use of these toxic medications, the NIMH (2019) continues to promote combination treatment of psychiatric medication and CBT or Interpersonal Therapy (IPT) as the current “best practice” treatment of choice for adolescents with depression and anxiety.

In a controversial meta-analysis on the efficacy of antidepressants on the overall well-being of youth with depressive symptoms, Spielmans and Gerwig (2014) refute the idea that combination therapy is the best treatment option for children and adolescents. Results suggest

little or no significant benefit in the overall well-being among depressed children and adolescents treated with antidepressant medication. Independent Australian researchers at the University of Melbourne (Jorm et al. 2006; Parker et al. 2016) found similar results. In most cases, well-being is synonymous with wellness. Although most agree that well-being describes an overall state, wellness refers to the overall balance of one's physical, social, spiritual, emotional, intellectual, environmental, and occupational dimensions of well-being.

This perspective was consistent with Dr. Peter Breggin's findings, a Harvard-trained psychiatrist and former consultant at NIMH, who studied the effects of neuroleptic medication on adults and children. Breggin conducted numerous empirical research studies and meta-analyses of the medical and psychiatric literature from the early 1970s to the late 1990s. His iconic work led to a successful reform campaign in mental health and establishing FDA black box warnings on various medications. He exposed the long-term devastating and debilitating effects of psychiatric medications on the human brain. Breggin (2011) coined the term chronic brain impairment (CBI), a condition produced by long-term use of psychotropic medication. According to Breggin, the ongoing and indiscriminate use of psychiatric medication with children and adolescents damages their physical growth, causes severe developmental delays, injures healthy brain development, and takes away their sense of self-control and autonomy (Breggin, 2013).

Breggin emphasizes the importance of discovering neurobiologically safe and effective bio-psycho-social-spiritual treatments that enhance brain function instead of impairing it. Without these types of treatments, CBI symptoms continue into adulthood and increase the cumulative negative repercussions of early impairment on subsequent levels of health, social, and mental health functioning.

Finding innovative, efficacious, and neurobiologically safe bio-psycho-social-spiritual treatments for adolescents with depression and anxiety plays a critical role in 1) helping resolve the current crisis in youth mental health; 2) preventing further deterioration of adolescent brains and psychiatric conditions; 3) enhance brain function to mitigate the high probability that chronic disability and brain impairment will develop over the lifespan, and 4) teach children and adolescents to achieve a psychophysiological coherent state that contributes to overall positive health and feelings of well-being (McCraty & Zayas, 2014) and bio-psycho-social-spiritual wellness (Breggin, 2013).

Adolescence is a critical time of growth and development in a multitude of areas. According to leading neuroscientists and researchers Lebel and Beaulieu (2011), Gogtay, Giedd, Lusk, Hayashi, Greenstein, Vaituzis, Nugent, Herman, Clasen, Toga, Rapoport, & Thompson (2004, May 25), Yurgelun-Todd & Killgore (2006), and Yurgelun-Todd, Killgore, & Cintron (2003), adolescence is a period of maturation of neurobiological processes in the brain that triggers frontal lobe development of higher cognitive functions. An extensive, in-depth review of interdisciplinary literature reveals a considerable lack of safe and effective, evidence-based, brain-enhancing treatments for adolescents with depression and anxiety, especially in the areas of transformational psychology, CAM, integrative medicine, energy psychology (EP), biofield therapies, neuroscience, and in the emerging fields of Neurotheology, and psychoneuroimmunology (PNI).

The Importance of Youth Mental Health

To adequately address the national public health problem of youth mental health with practical solutions, there is a need for ongoing data collection to track the prevalence, comorbidity and clinical correlations, patterns of treatment usage, and service providers'

availability for mental health disorders among U.S. youth. A critical area of research supported by the Division of Services and Intervention Research (DSIR), a division of NIMH, is The Child and Adolescent Psychosocial Interventions Research Program, which evaluates psychosocial interventions on mental and behavioral disorders in adolescents and children. Supporting new empirical research in the development of “innovative interventions,” according to DSIR Director, Robert Heinssen, remains high priority for the agency (DSIR, 2019). Heinssen opens the door to an area of research at the cutting edge of new applications previously undervalued in the United States. These kinds of scientific studies are undeniably essential to the existing literature as we transition from a Newtonian (Isaac Newton, b.1643-d.1727) understanding of modern science to Quantum Physics, field theory, and an electrodynamic paradigm. This research study, *The Effects of Bio-Intrinsic Transformational Therapy™ on Depression and Anxiety in Adolescents*, fits into that category. The expansion of scientific knowledge currently taught in most middle and high school science curriculums includes four states of matter: solid, liquid, gas, and plasma. Scientists have known about solids, liquids, and gases for centuries. Plasma was identified as a new concept by William Crookes in 1879 (Rader, 1997-2018). Our understanding of how plasma, putative energy fields, and the human biofield can apply to mental health and wellness is the basis of this dissertation and original research study.

Youth mental health has not always been a high priority for U.S. government agencies tasked with regulating mental health programming. In the early 1990s, most of the research, data collection, statistical analysis, and program development focused on adult populations. However, by the late 1990s, the state of youth mental health had gained public attention. An Institute of Medicine report (IOM, 1999, November) prompted a congressional mandate called the Healthcare, Research and Quality Act of 1999 that launched a series of initiatives to generate

national estimates of the frequency and correlates of youth mental disorders (Nguyen, Hellebuyck, Halpern, & Fritze, 2018). The NIMH response to the mandate was to add short assessments of youth mental disorders to two extensive national surveys carried out by the NCHS (Nguyen et al., 2018).

By the early 2000s, youth mental health had gained national attention from several principal U.S. government agencies. Such agencies included the U.S. Department of Health and Human Services (DHHS, 2000, November), the National Research Council (NRC, 2000), and the IOM (2001). Since then, priorities regarding child and adolescent mental health have elevated to critical importance in the United States. This shift in perception has led to more aggressive and comprehensive annual data collection regarding youth mental health. NIMH and SAMHSA currently remain the two primary federally funded sources of this data. These agencies administer national surveys that collect and analyze the prevalence and relevant patterns of major depression and anxiety disorders in adolescents.

Instruments such as the National Survey on Drug Use and Health (NSDUH) (SAMHSA, 2014, 2017a, 2017b, 2018), and the National Comorbidity Survey: Adolescent Supplement (NCS-A) (Merikangas, Avenevoli, Costello, Koretz, & Kessler, 2009) are used to collect data on millions of adolescents. “The NCS-A is a nationally representative face-to-face household survey of the prevalence and correlates of DSM-IV mental disorders among U.S. adolescents (ages 13–17) that was carried out between February 2001 and January 2004 by the Survey Research Center of the Institute for Social Research at the University of Michigan” (Kessler, Avenevoli, Costello, Green, Gruber, Heeringa, Merikangas, Pennell, Sampson, & Zaslavsky, 2009, p. 380).

Since 2004, the NSDUH has provided an annually updated report of findings comparing the current data with data collected from previous years. The NIMH still identifies the data from

the NCS-A [a face-to-face survey of 10,123 adolescents aged 13 to 18 years], shown on their website as the most current statistics regarding prevalence and patterns in anxiety disorders in the U.S. adolescent population (Kessler, 2017). A more recent study by Blanco, Hoertel, Franco, Olfson, He, López, González-Pinto, Limosin, & Merikangas (2017) looked at the generalizability of the findings of the NCS clinical trial for adolescents with major depression.

Prevalence of Depression and Anxiety Among Adolescents

Key findings from *The State of Mental Health in America 2018* (Nguyen, Hellebuyck, Halpern, & Fritze, 2018) and the 2019 updated online report (retrieved 09/07/19) verify the continuation of rising rates of serious youth mental health conditions. The most recent data on the prevalence of depression in U.S. adolescents are available in the 2017 NSDUH (SAMHSA, 2017a, 2018). SAMHSA also publishes a yearly report that summarizes the key elements of the annual NSDUH (SAMHSA, 2017b, 2018).

NSDUH Annual Report

The NSDUH questionnaire looks at national indicators for substance use and mental health in four age groups. Age groups consist of youths aged 12 to 17 years old, young adults aged 18 to 25, adults aged 26 to 49, and seniors aged 50 and older. 3.2 million adolescent respondents (SAMHSA, 2017a) provided data for the 2017 report.

The survey looks at impairment levels in activities of daily living due to a Major Depressive Episode (MDE). Adolescents are classified with severe impairment if their depression causes acute dysfunction in several areas. Adolescents who cannot adequately perform chores at home or function at a lower baseline level than previous levels of functioning at work or school are severely impaired. They also meet the criteria if they cannot get along with their family adequately or cannot maintain positive, supportive peer relationships.

Figure 1: Major Depressive Episodes Among Youth/Young Adults Rising

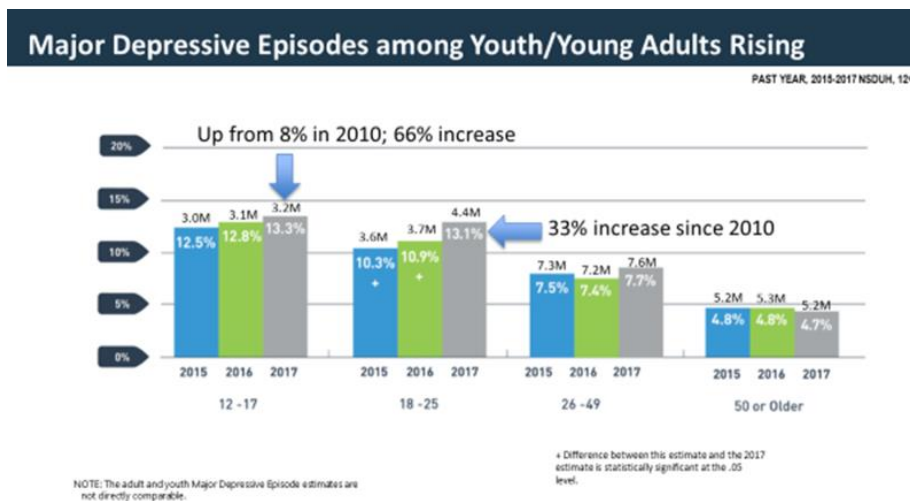
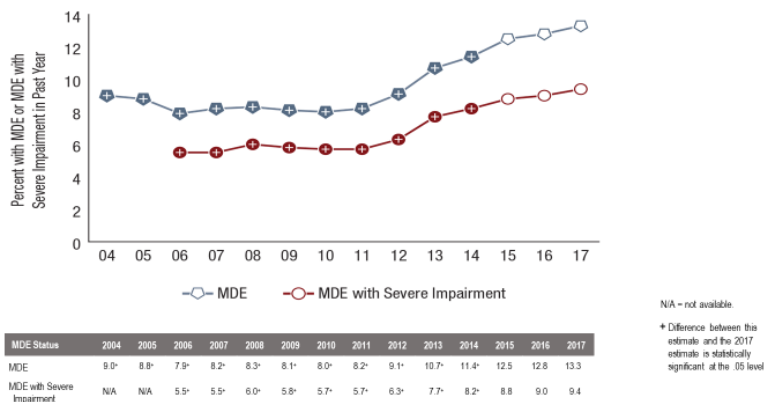


Figure 1 represents 2017 data from 3.2 million youths showing a 66% increase from 8% in 2010 to 13.3% in 2017 in adolescents with at least one Major Depressive Episode (MDE) within twelve months.

Figure 2:

Major Depressive Episode (MDE) and MDE with Severe Impairment in the Past Year among Youths Aged 12 to 17: Percentages, 2004-2017



Major Depressive Episode and MDE with Severe Impairment

Figure 2 represents 2017 data (SAMHSA 2017a), showing 2.3 million (9.4 %) U.S. adolescents with at least one MDE who also reported having severe impairment. More than two

thirds (70.7%) of all youths with major depression also had severe impairment. Less than half (n=1.3 million, 41.5 %) of those adolescents diagnosed with depression received treatment for their condition (Figure 3).

Figure 3: Received Treatment in the Past Year for Depression for Youth

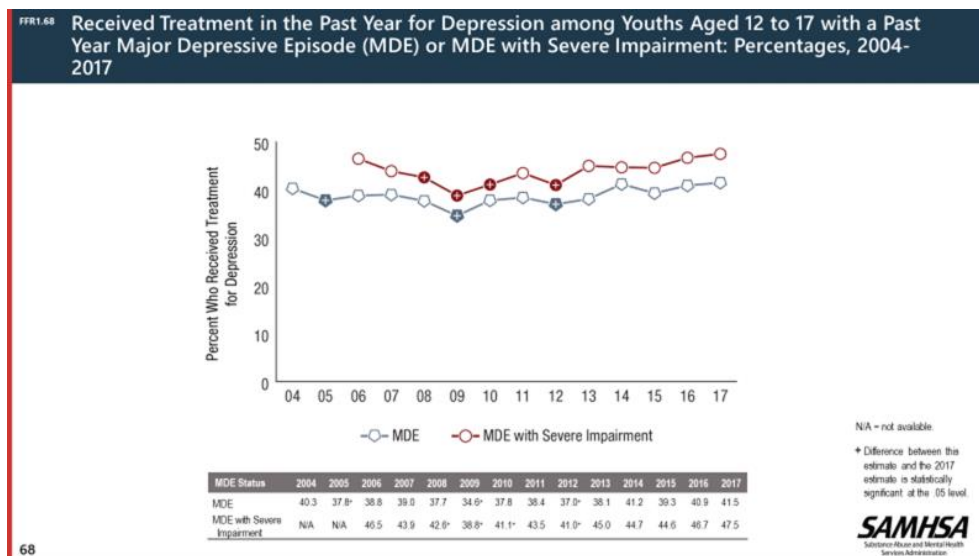


Figure 3 shows the percentage of adolescents who received treatment for Major Depression from 2004 (40.3%) to 2017 (41.5%). Although the number of adolescents with Major Depression with and without severe impairment has increased significantly from 2004 to 2017 (Figures 1 & 2), teens receiving treatment showed a minimal increase of only 1.2% over the past 13 years (SAMHSA 2017a).

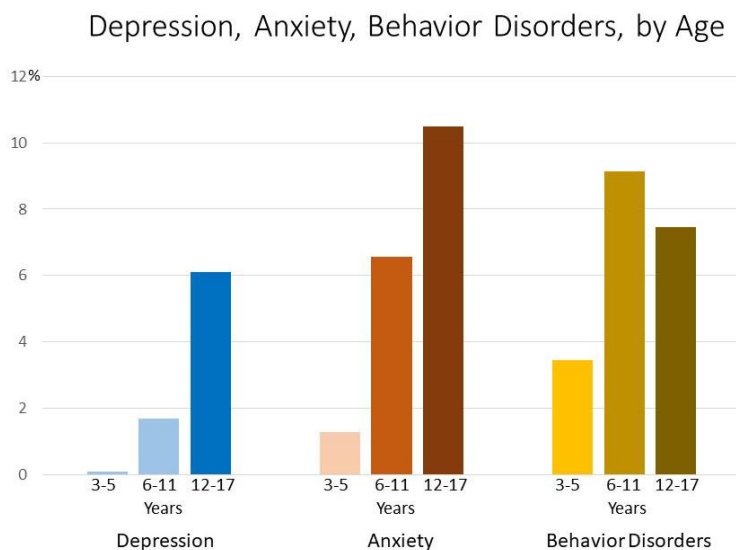
Anxiety disorders are the most common mental health problem in American youth.

One out of every three (1/3) US adolescents experiences an anxiety disorder. Lifetime prevalence rates for any anxiety disorder in adolescents are estimated to be 31.9%. The NCS-A (2010) cites that of 10,148 teens experiencing anxiety, only 18 % receive mental health treatment and services.

Data from the National Comorbidity Survey [NCS-A] (Merikangas, et al., 2010)



The most common mental health problem in American youth has been the prevalence of anxiety disorders. One out of every three (1/3) U.S. adolescent experiences an anxiety disorder. Untreated anxiety disorders cause significant impairment in academic, social, and family functioning (Wagner, 2019). According to Merikangas et al. (2010, October), lifetime prevalence rates for any anxiety disorder in adolescents are estimated to be 31.9%. In adolescents with an anxiety disorder, an estimated 8.3% experience severe impairment. The NCS-A (Merikangas et al., 2009) cites that of 10,148 teens experiencing anxiety, only 18% receive mental health treatment and services. Statistics show that the average age of onset of anxiety disorders is about six years old.

Figure 4: Data and Statistics on Children’s Mental Health | CDC

The Use of Complementary and Alternative Medicine

This Primary Investigator (PI) found numerous empirical research studies, reports, and meta-analyses investigating the use of integrative, CAM [biofeedback, heart rate variability, guided imagery, EP, Emotional Freedom Technique (EFT), Thought Field Therapy (TFT), Wholistic Hybrid Derived from Eye Movement Desensitization and Reprocessing and EFT (WHEE), biofield therapies, meditation, and prayer] in an in-depth, extensive interdisciplinary literature search. RCT studies and meta-analyses published in online journals and from the websites of the Association for Comprehensive Energy Psychology (ACEP), Institute of HeartMath (www.heartmath.org), and the Consciousness and Healing Initiative (CHI, 2020) were reviewed. Many studies supported the hypothesis that Bio-Intrinsic Transformational Therapy™ (BITT) is a psychologically and neurobiologically sound, safe and effective intervention. Results showed an enhanced quality of life, positive feelings of overall well-being and wellness, improved self-esteem, and increased autonomy (McCraty & Zayas. 2014).

A published meta-analysis authored by David Feinstein, Ph.D. (2012), examined 51 peer-reviewed studies investigating Acupressure Stimulation, the tapping of acupuncture points to address psychological issues. The results consistently demonstrated substantial effect sizes and other positive statistical results that far exceed chance after relatively few treatment sessions (Feinstein. 2012). Most of these peer-reviewed published studies targeted adult populations. Not many high-quality randomized controlled studies performed with children and adolescents exist in the literature.

In a randomized controlled pilot study with adolescent subjects that compared EFT and CBT (Gaesser & Karon, 2016), results were consistent with previous research findings. Results supported EFT as an effective evidence-based treatment to reduce adolescent anxiety within a few sessions. Additionally, the results indicated that EFT could be used effectively in school settings. Despite the lack of empirical, evidenced-based data, a significant percentage of children and adolescents already use integrative, complementary, and self-help treatments in addition to traditional methods (Jorm et al., 2006; Black et al., 2018, November).

Figure 5: The Number of U.S. Children Using Yoga



Figure 5 shows the number of U.S. children using yoga rose from 3.1% in 2012 to 8.4% in 2017.

Data obtained from the National Center for Complementary and Integrative Health (NCCIH) [formerly NCCAM] website (Black et al., 2018, November) confirms a significant rise in the use of complementary therapies used by U.S. children ages 4-17 from 2012 to 2017, such as yoga (Figure 5) and meditation (Figure 6).

Figure 6: Use of meditation by U.S. children rose from .06% in 2012 to 5.4% in 2017.



Research Questions

Before developing the protocol and implementation of this study, the PI answered the following preliminary research questions. Existing interdisciplinary literature was reviewed and studied using Google Scholar, online databases such as PubMed, Medline, Research Gate, Elsevier, Science Direct; public and college research libraries; websites such as The National Institute of Health (NIH), Institute of HeartMath, Center for Reiki Research, Rhine Research Center, Academy for Guided Imagery, Association for Comprehensive Energy Psychology (ACEP); the Consciousness and Healing Initiative (CHI), and other online resources in the fields of Psychology, Psychiatry, Psychology, Clinical Social Work, Professional Counseling, Integrative Medicine, Religion, Neurotheology, Neuroscience, Engineering, Education, Spirituality, and Health.

1. Are there peer-reviewed papers in the existing literature that report empirical research studies demonstrating strong effect sizes and other positive statistical results using EP techniques such as EFT, TFT, Acupoint Stimulation, Acupoint Tapping, and other bio-intrinsic transformational therapies in addressing psychological issues such as Post Traumatic Stress Disorder (PTSD), depression, and anxiety?
2. Is heart rate variability a valid and reliable measurement of overall well-being [psychophysiological coherence] in reducing depression and anxiety in adolescents?
3. Is there a correlation between increased psychophysiological coherence and the reduction of depression and anxiety in adolescents?
4. Does the existing empirical evidence show a correlation between the effects of CBT, other cognitive approaches, and bio-intrinsic transformational therapies such as EFT?
5. What are the adverse effects of psychotropic [neuroleptic and psychostimulant] medication on adolescent brain function?
6. What neurobiological, biomedical, and psychosocial factors make it essential to identify efficacious and neurologically safe bio-psycho-social-spiritual treatments for adolescents with depression and anxiety?

Purpose of the Study

The purpose of this proof of concept (PoC) study was to evaluate the feasibility, safety, and efficacy of the methods, procedures, and intervention to be used in a large-scale investigation of the effects of Bio-Intrinsic Transformational Therapy™ (BITT) on depression and anxiety in adolescents. The initial objective was to identify the neurobiological, biomedical, and psychosocial factors that impact adolescent brain development and function in a comprehensive review of the existing literature. The next aim was to create and implement a safe

and effective research design, method, and intervention protocol. This study's research design met the rigorous standards of a randomized controlled trial (RCT). The study used a randomized experimental, multiple group design consisting of a pre-test/post-test with a wait-list control group. This study's final objective was to ascertain the feasibility and search for possible preliminary effects and associations of this type of study. In a PoC study, the researcher determines whether the findings provide enough evidence of effect (MacQueen, 2013) to support continuing to the larger, main study with or without modifications.

This PoC study examined the feasibility of continuing to a larger study based on the hypotheses that using BITT would reduce depression and anxiety symptoms in adolescents within four sessions and result in a statistically significant change between experimental and control groups in a positive direction.

The preliminary results of this study showed decreases in measurable levels of anxiety and depression in adolescents as hypothesized. The between-group effects showed a positive impact on the experimental group. The research statistician and PI used SPSS to determine if the results indicated a statistically significant change in the intervention's effect between the experimental and control groups. A small sample size led to the lack of statistical power, and statistical significance in all measures was not achieved. However, trends showed a promising pattern in the hypothesized direction. There was a precipitous drop in the experimental group compared to the control group. Profile plot lines for the control group remained flat or were elevated. Further investigation is necessary to determine efficacy in clinical application and more conclusive results.

Importance of the Study

Depressive and anxiety disorders that emerge during childhood and adolescence not only cause detriments during critical developmental life stages but have long-lasting damaging effects across the lifespan (Breggin, 2013). Statistics show that the average age of onset of anxiety disorders is about six years old. Untreated anxiety disorders cause significant impairment in academic, social, and family functioning (Wagner, 2019). Supporting new, cutting edge, empirical research in the development of innovative interventions and applications in youth mental health remains an area of high priority for the NIMH/DSIR. BITT is an original, innovative approach to spiritual wellness (Hettler, 1976, p. 2) that restores the human bio-system to a state of ease, psychophysiological coherence, syntropy, and electromagnetic homeostasis without the use of toxic, brain disabling, psychotropic medication.

Existing interdisciplinary literature offers limited options in the treatment of adolescents with depression and anxiety. The current accepted best practices in youth mental health treatment are limited to a combination of cognitive-behavioral and psychopharmacological approaches. Shifting paradigms from a microbiological Newtonian model that treats illness to a holistic Quantum model that promotes wellness is essential. It encourages researchers to investigate interventions that incorporate and synthesize Eastern and Western thought, mind-body-spirit coherence, the human biofield, consciousness, mystical experience, and vibrational healing approaches in psychology, psychiatry, medicine, and physics. This paradigm shift is particularly salient in the age of a new understanding of science and consciousness. This shift has led to a rise in transformational therapies, CAM, integrative health, EP, biofield therapies, and more innovative research in the emerging fields of subtle energy, neuroscience, Neurotheology, and PNI.

BITT is a unique, cutting edge application that incorporates a holistic Quantum wellness model. This intervention teaches adolescents simple tools to achieve a state of ease and psychophysiological coherence, strengthen and balance their biofield, and connect to source energy without psychotropic medication. Finding innovative, effective, and neurobiologically safe bio-psycho-social-spiritual treatments for adolescents with depression and anxiety will play a critical role in resolving the current crisis in youth mental health.

A Wellness Approach

The National Wellness Institute has defined wellness as “an active process through which people become aware of, and make choices toward, a more successful existence” (National Wellness Institute, Inc., 2020). Wellness denotes a conscious, deliberate, and self-affirming recovery process that one creates after encountering an illness, crisis, or trauma. This has been described as a self-directed balance of healthy lifestyle habits in multiple dimensions. According to the National Institute of Wellness, creating consistent, healthy habits in all dimensions of one’s life builds resiliency and enhances a sense of meaning and purpose. “Wellness is holistic and multidimensional, and includes physical, emotional, intellectual, social, environmental, and spiritual dimensions” (Swarbrick, 2006, p. 311). An article published in *The Journal of Individual Psychology* explored the reliability of a 73-item inventory that addresses five wellness factors among male adolescents. In the Five Factor Wellness Inventory (5F-Wel), the wellness concepts are assessed through five factors or scales. These scales measure the concepts derived from the Indivisible Self model. In this model, the self is comprised of the creative self, the coping self, the social self, the physical self, and the essential self. Spirituality is an attribute of the essential self (Rachele, Cuddihy, Washington, & McPhail, 2013),

In April 2016, the Substance Abuse and Mental Health Services Administration, (SAMHSA 2016, April) rolled out a community wellness initiative based on the work of Dunn (1961) and Swarbrick (2006). In this model, there are eight dimensions of wellness. The dimensions are physical, emotional, intellectual, social, environmental, spiritual, occupational, and financial. Spiritual wellness relates to activities that enhance the meaning and purpose of life. Spiritual wellness has been considered a vital trait of overall wellness and positive mental health. The concept of spiritual wellness embraces positive practices that support good spiritual health and meet the need for spiritual expression and growth. Spirituality has been seen as a valuable strength and crucial contribution to health and healing. In contrast to the wellness model, the conventional western medical model may “dismiss the importance” of the patient's spirituality (Swarbrick & Burkhardt, 2000, p. 1) and often diagnoses spirituality and mystical experiences as a “form of pathology, shamanism, ritualistic behavior, or quackery” (Swarbrick, 2006 p. 312).

The original protocol used to study the effects of BITT was designed to enhance adolescents’ ability to experience a sense of meaning and purpose in life by connecting with the energy of the Divine. Connection to the Divine contributes to a decrease in depression and anxiety and enhances our brain function. In their seminal book *How God Changes Our Brain* (2010), Michael Newburg, MD, and Mark Waldman present the results of many years of empirical studies at the University of Pennsylvania in the field of Neurotheology. Numerous studies conducted from 1995 to 2007 show that any prayer and meditation, no matter what religion, has significant positive effects on brain enhancement and feelings of happiness.

What is Bio-Intrinsic Transformational Therapy™?

Bio-Intrinsic Transformational Therapy™ (BITT) is an original, innovative approach to spiritual wellness that incorporates and synthesizes eastern and western thought in Psychology, Medicine, Quantum Physics, Neurotheology, and Mysticism (Unity North Atlanta, 2018 Fall). BITT expresses a deep understanding of the individual personality, mind, and spirit; the individual biofield; human consciousness and mystical experience; and vibrational healing approaches. BITT “produces a state of mind-body-spirit coherence, integration, personal growth, an innate drive towards wholeness, physical and mental health and overall feelings of well-being” (Reeves-Oppenheim, 2018, August 15). BITT is a form of psychotherapy in which the following three components apply.

1. Incorporates an electrodynamic paradigm and an understanding of the human body’s endogenous electromagnetic currents.
2. Facilitates direct change to human putative energy biofields that positively influence health, mental health, and overall well-being.
3. Integrates trans-egoic (transpersonal) and transformational perspectives in modern western psychology with the understanding and practices of personal human transformation as described in the world’s great spiritual and mystical traditions. (Philosophical Research Society, 2018-2019).

BITT incorporates the concepts of psychophysiological coherence (McCraty & Zayas, 2014; Elbers & McCraty, 2020), syntropy (Szent-Gyorgyi, 1974), and an electrodynamic paradigm (Liboff, 2004, 2007). Szent-Gyorgyi, a research biologist awarded the Nobel Prize in 1937 and 1955, introduced the concept of an “innate drive in living matter to perfect itself” (Szent-Gyorgyi, 1974, p. 12) called syntropy. Szent-Gyorgyi described syntropy as a

“psychological drive towards synthesis, towards growth, towards wholeness, and self-perfection” (Szent-Gyorgyi, 1974, p. 12).

BITT teaches adolescents strategies to calm their amygdala, strengthen their biofield, and gain mastery over their emotional and spiritual states. BITT provides an innovative approach to spiritual wellness that restores the human bio-system to a state of ease, psychophysiological coherence, syntropy, and electromagnetic homeostasis without the use of toxic, brain disabling, psychotropic medication.

Pre-Study Workshops

During the fall and spring academic semesters of 2015, this PI was asked to present EP and biofield science approaches used in psychotherapy for selected health classes at Compass Prep Academy in Woodstock, Georgia. These workshops were presented as part of the regular curriculum and sanctioned by the principal and owner of the private school, Laura George. This seasoned mental health practitioner with over 38 years of experience with adults and adolescents provided the workshops as part of her regular employment as President and CEO of Out-of-the-Box Solutions, Inc. and a Licensed Clinical Social Worker. The workshops were not presented as pilot research and did not require Institutional Review Board (IRB) approval.

A total of four pre-study workshops of about 20-25 students each were facilitated. The workshops were structured as one psycho-educational class lasting for 50 minutes. The group process was a combination of didactic information, experiential group exercises, and individual live demonstrations using student or teacher volunteers. The risk of harm in their participation was minimal.

The live interactive presentations were well received by the students, teachers, and the owners of the school. The researcher’s proposed doctoral study was discussed with Laura

George, co-owner of the academy. The academy's owner was very enthusiastic about her school participating in the proposed study as a location site. She felt that the researcher's work was extremely compatible with her school's philosophy and structure. As reviewed in an article in a local magazine, "Around Woodstock," "The Woodstock academy, is a non-traditional learning community. According to Laura George, Compass Prep is a unique, organic learning community which, because of a philosophy of focus and flexibility, allows both the driven and the discouraged students to work side by side on a path toward success and, like a family, often encouraging one another along the way." (August 2015, p 36).

According to data compiled by city-data.com, the student population of Compass Prep Academy is a good demographic representative sample of the high school student population in Georgia. According to verbal feedback of students and teachers of the pre-study workshops, this alternative high school adolescent population is representative of most adolescents that enter psychotherapy or counseling for depression and anxiety. The researcher considered whether the results from an experimental research study using a small convenience sample could be generalized to larger groups of adolescents diagnosed with depression and anxiety with a high confidence level. One limitation of convenience sampling is a lack of confidence regarding external generalizability. Another limitation to external generalization of findings is an underpowered study.

Scope of the Study

Before IRB approval, Dr. Clea McNeely, an independent statistician not associated with the study, performed a power analysis using SPSS. The results showed that a commonly accepted sample size of 30 adolescents would produce an underpowered study. Dr. McNeely determined that at least 80 adolescents would be needed to produce adequate power for a full

study. Hummingbird IRB approved study # 2018-52 for a sample size of 80 adolescents between 13 and 18.

A sample of convenience recruited from multiple sources responded to a community-wide appeal and enrolled voluntarily in my study based on their interest in the research topic. Referrals came from Unity North Atlanta Church congregation, local medical provider offices, private practice professional counselors and psychotherapists, interested Cobb and Cherokee County private alternative high school administrators, and the general population. The IRB initially approved two sites in Georgia to sponsor the research. The sites were Unity North Atlanta Church in Cobb County and Compass Prep Academy in Cherokee County.

Subjects were enrolled and grouped by location sites. Enrolled subjects from both sites were randomly assigned to either the experimental or control group using an online random number generator (RANDOM.ORG) and coin toss. Randomization was performed by an administrative assistant unaffiliated with this study. Following random assignment to the treatment or control group, subjects recruited from the church site and the general population were offered a choice between two options to receive the intervention. Subjects in the church site's groups selected the day and time of the group meeting they preferred according to their availability. Subjects from the private school site were assigned to groups according to their class schedules. Each site had an equal number of participants in the experimental and control group.

Enrolled participants met all the inclusion criteria and did not meet any of the exclusion criteria. Although not a formal exclusion criterion, to avoid the appearance of researcher bias, none of the enrollees were private clients of or directly affiliated with the PI. The information given to volunteer subjects and their parents/guardians was that the teens were research participants in an initial phase of a doctoral dissertation project. They were told that they would

be taught to recharge their inner batteries, get their brain and heart in sync, learn fun and simple ways to deal with stressful emotions, and learn empowering tools to use in their daily lives. They were informed that they would complete two Beck Youth Inventories for Depression and Anxiety prior to the beginning and after the end of the four-week intervention. They were informed that they would complete VAS for Depression and Anxiety before and after the four intervention sessions. The teens were told that they would complete a research evaluation form with a Likert type scale and open-ended questions to rate program objectives and other aspects of the overall study at the end of the intervention. One research assistant assisting in the intervention instructed the participants on how to fill out the measurement instruments. Additional blinded research assistants (RA) and administrative staff scored the outcome measures. The RAs were Master of Social Work graduate student interns from Walden University and administrative staff from the research sites during the research period.

The PI taught and guided the intervention exercises. At the time of this research, the PI was a doctoral candidate at Holos University Graduate Seminary, President and CEO of Out-of-the Box Solutions, Inc., a Licensed Clinical Social Worker, certified Hypnotherapist, and Reiki Master. The PI is a mental health professional with over 38 years of experience in the treatment of mental health, substance abuse, transformational psychology, and energy healing modalities.

Limitations of the Study

The inherent weaknesses of conducting a research study in a school or church setting became more evident as the research design, sampling methods, protocol, and procedures evolved.

One limitation apparent in this study was the lack of randomized sampling of the research population. This factor highlights the difference between a randomized sample and a sample of

convenience with random assignment. This RCT study used convenience sampling with random assignment to experimental and wait-list control groups.

Using convenience sampling has several disadvantages that create threats to the internal and external validity of the study. Internal threats of convenience sampling included vulnerability to selection bias, social threats, and vulnerability to type I and type II sampling errors. Threats to external validity included decreased confidence in generalizing the findings of the study to a larger population of adolescents. Obtaining randomized sampling in the environment of a school or church setting was highly unlikely to achieve (Dudovskiy, 2018, January).

Another limitation was the inability to ensure isolation of the general school population's treatment and control groups. The lack of separation of research subjects from other students made social threats more likely to internal and external validity. Also, the inability to isolate each exercise's effects in the intervention protocol increased the likelihood of type I and II. Type I and II errors affected the researcher's ability to draw unbiased inferences about the results' statistical significance.

Another limitation of this study was a small sample size resulting in an underpowered study. The PI and research team were unable to recruit all 80 subjects needed for an optimally powered study. Due to the small sample size, there was insufficient power to achieve statistical significance and strong effect size in all measures. The SPSS analysis of both Beck Youth Inventories for between-group interaction did not meet the statistical significance criteria ($p = <.05$) due to a lack of statistical power. Although trends in all measures showed a promising pattern in the hypothesized direction, the pre-study power analysis showed that more subjects would be needed to test the hypothesis more conclusively.

Other limitations were the possibility that a lack of cultural diversity and attrition may have biased the results. A small sample of 34 adolescents responded and enrolled in the study during the initial study period. The participants were recruited from a region of Georgia that is typically homogeneous. The demographic characteristics of the sample will be discussed in Chapter 5. Seven subjects (20%) did not complete the intervention and all pretreatment and posttreatment measures. Reasons for attrition in this phase of the study varied. Two subjects enrolled but never began the study. Five other subjects had unrelated events that prevented them from completing all elements of the study. Attrition rates from 5% to 20% in a study are to be expected. However, due to a 20% dropout rate, the question of whether attrition biased the outcomes of this study will be explored in the discussion and conclusions in Chapter 5.

Lastly, a double-blind experiment was not possible in this study. Both the experimental and the wait-list control group participants were aware of who was receiving the intervention. Another challenging aspect of impact evaluation was that the counterfactual could only be approximated and not observed directly. The activities of the control participants measured using the VAS during the experimental group sessions in the church setting were not monitored. The activities of the control sample in the school setting were able to be observed while the experimental group received the intervention. However, the study design did not directly observe or control the natural conditions of the wait-list control group [counterfactual]. A further limitation was whatever natural conditions some control group participants measured instead of the intervention were unknown to the researchers. This study did not analyze the counterfactual conditions or compare the intervention to another mental health intervention.

CHAPTER 2: REVIEW OF LITERATURE

This chapter presents an extensive, in-depth review of the literature to answer the research questions under investigation. The PI scrutinized the existing literature using Google Scholar and various online databases such as PubMed, Medline, Research Gate, Elsevier, and Science Direct. Numerous public and college research libraries and websites such as The National Institutes of Health (NIH), Institute of HeartMath, Center for Reiki Research, Rhine Research Center, Academy for Guided Imagery, the Association for Comprehensive Energy Psychology (ACEP), and the Consciousness and Healing Initiative (CHI) were searched. Multidisciplinary online journals and texts in EP, Energy Medicine, Psychiatry, Clinical Social Work, Professional Counseling, Integrative Medicine, Biology, Cardiology, Neuroscience, Engineering, Education, Neurotheology, CAM, Spirituality, and Holistic Health were explored. Seminal papers, reports, meta-analysis literature reviews, RCTs, and other forms of scientific evidence spanning multiple disciplines were found supporting the view that biofield and subtle energy therapies show much promise in treating psychological problems such as PTSD, Depression, and Anxiety.

Shifting to an Electromagnetic Paradigm

The past 50 years have revealed both that there is a remarkable endogenous electric character to organisms, and, also, that there are equally remarkable effects in biologic systems when they are exposed to electromagnetic fields. (Liboff, 2004, p. 44)

Interdisciplinary research and knowledge over the past 200 years help us understand what the NIH, the NCCIH, the American Holistic Medical Association (AHMA), holistic physicians, energy psychologists, biologists, anatomists, and other allied researchers define as Energy Medicine, Energy Psychology, and Biofield Science. Modern scientific understanding of endogenous bioelectricity and the effects of electric (EF), magnetic (MF), and electromagnetic

fields (EMF) on living cells and tissue originated in the mid-1700s to early 1800s. Italian physicists such as Volta (b.1745-d.1827), the inventor of the electric battery, Galvani (b.1737-d.1798), who introduced the concept of bioelectrical information passing from nerve cells to muscles to create movement (Funk, Monsees & Ozkucur, 2009, February), and Matteucci (b.1811-d.1868), who expanded the work of both previous physicists (Liboff, 2007) explored how neural information passes to muscles, tissues, and cells through electrical signaling pathways. Building on previous knowledge, Ampere (b.1775-d.1836) found the interrelationship between electricity and magnetic fields. He “formulated the law of electromagnetism” (Poole, n.d.). The base unit of electrical measurement, “ampere,” was named in his honor.

These classical scientists and many other researchers and scholars from the early 1920s and beyond prove that all electrical currents create electromagnetic fields. Their research opened the door to the concept that all living organisms’ nervous systems are electrical (Liboff, 2007). Before the 1990s, there was no known direct link between bioelectrical science and Western medical practices. Cellular changes in response to EMFs remained mysteriously obscured. The idea of holistic medicine or “whole person healing” did not exist in the nineteenth and early twentieth-century Western scientific culture. The scientific processes associated with the physical body and the nature of the spirit and mind were considered separate and unrelated. “It was not until the development of appropriate molecular and cellular tools in the 1990s that a comprehensive link between cell biology and the phenomena of bioelectricity became possible” (Funk et al., 2009, February, p. 185).

With the development of late Germ Theory, researchers Pasteur (1860s), Lister (1860s), Koch (1870s), and Fleming (1920s and 1930s) provided the fundamental underpinnings that define the scientific paradigm in modern conventional medicine (Liboff, 2004, 2007). Even

today, most conventional Western medicine practitioners view the human body's structure and function in terms of microorganisms and molecules of the cells and their interactions. Current scientific understanding of illnesses and their treatment fits into the framework of Germ Theory, Newtonian physics, and a microbiological paradigm. Many U.S. healthcare systems presently adhere to a microbiological oriented treatment approach and have not adopted a “whole health” approach as a standard healthcare norm.

Dr. Abraham Liboff, a researcher and professor in the Department of Physics at Oakland University in Michigan, provides a historical context for understanding the electrodynamic paradigm (Liboff, 2004, 2007). Liboff (2004) found that a significant change occurred more than half a century ago when biochemists and physicists extended their research to include the study of DNA/RNA. In the biological sciences, Lund's work (Lund, 1947; as cited in Liboff, 2004) expanded our knowledge of how subtle endogenous energy fields affect biological processes. Lund's research with plants in the 1920s and 1930s demonstrated that all living organisms display a well-defined endogenous electric dipole field (Funk & Monsees, 2006; Funk et al., 2008, July 25; Funk et al., 2009, February). This concept, later reinforced by the work of Pohl, Braden, Robinson, Piclardi, and Pohl (1981, September), led to the observation that equal pairs of negative and positive charged magnetized poles exist in the fields of other living cells (IBM Research Editorial Staff, 2017, October 20). This notion that “life is an expression of the electromagnetic force” (Liboff, 2007, p. 317) forms the basis of modern-day Quantum Physics, Energy Medicine, Energy Psychology, Biofield Science, and Subtle Energy Therapies.

The Merriam-Webster dictionary defines electrostatics as “a branch of physics that deals with the effects arising from the interactions of electrical currents with magnets, with other electrical streams, or with themselves” (n.d.). Two early researchers in the 1970s, an

anatomist, named H.S. Burr (Burr, 1972; as cited by Liboff, 2004 & 2007, as cited by Funk et al., 2009, February) and Robert O. Becker, M.D., a pioneer in the field of bioelectric science (Becker, 1974; as cited by Liboff, 2004 & 2007, as cited by Funk & Monsees, 2006) made preliminary correlations between the potential for the treatment of physical injury or illness using endogenous electromagnetic currents. Over the past five decades, numerous researchers have reinforced the concept that the external application of direct or pulsed electromagnetic frequencies produces a positive and restorative effect by fundamentally changing the field template to promote wellness and healing (Foletti, Grimaldi, Lisi, Ledda, & Liboff, 2013).

In recent literature reviews recognizing the importance of electromagnetic field interactions in Biofield Science and Energy Medicine, many researchers advocate adopting an electromagnetic paradigm (The Consciousness and Healing Initiative, 2020). This conclusion is based on decades of quantitative research in Microbiology, Biomechanical Engineering, Epigenetics, and Quantum Physics. The belief that all living cells are electromagnetic entities (Funk & Monsees, 2006; Lipton, 2016) is an expected outcome of the physical laws of biology and physics. Studies have shown that as plant and animal organisms grow and develop over time, their endogenous electromagnetic field (EMF) grows with them. This field reflects dramatic changes associated with traumatic injury and illness. From the perspective of electromagnetic processes and quantum models, electrodynamic and biofield therapies are the most direct means of restoring the biosystem to its normal state. EMF coherence is essential to “modulate cellular function to restore or maintain health” (Foletti et al., 2013, p. 1). The changed field acts as a template for the living organism's fundamental electromagnetic parameters (Liboff, 2004). Using a bio-intrinsic resonant approach can

potentially lead to the development of safe and effective evidence-based treatments that promote wellness while “decreasing reliance on marginal biochemical remediation and pharmaceuticals” (Foletti et al., 2013, p. 1). The next step in medicine is to learn to “discern and apply those EM signaling parameters” by further evidenced-based research in this area (p. 1).

Quantum Electrodynamics (QED)

Investigative journalist Lynne McTaggart (2008), in her groundbreaking classic, *The Field*, suggests that “human beings and all living things are a coalescence of energy [light] in a field of energy [light] connected to every other thing in the world. (p. xv).” This “complex network of energy fields” (p. 14) is described as “a sea of motion - a quantum sea of light” (p. 25). According to quantum field theory, all electromagnetic fields are connected by a Zero Point Field. “The existence of the Zero Point Field implied that all matter in the universe was interconnected by waves, which are spread out through time and space...” (p. 29). This concept is best explained by a branch of physics referred to as “quantum electrodynamics” (QED). Quantum field theory describes the charged particles' interactions with the electromagnetic field, light with matter, and the charged particles with one another. The human EMF or biofield is both endogenous, i.e., produced within the organism or system, and bio-intrinsic, e.g., inherent, natural, innate, and essential to the human body. Traumas, pathologies, and abnormalities create chaotic deviations from this ordinarily coherent and organized field (McCraty & Zayas, 2014). These changes are compensated for by the electromagnetic system's bio-intrinsic tendency to return to a unified, coherent state. Therefore, the human biofield field has an innate homeostatic tendency to return to normal functioning and wholeness. This innate drive toward wholeness is found in the concepts of psychophysiological coherence (McCraty &

Zayas, 2014; Elbers & McCraty, 2020)) and syntropy (Szent-Gyorgyi, 1974).

Subtle Energy Medicine and Biofield Science

We are still on the threshold of fully understanding the complex relationship between light and life, but we can now say emphatically, that the function of our entire metabolism is dependent on light. (Prof. Fritz Albert Popp, Biontology Arizona, 2020)

Innovators in Holistic Medicine, Humanistic Psychology, Energy Medicine, Biofield Science, Electrotherapy, and Electromagnetic Field Therapies include Dr. Norman C. Shealy, who is widely considered the father of holistic medicine. Shealy authored numerous well-known publications including his seminal text, *Energy Medicine* (Shealy, 2011). Since the early 1970s, Shealy has been a major driving force behind the fields of Subtle Energy Medicine and Biofield Science. Over the past five decades, researchers, scientists, and educators have embraced therapeutic interventions or approaches that incorporate subtle energies and biofield science. Many higher learning institutions, medical schools, graduate programs in theology, psychology, clinical social work, and counseling have integrated humanistic, holistic, spiritual, quantum and electrodynamic approaches into their curriculums. Holos University Graduate Seminary (HUGS) has been at the forefront of this scholarly and scientific journey to expand our understanding and knowledge to maximize the healing potential of consciousness and subtle energies.

In 1971, Holos University's founding President, Dr. Shealy, "established an innovative holistic medical clinic incorporating the essential concept of spirituality as a guiding principle of healing" (Holos University Graduate Seminary, 2014, May, p. 13). Shealy created the idea of holistic medicine with the integration of traditional medicine, holistic theology, energy medicine practices, and the introduction of spinal cord stimulation and Transcutaneous Electrical Nerve Stimulation (TENS), a device patented in 1974 for the treatment of pain. Shealy founded the American Holistic Medical Association (AHMA) in 1978 and was its first president. Shortly

after, the terms Alternative, Complementary, Integrative, and Quantum became an integral part of the vernacular synonymous with holistic health care and the concept of wellness.

Throughout the 1960s, 1970s, and 1980s, Dr. Shealy and a group of like-minded “visionaries, teachers, authors, and researchers” interacted and supported each other’s findings and discoveries. Their collective mission was to bridge the gap between Science and Spirit by “blending the wisdom traditions and their scientific research” (Walker, 2019, p.5). In 1969 and 1970, respectively, the first and second Council Grove Conference of Altered States of Consciousness was cosponsored by the American Association for Humanistic Psychology and the Menninger Foundation (Fadiman, 1969, 1970). Dr. Elmer Green, a researcher at the Menninger Foundation, and his wife, Alyce, were leaders in the field of biofeedback. They co-founded the Biofeedback Research Society, which later became the Association for Applied Psychophysiology and Biofeedback. In October 1989, Dr. Green co-founded a professional non-profit organization, the International Society for the Study of Subtle Energy and Energy Medicine (ISSSEEM). The purpose of ISSSEEM was to study the science of medical and therapeutic applications of subtle energies (Ross, 2012, December 18). ISSSEEM produced two professional publications, *Bridges*, a peer-reviewed scholarly journal, and a quarterly magazine, *Subtle Energies and Energy Medicine*.

The term *Energy Medicine* was coined in the 1980s by Dr. Elmer Green (Shealy, 2011). The term became widely used by these early pioneers with the start of a twenty-four-year history of annual ISSSEEM conferences in 1991. Green, Shealy, and Drs. Robert and Ann Nunley were members of a tight-knit group of professional colleagues that attended the annual Council Grove meetings. Among the other attendees was a young medical intuitive named Carolyn Myss. The Nunleys’ introduction of Shealy to Myss began a 20-year professional collaboration of medicine

and intuition. Out of their work together evolved a new science they called “Medical Intuition.” Shealy and Myss began a graduate program in Energy Medicine and Medical Intuition in 2000, the precursor of Holos University Graduate Seminary (HUGS). By June 2001, Drs. Robert and Ann Nunley, Dr. Norm Shealy, Dr. Carolyn Myss, and their close friend and colleague, Professor Emeritus Dr. Elmer Green, had become the core faculty of Holos University Graduate Seminary (HUGS). HUGS was established as an institution of higher learning based on the integration of Science and Spirit. HUGS provides a unique learning environment based on a holistic, spiritual philosophy to advance new thought and innovative research in the field of subtle energies, Biofield Science, and Energy Medicine. In July 2013, ISSSEEM officially became the International Research Division of Holos University Graduate Seminary (HUGS).

In 1992, the U.S. Congress officially recognized the vital role of non-traditional Western medicine approaches by establishing the Office of Unconventional Medicine. The purpose of this office within the U.S. Department of Health and Human Services Food and Drug Administration (USFDA) was to promote new scientific CAM research, assess the existing research, and investigate the efficacy of “unconventional medical practices.” Through a series of name changes, the Office of Unconventional Medicine changed to the Office of Alternative Medicine (OAM). In 1998, OAM was renamed and established as a national center, The National Center for Complementary and Alternative Medicine (NCCAM). The final and most current iteration, under the Obama administration (NIH, 2014, December 17), NCCIH functions as a vital component of the NIH.

The notion of a biofield that is intrinsic to all living things was proposed in the early 1990s. That concept has gone through various iterations as scientists’ understanding of bio-intrinsic fields has evolved. The term “biofield” was originally coined in 1994 by a panel of NIH

scientists studying manual medical modalities (Kafatos, Chevalier, Chopra, Hubacher, Kak, & Theise, 2015, p.27). A year later, Rubik, Pavek, Green, Laurence, Ward, and Al (1995) described the biofield as a “massless field, not necessarily electromagnetic, that surrounds and interpenetrates the human body” (p. 9). Since then, the biofield concept has expanded to “describe the behavior of cells, organs, plants, interpersonal interactions, and even the Earth” (The Consciousness and Healing Initiative, 2020, April, p.12). Current understanding defines the biofield as “a field of energy and information, both putative and subtle, that regulates the homeodynamic function of living organisms and may play a substantial role of understanding and guiding health processes” (Jain, Daubenmier, Muehsam, Rapgay, Chopra, 2015, p. 16). Understanding the unified and coherent characteristics of biofields and their role in quantum models is vital to today’s scientists and medical practitioners. This knowledge informs our understanding and practical use in healing modalities of the nature of consciousness and the living universe (Kafatos et al., 2015).

A widely used definition of CAM can be found in an official NCCAM document (Institute of Medicine, 2005). CAM incorporates a wide variety of health care practices, products, and therapies that differentiate from methods, products, and treatments used in conventional allopathic medicine. NIH identified ten major CAM approaches. CAM integrates ancient wisdom and holistic approaches used for centuries in China (Traditional Chinese Medicine, Acupuncture, Qigong), India (Ayurveda, Yoga), Tibet (Buddhist mindfulness meditation), Japan (Traditional Japanese Kampo Medicine), and indigenous cultures (Shamanism, Native American, Yoruba, herbalism) around the globe (Shealy, 2011, p.4). Healing approaches using external electrotherapy and electromagnetic devices, quantum field approaches, and assorted biofield therapies emerged in the twentieth century as an outgrowth of

the industrial revolution, various branches of engineering, and the development of modern technology.

Two Types of Energy Fields

NCCIH's definition of Energy Medicine describes two distinct types of energy fields. An FDA guidance document defines these types of electromagnetic fields as "putative" and "veritable" energy fields (USFDA, 2007). The energy within and around the body is called a putative energy field or human bioplasma. Subtle vibrations in this field are seen and felt outside the range of normal human perception. Scientists can measure putative energy fields with specialized technology. Certain biofields are measured using standard equipment such as EEG, EKG, MRIs, electrocardiograms, and nerve conduction studies (Shealy, 2011, p. 1).

In the past, other aspects of biofields were more challenging to measure. Some energy healers report the ability to perceive subtle human energy fields without instruments. Energy healers often report affecting change directly to the putative energy of the human biofield to restore homeostasis. In one study in the UK, 93% of the 278 respondents receiving energy healing reported experiencing immediate benefits such as relaxation, improved well-being, and less pain (Rahtz, Child, Knight, Warber, & Dieppe, 2019, May). In recent years, devices have emerged that claim to measure the finer, subtle vibrations of the human bio-energetic field (Udristioiu, 2015, October 13). Biophoton imaging (Popp, Li, Mei, Galle, & Neurohr, 1988, July), Gas Discharge Visualization (GVD) (Kostyuk, Cole, Meghanathan, Isokpehi, & Cohly, 2011, May 19), Thermography (Udristioiu, 2015, October 13), Biofield Viewer™ (Streeter, 2019, January 11-12), and Pulsed Electromagnetic Frequency (PEMF) (Holden, 2012, Spring) devices diagnose and treat a plethora of ailments and conditions with reported positive results.

Basic physical science teaches us about four states of matter, i.e., solid, liquid, gas, and plasma. By increasing the energy in a particular state of matter, this process converts that state into a less dense state. For example, solid converts to liquid, liquid converts to gas, and gasses convert to plasma (Rader, 1997-2019). Sound waves produced by tuning forks measure the human biofield and investigate this field's qualities. The human biofield is a toroidal shaped matrix of plasma surrounding the body. It has 12 distinct bands of putative energy. Memories of life events are stored in these bands, much like the growth rings of trees. The outer band of the biofield is about 5 feet outside the body. It holds information regarding gestation, birth, and the early years of life. Children and adults have the same size biofield. Children have less rings than adults (McKusick, 2014, September).

As we mature, our biofields grow with us. We can expand and contract our biofields at will. Most of us are unconscious of the movement and changes in our biofields (McKusick, 2014, September). Biofields also include vibrational aspects of emotional, mental, and subtle states of consciousness. The biofield is holographic, fluid, and reflects our electrical health every moment. The biofield is a complete template of our body's tissues, organs, and cells and remains intact, even if a part of the physical 3D form is removed. This multidimensional energetic blueprint or template creates the 3D physical form. The human bioplasmic field can be read, scanned, and interpreted in various ways, much like any other blueprint (Red Spirit Energy Healing, 2020, May 25).

Human biofields also interact with EMFs that originate from outside of the body that influence their fields. These types of fields are called “veritable energy” fields (EMF). In 1996, in response to a global outcry over the possibility of harmful effects of EMFs, The World Health Organization (WHO) launched the International EMF Project. The WHO website explains how

veritable electromagnetic currents can cause stimulation of the nerves and muscles and affect human biological processes in both positive or negative ways (World Health Organization, 2020). Veritable EMFs can be healing or detrimental to the body's organs, tissues, and cells healthy functioning. Research shows that low-frequency EMFs have healing potential, and higher frequencies can cause damage (Popov, Dobref, Deliu & Burlacu, 2016). Current scientific techniques can easily measure veritable fields. Researchers studying veritable energy fields are often found in the professions of microbiology, osteopathic medicine, cardiology, neurology, and psychiatry.

Electromagnetic Frequency Devices

The earliest documented use of electromagnetic frequencies in conventional modern medicine is the development of the cardiac pacemaker. Pacemakers are the result of the interface between the study of human anatomy and the use of technology found in engineering. Experimentation with restoring the function of the human heart began with John MacWilliam (1989), a cardiac electrophysiologist who applied electrical impulses directly to the organ. In 1926, a medical pioneer named Dr. Mark Lidwill invented a portable electrical impulse device that reportedly saved the life of a newborn infant. Numerous innovations were explored that spanned decades from the 1930s - 1970s. It was only after 2016 that there were widely accepted FDA safety standards for pacemakers. Currently we have reusable pacemakers (Selvaraj, Sakthivel, Satheesh, Ananthakrishna, Sagnol, Jouven, Dodinot, & Balachander, 2017, January 23) that can restore normal heart function.

Since the 1970s, the FDA has approved several devices in the field of osteopathy and pain management using pulsed EMFs. Liboff (2004, 2013) cites two early osteopathic researchers, Bassett and Diebert (as cited by Liboff, 2004, 2013), who applied

electromagnetic fields and ion resonance electromagnetic field stimulation to accelerate healing bone fractures in shorter periods than conventional medicine. Another prime example of using electromagnetic stimulation in Western medicine is the modern Transcutaneous Electrical Nerve Stimulation (TENS or TNS), patented in March 1974 by Dr. Norm Shealy, for pain reduction.

Current use has extended into the field of Neurology and Psychiatry. FDA approved devices such as PET scans, SPECT scans, MRIs, EEGs, electroshock therapy (ECT), Transcranial Magnetic Stimulation Therapy (TMS), and Repetitive Transcranial Magnetic Stimulation [rTMS] (Udupa & Chen, 2010). ECT, TMS and rTMS are used to treat medication-resistant depression (Lefaucheur, 2019). In March 2014, the FDA approved CEFALY (The American Migraine Foundation, 2016, December), a transcutaneous electrical nerve stimulation device for the prevention of migraines. The use of electromagnetic frequency treatments demonstrates a narrow acceptance of the electrodynamic model in some aspects of conventional Western medicine. However, the results of this study and future biofield informed research will help expand this acceptance and shift to an electrodynamic paradigm to include the fields of mental health, behavioral health, and addictive diseases. More high-quality RCT research is essential in the areas of mental and behavioral health to support the widespread use of subtle energy interventions and psycho-spiritual approaches (The Consciousness and Healing Initiative, 2020, April; Rindfleisch, 2019, October 1).

Neurotheology

A mystic sees beyond the illusion of separateness into the intricate web of life in which all things are expressions of a single Whole. You can call this web God, the Tao, the Great Spirit, the Infinite Mystery, Mother or Father, but it can be known only as Love. (Joan Z. Borysenko. 1997, p. xv)

Understanding the fundamental laws of quantum physics and subtle energy models coupled with Western psychology and ancient spiritual wisdom is at the core of modern Integrative and Holistic Medicine, Energy Psychology, Biofield Science, BITT, and the emerging field of Neurotheology. The blending of Eastern and Western spirituality and healing approaches, which became popular in the cultural revolution in the 1960s, is evidenced by our 21st-century embrace of nondual healing methods. Nondual healing systems focus on mind-body-spirit practices that achieve outcomes by directly affecting the biofield. Our understanding of ancient wisdom found in Indo-Tibetan, Vedic, and other Asian and indigenous philosophical and medical systems allows us to expand our collective knowledge of human consciousness and the living universe. The electromagnetic paradigm challenges reductionist approaches of microbiology and plays a substantial role in guiding whole person health processes (Jain, Daubenmier, Muehsam, Rapgay, & Chopra, 2015).

Since the early 1970s until the present, questions about the local versus the nonlocal nature of the mind and consciousness have been posed, researched, and written about by physicians, psychologists, and internationally renowned neuroscientists. Dr. Larry Dossey (Dossey, 2013, October 1); Dr. Ken Wilbur (Kyriacou, 2018), Shukla, Archaya & Rajput (2013, July), and Cooke and Elcoro (2013, March) are among those who have explored ideas about the nature of non-local consciousness. Dr. Simon Dein (2013, 2018), a professor in the U.K., and Dr. Andrew Newberg, a medical researcher in the U.S. have focused on the interface between spirituality, religion, and the diverse aspects of psychiatry, psychology, and mental health.

In his revolutionary text, *Principles of Neurotheology*, Newberg described the emerging field of neurotheology (Newberg, 2010). Neurotheology is a unique field of interdisciplinary study that seeks to understand the relationship between the brain and theology, i.e., the mind and

religion. Neurotheology looks at the relationship between the neural phenomena in brain processes, and what is identified in all religious and mystical traditions as spiritual experience. Neurotheological research seeks to explain what happens, in terms of scientific, objective, and mechanical functioning of brain processes, when human beings have what is considered by the scientific community to be subjective, mystical experiences of the Divine (Underhill, 2012). Consciousness has been considered by many, or most, neuroscientists to be localized within the brain and cannot exist if the brain is non-functional. Current scientific thinking proposes that spiritual experience is merely a function of firing of neural pathways and wiring within in the brain itself (Newburg, 2010)

Neuroscientists agree that the debate in the scientific community cannot prove or disprove the existence of God or Higher Power or an Infinite Intelligence. Barbara Hagerty (2009) conducted an exhaustive review of scientific data and personal testimonies available in the literature until 2006. In her book, *Fingerprints of God*, Hagerty (2009) concludes that “It seems to me that the instruments of brain science are picking up *something* beyond the material world.... Science is showing that a spiritual experience leaves fingerprints, evidence that a spiritual transaction has occurred” (p. 276).

In the Western medical paradigm of microbiology, science has been regarded as anti-spiritual. Spiritual or “mystical” experiences cannot be proven by the scientific method and are not considered valid or reliable in the empirical, scientific sense. Over the past fifty years, with the blending of Eastern spirituality and Western Quantum physics, rigid boundaries between science and spirituality have become more malleable. Mystical philosophies from eastern cultures have become integrated into Western society. Eastern culture is reflected in popular fashion, psychology, music, meditation, and various healing modalities. “Whole person” systems

of healthcare that address the physical, mental/emotional, and spiritual aspects of the person have been accepted into mainstream Western medical government agencies such as the U.S.

Department of Veteran Affairs, as evidenced by Passport to Whole Health (Rindfleisch, 2019, October 1).

One of the great Eastern mystics of the 20th Century, Meher Baba (Hooper, 2010), explained the *rightful place of science* (Baba 2007) Meher Baba's Discourses were given and compiled during the early 1930's through the 1940's. "It is a mistake to look upon science as anti-spiritual. Science is a help or hindrance to spirituality according to the use to which it is put. Just as true art expresses spirituality, science, when properly handled, can be the expression and fulfilment of the spirit. Scientific truths concerning the physical body and its life in the gross world can become mediums for the soul to know itself; but to serve this purpose they must be properly fitted together into larger spiritual understanding. ...All-sided progress of humanity can be assured only if science and religion proceed hand in hand" (Baba, 2007, p. 6).

Understanding Energy Psychology

According to researcher and practicing psychologist David Feinstein, Ph.D. (2008, 2012, 2015, 2019), EP is an umbrella term for a variety of clinical and self-help modalities and biofield therapies integrated into the Western clinical psychological framework. EP incorporates an understanding of the electrodynamic paradigm and the human body's endogenous electromagnetic currents along with ancient Traditional Chinese Medicine, Indo-Tibetan, Asian, and indigenous healing approaches. EP is used synonymously with terms such as Emotional Freedom Techniques (EFT), Thought Field Therapy (TFT), Acupoint Stimulation, and Acupoint Tapping. EP commonly uses a protocol that combines manual stimulation of acupuncture points while the patient mentally focuses their attention on problematic negative thought patterns.

In 2012 Feinstein published a comprehensive retrospective literature review of 51 studies entitled “Acupoint Stimulation in Treating Psychological Disorders: Evidence of Efficacy” in the American Psychological Association’s journal, *Review of General Psychology*. Early EP research studies from 2001 to 2010 focusing on psychological disorders such as depression, anxiety, and PTSD yielded positive results. Feinstein (2012) identified eighteen RCTs that consistently demonstrated large effect sizes and other positive statistical results that far exceeded chance after relatively few treatment sessions. Feinstein cited EP advocates who reported claims of rapid results and positive effects. Feinstein concluded that there was a strong indication of efficacy in a variety of acupoint stimulation modalities such as TFT and EFT.

TFT is an EP technique created by Dr. Roger Callahan in the 1970s. TFT is useful in the treatment of traumas, phobias, and psychological pain caused by other upsetting experiences (Callahan, 2001). TFT uses energy meridian treatment points and bilateral optical-cortical stimulation while focusing on the targeted symptoms or problem. Many high-quality RCT studies over the past two decades demonstrate positive results using TFT in the treatment of anxiety, depression, anger, acute stress, grief, chronic pain, cravings, fatigue, nausea, neurodermatitis, obsessive traits, panic disorder without agoraphobia, parent-child stress, phobia, PTSD, relationship stress, trichotillomania, tremor, and work stress (Feinstein, 2012).

Other early EP research studies involved a group of clinicians at Kaiser Permanente in Honolulu. The Kaiser Permanente study tracked the progress of 714 patients treated with TFT (Sakai, Paperny, Mathews, Tanida, Boyd, Simon, Yamamoto, Mau, & Nutter, 2001). Researchers claimed positive results. A team of investigators on the medical team lead by Dr. Joaquín Andrade, a medical doctor trained in acupuncture and TFT, facilitated a well-known study (Andrade & Feinstein, 2004). Andrade introduced acupoint tapping for psychiatric

conditions to the staff of eleven clinics in Argentina and Uruguay. This study tracked the progress of 5,000 anxiety patients over more than five years, showing positive results. The results from this study comparing acupoint tapping with CBT sessions found that only three tapping sessions produced the equivalent amount of anxiety reduction as 15 CBT sessions. Another study by Carl Johnson, a retired Veterans Administration psychologist, focused on his post-retirement work with PTSD. This study investigated 105 people who had been severely traumatized in Kosovo following the widespread genocide of their people. Results showed substantial improvement in 103 of the participants (Johnson, Shala, Sejdijaj, Odell, & Dabishevici, 2001).

Feinstein (2012) suggested that early researchers, in their enthusiasm for EP methods, may have been biased in their interpretation of the data. However, subsequent studies have produced similar effects validating the conclusions of early studies. Gaesser & Karan (2016) conducted a promising RCT pilot study that compared EFT and CBT to reduce adolescent anxiety. Stapleton, Crighton, Sabot and O'Neill (2020) replicated an earlier study (Church, Yount, and Brooks, 2012), that re-examined the effects of EFT on stress biochemistry. Data supported the findings of the original study. EFT was determined to be an effective treatment to reduce the biological markers of stress in a short time. Within the past two decades, EFT (Craig, 2011) has become extremely popular and widely practiced.

There is no doubt that many consumers of mental health services today value anecdotal reports and are highly likely to use these popular approaches. Prior to 2012, the American Psychological Association (APA) was obstructing requests by professional organizations to offer courses in EP including EFT. In 2012 the APA updated their position on EFT. In July 2012, the ACEP finally approved courses in EP and EFT as empirically valid modalities (Feinstein, 2015,

May 25). In 2018 NCCIH reported a significant rise of 5% in the use of complementary therapies by children ages 4-17 from 2012 to 2017 (Black, Barnes, Clarke, Stussman and Nahin, 8 November 2018). In a review that compared yoga, meditation, and chiropractic in adults, Clarke, Barnes, Black, Stussman, and Nahin (8 November 2018) found that the use of yoga increased by 5% and the use of meditation rose to 10% from 2012 to 2017.

Evidence-Based Results in EP and Biofield Therapies

Over the past few decades, evidence-based studies indicate robust effect sizes and other positive statistical results using EP techniques and various forms of Biofield Therapies. Evidence includes anecdotal reports, uncontrolled outcome studies, systematic observation, and RCTs. RCTs are considered by most scientists to be the gold standard of quantitative, empirical research. During my literature review I found numerous, high quality RCTs to support the use of EP and Biofield Therapies. Validation of the efficacy of these electrodynamic psychotherapeutic approaches come from a variety of sources. Researchers of energy and biofield therapies have written formative reviews, articles, and reports that provide an analysis of diverse research studies and other scientific evidence spanning multiple disciplines (Jain & Mills, 2009; Rindfleisch, October 2019; CHI, 2020).

A recent comprehensive review of the efficacy of Biofield Therapies was published in a 2019 report prepared for the VHA Office of Patient Centered Care & Cultural Transformation. *Passport to Whole Health* (Rindfleisch, October 2019) confirms the efficacy and safety of biofield approaches finding them, “relatively free of adverse effects” (p 325). In 2003, a general research survey of 2,200 published reports on energy healing found 11 out of 19 trials produced positive effects in 1,922 subjects. A 2008 Cochrane review on hands-on healing approaches such as Healing Touch and Reiki concluded that pain was reduced in 1,153 patients. A 2009 review of

66 studies of biofield therapies in the treatment of pain produced strong evidence of pain reduction (Jain & Mills, 2009). Another general review in 2014 found positive results in 12 out of 18 studies (CHI, April 2020, p 33). Since 2010, the number of publications has increased significantly, especially in EP approaches such as EFT and TFT (CHI, April 2020).

In an earlier systematic review of the literature, “Biofield Therapies: Helpful or Full of Hype? A Best Evidence Synthesis” (Jain & Mills, 2009), researchers Dr. Shamini Jain and Dr. Paul Mills focused on the effects of biofield therapies such as therapeutic touch and Reiki for medical and emotional problems including pain and anxiety in people with acute pain, cancer, and heart disease. The authors rated 66 clinical studies investigating the effectiveness of biofield therapies with a variety of patient populations. The purpose was to determine whether research in biofield therapies demonstrated positive results for specific medical ailments or aspects of functioning. Findings indicated that the studies met the minimum standards for validity of inferences. Eight RCTs examined mood variables such as depression, anxiety, and general mood disturbance. The authors concluded that biofield therapies showed strong evidence of reducing pain intensity in pain populations. Evidence that biofield therapies effectively reduce anxiety and other behavioral symptoms in pain patients showed much promise. The authors strongly suggested the need for more high-quality research in this area.

Current State of the Knowledge

Most recently, Dr. Jain and colleagues co-founded The Consciousness and Healing Initiative (CHI). In April 2020, CHI published a comprehensive report on the current state of Subtle Energy and Biofield Healing. This report looked at many elements of “whole person healing” such as nutrition, mind-body medicine, indigenous healing approaches, and subtle energy/biofield therapies. The authors concluded that the research data shows promising

evidence for the reduction of pain, anxiety, trauma, and other ailments. They offer a “systems-change approach.” In a meeting of CHI constituents held on July 17, 2019 (p.9), the group identified six key domains. They created “systems mapping” of various aspects of Subtle Energy and Biofield Healing, explored current healing practices, synthesized current evidence, addressed existing concerns, discussed implications for research, and made suggestions for future directions (CHI, April 2020, p. 10).

The CHI report contains a graph called “Landscape Map of Peer Reviewed Clinical Studies (p. 33).” The graph indicates the number of peer reviewed clinical studies found in various current modalities. For example, there were 116 studies investigating some form of EP, 70 studies with protocols using Therapeutic Touch, 61 studies addressing Reiki, 30 studies that used Healing Touch, and 48 studies classified as “other modalities.” The Biofield Healing Report (CHI, April 2020, Section VI, p.78) has imbedded links to a variety of resources including a library of empirical research spanning several decades.

Compelling evidence supports the view that EP techniques, Biofield Therapies, and other bio-intrinsic vibrational approaches show considerable promise in treating psychological problems like PTSD, Depression, and Anxiety. High-quality RCT studies are more prevalent in the field of EP, particularly TFT and EFT, and in healing approaches that work directly with the human biofield. More protocols using subtle energies, biofield, and electromagnetic approaches are vitally needed in the fields of psychiatry, psychology, behavioral, and mental health. The data from these studies will serve to advance the acceptance of these methods as “best practices” and “treatments of choice” by scientists, researchers, and mental health practitioners.

Psychophysiological Coherence

The term, psychophysiological coherence evolved from a heart-brain coherence model developed by Doc Lew Childre, the founder of a non-profit educational and research organization, HeartMath Institute (HMI), and Howard Martin. They co-authored a groundbreaking, best-selling book, “The HeartMath Solution” (Childre & Martin, 1999). It is the definitive work on the “intelligence of the heart.” Researchers Rollin McCraty and Maria Zayas (2014) defined psychophysiological coherence as the ability to self-regulate the quality of feeling and emotion of moment-to-moment experience and its relationship to human physiology. McCraty and Zayas’ (2014) meta-analysis of studies investigating the heart-brain connection using coherence-based approaches spans decades from the 1970s to 2014.

A system of integrated cardiological and polyvagal responses and neural pathways between the brain and the heart enables the human bio-system to maintain a balanced state of ease, resulting in feelings of contentment and happiness. This bio-intrinsic state of coherence enhances one’s ability to self-regulate mentally and emotionally, which, in turn, leads to feelings of stability, wholeness, and oneness with others [social coherence] and our global environment [global coherence]. McCraty and Zayas (2014) maintain that the ability to self-regulate and alter one’s emotional responses is key to a person’s feeling of overall well-being and positive mental health.

The reciprocal interactions among one’s physiological, cognitive, and emotional systems form a vagally mediated, neural, bi-directional information processing network in which communication between systems can occur. Bi-directional communication between the heart and brain have been used interchangeably in the literature as cardiac coherence, neuro-cardiological coherence, and heart-brain coherence (Elbers & McCraty, 2020).

Stressful traumatic events harm human bio-systems and create a state of fragmentation, emotional dysregulation, and chaos. This state of turmoil or disharmony and fragmentation is called, “entropy.” In the human biofield, trauma and stress create a state of entropy and disruption. Trauma or excessive stress over a long period causes the baseline, a type of internal memory that organizes perception, feelings, and behavior on a cellular level, to become rigid and lose resiliency. The result is a constant feeling of anxiety and a decrease in heart rate variability (Tuladhar, Bohara, Grigolini, & West, 2018, May 29).

Over time, the damaging effects of an actual traumatic event or memories of traumatic events lead to establishing a baseline in which the individual gets “stuck” in a state of entropy [chaos] and is unable to regain a state of psychophysiological coherence or syntropy [wholeness]. McCraty and Zayas (2014) contend that a person’s inability to self-regulate and regain their internal baseline of psychophysiological coherence produces a new baseline state of stress, anxiety, and overwhelm. In psychological terms, we call this state of arousal of the amygdala the “fight or flight” response. Prolonged symptoms of hypervigilance, anxiety, and acute stress responses alter one’s internal baseline and can lead to mental disorders such as generalized anxiety disorder, depression, and post-traumatic stress syndrome (Elbers & McCraty, 2020).

Coherence techniques developed by HMI involving vagally mediated, neuro-cardiological breathing (Heart Focused Breathing™) and self-induced positive emotions (Quick Coherence Technique®) increase the overall well-being and homeostasis of bodily processes. The heart’s rhythm and sine wave patterns reflect state-specific emotions. Self-induced positive emotions shift psychophysiological systems to improve self-regulation and heart rate variability (McCraty & Zayas, 2014; Elbers & McCraty, 2020).

Two simple techniques, Heart-Focused Breathing™, and Quick Coherence Technique® facilitate a shift into a state of psychophysiological coherence. The practice of Heart-Focused Breathing™ along with self-induced positive emotions shift our psychophysiological systems toward a more balanced, holistically coherent, and harmonious state (McCraty, 2015, November). These tools bypass higher-level cognitive functions, calm the amygdala, and have a direct positive impact on the human electromagnetic biofield. MRI studies show that adolescents have a mature, fully functioning amygdala and less mature white matter brain development in frontal lobes (Gogtay, Giedd, Lusk, Hayashi, Greenstein, Vaituzis, Nugent, Herman, Clasen, Toga, Rapoport, & Thompson, 2004).

Psychophysiological coherence plays a vital role in facilitating higher cognitive functions, creating emotional stability, and facilitating states of calm. Current research indicates that increased psychophysiological coherence resets our internal baseline to achieve emotional regulation and increased feelings of positive overall well-being [syntropy], decreasing negative emotions such as trauma, stress, fear, anxiety, and depression [entropy]. Over time, this practice of self-induced positive emotions with heart-focused breathing recalibrates a new inner-baseline to a state of ease with more resiliency and heart rate variability (Elbers & McCraty, 2020).

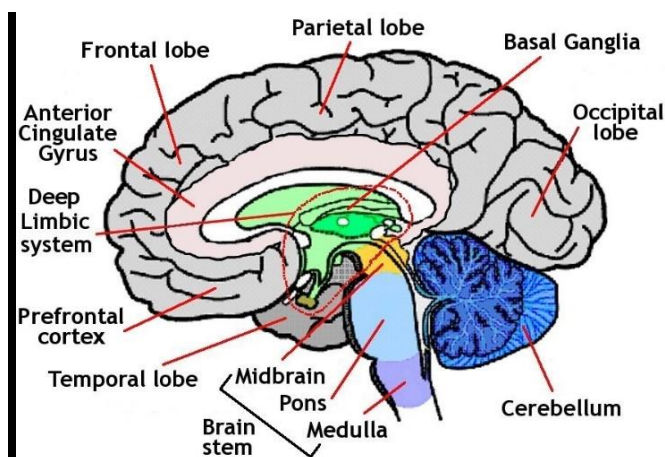
A current systematic review and meta-analysis of the use of heart rate variability biofeedback (HRVB) to improve emotional and physical health conducted by Lehrer, Kaur, Sharma, Shah, Huseby, Bhavsar & Zhang (2020), yielded 1868 papers. Fifty-eight studies met all the inclusion criteria. The authors determined that the use of HRVB produced a significant small to moderate effect size. They found that the effect of HRVB was strongest in “anxiety, depression, anger, and athletic/artistic performance (p. 1).” They concluded that HRVB seemed useful as a complementary treatment. They encouraged researchers to conduct further studies to

confirm the efficacy of HRVB for specific applications (Lehrer, Kaur, Sharma, Shah, Huseby, Bhavsar & Zhang, 2020).

Adolescent Brain Development

Over the past half-century, we have seen unprecedented progress in understanding how the brain develops and, in particular, the phenomenal changes in both its circuitry and neurochemistry that occur during prenatal and early postnatal development (National Institute of Neurological Disorders and Stroke. 2020, February)

Figure 7: Human Brain (ThinkLink, 2014)



Ancient Greeks thought the human brain was the organ in the body where consciousness resides. The notion of the brain and mind are synonymous with describing our sense of self, thoughts, feelings, and behaviors. The frontal lobe of the human brain is the seat of intelligence, logic, and reason. Until the emergence of Quantum and non-dual approaches, consciousness was considered localized within the brain and could not exist outside of active brain function. Traditional Western scientific thinking suggests that spiritual experience is merely a function of stimulating neural pathways and wiring within the brain. How we understand the human brain and its relationship to consciousness is essential to the use of bio-intrinsic transformational therapies to decrease depression and anxiety in adolescents. It requires a thorough understanding

of the biomechanics of neuroscience, neurotheology, the understanding and ability to connect to a unified field, and a non-local view of consciousness.

According to the literature on brain basics from the NIH called *Know Your Brain*, the brain is the “most complex part of the human body” (National Institute of Neurological Disorders and Stroke, 2020, February). The brain is a three-pound organ that organizes intelligence and memory. The two hemispheres are like a computer’s dual-core processor with the ability to parallel process linear and non-linear information (Prenksy, 2001a & 2001b). In 90% of the population with right-handed dominance, the left side of the brain functions like a linear processor (Germann, Petrides, & Chakravarty, 2019, November). It allows us to filter sensory information, perceive linear time and space, perceive spoken language, and analyze data. The right hemisphere perceives non-linear, non-verbal, and intuitive information such as subtle energy, unity, connectedness, and creativity. Other vital functions of the human brain are to interpret sensory information, initiate muscle movement, regulate cell and organ function, and control emotion and behavior. Once thought to be static and unchangeable after childhood, the brain can change and adapt into adulthood via a process called neuroplasticity. Scientists have learned more about the brain in the last decade than in all previous centuries because of the stepping up of research in neurological and behavioral science and the development of innovative research techniques.

Significant contributions to our understanding of changing brain structures and functions in children and adolescents were made with the integration of education and digital advancements in the last few decades. Marc Prensky (2001a, 2001b), author of *Digital Game-Based Learning* (McGraw-Hill, 2001) explains that today’s students have fundamentally changed in how their brains function and process information. Prensky describes these students as “digital

natives,” a generation of youth who have grown up in an environment of digital technology (Prensky, 2001a, p. 1). Prensky proposes that digital natives are not the students our current educational system was designed to teach. Prensky and others in the fields of education and information technology suggest another paradigm in the lexicon of thought processing. Prensky claims that the brains of digital natives have adapted in such a way to support parallel processing versus linear processing (Prensky, 2001b, pp. 3-4).

In 2000 the National Research Council and Institute of Medicine completed a project and published a report of findings called *From Neurons to Neighborhoods* (National Research Council and Institute of Medicine, 2000). In the published report, four landmark studies cited demonstrated significant brain maturation during adolescence and early adulthood using sophisticated image processing of conventional MRI scans. Since then, additional longitudinal studies using conventional MRI have added substantially to our understanding of healthy brain development within individual subjects.

The first area of the brain to develop is the temporal lobe. This area is associated with the most basic autonomic functions that regulate memory, understanding language, facial recognition, hearing, vision, speech, and emotion. The temporal lobe is often referred to as “the primitive brain.” The primitive brain includes the amygdala, which regulates negative emotional responses such as fear and aggression. According to experts in the field of early childhood, the amygdala is almost mature at birth and fully matures as early as a child's first birthday. This finding indicates that toddlers are anatomically designed to experience “psychologically driven fear, anxiety, and stress” (National Research Council and Institute of Medicine, 2000, p. 213). Other areas, including the parietal lobes that involve spatial orientation, making sense of the manifest world, spelling, perception, and knowledge of numbers develop next. The final area of

the brain to develop is the prefrontal cortex (frontal lobe) that involves executive functions such as thinking, planning, problem-solving, behavioral control, and decision making.

According to leading neuroscientists and researchers Lebel and Beaulieu (2011); Gogtay et al. (2004), Yurgelun-Todd, & Killgore (2006), and Yurgelun-Todd, Killgore, & Cintron (2003), adolescence is a period of maturation of neurobiological processes in the brain that triggers frontal lobe development of higher cognitive functions. In a 2006 study of fear-related activity in the pre-frontal cortex, Dr. Deborah Yurgelun-Todd, director of neuropsychology and cognitive neuroimaging at McLean Hospital and a group of researchers explored how adolescents perceive emotion as compared to adults. The brains of 18 healthy, normal children between the ages of 10 and 18 were compared to 16 adults. Magnetic resonance imaging (MRI) results found that adolescent brains work differently than adult brains. Yurgelun-Todd and Killgore concluded that adolescents perceived emotions of anger and fear in human faces more often than adults who saw the same faces (Yurgelun-Todd & Killgore, 2006).

Yurgelun-Todd and Killgore's (2006) findings corroborated the results of a longitudinal study utilizing tractography, a type of imaging that looks at brain wiring, by Lebel and Beaulieu (2011) in which "prolonged maturation of white matter fibers beyond adolescence" (p. 16) was demonstrated within individual subjects for the first time. Lebel and Beaulieu concluded that the human brain does not stop developing at adolescence as previously thought but continues developing well into young adulthood.

Gaps in Knowledge

What neurobiological, biomedical, and psychosocial factors are necessary to identify efficacious and neurologically safe bio-psycho-social-spiritual treatments for adolescents with depression and anxiety? An exhaustive review of the literature reveals a considerable lack of

effective evidence-based biomedical mental health treatments. This is especially salient in the area of CAM, EP, energy medicine, subtle energies, and biofield therapies for adolescents diagnosed with depression and anxiety.

Current neurobiological research using MRI technology establishes that adolescent brains lack mature prefrontal cortex white matter. The lack of white matter in the undeveloped teenage brain impairs frontal lobe executive functions such as thinking, planning, problem-solving, behavioral control, and decision making. Treatment approaches that rely heavily on cognitive functions such as rational decision-making skills will be less effective than those that teach skills to calm the amygdala and help adolescents regulate their innate tendencies towards fear and negative emotional responses. Identifying current therapeutic approaches that help adolescents master critical psycho-social-spiritual developmental stages and tasks is essential. For adolescents to answer the fundamental question “Who Am I?”, and promote self-individuation and positive self-identity, it is vital to create efficient and neurologically safe bio-psycho-social-spiritual treatments for adolescents with depression and anxiety.

Conclusion

The concept that “life is an expression of the electromagnetic force” (Liboff, 2007, p. 317) forms the basis of modern-day Quantum Physics, Energy Medicine, EP, Biofield Science, and Subtle Energy Therapies. Our awareness of the human nervous system as electrical and the interactions of electromagnetic fields on and within the human body provide the fundamental underpinnings of the electromagnetic paradigm. The human biofield field has an innate homeostatic tendency to return to normal functioning and wholeness. Understanding the unified and coherent characteristics of biofields and their role in quantum models is vital to today’s scientists and medical practitioners. From this perspective, electrodynamic and biofield

therapies are the most direct means of restoring the biosystem to its normal state. Using bio-intrinsic resonant approaches in mental health will lead to the development of safe and effective evidence-based treatments that promote healing while decreasing reliance on toxic, brain disabling psychopharmaceutical substances. Recognizing the importance of electromagnetic field interactions, many biofield informed researchers advocate adopting an electromagnetic paradigm.

Meta-analysis literature reviews were conducted analyzing an abundance of empirical studies and other forms of scientific evidence spanning multiple disciplines and providing high-quality RCT research results. The existing interdisciplinary literature provides compelling evidence that biofield and subtle energy electrodynamic psychotherapeutic approaches show considerable promise in clinical applications to treat psychological problems such as PTSD, Depression, and Anxiety. High-quality empirical research studies are found almost twice as often in EP, particularly TFT and EFT, and in other hands-on healing approaches that directly interact with the human biofield. However, most of the research populations are adults. It is clear that RCT studies demonstrating robust positive effects in the treatment of adolescents with depression and anxiety outside of the conventional cognitive-based psychotherapy and psychotropic medication model is severely lacking.

Many of the researchers cited in this chapter indicate a strong need for more conclusive, innovative, high-quality research in the fields of bio-intrinsic transformational therapies, CAM, EP, biofield therapies, and neuroscience, especially with adolescents. Innovative protocols using subtle energies, biofield, and electromagnetic approaches are critically needed in the fields of psychiatry, psychology, behavioral, and mental health. Results from these foundational studies

will provide the evidence for future acceptance of these methods as “best practices” and “treatments of choice” by scientists, researchers, and mental health practitioners.

Definition of Terms

Anxiety: is an emotion characterized by feelings of tension, worried thoughts, and physical changes like increased blood pressure (American Psychological Association, 2021)).

Adolescence: transitional phase of growth and development between childhood and adulthood. The World Health Organization (WHO) defines an adolescent as any person between ages 10 and 19 (Csikszentmihalyi, M., n.d., *Adolescence. Encyclopedia Britannica*).

Biofeedback: is a mind–body technique in which individuals learn how to modify their physiology for the purpose of improving physical, mental, emotional, and spiritual health (Frank, Khorshid, Kiffer, Moravec, & McKee, 2010).

Biofield: a field of energy and information, both putative and subtle, that regulates the homeodynamic function of living organisms. (Why Reiki?, n.d.).

Bio-Intrinsic Transformational Therapy™ is a unique, cutting edge application that incorporates a holistic Quantum wellness model. This intervention teaches adolescents simple tools to achieve a state of ease and psychophysiological coherence, to strengthen and balance their biofield, and to connect to source energy without the use of psychotropic medication. (Reeves-Oppenheim, 2018).

Cognitive Behavioral Therapy (CBT): is a form of psychological treatment that has been demonstrated to be effective for a range of problems including depression, anxiety disorders, alcohol and drug use problems, marital problems, eating disorders, and severe mental illness. CBT treatment usually involves efforts to change thinking and behavioral patterns (American Psychological Association, 2021).

Chronic brain impairment (CBI): exposure to psychoactive substances, especially long-term, results in impairments of the brain or mind that can become persistent or permanent, including atrophy (shrinkage) of brain tissue (Breggin, 2011).

Complementary and Alternative Medicine (CAM): encompasses a wide array of health care practices, products, and therapies that are distinct from methods, products, and treatments used in “conventional” or “allopathic” medicine. Some forms of CAM, such as traditional Chinese medicine and Ayurvedic medicine, have been practiced for centuries, whereas others, such as electrotherapy, are more recent (U.S. Food and Drug Administration 2007 February).

Counterfactual: In inferential statistics, the counterfactual asks “what if” questions to determine causality. The treatment and control conditions are comparability conditions: We must assume that the people in the treatment group on average are identical to the people in the control group with respect to their potential outcomes. The counterfactual is a formal model of causality against which we can assess the adequacy of various estimators (Elwert, 2013 May).

Depression: People with depression experience a lack of interest and pleasure in daily activities, significant weight loss or gain, insomnia or excessive sleeping, lack of energy, inability to concentrate, feelings of worthlessness or excessive guilt and recurrent thoughts of death or suicide (American Psychological Association, 2021).

Division of Services and Intervention Research (DSIR), a division of NIMH which evaluates psychosocial interventions on mental and behavioral disorders in adolescents and children (DSIR, 2019.)

Electrodynamics: a branch of physics that deals with the effects arising from the interactions of electrical currents with magnets, with other electrical streams, or with themselves (Electrodynamics, n.d.).

Electromagnetic: relating to the interrelation of electric currents or fields and magnetic fields (Lexico, n.d.).

Electromagnetic Fields (EMF): veritable electromagnetic currents can cause stimulation of the nerves and muscles and affect human biological processes in both positive or negative ways (World Health Organization 2020).

Emotional Freedom Techniques (EFT): Emotional Freedom Techniques and was founded by Gary Craig in 1995. Without the use of needles, this form of acupuncture uses the fingertips to stimulate energy points on the body. Its earlier forms involved stimulating the acupuncture meridians while tapping on them with the fingertips (Quinn, 2018).

Energy Psychology: an umbrella term for a variety of clinical and self-help modalities and biofield therapies integrated into the Western clinical psychological framework (Feinstein, 2008).

Heart Rate Variability (HRV): is a measure of the variation in time between each heartbeat. This variation is controlled by a primitive part of the nervous system called the autonomic nervous system (ANS). It works regardless of our desire and regulates, among other things, our heart rate, blood pressure, breathing, and digestion. The ANS is subdivided into two large components, the sympathetic and the parasympathetic nervous system, also known as the fight-or-flight mechanism, and the relaxation response (Campos, 2019 November 22).

Holos University Graduate Seminary (HUGS) a named division of All Faiths Church of Spirituality and Health, Inc.501 (c) 3: an institution of higher learning that promotes scholarly and scientific study to expand our knowledge and maximize the healing potential of consciousness and subtle energies (Holos University Graduate Seminary, 2014, May).

International Society for the Study of Subtle Energy and Energy Medicine (ISSSEEM): a non-profit organization founded to study the science of subtle energies in medical and therapeutic applications. In July 2013, ISSSEEM officially became the International Research Division of Holos University Graduate Seminary (Holos University Graduate Seminary, 2014, May).

Interpersonal Psychotherapy (IPT): is a time-limited, focused, evidence-based approach to treat mood disorders. The main goal of IPT is to improve the quality of a client's interpersonal relationships and social functioning to help reduce their distress (Psychology Today, 2021).

Major Depressive Episode: A period of daily and day-long depressed mood or loss of interest or pleasure in virtually all activities. Also present is some combination of altered appetite, weight, or sleep patterns, psychomotor agitation or retardation, difficulty thinking or concentrating, lack of energy and fatigue, feeling of worthlessness, self-reproach, or inappropriate guilt, recurrent thoughts of death or suicide, and plans or attempts to commit suicide (Major depressive episode, n.d.).

National Comorbidity Survey: Adolescent Supplement (NCS-A): is a nationally representative face-to-face household survey of the prevalence and correlates of DSM-IV mental disorders among U.S. adolescents (ages 13–17) that was carried out between February 2001 and January 2004 by the Survey Research Center of the Institute for Social Research at the University of Michigan (Kessler, et.al., 2009).

National Survey on Drug Use and Health (NSDUH): SAMHSA questionnaire that looks at national indicators for substance use and mental health in four age groups.

Neuroleptic: noun or adjective. antipsychotic (Merriam-Webster, n.d.).

Neurotheology: is a unique field of interdisciplinary study that seeks to understand the relationship between the brain and theology. Neurotheology looks at the relationship between the neural phenomena in brain processes, and what is identified in all religious and mystical traditions as spiritual experience.

Nondual Healing: systems that focus on mind-body-spirit practices that achieve outcomes by directly affecting the biofield.

Non-local Consciousness: empirical evidence suggests that human consciousness is nonlocal—i.e., it is not confined to specific points in space, such as brains and bodies, or specific moments in time, such as the present (Dossey, 2014).

Plasma: a collection of charged particles (as in the atmospheres of stars or in a metal) containing about equal numbers of positive ions and electrons and exhibiting some properties of a gas but differing from a gas in being a good conductor of electricity and in being affected by a magnetic field (Plasma, n.d.).

Psychophysiological Coherence: the ability to self-regulate the quality of feeling and emotion of moment-to-moment experience and its relationship to human physiology (McCraty and Zayas, 2014).

Psychoneuroimmunology (PNI): is a discipline that has evolved in the last 40 years to study the relationship between immunity, the endocrine system, and the central and peripheral nervous systems (Tausk, Elenkov, & Moynihan, 2008).

Post-Traumatic Stress Disorder: a psychological reaction occurring after experiencing a highly stressing event (such as wartime combat, physical violence, or a natural disaster) that is usually characterized by depression, anxiety, flashbacks, recurrent nightmares, and avoidance of reminders of the event (Merriam-Webster, n.d.)

Pulsing (ed) Electromagnetic Frequency (PEMF): An alternating electrical current used to produce an electromagnetic field. This may induce healing when applied to a fractured bone. The field is applied noninvasively to the affected limb. It may be moderately helpful in treating bony nonunion (PEMF, n.d.).

Putative Energy Fields: generally, reflect the concept that human beings are infused with subtle forms of energy that have defied measurement to date by reproducible methods. Energy healers claim that they work with this subtle energy, see it with their own eyes, and use it to affect physical body changes and influence health (U.S. Food and Drug Administration 2007 February).

Substance Abuse and Mental Health Services Administration (SAMHSA): is the agency within the U.S. Department of Health and Human Services that leads public health efforts to advance the behavioral health of the nation. SAMHSA's mission is to reduce the impact of substance abuse and mental illness on America's communities (SAMHSA, 2021).

Subtle Energy: is another term used with Energy Medicine. The energies activating a person are subtle or of very low intensity. Such low levels may not be measurable at this time. There are four basic types of energies enumerated in Physics; they are strong and weak forces at the nuclear level, gravitational, and electromagnetic forces. Of these, electromagnetic (or, its equivalent, acoustic) is the only one that is easily manipulated at the present time. Acoustic energy could be transformed into electromagnetic or vice versa through a material property known as piezoelectricity. Many tissues of the body are known to be piezoelectric; hence, any electromagnetic input to the body is transformed into acoustic and any acoustic input could be transformed into electromagnetic energy. Thus, the body is bathed in both electromagnetic and acoustic energies of various frequencies and intensities (Srinivasan, 2010).

Syntropy: a psychological drive towards synthesis, towards growth, towards wholeness, and self-perfection (Szent-Gyorgyi, 1974).

Thought Field Therapy (TFT): a technique created by Dr. Roger Callahan in the 1970s. TFT is useful in the treatment of traumas, phobias, and psychological pain caused by other upsetting experiences (Callahan, 2001).

Veritable Energy Fields: are electromagnetic fields (EMFs) that originate from outside the body that influences the body's fields. They can be measured and use either mechanical vibrations (such as sound) or electromagnetic forces, including visible light, magnetism, monochromatic radiation (such as laser light), and other light rays (U.S. Food and Drug Administration, 2007 February).

Zero Point Field: In quantum field theory, the vacuum state is the quantum state with the lowest possible energy; it contains no physical particles and is the energy of the ground state. This is also called the zero point energy; the energy of a system at a temperature of zero (Baksa, 2011).

CHAPTER 3: RESEARCH METHODS

This chapter contains four major elements. The four components are 1) an overview of the study, participants, and settings, 2) data collection procedures and psychometric instruments used to measure the dependent variable, 3) the research design, and 4) procedures and materials used in the study. This PoC study evaluated the feasibility of the methods, procedures, and intervention used to investigate The Effects of Bio-Intrinsic Transformational Therapy™ on Depression and Anxiety in Adolescents.

Having a methodology provides scientists with a way of thinking about a problem. Scientific research is the process of identifying an area of interest, planning a structured way to explore a hypothesis, creating a framework to put the plan into action, executing the plan while decreasing the risk of errors, collecting the data, and evaluating the results. A well-reasoned methodology communicates the study design to others in a compelling, replicable way. Kazdin (2003) states that “the overall purpose of methodology is to permit one to draw sound or valid inferences” (p. 12). It makes sense that a well-constructed methodology helps codify the sources and solutions of problems that emerge. Understanding and stating the limitations of a research study and planning for all possible problems that may arise in the execution of that study is essential in designing a successful methodology.

According to Kazdin (2003), “methodology is the overarching term that encompasses diverse principles, procedures, and practices related to the conduct of research” (p. 9). Kazdin explains that scientific knowledge is based on the accumulation of empirical evidence. Empirical evidence is defined as knowledge based on observation or experience and can be verified or disproved by observation or experiment (Empirical, n.d.). A well-formulated methodology provides researchers with a vehicle from which to draw sound and valid conclusions. It provides

scientists from diverse disciplines with a step-by-step method of obtaining scientific knowledge that can be replicated or tested by others.

Research that incorporates theology and psychology, i.e., spirituality and science, requires innovative and cutting-edge methods. According to ÓLaoire (2002), “Asking the wrong questions based on false models of reality and unproven expectations can only give irrelevant or even dangerous answers (p.1).” ÓLaoire (2002) suggests that our current “materialistic, reductionist, and close-minded (p.1)” models of reality are insufficient to address new scientific understandings. ÓLaoire (2002) asks us to design methodologies that create “a synthesis between the enlightened poles of science and religion (p. 1).” Model validity is how researchers “ensure that what we are measuring is what we claim to be measuring” (ÓLaoire, 2002, p. 6).

Many practitioners from various disciplines now perceive a heightened vibrational reality where practitioners are both scientists and mystics. Researcher-practitioners endeavor to yield valid and reliable data while simultaneously gathering data for the creation of new models. A challenging aspect of expanding the frontier of scientific knowledge is how to create new models using existing research methods. ÓLaoire (2002, p. 6) encourages researchers to be bold and dare to create models intuitively that can be subsequently tested.

One major challenge of this research was to design a methodology that operationalized vital concepts of a model of reality reflecting esoteric and mystical ideas. This study represents a core shift in the scientific paradigm to a unified field model that embodies Eastern spiritual philosophy and Quantum field theories of consciousness. My research team and I measured hypothesized positive effects of a bio-intrinsic transformational process in which consciousness is non-local and outside the realm of time and space. In a 2020 study by Hammerschlag, McKusick, Bat, Muehsam, McNames, & Jain, the authors conclude that “Our study exemplifies

the challenges faced when attempting to fit interventions with incompletely understood procedures and mechanisms into conventional research designs” (p. 911). Their sentiment is echoed by this study and numerous interdisciplinary researchers who combine conventional research and practice approaches with a more esoteric understanding of body-mind-spirit.

Even as modern scientific understanding transitions from a linear, reductionist, microbiological view to a Quantum, non-local, electrodynamic paradigm, many independent researchers do not have access to cutting-edge biofield and biophoton technologies and measurement devices. The original research presented in this dissertation fits into that category. Our understanding of how plasma (the fourth state of matter), putative energy fields, and the human biofield apply to mental health and wellness is the basis of this study. However, newly developed, innovative measurement instruments consistent with a quantum view of reality and consciousness were not available to this doctoral researcher. Therefore, commonly used standard psychological measures shaped this study’s design.

Future researchers expanding on our results are strongly encouraged to add a biometric component to the methodology. Recommended devices previously discussed in Chapter 2 include Biophoton imaging (Popp, Li, Mei, Galle, & Neurohr, 1988, July), Gas Discharge Visualization (GVD) (Kostyuk, Cole, Meghanathan, Isokpehi, & Cohly, 2011, May 19), Thermography (Udristioiu, 2015, October 13), Biofield Viewer™ (Streeter, 2019, January 11-12), Pulsed Electromagnetic Frequency (PEMF) (Holden, 2012, Spring), and emWave devices (emWave Pro Multi-user, 2019) to measure heart rate variability (HRV) or other FDA approved biofeedback devices.

Quantitative Methods

Overview

This PoC study explored the feasibility of the methods, procedures, and intervention to be used in a full-scale investigation of the effects of Bio-Intrinsic Transformational Therapy™ on depression and anxiety in adolescents. The study design was a pre-test post-test waitlist experiment. Randomized control participants were put on a waiting list and received the treatment after the experimental group completed the intervention and post-test data collection.

This design is typical in behavioral health research with human subjects. The Federal Regulations for the Protection of Human Subjects, Title 45 Part 46 (Office for Human Research Protections, 2018, July 19) mandate rules and regulations that protect human subjects and vulnerable populations. Ethical concerns regarding justice require researchers to provide equitable selection and recruitment and prohibit denying human subjects access to fair treatment. The Belmont Report (U.S. Department of Health & Human Services, 1979, April 18) advised that control subjects have an opportunity to receive the same treatment as the experimental group. The Office for Human Research Protections (OHRP) “provides leadership in the protection of the rights, welfare, and wellbeing of subjects involved in research conducted or supported by the U.S. Department of Health and Human Services” (Office for Human Research Protections. n.d.).

All research involving human subjects, particularly vulnerable populations such as children and adolescents, must be approved and managed by a federally certified IRB. Hummingbird IRB, a federally registered, independent review board, provided approval and oversight for this study. This study began during the Cobb and Cherokee County academic year of 2018/2019. Hummingbird IRB approved the initial study #2018-52 from June 14, 2018,

through June 13, 2019, through an expedited review process pursuant to category seven. The study was subsequently approved for two more years, from June 14, 2019, through June 13, 2021, under the oversight of Hummingbird and New England IRB (Appendix A).

Preliminary activities began in June and ran through early August 2018. A website page dedicated to recruiting for the study was approved by the IRB. The webpage was developed and published by the technical staff at Unity North. Recruitment began in the fall academic semester by mid-August 2018. Fall semester intervention groups and data collection were facilitated from September 3, 2018, to the end of May 2019. Thirty-four ($n=34$) teens enrolled in the study. About one third ($n=27$, 33.75%) of the total subjects ($n=80$) needed for statistical power completed the study during the first year. Hummingbird IRB approved the continuation of the study for another year from June 2019 through June 2020. During the second year of continued IRB approval, another 25 subjects completed the study.

Participants

As the PI, I considered conducting the study at one small private alternative high school in Canton, Georgia, and recruiting subjects from the school's student population. After a power analysis performed by a statistician unaffiliated with the study, it was determined that the minimum sample size of 80 subjects was needed. Enrollment at one school alone would not support the number of adolescents needed for the study.

I enlarged the scope of the sample population to include adolescents referred from the congregation of Unity North Atlanta Church, local medical provider offices, private practice professional counselors and psychotherapists, private alternative high school administrators, interested Cobb and Cherokee County High School guidance counselors (pending approval of Cobb and Cherokee County School District Department of Research, Evaluation, Student

Assessment) and the general population. After enrollment and consenting to the study, those adolescents who met all enrollment criteria were randomly assigned to the experimental and control groups.

Sampling Method

John Dudovskiy (2018, January) recommends using convenience sampling during the exploration stage of a research study. A sample of convenience is extremely effective when a researcher is conducting pilot data collection. The purpose of such data collection is to identify research design limitations and test the acceptability and feasibility of a new intervention.

Convenience sampling has some real advantages: simplicity and ease, cost-effectiveness, and shorter time frame required for data collection (Dudovskiy, 2019). A limitation of convenience sampling is decreased confidence in external generalizability.

I employed a convenience sample due to the inability to obtain a random sample within the adolescent population found in schools and church settings. Prospective participants voluntarily enrolled in the study based on their interest in the research topic. Each participant was assigned a consecutive number in the order that the enrollment packets were received to ensure randomization. An online random number generator (RANDOM.ORG) and coin toss were used by a blinded assistant to assign subjects to either the experimental or control group to achieve additional randomization. Each participant was each given a unique identifier number consisting of a letter designating their study location, their consecutive number, and either A or B for experimental or control. Several options for attendance were given to all participants. Each participant selected the day and time of the group meeting they wanted to attend, depending on their availability.

Data Collection Procedures

Data from all participants in both experimental and control groups was collected at three data points during the research period: at baseline, at four weeks, and at eight weeks using the Beck Youth Inventories for Depression and Anxiety (Appendix D. 1 & 2). Beck Youth Inventories for Depression and Anxiety were given to all participants in both groups at an orientation session before the 4-week intervention period, at a debriefing session after group A received the intervention, and again at a final debriefing session after the wait-list group B received the intervention. Pre and post Visual Analogue Scales (VAS) (Appendix D. 3) for depression and anxiety were administered before and after each intervention session for both the experimental and the control groups. Each subject was given VAS measures for both variables a total of 8 times over the course of the intervention. At the end of the study in the final debriefing session, program outcome evaluation data was collected from all participants in both groups using the research evaluation form (Appendix D. 4).

Sample

Thirty-four adolescents ranging from the ages of 13 to 18 volunteered for the study. All 34 subjects enrolled and consented to the study. The sample consisted of 19 students attending Compass Prep Academy and 15 teens recruited through Unity North Atlanta and local outpatient mental health provider offices. Twenty-seven subjects completed all four intervention sessions and all measurement instruments. All participants enrolled met the inclusion criteria. Seven enrolled subjects (n=7, 20%) did not complete the study. Reasons for attrition in the study varied. Two subjects enrolled but never began the study (n=2). Others had unrelated events that prevented them from completing all elements of the study (n=5). These events included scheduling or transportation difficulties and challenging family situations. Attrition can create

bias in study results. Attrition rates from 5% to 20% in a study are not unusual and do not necessarily contribute to bias. Using convenience sampling inherently creates threats to external validity that include decreased confidence in generalizing the study's findings to a larger population. If the subjects' demographic characteristics lost to follow-up are different between randomized groups, then attrition-related bias may become a problem (Dumville, Torgerson, & Hewitt, 2006). For this study, we will explore whether attrition caused bias in the discussion portion of Chapter 5.

Inclusion Criteria

34 adolescents fulfilled three inclusion criteria:

1. The participants must be between 13 and 18 years of age at the beginning of the study.
2. All participants and their parents or legal guardians are required to complete and return four forms in the enrollment packet before the end of the enrollment period. The entire packet consists of five items: a letter of invitation (Appendix B. 1), a demographic information form (Appendix B. 2), a child assent form for participants from age 13 to 17 (Appendix B. 4), the main consent form for parents and any participant over 18 (the age of consent in Georgia) (Appendix B. 3), and a HIPAA compliant authorization to collect and release confidential information for research with human subjects (Appendix B. 5). Enrollees were instructed to complete and return four documents/permissions and retain the letter of invitation for their records.
3. The participants must be available for the entire length of the study.

Exclusion Criteria

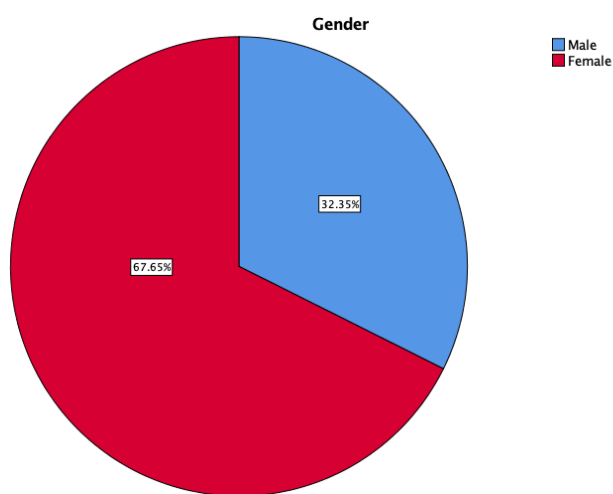
Three exclusion criteria existed. None of the participants who enrolled met any of these criteria.

1. Any subject younger than age 13 or older than age 18 at the beginning of the study.
2. Any subject with an inability to comprehend the English language used in the psychometric instruments,
3. Any subject with active psychosis.

Demographic Information

34 adolescents, 67.6% (n=23) females and 32.4% (n=11) males (see Figure 8), who enrolled and consented to the study fulfilled all four inclusion criteria. Participants were randomly assigned to the experimental group A or the control group B. Participants were equally divided between the experimental and control groups. Seventeen adolescents were in each group.

Figure 8: A Pie Chart of Gender Categories for Combined Groups



Research Settings

Two research sites were approved by Hummingbird IRB. The primary site approved for the study was Unity North Atlanta Church. The secondary approved location was Compass Prep Academy, a private, alternative, faith-based high school.

Unity North Atlanta

Unity North Atlanta, an Interfaith, Interdenominational community church located in Marietta, Georgia, was the primary site of the study. It provided an adequate physical environment for the study's scope. There was easy access for both Cobb and Cherokee County residents. The church supported all activities necessary for the study. These included recruitment activities, enrollment interviews, large group presentations, and multiple intervention groups. Unity North Atlanta embraces a spiritual philosophy that actively promotes and is congruent with the topic of the PI's research. The Unity North Atlanta Board of Directors wrote a letter supporting and approving the partnership to sponsor the research study (Appendix A). Unity North is affiliated with Unity Worldwide Ministries and related to Unity Institute, headquartered at Unity Village, Missouri.

Compass Prep Academy

Compass Prep Academy, a private, alternative high school located in Canton, Cherokee County, Georgia, was chosen as a secondary setting. The location was selected after the PI's conversations with the owner/principal and the positive reactions to the therapeutic interventions in a series of pre-study workshops. The incidence of depression and anxiety in the sample population of compass Prep Academy matched those found in the larger adolescent population (SAMHSA, 2014). Data compiled by the City of Woodstock showed that the student population

of Compass Prep Academy was demographically comparable to the general high school student population in the state of Georgia.

Measurement Instruments

Independent variable

The independent variable used in this analysis was the intervention, Bio-Intrinsic Transformational Therapy (BITT)TM. BITT is a 90-minute psycho-educational therapeutic group process conducted in consecutive sessions over a four-week period. The intervention was facilitated by the PI with assistance from a Research Assistant (RA). The intervention protocol consisted of a structured, holistic, multi-model program using a combination of three types of bio-intrinsic transformational therapies, e.g., 1) Heart-Focused BreathingTM/Quick Coherence Technique[®] adapted from the HeartMath Institute research on psychophysiological coherence; 2) progressive relaxation/creative visualization adapted from the fields of clinical hypnotherapy, humanistic and transformational psychology; and 3) Powering UpTM, a form of biofield therapy using bio-intrinsic resonance, group games, and energy exercises (Edwards & Reeves-Oppenheim, 2014, June 29).

Dependent variables

Two dependent variables were measured in this study. The dependent variables measured were depression and anxiety in adolescents. The levels of depression and anxiety for both groups were measured by the Beck Youth Inventories at three data collection times during the study as described in the data collection procedures section. Another instrument, the VAS, was used to measure the two dependent variables before and after each intervention session for each participant in the experimental and control groups.

Beck Youth Inventories™ - Second Edition

The Beck Youth Inventories™ -Second Edition (Beck, J., Beck, A., & Jolly, 2005) is a set of five self-report inventories designed for children and adolescents aged 7 through 18. They are used separately or in different combinations to assess symptoms of depression, anxiety, anger, disruptive behavior, and self-concept. Each inventory contains 20 questions and takes approximately 5 to 10 minutes to complete. Each inventory contains questions about thoughts, feelings, and behaviors associated with emotional and social impairment. Respondents are asked to describe how frequently the statement has been true for them during the past two weeks (Pearson Clinical, 2021). These instruments measure emotional and social impairment in five specific areas (Beck, Beck, Jolly, & Steer. 2019). When these inventories were normed, they met the diagnostic criteria found in the *Diagnostic and Statistical Manual of Mental Disorders*, 4th ed. (DSM-IV) published by the American Psychiatric Association (APA, 1994). Since then, the DSM has gone through two more revisions, The DSM IV-TR (APA, 2000) and DSM 5 (APA, 2013). According to Beck, J., Beck, A., & Jolly, the inventories are normed and found to be representative of the U.S. population for age, gender, ethnicity, and social-economic status.

The Depression Inventory (Appendix D. 1) is consistent with the criteria of depression not otherwise specified [DSM IV code 300] listed in the *Diagnostic and Statistical Manual of Mental Disorders*, 4th ed. (DSM-IV) and depression unspecified [code F32.9] as listed in the DSM-5 (Substance Abuse and Mental Health Services Administration, June 2, 2016). The inventory identifies early symptoms of depression. It includes 20 statements related to a child's or adolescent's negative thoughts concerning self, life and the future, feelings of sadness and guilt, and sleep disturbance. Depression describes a spectrum of mood dysregulation ranging from mild to moderate or severe.

The Anxiety Inventory (Appendix D .2) indicates a child or adolescent's specific worries about school performance, the future, judgmental reactions of others, fears including loss of control, and physiological symptoms associated with those feelings (Pearson Clinical, 2021). It is consistent with the diagnostic criteria of Anxiety not otherwise specified [311] in the DSM IV and DSM-5 for Anxiety Unspecified [F41.9] (Substance Abuse and Mental Health Services Administration, June 2, 2016).

The Beck Youth Inventories™ -Second Edition (Beck, J., Beck, A., & Jolly, 2005) are useful measures for this study because they are level B and easily administered in non-clinical settings such as schools or churches. Qualified professionals to administer the inventories in non-clinical settings are readily accessible. Level B allows the tests to be purchased and administered by master's degree level professionals in psychology, education, occupational therapy, social work, or in a field closely related to the intended use of the assessment (Pearson Clinical, 2021).

Visual Analogue Scale

The Visual Analogue Scale (VAS) (Appendix D. 3) is a psychological self-report measurement tool commonly used in research. It measures subjective characteristics such as pain or emotions and attitudes that cannot be directly measured. When responding to a VAS item, respondents specify their level of agreement by indicating a position along a continuous 100 mm line between two endpoints. The value of the position is measured with a ruler and the number is entered into the spreadsheet as a data point (Klimek, Bergmann, Biedermann, Bousquet, Hellings, Jung, Merk, Olze, Schlenter, Stock, Ring, Wagenmann, Wehrmann, Mösges, & Pfaar, 2017, pp. 16-24).

Research Evaluation Form

The Research Evaluation Form (Appendix D. 4) to measure program outcomes was IRB approved on October 29, 2018. Each participant completed it in both experimental and control groups in the debriefing meeting after the final intervention session. At the end of the intervention, subjective data were collected from all participants in both groups using an outcome evaluation questionnaire. The Research Evaluation Form was administered during the debriefing post-test session for personal feedback and follow-up.

The form consisted of twelve questions. The first nine questions asked participants to rate different aspects of the study on a Likert-type scale of excellent, good, fair, or poor. Questions ten through twelve asked the participants to make subjective determinations about their learning experience. Twenty-seven (27) forms were distributed to the participants who completed the intervention groups. Twenty (n=20), 74% completed the form and returned it to the PI. Seven (n=7), 26% of participants failed to return the completed form.

The primary purpose of a program outcome evaluation is to determine the quality of each distinct program component and whether the study yielded overall positive learning outcomes as hypothesized (Free Management Library, 2021). Program outcome evaluations assess the effectiveness of the study's components that lead to making informed decisions about the program's development (McNamara, 2006). Using an outcome-focused evaluation method, the researcher determines how effective each aspect of the implemented program is. The data collected from evaluation questionnaires is quantified and used for future program planning.

Research Design

The RTC study's design was a multiple group experiment with a pre-test/post-test and a wait-list control group. A sample of convenience recruited by multiple sources was randomly

assigned to treatment and control groups. A 2 X 2 Mixed ANOVA with repeated measures was used to evaluate the efficacy of the research design and interpret data to form statistical conclusions. Data collection points for the Beck Youth Inventories for Depression and Anxiety were pre-session 1, post-session 4, and post-intervention for the wait-list control group. Data collection for a total of eight VAS for depression and anxiety were pre-and-post each session over four consecutive weeks. A research evaluation form was given to all participants in both the experimental and control groups at the end of the study as a follow-up measure and program outcome evaluation.

Analytics strategy

A 2 X 2 Mixed ANOVA with repeated measures was used to evaluate the research design and form statistical conclusions. A mixed-design analysis of variance model or split-plot ANOVA is used to detect differences between two or more independent groups while subjecting participants to repeated measures. Thus, in a mixed-design ANOVA model, one factor (a fixed-effects factor) is a between-subjects variable, and the other (a random-effects factor) is a within-subjects variable. This study consisted of two distinct groups, experimental and control, and repeated pre and post-test measures given at different intervals [data points] throughout the study. The factors involved in the study were "between groups" and "within groups." "Between groups" relates to the differences in data between the treatment group and the control group. The meaning of "within groups" pertains to the scores of individual subjects' levels of depression and anxiety within each group. The term "repeated measures within-subjects" relates to the data collected for the same participant tested on more than one occasion over the study duration.

Two dependent variables were identified in this study. The dependent variables were the measurable levels of depression and anxiety in adolescents. The depression and anxiety levels in

the sample were measured in both the control and treatment groups using the Beck Youth Inventories™ -Second Edition for Depression and Anxiety and the VAS. The data from these repeated measures were collected at specific intervals throughout the study. Comparisons of the inventory scores for depression and anxiety were made between the two groups, treatment, and waitlist control, at specific times over the research period.

The study's statistician and PI chose a mixed ANOVA's analytic strategy to measure change over time in two groups (between-groups), control and treatment, and three different F ratios (within-subjects). The study's statistician used SPSS to assess the mean (average) scores of the levels of depression and anxiety of each participant in each group (between-group effect, i.e., the difference across conditions) at specific periods (within-subjects effect, i.e., change over time). A probability "p-value" of less than .05 ($p < .05$) was used to determine whether the intervention's effects had any statistical significance. SPSS provided statistical analysis of the raw data.

Procedures Used in the Study

Recruitment

Recruitment of participants started shortly after Hummingbird IRB approved the study. The PI received written approval for the study protocol, handouts, letters, enrollment documents, flyers, phone scripts, and email text in June 2018. The IRB approved webpage and social media text in mid-August 2018. Flyers, letters of invitation, information about the study, and enrollment forms (Appendix B. 1-5) were posted on the Unity North website on a dedicated page called "Teen Study" (<https://unitynorth.org/teen-study/>). The Unity North website link was distributed among adolescents and their parents/legal guardians in Cobb and Cherokee County, the congregation of Unity North Atlanta Church, local medical provider offices, private practice

professional counselors and psychotherapists, private alternative high school administrators, interested Cobb and Cherokee County high schools teachers and guidance counselors (pending approval of Cobb and Cherokee County School District Department of Research, Evaluation, Student Assessment) and the general population. The method of delivery included in-person and mail distribution, links to download forms on the Unity North Teen Study webpage, social media posts, and email attachments.

Recruitment marketing and outreach kicked off in mid-August 2018, during the start of the fall academic semester, with an in-person presentation to the adult congregation of Unity North given by the PI. A live presentation was facilitated by the PI and RA to the Y.O.U. (Youth of Unity) group at Unity North Atlanta Church. Paper copies of information about the study and enrollment packets were made available at each presentation.

Laura George, Compass Prep Academy's principal and owner, sent an email to all the teachers, students, and their parents/legal guardians in the Compass Prep Academy school population to introduce and describe the study. In the email, the Laura George explained the purpose of the study. She identified the potential risks and benefits of the interventions. She requested that each interested student complete, sign and return the enrollment forms to the student's homeroom teacher. A live demonstration and Q&A session were presented by the PI and RA to eligible students at Compass Prep Academy.

Distribution of the packets and recruiting in the general population continued throughout the recruitment and enrollment period. Flyers and enrollment packets were made available to interested school guidance counselors, interested alternative school administrators and teachers, local business owners willing to post a flyer for the general population, professional mental health providers, medical offices, counseling centers and allied health provider offices. The PI

provided live demonstrations upon request at various local organizations for recruitment purposes. Recruiting emails were sent to members of professional therapist online listserv groups (Appendix B. 10). Scripted phone calls (Appendix B. 6) distribution of flyers (Appendix B. 8), and outreach through personal contacts on Facebook and LinkedIn were also used as recruitment tools.

Enrollment and Consent

The initial enrollment and consent process began in August of 2018. By early September, the PI had received 26% (n=21) of the required IRB approved subjects' enrollment packets with all required documentation completed and signed from all interested participants and parents/legal guardians. This was enough to begin the intervention phase of the study.

The enrollment packet consisted of five documents. A cover letter (Appendix B. 9) to the organization or person agreeing to help in the recruitment process was attached to the packet. The packet included a letter of invitation describing the parameters of the study, a parental/legal guardian main informed consent form, a child assent form, an intake form to collect demographic information, and a consent form authorizing collection and use of private and confidential health information as per HIPAA compliance (Appendix B. 1-5). The letter of invitation explained the purpose of the study, identified the potential level of risk of the interventions used, and described potential costs and benefits to the participant. Each interested adolescent and their parent/legal guardian were asked to complete, sign, and return four forms to the PI by a certain date. To be accepted into the study, all four required documents had to be submitted to the PI by the end of the recruitment period.

As packets were received, each packet was assigned a consecutive number by the RA and put into a confidential file folder. Each packet was assigned a unique identifier number based on

the research site location, C for Compass Prep and U for Unity North, and the consecutive number that was randomly assigned as the packet was received. Participant names were not used in the data collection process and scoring the measurement instruments. Each participant's unique identifier number was used in data collection and management and statistical analysis to ensure and to maintain confidentiality of protected personal information.

A pre-study SPSS power analysis done by an independent statistician not affiliated with the study projected that a minimum of 80 subjects was necessary to achieve enough statistical power to determine significance. Twenty-one adolescents enrolled in the study during the initial recruitment period in August of 2018. Eleven students met the inclusion criteria and were enrolled at Compass Prep Academy. Ten teens who met the inclusion criteria were recruited from various sources in the community and enrolled at the Unity North Atlanta site.

The projected sample size of 80 adolescents was not attained in the initial phase of the recruitment period (Phase I). A second recruitment period (Phase II) took place towards the end of the first research period. Phase II recruitment was held from October 2018 until January 2019. Thirteen more subjects enrolled in the second phase of the study. The second round of treatment and control groups was facilitated at the Unity North site from February to the end of May 2019. A total of 34 subjects (n=34) enrolled and consented to participate in the study during the first year of IRB approval.

The enrollment and consent process consisted of a confirmation phone call and an individual interview. The PI or RA made a phone call (Appendix B. 6) to each prospective participant who met all the inclusion criteria and their legal guardian. Interviews were scheduled with each adolescent and at least one of their parents or their legal guardian. Interviews were held at one of several locations selected by the subject. In person interviews were held at either

Compass Prep Academy, Unity North Atlanta Church or at the PI's office in Woodstock, Georgia. Due to work or time availability constraints, some interviews were held by phone. In some cases, a video application like Facebook or WhatsApp was used to conduct the interview.

During the enrollment and consent interview, the adolescent and their parent/legal guardian were given a verbal explanation of the scope of the study and the enrollment criteria. They were offered an opportunity to see the three measurement instruments, The Beck Youth Inventories™ -Second Edition for Depression and Anxiety (Appendix D. 1 & 2) and the Visual Analogue Scale (Appendix D. 3), to be used in the study. They were also be given the opportunity to ask any questions and voice any concerns they had about participation in the study. They were shown the schedule of the dates of all orientation pre-test meetings, four weekly group intervention sessions and all debriefing/ post-test meetings. Each participant and adult guardian were given a final opportunity to consent to or withdraw from the study.

After all the enrollment interviews were completed and the final number of subjects determined, an administrative assistant unaffiliated with this study was assigned to generate the random numbers using an online random number generator. This process kept the PI and the RA blinded from the process. The administrative assistant generated random numbers for half of the subjects to assign subjects to either the treatment or control group. Another level of randomization was created by using a coin toss to determine which set of numbers were to be used to assign subjects to either the treatment or control group. Subjects in both groups were asked to self-select the day and time of the group sessions they wanted to attend depending on their availability. Each subject's data was linked to their unique identifier number to ensure compliance with Health Insurance Portability and Accountability Act of 1996 (HIPAA) (U.S. Department of Health and Human Services, 2018, September 14) and federal confidentiality laws

concerning disclosure of private and protected personal information and to prevent errors in the research process and researcher bias.

An acceptance letter (Appendix B. 7) with instructions and assigned dates and times of group meetings was given by hand or mailed to all participants by the PI. The letter clearly stated which group, treatment (group A) or control (group B), the teen was assigned to. The intervention period commenced as stated in the letter.

Intervention Protocol

Structure of Sessions

Orientation meeting:

- Welcome and housekeeping 5 minutes.

The Human Biofield Explained document gives a clear explanation of the human biofield that will add to the subjects' understanding of the study. The science toys that are demonstrated are the UFO ball, a set of homemade dowsing rods, and a Tedco Toys prism called The Light Crystal. These toys demonstrate the depth, width, and flexibility of the human biofield. The prism allows subjects to view in real-time the colors in the biofield and the changes in the color spectrum in the field as others do the intervention exercises in the Powering Up™ protocol. Slides were shown to visually demonstrate components of the human biofield and their relationship to emotional and spiritual states (Appendix C. 2).

- Facilitation of Pre-test Beck Youth Depression and Anxiety Inventories (Appendix D. 1&2) 25 minutes
- Q & A session 30 minutes
- Schedule and materials 15 minutes

Session #1:

- Welcome and housekeeping 5 minutes.
- VAS pre-test (Appendix D. 3) 5 minutes
- Ice breaker and UFO ball exercise (Appendix C. 1) 15 minutes
- State of Ease Brochure (Appendix C. 5) 10 minutes
- Inner Ease Technique (Appendix C. 5) 10 minutes
- Powering Up™ Handbook: Overview and Getting Started (Appendix C. 3) 10 minutes
- Tai Chi exercise #1: Creating the Tai Chi Ball of Energy (Appendix C. 4) 10 minutes
- Progressive Relaxation/Creative Visualization exercise (Appendix C. 6) 20 minutes
Music used for all progressive relaxation/creative visualization exercises: Steven Halpern Higher Ground
- VAS post-test (Appendix D. 3) 5 minutes

Session #2:

- Welcome and housekeeping 5 minutes.

- VAS pre-test (Appendix D. 2) 5 minutes
- Two Tools to Help You Get in Sync article (Appendix C. 7) 15 minutes
- Heart Focused Breathing™ & Quick Coherence® exercise (Appendix C. 9) 10 minutes
- Powering Up™: Push and Pull (Appendix C. 3) 10 minutes
- Tai Chi exercise #2: Rotating the Energy Ball (Appendix C. 4) 10 minutes
- Progressive Relaxation/Creative Visualization exercise with music (Appendix C. 6) 30 minutes
- VAS post-test (Appendix D. 3) 5 minutes

Session #3:

- Welcome and housekeeping 5 minutes.
- VAS pre-test (Appendix D. 3) 5 minutes
- Heart Focused Breathing™ & Quick Coherence® exercise using Max Richter "On the Nature of Daylight" (track runs for 6:11 minutes). 10 minutes
- Two Tools Activity Worksheet (Appendix C. 8) 15 minutes
- Powering Up™: Ball of Light and Neuro Ping Pong (Appendix C. 3). Use the Light Crystal prism to see changes in energy fields. 10 minutes
- Tai Chi exercise #3: Shrinking and Growing the Energy Ball (Appendix C. 4) 10 minutes
- Progressive Relaxation/Creative Visualization exercise with music (Appendix C. 6) 30 minutes
- VAS post-test (Appendix D. 3) 5 minutes

Session #4:

- Welcome and housekeeping 5 minutes.
- VAS pre-test (Appendix D. 3) 5 minutes
- Heart Focused Breathing™ & Quick Coherence® exercise using Max Richter "On the Nature of Daylight" (track runs for 6:11 minutes). 10 minutes
- Powering Up™: Sending Electrical Pulses (Appendix C. 3) 10 minutes
- Tai Chi exercise #4: Projecting and Receiving Energy (Appendix C. 4) 10 minutes
- Group discussion How to Use These Exercises in Daily Life 15 minutes
- Progressive Relaxation/Creative Visualization exercise with music (Appendix C. 6) 30 minutes
- VAS post-test (Appendix D. 3) 5 minutes

Debriefing meeting:

- Welcome and housekeeping 5 minutes.
- Facilitation of Post-test Beck Youth Depression and Anxiety Inventories (Appendix D. 1&2) 25 minutes
- Research Evaluation Form and discussion of learning experience 30 minutes
- Follow Up and Next Steps 30 minutes

How Sessions were Facilitated

Each intervention session was held for 90 minutes. The protocol for each session was the same with a few minor additions. Pre and post testing using a Visual Analogue Scale for depression and anxiety was facilitated at the beginning and end of each session. Pre and Post Beck Youth Inventories for Depression and Anxiety were given before the 4-week intervention period and after both groups (experimental and control) received the intervention.

All intervention sessions began with participants completing the pre-session VAS. Instructions were given by the PI or RA. Completed VAS were collected by the RA and put into a manila envelope. All intervention sessions began with heart-brain focused breathing to establish coherence. The PI taught the didactic portion of the intervention sessions. The first session focused on establishing neuro-cardiological coherence and teaching HeartMath approved exercises.

The first exercise of session #1 was called The State of Ease. Copies of the brochure were given to participants, so they could read along as the State of Ease brochure was being explained. The state of ease breathing technique was facilitated as written in the brochure. Each participant sat in a chair, closed their eyes, and was instructed to breathe deeply into their abdomen. They were instructed to put one hand on their chest to shift their attention to their heartbeat. They were instructed to breathe in and out through their heart and attune their breathing to the rhythm of their heart. Some participants could not feel or have an awareness of their heart rhythm. Those participants were instructed to find a pulse in their neck or behind their ear to sense their heartbeat and then to put their awareness into their heart.

The second session began with an exercise called Heart-Focused Breathing™ and Quick Coherence Technique®. The PI taught the participants to do this exercise without music so they

would feel confident about using it between sessions in any setting. Participants were given an article from Unit 4 in a course for adolescents, Smart Brain, Wise Heart called “Two Tools to Help You Get in Sync.” The PI read the text out loud to the group and facilitated a discussion about the content. Subjects discussed the value of using the tools of Heart-Focused Breathing™ and Quick Coherence Technique®. Subjects were encouraged to think about 3 times during the day when the tools would be most useful for them to practice. The PI suggested practicing these tools at those times or at any time when they felt difficult feelings.

In session # 3 and #4, Heart-Focused Breathing™ and Quick Coherence Technique® was facilitated with a six-minute soundtrack by Max Richter called “On the Nature of Daylight.” The violin music seemed to amplify the effect of the exercise by expanding the heart field. Each participant sat comfortably in a chair in a circle in the classroom with their eyes open or closed. They were instructed to breathe deeply into their abdomen for a few deep breaths. They were instructed to put one hand on their chest to shift their attention to their heartbeat. They were instructed to breathe in and out through their heart and attune their breathing to the rhythm of their heart. The participants were then asked to add a positive feeling to the breathing. They were instructed to recall someone or something that they loved and appreciated such as a best friend or an animal.

The “Two Tools Activity Worksheet” was given to the subjects in session #3. The PI facilitated reading the worksheet out loud while participants completed the written quiz and made a list of times during the day when they would commit to using the tools. All participants were encouraged to practice these tools at least 3 times a day. The PI led a short discussion and encouraged each subject to share with the group when they would practice these breathing tools throughout the day. Sharing was completely voluntary. No one was pressured to speak. Most

participants were eager to share their ideas with the group. A few adolescents declined to disclose their answers to the group. The completed worksheets were collected and put into a manilla envelop with the other data.

The second exercise of the protocol in session #1 started with distributing copies of the Powering Up™ Handbook book and reading and explaining the questions and answers. The participants were instructed to stand in a circle. They were instructed to do Step One- Getting Started to activate and feel the energy in their hands. Most participants reported sensations of warmth and tingling, wind or coldness, a spongy feeling, and a magnetic pull between their hands.

In the second session, the Powering Up™ exercise was to create an energy ball and rotate it and throw it to others. Participants could feel the energy ball getting bigger. They were actively engaged, laughing, and playing with each other. They were surprised that they could feel the energy ball in their hands. They could feel it being thrown and felt when they received it.

Another Powering Up™ exercise done in session #3 was called Push and Pull. Participants were shown how to create positive and negative electromagnetic fields around their bodies. They were instructed to imagine pushing out their field to expand to fill the room. They were instructed to imagine pulling their field inward towards their body, to contract it and make it small. Using metal dowsing rods made from a hanger being held by plastic straws, they could see the rods expanding and contracting as they push and pulled their fields. Some participants were convinced there was a trick to it, that the PI was somehow moving the rods.

The final exercise in all sessions was a twenty-minute progressive deep relaxation and guided imagery. All participants were given the opportunity to sit in a chair, lay on the floor, or lay down on a couch if they wished. The overhead lights were dimmed. The album, Steven

Halpern's "Higher Ground," was played using a laptop. The PI led the exercise consisting of an induction of progressive muscle relaxation. Then the PI suggested that a bright, beautiful healing light enter through the top of their heads and down their body until they were surrounded by a bubble or cocoon of healing light. The participants were guided to walk down a beautiful staircase into a place of peace. A wise and loving being joined them in their place of peace and answered any questions they had. Finally, the participants were guided back to the awareness of the room and into full alertness. Most participants seemed energized and engaged and verbalized an eagerness to attend the next session. Finally, all participants completed the post session VAS. Those measures were collected and put into the manila envelope by the PI or RA.

Data Collection

Orientation and Pre-testing

All enrolled participants in the experimental and control groups attended an orientation session prior to the start of the four weekly session intervention. Orientation included an overview of the study protocol and data collection methods, instructions for taking the BYI-D and A pre-tests, how to complete the pre-and-post VAS, location of the bathroom, pick up by parents, and dates of the sessions. The PI answered any questions or concerns the participants expressed. An explanation of the human biofield, bio-intrinsic resonant energy, and a demonstration of our electromagnetic field and connectivity to others using the UFO ball and homemade dowsing rods was facilitated by the PI.

Three instruments for pre-tests, the BYI-for Depression and Anxiety and the VAS, were administered. Instructions were read out loud by the PI or RA. Each BYI inventory took about 5 minutes to complete. It took about 3 minutes to complete the pretest for the VAS. All completed instruments were collected by the PI or RA and put into a manila envelope to be scored later.

Optimally 8 VAS measurement points or “observations” per subject in both groups were expected. Due to a misunderstanding of VAS testing protocol in the initial batch of control subjects in the fall of 2018, there was missing data in VAS measures.

Weekly VAS data collection

At the beginning of each intervention session, participants were instructed to put their cell phones away, go to the bathroom and get ready to start the session. They were asked if they had any questions or concerns from last session. Any questions or concerns were identified and addressed by the PI. Participants were given the pre-session VAS forms to complete. Instructions were explained by the PI or RA. The completed pre-VAS forms were collected and placed in a manilla envelope. At the end of each intervention session, the post-session VAS forms were distributed by the PI or RA and completed by the teens. All completed pre-and-post VAS forms were collected and put into a same manila envelope. To ensure lack of bias, none of the VAS forms were reviewed by the PI and RA.

Debriefing/Post-testing session

A debriefing session was held with all participants from the experimental and control groups. The PI or RA administered the Beck Youth Inventories for Depression and Anxiety and the Research Evaluation Form to all participants in both groups. The PI or RA instructed subjects to complete the BYI-D and BYI-A based on the previous two-week period. Participants were instructed to complete the Research Evaluation Form with as much detailed, personal feedback as possible. All forms were collected and placed in a manila envelope. None of the measurement instruments were viewed. All confidential materials were transported by the PI as per HIPAA to the office and put in a locked file cabinet.

Data Management

Institutional Review Board (IRB)

An IRB is a federally mandated board regulated by the FDA. An IRB is designated to review and monitor research involving human subjects. Under FDA regulations, “an IRB has the authority to approve, require modifications in (to secure approval), or disapprove research” (U.S. Food and Drug Administration, 1998, January). An IRB serves an extremely significant role in the protection of the rights and welfare of human research participants. “The purpose of IRB review is to assure, both in advance and by periodic review, that appropriate steps are taken to protect the rights and welfare of humans participating as subjects in the research” (U.S. Food and Drug Administration, 2019, September 11). IRB members review and approve research protocols and related materials used by investigators such as informed consent documents, handouts letters, brochures, recruiting materials, and enrollment forms to ensure the protection of human subjects’ rights and welfare.

Federal Confidentiality and HIPAA Compliance

The U.S. government has rules and guidelines to protect subjects’ confidential and sensitive health information while enrolled in research. The Health Insurance Portability and Accountability Act of 1996 (HIPAA) is a federal law created to protect private health information. Federal laws HIPAA and CFR 42, Part 2 protect an individual’s private health, mental health, and alcohol & drug abuse information. These laws do not allow anyone to release or use a person’s protected information without the subject’s written consent.

All participants and their legal guardians signed an authorization form (Appendix B. 5) voluntarily giving their consent to allow their confidential and private mental health information to be collected, used for research purposes, and be stored by the PI. The form stated clearly that

the subject's data would not be associated with their name but with a unique identifier number. Their protected information was stored in a secured computer and confidential HIPAA compliant file. The data collection spreadsheet for the study used a unique identifier number to represent each participant.

Data was run in an aggregate in SPSS using a mixed ANOVA. Subjects' personal files and raw data were kept in locked and secure file cabinets in a locked office at Out-of-the Box Solutions Inc. 242 Creekstone Ridge, Woodstock, Georgia 30188 as per HIPAA guidelines. In some cases, information was shared with those who made sure the study was done correctly like the IRB and Holos University. Published data presented in this dissertation is without association to any individual subject.

Ethical Considerations

The inherent weaknesses and ethical considerations of choosing community-based settings became more evident as the research design evolved, sampling methods were identified, and procedures were implemented. Some observable weaknesses included 1) the lack of random sampling, 2) the inability to ensure isolation of the treatment and control groups from the general school population making social threats to internal and external validity more likely, 3) the inability to isolate the effects of each individual intervention thus increasing the likelihood of type I and II errors in drawing inferences about the statistical significance of the results, and 4) the lack of confidence to generalize findings to a larger sample of adolescents through using convenience sampling.

CHAPTER 4: RESEARCH FINDINGS

Introduction

This PoC study's primary objective was to assess the feasibility and acceptance of the methods, procedures, and intervention used to evaluate *The Effects of Bio-Intrinsic Transformational Therapy™ on Depression and Anxiety in Adolescents*. The secondary objective was to evaluate the safety and efficacy of the methods, procedures, and intervention to reduce depression and anxiety symptoms among the same sample. The third objective was to determine the feasibility and preliminary effects of this type of study to be used in a large-scale investigation with or without modification.

Data Analysis

This section discusses the quantitative results of the study. It reflects subjects' reported levels of depression and anxiety at separate data points throughout the study. Within and between-group effects over time were calculated. For all numerical analyses, a statistically significant change is defined as $p < 0.05$. SPSS (Techopedia.com, n.d.) provided a statistical analysis of the raw data (Appendix D). Dr. Paul Thomlinson, the study's statistician, performed the SPSS analysis for all measures and tests used in this study.

Characteristics of the Sample

Descriptive Statistics

The following information is the statistical analysis of the demographic data collected at baseline using the Demographic Information Form (Appendix B. 2). Thomlinson performed an SPSS analysis using the Qui Square Test of Independence. The Qui Square test determines whether there is an association between categorical variables. It answers the question of whether randomization produced equivalent groups.

Table 1 shows the gender and age of the 34 adolescents enrolled in the study. The combined sample (n=34) was made up of 23 females (67.6%) and 11 males (32.4%).

Table 1: - Descriptive Statistics Combined- Gender & Age

Descriptive N=34		Combined
Gender Male		11
Gender Female		23
Age	18	4
	17	11
	16	4
	15	8
	14	3
	13	4

Table 1 describes participants (n=34) ranged in age from 13 to 18 years old. The age of distribution of the combined sample spanned the entire range of eligibility. Five thirteen-year-olds (14.7%, n=5) participated. Three participants were 14 years old (8.8%, n=3). Eight subjects (23.5%, n=8) were 15 years old. 8.8% (n=3) were 16 years old. One third (32.4%, n=11) of all the participants was 17 years old. Four subjects (11.8%, n=4) were 18 years old.

Participants (n=34) were randomly assigned to the experimental group A or the control group B. Subjects were divided equally between the experimental and control groups. Each group consisted of 17 subjects. Group A (n=17) subjects received the intervention first. Group B (n=17) subjects were put on a waitlist and received the intervention after the experimental period.

Table 2: - Descriptive Statistics Experimental and Control – Gender & Age

Descriptive N=34	Experimental	Control
Gender Male	5	6
Gender Female	12	11
Age 18	2	2
17	4	7
16	2	1
15	5	3
14	3	0
13	1	3

Table 2 shows the gender and age of the experimental group A (n=17) and control group B (n=17). Twelve adolescents (70.5%) in group A were female. Five adolescents (29.4%) were male. Eleven adolescents (64.7%) in group B were female and 6 adolescents (35%) were male. A Qui Square test was used to test the hypothesis that randomization would produce an even distribution for gender between both groups. The output of crosstabulation shows a balance across both groups.

The frequency table (Table 3) shows the output generated by SPSS for variables of gender, age, grade, depression, anxiety, harm to self, harm to others, hallucinations, paranoia, and medication.

Table 3: - Descriptive Statistics Combined, Experimental, and Control Groups

Descriptive N=34	Combined	Experimental	Control
Gender Male	11	5	6
Gender Female	23	12	11
Age 18	4	2	2
17	11	4	7
16	4	2	1
15	8	5	3
14	3	3	0
13	4	1	3
Grade 12	10	6	4
11	7	1	6
10	5	3	2
9	5	4	1
8	7	3	4
# Diagnosis Depression	13	7	6
# Diagnosis Anxiety	13	7	6
# Prior SI/SH	9	4	5
# Prior HI/Violence	1	0	1
# Prior Hallucinations	4	2	2
# Prior Paranoia	6	1	5
# Taking Medication	9	7	2

Table 3 shows data outcomes for frequency variables for the combined, experimental, and control groups. This table shows that randomization produced a roughly even distribution between groups for the following variables: gender, depression, anxiety, thoughts of self-harm, thoughts of harm to others, and hallucinations.

Figures 9, 10 and 11 are histograms that graphically summarize the distribution of demographic variables collected at baseline using the Demographic Information Form (Appendix B. 2).

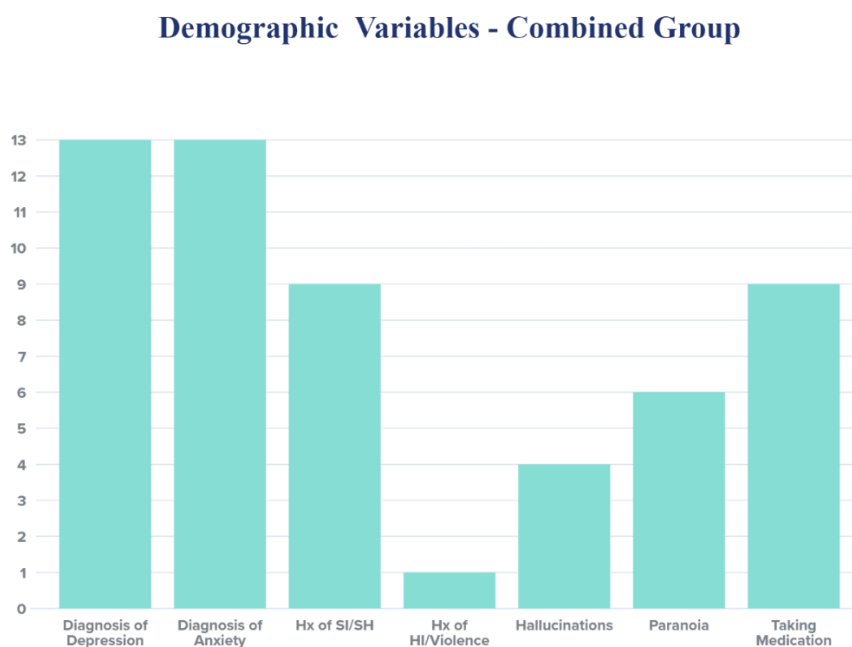
Figure 9: Demographic Variables – Combined Group

Figure 9 shows the distribution of demographic variables for the combined group of participants ($n=34$) at baseline. Thirteen (38.24%, $n=13$) had a diagnosis of depression. The same number of participants (38.24%, $n=13$) had a diagnosis of anxiety. Approximately a quarter of the subjects (26.5%, $n=9$) disclosed a history of suicidal ideation or thoughts of self-harm. Similarly, approximately one out of four adolescents (26.5%, $n=9$) reported taking psychotropic medication. Four (11.76%, $n=4$) reported a history of hallucinations.

Figure 10: Demographic Variables - Experimental Group

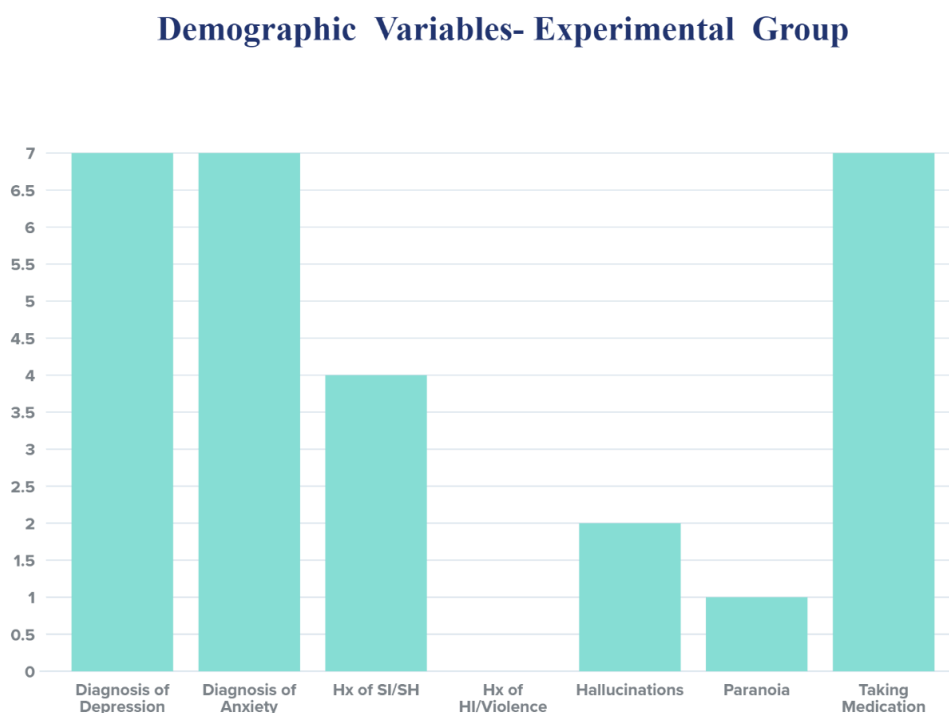


Figure 10 shows the distribution of the demographic variables of experimental group A. In the experimental group (n=17), 41.17% had a diagnosis of depression (n=7). The equal number of participants (n=7, 41.17%) had a diagnosis of anxiety. Four out of seventeen adolescents (23.5%, n=4) disclosed a history of suicidal ideation or thoughts of self-harm. Seven participants (41.17%, n=7) were taking psychotropic medication. Two (11.76%, n=2) reported a history of hallucinations.

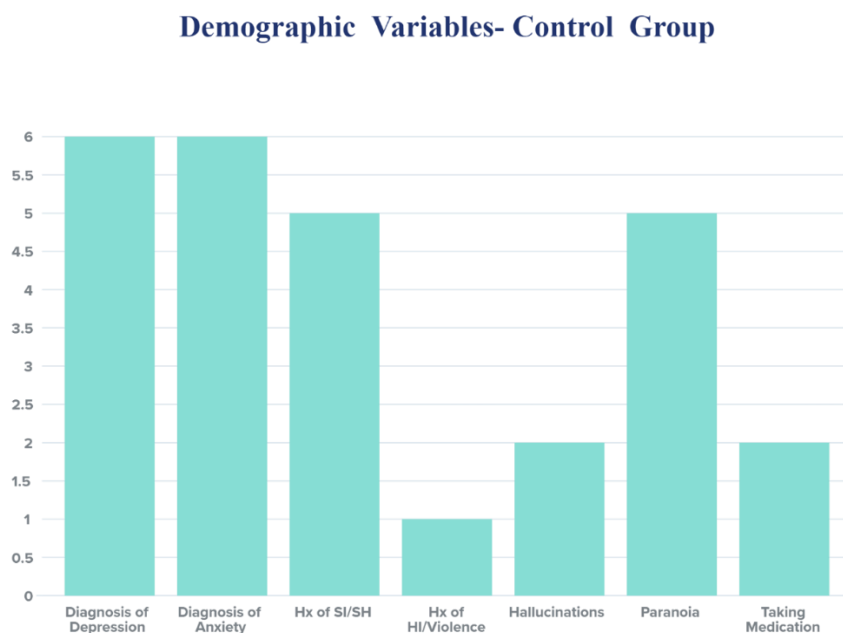
Figure 11: Demographic Variables-Control Group

Figure 11 shows the distribution of the demographic variables of control group B. In the control group (n=17), six participants (35.29%, n=6) had a diagnosis of depression. The same number of participants (35.29%, n=6) had a diagnosis of anxiety. Five out of seventeen subjects (29.41%, n=5) disclosed a history of suicidal ideation or thoughts of self-harm. Only two adolescents (11.76%, n=2) were taking psychotropic medication. Two (11.76%, n=2) reported a history of hallucinations.

Analysis of Outcome Measures

Between-Group Comparisons - Pre and Post Outcome Measures

Table 4 represents the statistical analysis of the data collected from the Beck Youth Inventory for Depression (Appendix D. 1), Beck Youth Inventory for Anxiety (Appendix D. 2), and VAS for Depression and Anxiety (Appendix D. 3) at baseline and week four post-intervention. SPSS analysis, a 2X2 mixed analysis of variance, was performed by Thomlinson.

Thirty-four adolescents (n=34) enrolled in the study. Twenty-seven adolescents (n=27) completed the study. Data analysis consisted of data collected from those twenty-seven subjects. There were missing data from 10 subjects in the control group for both Depression and Anxiety VAS. There were missing data from 1 subject in the experimental group for Anxiety VAS.

Table 4: Between-Group Comparisons - Pre and Post Outcome Measures

Measure	Control Mean	Control SD	Experimental Mean	Experimental SD	F	df	Sig	η^2p
Beck Youth Inventory Depression	N=15		N=12		2.194	1,25	.151	.081
Baseline	61.33	10.506	57.42	12.501				
Week 4 Post test	60.47	11.154	51.42	6.244				
Beck Youth Inventory Anxiety	N=15		N=12		2.334	1,25	.139	.085
Baseline	60.13	10.750	57.92	11.943				
Week 4 Post test	59.67	11.344	52.50	8.028				
Visual Analogue Scale Depression	N=5	Control SD	N=12	Experimental SD	8.203	1,15	.012	.354
Baseline - pre 1	2.760	2.950	2.450	2.4085				
Week 4 - post 4	4.620	4.0339	.158	.2275				
Visual Analogue Scale Anxiety	N=5		N=11		10.588	1,14	.006	.431
Baseline – pre 1	3.460	2.5324	3.945	2.6105				
Week 4 - post 4	4.940	3.3687	.209	.2663				

SD: Standard Deviation

$P < 0.05$

Table 4 provides the between-group comparisons of pre/post means, standard deviations, F tests, degree of freedom (df), and significance ($p < 0.05$).

Partial Eta-squared (η^2p)

Analysis of Beck Youth Inventory Depression

Plot of Beck Depression Inventory Means

The plot of estimated marginal means for the Beck Youth Depression Inventory shows the experimental and control groups' results. The statistical analysis, a 2X2 mixed analysis of variance, shows a pattern of means for the Beck Youth Depression Inventory in the expected and hypothesized direction. The time x group interaction was not statistically significant $F(1,25) = 2.19, p = .15$. The sample size ($n=27$) was underpowered and did not produce a significant effect ($\eta^2p = .081$). More participants are needed to test this hypothesis more definitively. Patterns suggest that in a longer study, we would find stronger, significant effects.

Figure 12: Plot of Beck Depression Inventory Means

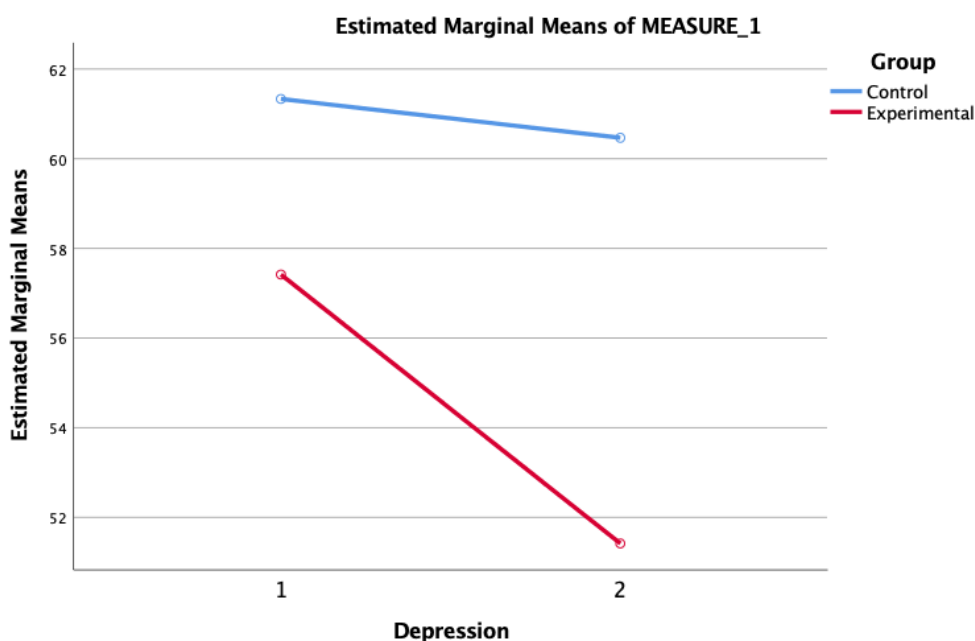


Figure 12 shows a change in depression scores for both groups from baseline to post-intervention assessment. At baseline, the experimental group had, on average, a lower score on depressive symptoms than the control group. The score declined more in the experimental group after the

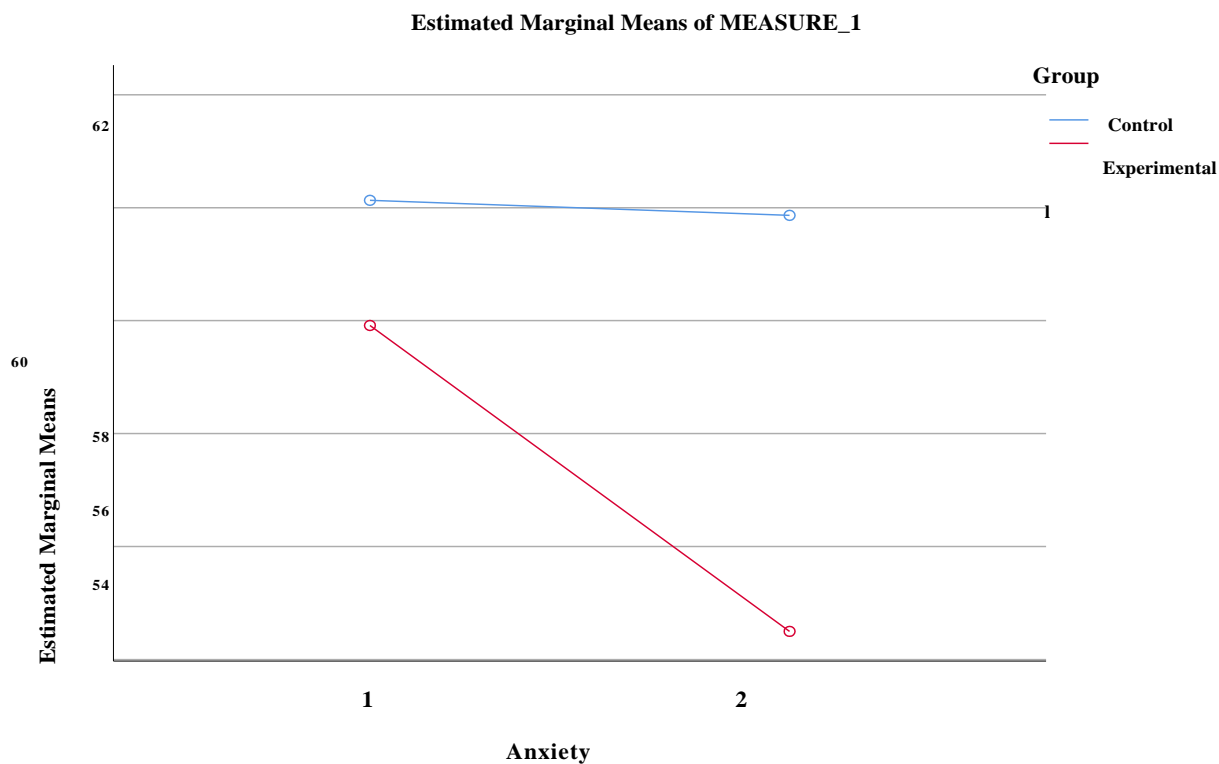
intervention than in the control group. The difference was only marginally significant ($p=.15$), but the study was underpowered and statistical significance was not expected.

Beck Youth Inventory Anxiety

Plot of Beck Anxiety Inventory Means

Figure 13 is the plot of estimated marginal means for the Beck Youth Anxiety Inventory results for the control and experimental groups. The statistical analysis, a 2X2 mixed analysis of variance, shows that the pattern of means for the Beck Anxiety Inventory was in the expected and hypothesized direction. Time x group interaction was not significant, $F(1,25) = 2.33$, $p=.139$ as expected. More participants are needed to test this hypothesis more definitively. Patterns suggest that in a longer study, significant effects would be found.

Figure 13: Plot of Beck Anxiety Inventory Means



Analysis of Visual Analogue Scale Depression

VAS depression scores for pre and post-test experimental and control groups were analyzed by Dr. Paul Thomlison using SPSS. The VAS was administered to each subject before and after each intervention session. The data presented in this section's profile plots are the estimated means of the depression pre-session #1 and the post-session #4 VAS scores for both groups. There were missing data from 10 subjects in the control group. Data for one subject in the experimental group was also missing.

Figure 14: Plot of Visual Analogue Depression Means

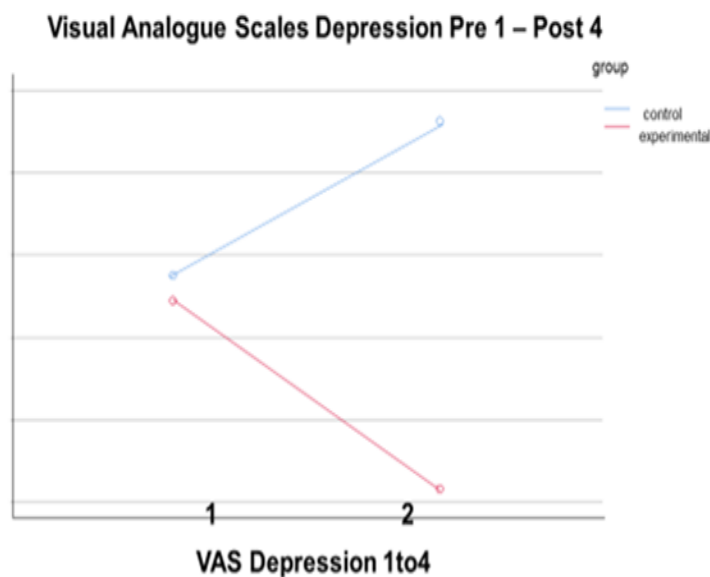


Figure 14 shows the plot of the estimated marginal means for the VAS Depression Pre 1 to Post 4 for the control and experimental groups ($n=17$). The statistical analysis, a 2X2 mixed analysis of variance, shows a pattern of means for VAS Depression in the expected and hypothesized direction, $F(1,15) = 8.203, p=.012$. More participants are needed to make definitive conclusions. However, the trend suggests statistical significance and a strong positive effect ($\eta^2p = .354$) in reducing depressive symptoms over four weeks for the intervention group.

Analysis of Visual Analogue Scale Anxiety

VAS anxiety scores for pre and post-test experimental and control groups were analyzed using SPSS. The VAS was administered to each subject before and after each intervention session. The data presented in this section's profile plots are the estimated means of the anxiety pre-session #1 and the post-session #4 VAS scores for both groups.

Figure 15: Plot of Visual Analogue Anxiety Means

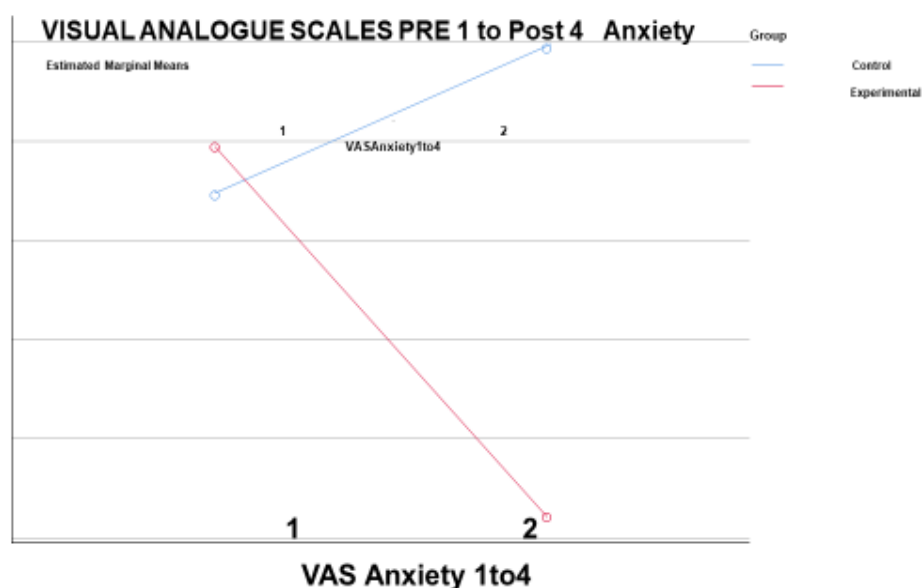


Figure 15 shows the plot line of the estimated marginal means for the VAS Anxiety Pre 1 to Post 4 for the control and experimental groups (n=16). The statistical analysis, a 2X2 mixed analysis of variance, shows a pattern of means for VAS Anxiety in the expected and hypothesized direction, $F(1,14) = 10.588, p=.006$. More participants are needed to make definitive conclusions. However, the trend suggests statistical significance and a strong positive effect ($\eta^2p = .431$) in reducing anxiety symptoms over four weeks for the intervention group.

Summary of Outcome Measures

Even with a small sample size, the pattern of means for between-group effects in all measures showed precipitous declines for both depression and anxiety in the experimental group. A Mixed ANOVA SPSS analysis of Beck Youth Inventories for depression and anxiety for between-group interaction was not statistically significant due to a lack of statistical power. SPSS analysis of the VAS in pre-session #1 and post-session #4 tests for between-subject effects in both depression and anxiety achieved some statistical significance after four sessions. Trends in all measures showed a promising pattern in the hypothesized direction. The experimental group had, on average, lower scores on depressive and anxiety symptoms than the control group. The scores declined in all measures more in the experimental group after the intervention than in the control group. Profile plot lines for the control group in the Beck Inventories were either slightly decreased or remained flat. Profile plot lines for the control group in the VAS were elevated at week 4. The control group's VAS scores showed an increase in anxiety and depressive symptoms from baseline to post-intervention. This pattern did not match the precedent found in the Beck Youth Inventories.

Program Evaluation

Evaluation Form for Research Study

The information in this section is the statistical analysis of the subjective data collected from both groups, the experimental and wait-list control, after receiving the intervention using the Evaluation Form for Research Study (Appendix D. 4). Respondents completed a Likert-type scale to rate aspects of the overall program in the first nine questions. The form yielded process evaluation data shown in Table 5. The results provide evidence of the quality of program implementation. MSW graduate student interns performed this analysis.

The research evaluation questionnaire determined whether the program implementation process in this study was of high quality and yielded positive learning outcomes as hypothesized. Each subject in the experimental group completed an evaluation form after the intervention's fourth session. All control group participants completed the evaluation form after the end of the wait-list intervention. Participants rated the effectiveness of the overall program's various components and individual aspects of the intervention protocol.

The evaluation questionnaire consisted of twelve questions. In the first nine questions, participants rated different aspects of the study on a Likert-type scale of excellent, good, fair, or poor. In questions ten through twelve, participants made subjective determinations about the quality of their experience in a written narrative format. Twenty-seven (27) evaluation questionnaires were distributed to participants who completed four sessions of the intervention. Twenty (n=20), 74% questionnaires were completed and returned to the Primary Investigator. Seven (n=7), 26% of participants failed to return the completed form.

Table 5: Combined Group-Post Intervention Rating Scale of Study Objectives

#	N=20	Excellent	Good	Fair	Poor
1.	The objectives for this study were clear.	10	6	4	0
2.	New terms and ideas were clearly explained.	10	9	1	0
3.	Materials were easy to understand.	9	9	2	0
4.	Audio/visuals enhanced understanding.	12	5	2	1
5.	Primary Investigator was prepared.	15	3	2	0
6.	Primary Investigator responded to questions.	11	4	5	0
7.	Primary Investigator encouraged participation.	16	3	1	0
8.	How would you rate the study overall?	6	13	1	0
9.	How helpful was the study to you?	4	10	6	0

Table 5 represents the responses of 20 participants in both groups (n=27), experimental and wait-list control, given a subjective evaluation questionnaire after receiving the intervention.

Data from 10 participants were lost due to non-compliance in returning the questionnaire to the PI or RA. Participants rated their experience on a Likert-type scale as excellent, good, fair, or poor.

Question #1 asked if the objectives of the study were clear. Ten (n=10) 50% of the respondents checked excellent, six (n=6) 30% checked good, and four (n=4) 20% checked fair. In question #2, ten (n=10) 50% of subjects responded that new terms and ideas were clearly explained excellently, nine (n=9) 45% checked good and one (n=1) 5% checked fair. Question #3 asked if the materials were easy to understand. Nine (n=9) 45% felt they were excellent, nine (n=9) 45% responded that materials were good, and two (n=2) 10% checked fair. When asked in question # 4 if audio/visuals enhanced understanding, twelve respondents (n=12) 60% answered excellent, five (n=5) 25% checked good, two (n=2) 10% checked fair, and one (n=1) 5% checked poor. To rate the preparedness of the PI in question # 5, fifteen (n=15) 75% checked excellent, three (n=3) 15% check good, and two (n=2) 10% checked fair. To rate how well the PI responded to participants' questions (question # 6), eleven (n=11) 55% checked excellent, four (n=4) 20% check good, and five (n=5) 25% checked fair.

Question #7 rated whether the PI encouraged participation, sixteen (n=16) 80% felt it was excellent, three (n=3) 15% checked good, and one (n=1) 5% checked fair. Question #8 rated the effectiveness of the overall study, six respondents (n=6) 30% checked excellent, thirteen (n=13) 65% checked good, and one (n=1) 5% checked fair. In the final question #9 of this section, participants rated how helpful they felt the study was personally. A total of 70% of participants gave the study a positive rating for helping them personally. Four respondents (n=4), 20% rated the helpfulness of the study as excellent. Ten respondents (n=10) 50% rated it as good. Only six (n=6) 30% rated the helpfulness of the study as fair.

The evaluation form's final three questions were subjective, open-ended questions in which participants provided personal feedback. Question #10 asked participants to describe the most beneficial part of the study. Five (n=5) 25% of the respondents felt the Heart-Focused Breathing™ and Quick Coherence Technique® were most beneficial. Six respondents (n=6) 30% stated that the Progressive Relaxation/Creative Visualization was most beneficial.

Other written responses included “learning how to calm myself when dealing with situations that make me nervous, Powering Up™, helped me chill out when stressed, heart-focused breathing allowed me to get in tune with my body while reaching a state of balance, learning how to relax in times of anxiousness, learning to cope with anxiety and depression in a new and brilliant way, and how to make myself feel calm.”



Question # 11 asked respondents to describe the least beneficial part of the study. Seven (n=7) 35% of the respondents stated that “nothing” was least beneficial. Seven (n=7) 35% of the respondents felt that the least beneficial part of the intervention was the energy exploration called

Powering Up™, which included exercises such as “push and pull” and “making an energy ball.” One male participant wrote that it was least beneficial that there were “only four sessions. I wish there were more for me to attend.” One female participant stated that she had “a lot of anxiety” and “felt pressured” to give verbal feedback while processing the activities. Finally, question # 12 asked what subjects learned from participating in the study.

What I Learned

- I learned to be more in tune with my body and energy.
- I learned that there is a way to fix your anxiety and depression by yourself.
- I learned to step back, relax and calm down.
- I learned how to reel myself back in.
- I learned how to focus my energy better.
- I learned how my energy can affect others.



Individual written statements of learning included a variety of responses. Many participants stated that they learned new coping skills for relaxation and calm in the face of stress and anxiety. Responses included statements such as “how to calm my breathing and body, how to breathe in anxious situations, how to take a step back and calm down with breathing, learning how to cope with different things, using breathing techniques help, knowing that it’s possible to reach a place of stability and peace, how to make myself and others calm, how to slow my heart and focus my energy in a positive way in stressful situations, how to better manage my anxiety and breathing, great for someone with anxiety and depression.”

Other participants expressed gaining more awareness of and control over their biofield and learning how their moods can affect others. One male participant stated, “I learned to be

more in tune with my body and energy.” Other teens said they learned “how to access my own energy and work with others to become more in tune,” and “how to control my personal energy.”

Many of the participants expressed feelings of increased empowerment. One female wrote that she was amazed to learn that “there is a way to fix your anxiety and depression by yourself.” Several teens said they learned to “take a step back, relax and calm down.” One male student wrote that he learned how “to reel myself back in.” An eighteen-year-old male said he gained insight into “how to focus my energy better and how my energy can affect others.” One participant explained, “I have a new understanding of the world and the brain. I am more informed.” Several participants expressed gratitude for taking part in the study. One participant succinctly expressed the sentiment by writing, “Thank you for letting me participate in this. I learned a lot, and it was a lot of fun.”

CHAPTER 5: DISCUSSION, CONCLUSIONS, AND FUTURE DIRECTIONS

Summary

This study's overarching purpose was to evaluate the feasibility, safety, and efficacy of the methods, procedures, and intervention to use in a large-scale investigation of the effects of BITT on depression and anxiety in adolescents. Chapter 2 described the literature review process used to research theoretical underpinnings for the study. Various neurobiological, biomedical, and psychosocial factors that impact adolescent brain development and function were identified. This project reviewed the contributions of meta-analysis and research studies using post-materialist scientific models and etheric concepts like our approach. Many interdisciplinary studies and articles were found that supported my hypothesis that this type of bio-resonant, subtle energy-based intervention is psychologically safe and neurobiologically sound. As described in Chapter 4, the study's statistician and PI found strong trends in the hypothesized direction. This study supports the theory that we would see more conclusive evidence that BITT is a safe and effective integrative treatment for depression and anxiety in adolescents in a more extensive investigation. This study's results demonstrate that experimental group A showed a more precipitous decline in depression and anxiety than control group B from baseline to week four post-intervention as hypothesized. The analysis of the results meets our expectations and supports the hypothesis that we would find statistically significant results in a more extensive study.

Discussion

Demographic Characteristics

Using descriptive statistics, the researcher decided to track the participants' specific demographic characteristics compared to the general population. The Chi-Square test was used to see patterns and correlations between those variables and the intervention effects. The data used were from the demographic information form (Appendix B. 2) included in the enrollment packet. The data collected were variables such as gender, age, grade, history of a prior diagnosis, history of self-injury or violence, hallucinations, paranoia, and medication use. The data revealed found some interesting patterns and associations between the 34 adolescents who voluntarily enrolled in the study. Those trends are discussed in this chapter.

Thirty-four (n=34) participants voluntarily enrolled in the study. The combined sample of convenience was 23 females (67.6%) and 11 males (32.4%). Based on national statistics and the researcher's experience in the field, this gender disparity was expected. Statistics of the prevalence of any mental illness (AMI) regarding gender suggest that females make up a larger population. Current NIH statistics regarding prevalence among adults with AMI show that women had higher rates of mental illness "(24.5%) than men (16.3%). Young adults aged 18-25 years had the highest prevalence of AMI (29.4%)" (The National Institute of Mental Health, 2020, November). There is a detailed discussion of the increased prevalence of mental illness and the lack of appropriate treatment options for U. S. youth in Chapter 1.

The age of distribution of the combined sample spanned the entire range of eligibility. Participants ranged in age from 13 to 18 years old. Five 13-year-olds (14.7%, n=5) participated. Three participants were 14 years old (8.8%, n=3). Eight subjects (23.5%, n=8) were 15 years old. 8.8% (n=3) were 16 years old. One third (32.4%, n=11) of all the participants was 17 years old.

Four subjects (11.8%, n=4) were 18 years old. The most considerable portion of the participants was 17 years old. I did not find a consistent pattern regarding age distribution in the sample.

Pearson Qui-Square was used to test the hypothesis that randomization would produce an even distribution of variables between experimental and control groups. The output of cross-tabulation showed a balance across both groups. The researcher and statistician found a relatively even distribution between groups for the following variables: gender, depression, anxiety, self-harm, thoughts of harm to others, and hallucinations. Although the results did not show an even distribution among variables of age, grade, paranoia, and medication use, there were no significant differences between experimental and control groups.

The study's sample of convenience was self-selecting due to the subject's interest in the topic of the study. Local mental health professionals, alternative high school administrators, and church youth organizations in Cobb and Cherokee County, Georgia, referred participants. Subjects tended to be less socioeconomically and culturally diverse than in an inner-city environment or in the general population. In the opinion of this researcher, as a mental health practitioner with over thirty-eight years' experience, future research will benefit greatly from a larger sample size of a more socially and culturally diverse representation.

The percentage of the study's participants with a prior diagnosis of depression and anxiety was higher than the national average as expected. In our sample, 38.24% (n=13) had a prior diagnosis of depression and anxiety. The percentage of participants with severe impairment from depression or anxiety was also higher in our sample than in U.S. national statistics discussed in Chapter 1. Approximately a quarter of our subjects (26.5%, n=9) disclosed a history of suicidal ideation or thoughts of self-harm.

Similarly, approximately one out of four adolescents in our study (26.5%, n=9) reported

taking psychotropic medication. As expected from the PI's experience in the field, the study's sample reported higher depression and anxiety levels. Therefore, the researcher anticipated finding more significant effect size, with fewer participants than in the general population. A relatively small convenience sample diminished confidence to generalize results to a larger population.

Outcome Measures Analysis

Thirty-four adolescents enrolled and consented to the study. Unfortunately, seven participants withdrew from the study for various reasons unrelated to the study. A few subjects enrolled but never began the study. Others had unexpected events such as scheduling or transportation difficulties and challenging family situations that prevented them from completing the study. Although the drop-out rate was 20%, attrition did not appear to bias the study's results.

The decrease in sample size left twenty-seven adolescents ($n=27$) who completed all elements of the study. Statistical analysis consisted of data collected from those twenty-seven subjects. Participants were assigned randomly to the experimental or wait-list control group. There was almost equal distribution between both groups. Twelve subjects ($n=12$) were in experimental group A, and fifteen ($n=15$) were in the control group B.

Primary Outcome Measures: Beck Youth Inventories

Twenty-seven adolescents ($n=27$) took pre-and-post Beck Youth Inventories for Depression and Anxiety. The statistical approach used was a mixed analysis of variance with repeated measures. Statistical analysis evaluated change over time between the groups. The distribution of data across groups was normal. Tests of within-subjects effects showed values of $F(1,25) = 2.19, p=.15$ for BYID and $F(1,25) = 2.33, p=.139$ for BYIA (found in Table 4 of Chapter 4). F tests represent an interaction between groups. To determine statistical significance,

the p-value was used. For the Beck Youth Inventories for Depression and Anxiety, p values were greater than .05. Although these early results are impressive, with a precipitous drop in the experimental group and a flat or slightly higher means in the control group, statistical significance was not found due to the small sample size. Patterns suggest that in a more extensive study, the data would reveal stronger effects.

Secondary Outcome Measures: Visual Analogue Scales

SPSS analysis included data from five (n=5) subjects in the control group and eleven (n=11) from the experimental group. Chapter 3 describes the study's method of data collection. The PI expected to collect 8 VAS measurement points or "observations" per subject in both groups. Due to a misunderstanding of the VAS testing protocol, there was missing data in the control group B participants' VAS measures.

There were missing data from ten (n=10) subjects in the control group B for both Depression and Anxiety VAS. There were missing data from only one (n=1) subject in the experimental group A for Anxiety VAS. This disparity created unequal experimental and control groups. Unequal sample sizes make conclusions more tentative. In the analysis, the PI looked for patterns and trends. The data were interpreted with caution.

Table 6 shows the disparities of standard deviations between experimental and control groups. It also indicates a trend of strong effects and statistical significance between baseline VAS and fourth-week post-test scores. The pattern of means in both measures show a decrease in depression and anxiety in the experimental group with a rise in the control group. There was a more substantial effect size with greater significance in the anxiety group versus the depression group. The PI interpreted this finding's relevance to mean that the intervention may have a more robust and quicker effect on anxiety than depression.

Table 6: Between-Group Comparisons- Pre and Post VAS Outcome Measures

Measure	Control Mean	Control SD	Experimental Mean	Experimental SD	F	df	Sig	η^2_p
Visual Analogue Scale Depression	N=5	Control SD	N=12	Experimental SD	8.203	1,15	.012	.354
Baseline - pre 1	2.760	2.950	2.450	2.4085				
Week 4 - post 4	4.620	4.0339	.158	.2275				
Visual Analogue Scale Anxiety	N=5		N=11		10.588	1,14	.006	.431
Baseline – pre 1	3.460	2.5324	3.945	2.6105				
Week 4 - post 4	4.940	3.3687	.209	.2663				

The control group's profile plot lines, VAS scores for depression and anxiety represented in Figures 13 and 14 of Chapter 4, were elevated at week 4. The VAS means of the control group indicated an increase in anxiety and depressive symptoms from baseline to post-intervention. This pattern did not match the findings in the Beck Youth Inventories. Perhaps in a larger study with equivalent and balanced groups, we would find the expected, hypothesized pattern.

When comparing individual pre- and post-VAS scores, there was an increase in depression or anxiety for that session in some cases. Nevertheless, these experimental participants verbalized positive experiences like learning “how to calm my breathing and body,” “how to control my energy,” and being “more in tune with my body and energy,” not reflected in the test scores. Participants on the autism spectrum or with severe depression, a history of trauma, or PTSD appeared more dissociated or disconnected from their emotions, physical sensations, and somatic awareness than those with anxiety or mild depressive symptoms. This researcher believes that the BITT intervention increases mind-body awareness in participants and provides a safe space to reconnect their minds and bodies. Therefore, some participants can perceive an increase in real-time depression or anxiety while simultaneously experiencing an overall feeling of calm, relaxation, and well-being.

Tertiary Outcome Measures: Program Evaluation Analysis

Twenty-seven (27) research evaluation questionnaires were distributed to participants who completed all four sessions of the intervention. Twenty (n=20), 74% of questionnaires were completed and analyzed. When rating the overall study’s effectiveness, 95% of participants rated the overall effectiveness as excellent or good. 70% of participants gave the study a positive rating for helping them personally.

25% of the respondents felt the Heart-Focused Breathing™ and Quick Coherence Technique® were the most beneficial. 30% stated that the Progressive Relaxation and Creative Visualization exercise was the most beneficial. 35% of the respondents felt that the least beneficial part of the intervention was the energy exploration called Powering Up™, which included “push and pull” and “making an energy ball.” Most participants had no prior knowledge or experience with the subtle energy aspect of the intervention.

Data analysis of the qualitative information collected by the evaluation forms was not a part of the SPSS statistical analysis. Analyzing the collected qualitative data was beyond the scope of this study. However, qualitative results should be considered when pondering the implications of this study and planning for future research.

Areas of Concern

Limitations of the Methodology

In this study's settings, a double-blind experiment was not possible. Both the experimental group and the wait-list control group participants were aware of who was receiving the intervention. As a PoC study, descriptive, not inferential statistics, were used. The study design did not address a method to control the counterfactual in measuring the intervention's effect on adolescents' mental health. The counterfactual could only be approximated and not observed directly. The PI knew what the control participants were doing in their assigned classes, while the experimental group received the school setting intervention. However, in the church setting, the PI could not control or measure the counterfactual. The researcher did not know what natural condition some control group participants were measuring instead of receiving the intervention. This study did not analyze or measure the counterfactual conditions or compare BITT intervention to another mental health intervention. Possibly time spent with a caring adult or in some other activity could have produced the same results. In this researcher's opinion, future research or replication of this study would benefit from controlling the counterfactual in all settings to increase more confidence in the results.

Another limitation of this study's methods was the sensitivity of the measurement instruments used to detect significant changes in depression and anxiety in adolescents. The study's etheric nature involved measuring changes in the subtle or putative energy fields in and

around the body. Biometric measures, in addition to standard psychological tests, would give more precise results. As explained in an article written by Dr. Eric Leskowitz at Harvard Medical School, “currently available objective measurement devices are not yet sensitive enough to detect and measure subtle energy directly” and “the etheric processes proposed in this paper can only be inferred and indirectly supported by subjective reports and preliminary objective data”

(Leskowitz, 2020, September 25, p. 12).

Suggestions to Overcome These Limitations

An apparent flaw in the study’s methodology was not controlling for the counterfactual. In some cases, precisely what activity or condition was compared to the BITT intervention was unclear. This study also did not compare the BITT intervention to other well-known, evidence-based therapies for adolescents. A comparison study of that type would have required more time, money, and other resources than this researcher had available as an independent PI and private practice mental health provider. In a larger, inferential experiment the PI could modify the study design to include controlling for a counterfactual by either having a set activity for the control group during the intervention or comparing the intervention to another similar type, evidence-based therapy.

In previous discussions, cutting-edge innovations in biofield technology are presented. In Chapter 2, this author describes how various devices measure bioelectricity and bioelectromagnetic energy fields. However, most researchers do not have easy access to this expensive and relatively unknown biotechnology. This PI strongly suggests that future researchers add biometric measures to the study design with standard psychological tests to provide more conclusive data on how this intervention affects the human biofield.

Assessing external validity and model validity in a study is vital to understanding its clinical and policy applications. Healthcare research involving CAM and Integrative Medicine (IM) requires evaluation of model validity to assess the likelihood that the research has adequately addressed the unique theory and therapeutic context of the CAM/IM system under evaluation (Khorsan & Crawford, 2014, p. 3). New models of reality need to inform a new scientific methodology, as done in this study, for future research. ÓLaoire suggests that future researchers use external and validity models that incorporate spirituality and theories of consciousness in conducting scientific research. In this way, clinical practitioners using CAM/IM healing modalities can become “Mysticists,” a blend of scientists and mystics (ÓLaoire, 2002, p. 1).

Conclusions

This PoC experiment is a pilot study in a new, unresearched area to fulfill the doctoral dissertation process's intent at Holos University Graduate Seminary. This analysis looks very promising for future CAM/IM resonant research in the interdisciplinary fields of Holistic Medicine, Clinical Social Work, Transpersonal Psychology, Psychiatry, EP, Biofield Science, Theology, and Neurotheology. In this experiment, the efficacy of an innovative intervention, BITT, was tested that will contribute to the existing literature by bringing together ancient spiritual knowledge and modern scientific exploration. This researcher explored ways that new Quantum understandings of spirituality and consciousness affect youth mental health using the scientific method. The PI did not expect to produce statistical significance to test the hypothesis but rather explore the study design's feasibility, efficacy, methods, intervention, and overall program outcomes.

The study's design did not use a matched design or track for ethnicity and socio-cultural diversity in this study. However, when comparing the output cross tabulations for experimental and control groups, the researcher found an equal distribution across conditions for gender, depression, anxiety, suicidal ideation or self-harm, thoughts of harm to others, and hallucinations. Future research of this type should explore ethnicity or socio-cultural factors that would be valuable in youth program development and planning.

The PI understood from the pre-study power analysis that it was unlikely to find statistical significance with a small sample. The PI wanted to assess the hypothesis's validity and determine whether to move forward to extend the study with or without modifications. The study's results showed impressive patterns in the expected, hypothesized direction for both depression and anxiety. This early exploration produced meaningful data and hopeful results. These patterns suggest that in a more extensive study, statistically significant effects would be found.

In all quantitative measures, results showed a more significant effect with more statistical significance in the anxiety group than in the depression group. The PI interpreted this finding's relevance to mean that the intervention had a more substantial effect on anxiety in a shorter period than depression. The reason for this finding involves the polyvagal mediated responses of the autonomic nervous system. Three states associated with anxiety and trauma are commonly known as the "fight, flight, or freeze" responses of the amygdala (Elisabeth, 2020, February 7).

The data suggest that adolescents with anxiety are more in tune with their emotions and experience their body sensations more intensely than those shut down by depression. Teens with depression or trauma are in the state of "freeze." They are more dissociated and have lost their connection with emotional and somatic awareness. The psychological term *dissociation*

describes this process of “freeze” by which humans protect themselves from painful thoughts and feelings. The “fight, flight, or freeze” response is a form of entropy or chaos in the human biosystem. This study’s findings represent the current human state of emotional dysregulation, distress intolerance, and disconnection between mind, body, and spirit. Adolescent brains are biologically attuned to perceive fear, as described in the MRI studies presented in Chapter 2. Therefore, adolescents have an innate and well-developed fight, flight, or freeze response to their perception of danger in the environment or in other people. BITT teaches participants how to calm the amygdala and achieve a state of ease. The study’s results suggest that this state is more readily achievable in anxiety cases than in depression or trauma. It appears that the psychological and physiological processes contributing to overall well-being take longer to effect change in depression and trauma than with anxiety.

Chapter 2 discussed that over time the damaging effects of actual traumatic events or memories of traumatic events lead to establishing a baseline in which the individual gets “stuck” in a state of entropy (chaos) and is unable to regain psychophysiological coherence (McCraty and Zayas, 2014). McCraty and Zayas explain psychophysiological coherence as the ability to self-regulate the quality of feelings and emotions in moment-to-moment experiences and their relationship to human physiological health and overall well-being. Although this study did not measure these aspects of coherence directly, findings suggest that the BITT intervention teaches adolescents to restore their ability to self-regulate their emotions, feelings, brain-heart connection, and bodily sensations.

In Chapter 2, Szent-Gyorgyi (1974) defined syntropy as a human innate psychological drive towards synthesis, growth, wholeness, and self-perfection (p. 12). This state of unifying wholeness creates a healthy, energetic template in our body's electromagnetic field. This study’s

findings are consistent with previously conducted research in EP, neuroscience, psychophysiological coherence, and biofield science.

This study did not analyze subjective measures or qualitative data. However, qualitative information from each participant was collected using the research evaluation questionnaire. This study's scope did not directly measure BITT intervention's effect on feelings of psychophysiological coherence, empowerment, or overall well-being. However, a preliminary review of the subjective data described in Chapter 4 concluded that evidence of enhanced overall coherence, feelings of empowerment, and an increased sense of well-being would be found in a more comprehensive study.

This dissertation was the culmination of the PI's passion to explore the scope and relationship of mystical knowledge and scientific research. Quantum Physics, Energy Medicine, EP, Biofield Science, and the study of subtle energies expand mysticists' understanding of the human biofield and nervous system as electrical and electromagnetic. These new scientific avenues provide the fundamental underpinnings of the electromagnetic paradigm and its importance in restoring health. Syntropy and brain-heart science explain the human biofield's innate homeostatic tendency to return to normal functioning and wholeness.

Understanding the unified and coherent characteristics of biofields and their role in quantum models is vital to youth mental health practitioners. From this perspective, electrodynamic and biofield therapies are the most direct means of restoring the biosystem to its normal state of ease and overall well-being. Researching CAM informed and bio-intrinsic resonant approaches such as BITT can lead to the development of safe and effective, evidence-based youth mental health treatments that promote healing while decreasing reliance on toxic, brain disabling psychopharmaceutical substances. As quantum informed

mysticists, future researchers recognize the importance of electromagnetic biofield interactions in restoring mental and physical health and advocate for future researchers in youth mental health to adopt the new electromagnetic paradigm model.

Implications and Suggestions for Future Research

Bio-Intrinsic Transformational Therapy™ is an innovative, cutting edge intervention that teaches adolescents simple tools to achieve a state of ease, psychophysiological coherence, somatic awareness, and syntropy. The term syntropy in energetic healing describes a natural process “to access the different levels of consciousness associated with energy, allowing it to return the client to a state of wholeness” (Syntropy Energetics, 2011). It is a marriage of conventional science and practical mysticism, as Meher Baba explained in Chapter 1 (Baba, 2007). BITT teaches teens to strengthen and balance their biofield, experience a mindful state of wholeness and unification, and connect to source energy to reduce depression and anxiety. Finding safe, brain-enhancing, and effective bio-psycho-social-spiritual treatments for adolescents with depression and anxiety play a critical role in resolving the current crisis in youth mental health. Further research is necessary to replicate this study’s findings and expand upon the results to apply the findings to the general population of adolescents experiencing depression and anxiety with a high degree of confidence.

The study design did not track for ethnicity or socio-cultural diversity. The open question remains unanswered from this study if the BITT intervention would produce the same results with all ethnic and socioeconomic groups. The idea that the energetic template (biofield) in and around all human beings is universal and does not have specific characteristics to any particular culture or ethnicity has yet to be explored. Future exploration of subtle energy interventions with adolescents from diverse international and cultural backgrounds would be fruitful. Future

research should include larger samples represented by more socially and culturally diverse populations. The implications of such research would contribute to our understanding of consciousness and healing as non-local and universal.

Another important clinical application of future research would be to address the counterfactual by comparing BITT to other evidence-based NIH-approved treatments for adolescents. This researcher found positive effects on depression and anxiety with the BITT intervention within four sessions. As described in Chapter 2, studies done with adolescents and adults found significant positive mental health changes with EP approaches such as EFT and TFT (Feinstein, 2008, 2012, 2019) in fewer sessions than with CBT (Gaesser & Karan, 2016). Another area of relevant further research is to explore the cost-benefit analysis of BITT versus CBT or another type of positive youth development program.

As explained by Leskowitz (2020), the currently available, objective measurement devices used by most practitioners and researchers are not sufficient to measure subtle energy. Leskowitz claims, therefore, that the existence of subtle or putative energy cannot wholly be disproved or validated (Leskowitz, 2020, September 25). Researchers of the future will need to prove the existence of the human biofield and putative energy fields using new, cutting-edge biometric technology.

In Chapter 2, various innovative biofield devices that measure bioelectricity and bioelectromagnetic energy fields were identified. This technology includes, but is not limited to, the Biofield Viewer™ (Streeter, 2019, January 11-12), Gas Discharge Visualization (GVD) (Kostyuk, Cole, Meghanathan, Isokpehi, & Cohly, 2011, May 19), or biophoton photography (Popp, Li, Mei, Galle, & Neurohr, 1988, July). Using this type of biometric device is vital to explore further the intersection of quantum physics, biofield science, and mental health.

However, these devices are somewhat unknown, expensive, and not readily accessible to most independent researchers. Future research using the electrodynamic paradigm will need to incorporate these biometric measures with standard psychological tests to provide more conclusive data on how BITT and other bio-intrinsic interventions affect the human biofield.

As human understanding of consciousness shifts from a linear, logical, left-brain process to a more holographic, intuitive, and quantum right brain view, this new way of experiencing what was previously held as scientific truths requires alternate theoretical constructs. This paradigm shift will determine and inform how we define scientifically valid research in the new age of energy healing and medical intuition. Many CAM/IM informed researchers are transitioning to a bio-psycho-social-spiritual model that incorporates Eastern philosophy and spiritual views of intuition and energetic information and Western scientific, rational, and microbiological approaches.

Many enlightened researcher-practitioners have increased intuitive awareness of human subtle energy fields and their relationship to health and healing. CAM/IM informed researchers and scholars understand that human consciousness is rapidly evolving to higher awareness and vibration levels. In his *Discourses*, Meher Baba explains that “Scientific truths concerning the physical body and its life in the gross world can become a medium for the soul to know itself; but to serve this purpose, they must be properly fitted into the larger spiritual understanding” (Baba, 2007, p 6).

New scientific paradigms now reveal that the cosmos is a unified energy field, and the universe is a holographic representation of light and energy. This view of unity and oneness requires new models and paradigms in future research that reflect what ÓLaoire (2002) identifies as the “union of science and experiential mysticism (p. 1).” As suggested in Leskowitz’s

exploratory article on mapping the subtle energy of our physical anatomy, “Ongoing research in bio-electromagnetism and energy medicine, conducted from the perspective of a post-materialist science, can incorporate the research directions suggested here to develop a more complete picture of how energy medicine techniques actually work” (Leskowitz, 2020, September 25, p. 12).

Many CAM/IM resonant researchers agree there is a vital need for more conclusive, innovative, high-quality research in bio-intrinsic transformational therapies, CAM, integrative approaches, EP, biofield therapies, neuroscience, neurotheology, and PNI. This type of research is notably lacking in adolescent populations. Innovative protocols for adolescents using subtle energies, biofield, and electromagnetic approaches are critically needed, as explained in Chapter 1, in psychiatry, psychology, behavioral, and mental health.

Results from these foundational studies provide evidence for future acceptance of these methods as “best practices” and “treatments of choice” by scientists, researchers, mental health practitioners, healthcare providers, and the general public. In this researcher’s opinion, based on many years of scientific research and experience in the field, the direction of future bio-resonant-informed research with adolescent populations will shape “best practices” by testing innovative interventions with peer-reviewed, evidence-based CAMS/IM-resonant studies in bio-intrinsic transformational therapies. The new challenge to all bio-resonant-informed researchers is to create innovative and unique intervention protocols and explore their efficacy from an electrodynamic perspective. As researchers who are both scientists and mystics, we must add our voices to the existing literature as we scientifically validate the positive effects of bio-intrinsic transformational therapies in treating youth mental health.

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APPENDIX A

CITI Certificates

Primary Investigator Certificate



The certificate is presented on a white background with a dark grey border. At the top left is the CITI PROGRAM logo, which consists of a blue globe icon followed by the text 'CITI PROGRAM' in blue. To the right of the logo is a grey silhouette of a world map. In the top right corner, the following information is listed: 'Completion Date 18-Nov-2017', 'Expiration Date 18-Nov-2018', and 'Record ID 25210942'. Below the logo and map, the text reads: 'This is to certify that: **Robin Reeves-Oppenheim**'. This is followed by 'Has completed the following CITI Program course:'. The course details are listed in two columns: 'Human Subjects Research - BASIC (Curriculum Group)', 'Human Subjects Research - IRB - Social-Behavioral-Educational Focus (Course Learner Group)', and '1 - Independent Learner (Stage)'. Below this, it states 'Under requirements set by: **Independent Learner**'. To the right of this text is a large, light grey 'CITI' logo with the full name 'Collaborative Institutional Training Initiative' underneath. At the bottom left, a verification URL is provided: 'Verify at www.citiprogram.org/verify/?waea7f682-829a-4af8-b651-6e57b96aaf82-25210942'.

CITI PROGRAM

Completion Date 18-Nov-2017
Expiration Date 18-Nov-2018
Record ID 25210942

This is to certify that:

Robin Reeves-Oppenheim

Has completed the following CITI Program course:

Human Subjects Research - BASIC (Curriculum Group)
Human Subjects Research - IRB - Social-Behavioral-Educational Focus (Course Learner Group)
1 - Independent Learner (Stage)


Under requirements set by:


Independent Learner

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?waea7f682-829a-4af8-b651-6e57b96aaf82-25210942

Research Assistants' Certificates





Completion Date 08-Sep-2020
Expiration Date N/A
Record ID 38228806

This is to certify that:

CLINSHETTA Patterson


Has completed the following CITI Program course:

Not valid for renewal of certification through CME. Do not use for TransCelerate mutual recognition (see Completion Report).


Student's (Curriculum Group)
Doctoral Student Researchers (Course Learner Group)
1 - Basic Course (Stage)

Under requirements set by:

Walden University



Verify at www.citiprogram.org/verify/7w95f79fc8-edcd-4798-81b7-b82543f7f75e-38228806





Completion Date 23-Sep-2018
Expiration Date 23-Sep-2019
Record ID 28754208

This is to certify that:

Cynthia Blevins

Has completed the following CITI Program course:

Not valid for renewal of certification through CME.

Human Subjects Research - BASIC (Curriculum Group)
Human Subjects Research – Social-Behavioral-Educational Basic (Course Learner Group)
1 - Independent Learner (Stage)

Under requirements set by:

Independent Learner



Verify at www.citiprogram.org/verify/7wc35d4d9f-2470-4d48-9a4f-1c98e73180db-28754208

Administrative Staff Certificate

Completion Date 31-Aug-2018
Expiration Date 31-Aug-2019
Record ID 28107993

This is to certify that:

Beverly DeVille

Has completed the following CITI Program course:

Human Subjects Research - BASIC	(Curriculum Group)
Human Subjects Research – Social-Behavioral-Educational Basic	(Course Learner Group)
1 - Independent Learner	(Stage)

Under requirements set by:

Independent Learner

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?wa94a0726-a96b-43b5-ac4b-43119f356dd1-28107993

IRB Approval Letters



June 14, 2018

Robin Reeves-Oppenheim
 Out-of-the Box Solutions, Inc.
 242 Creekstone Ridge
 Woodstock, GA 30188

Protocol Title: The Effects of Bio-Intrinsic Transformational Therapy™ on
 Depression and Anxiety in Adolescents
 Hummingbird IRB #: 2018-52
 Approval Period: June 14, 2018 - June 13, 2019

Dear Ms. Reeves-Oppenheim:

On June 14, 2018 a reviewer from Hummingbird IRB reviewed the following item(s) through the expedited review process pursuant to category:

Expedited Category Seven: Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies. (NOTE: Some research in this category may be exempt from the HHS regulations for the protection of human subjects. 45 CFR 46.101(b)(2) and (b)(3). This listing refers only to research that is not exempt.)

The following documents were approved:

Protocol Date:	June 2, 2018
Consent Form(s):	<ul style="list-style-type: none"> • Informed Consent Form, Version 1.0, dated June 2, 2018 • Assent Form, Version 1.0, dated June 2, 2018 • Consent to Use and Disclose Confidential Information, Version 1.0, dated June 2, 2018
Recruitment/Participant Materials:	<ul style="list-style-type: none"> • Demographic Information, Version 1.0, dated June 2, 2018 • Enrollment Script, Version 1.0, dated June 2, 2018 • Exercises and Handouts, Version 1.0, dated June 2, 2018 • Letter of Acceptance, Version 1.0, dated June 2, 2018 • Letter of Invitation, Version 1.0, dated June 2, 2018

Hummingbird IRB, c/o NEIRB, 1st Avenue, Suite 250, Needham, MA 02494
 855-447-2123 (Toll Free)

Robin Reeves-Oppenheim
June 14, 2018
Page 2 of 2

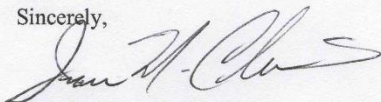
- Recruitment Flyer, Version 1.0, dated June 2, 2018

Hummingbird IRB acknowledges the following document(s):

- Cover Letter to Accompany Information Packet, Version 1.0, dated June 2, 2018
- Cover Letter to Schools and Churches, Version 1.0, dated June 2, 2018
- Email Requests to Professional Groups, Version 1.0, dated June 2, 2018

Any changes made to the protocol, consent or other approved material must be submitted to Hummingbird IRB. Approval from Hummingbird IRB must be secured prior to initiation of the revision(s). You will receive a reminder to renew approval of the study approximately 3 months prior to the end of the approval period.

Sincerely,



Isaac M. Colbert, Ph.D.
Chair, Hummingbird IRB

cc: Hummingbird IRB File



A WIRB-Copernicus Group Company

May 28, 2019

Robin Reeves-Oppenheim
Out-of-the Box Solutions, Inc.
242 Creekstone Ridge
Woodstock, GA 30188

Protocol Title: The Effects of Bio-Intrinsic Transformational Therapy™ on
Depression and Anxiety in Adolescents
Hummingbird IRB #: 2018-52
Sponsor: Investigator Initiated
Approval Period: May 28, 2019 - June 13, 2020

Dear Ms. Reeves-Oppenheim:

On May 28, 2019, Hummingbird IRB reapproved the above referenced study for an additional year.

All approved consents; recruitment and participant materials continue to be valid and do not require new approval dates.

Any changes made to the protocol, consent or other approved material must be submitted to Hummingbird IRB. Approval from Hummingbird IRB must be secured prior to initiation of the revision(s). You will receive a reminder to renew approval of the study approximately 3 months prior to the end of the approval period.

Sincerely,

Isaac M. Colbert, Ph.D.
Chairman, Hummingbird IRB

cc: Hummingbird IRB File

Certificate of Action

Investigator Name: Robin Reeves-Oppenheim	Board Action Date: 06/08/2020
Investigator Address: 242 Creekstone Ridge Woodstock, GA 30188, United States	Approval Expires: 06/13/2021 Continuing Review Frequency: Annually
Sponsor: Out-of-the Box Solutions, Inc. Institution Tracking Number:	Sponsor Protocol Number: Amended Sponsor Protocol Number:
Study Number: 1280118	IRB Tracking Number: 120190404
Work Order Number: 17-1287373-1	Panel: 21 Note: Panel 18 is a shared panel of CGIRB and WIRB. Panel 19 is a shared panel of Aspire and WIRB. Panel 21 is a shared panel of NEIRB and WIRB.
Protocol Title: The Effects of Bio-Intrinsic Transformational Therapy (TM) on Depression and Anxiety in Adolescents	

THE FOLLOWING ITEMS ARE APPROVED:

Consent Form - Assent [S0]

Consent Form - Main [S0]

Study and Investigator for an additional continuing review period. This approval expires on the date noted above.

Please note the following information:

THE IRB HAS APPROVED THE FOLLOWING LOCATIONS TO BE USED IN THE RESEARCH:

Out-of-the Box Solutions, Inc., 242 Creekstone Ridge, Woodstock, Georgia 30188

ALL IRB APPROVED INVESTIGATORS MUST COMPLY WITH THE FOLLOWING:

As a requirement of IRB approval, the investigators conducting this research will:

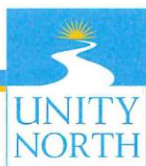
- Comply with all requirements and determinations of the IRB.
- Protect the rights, safety, and welfare of subjects involved in the research.
- Personally conduct or supervise the research.
- Conduct the research in accordance with the relevant current protocol approved by the IRB.
- Ensure that there are adequate resources to carry out the research safely.
- Ensure that research staff are qualified to perform procedures and duties assigned to them during the research.
- Submit proposed modifications to the IRB prior to their implementation.
 - Not make modifications to the research without prior IRB review and approval unless necessary to eliminate apparent immediate hazards to subjects.
- For research subject to continuing review, submit continuing review reports when requested by the IRB.
- Submit a closure form to close research (end the IRB's oversight) when:
 - The protocol is permanently closed to enrollment
 - All subjects have completed all protocol related interventions and interactions
 - For research subject to federal oversight other than FDA:
 - No additional identifiable private information about the subjects is being obtained
 - Analysis of private identifiable information is completed
- For research subject to continuing review, if research approval expires, stop all research activities and immediately contact the IRB.
- Promptly report to the IRB the information items listed in the IRB's "Prompt Reporting Requirements" available on the IRB's Web site.
- Not accept or provide payments to professionals in exchange for referrals of potential subjects ("finder's fees.")

This is to certify that the information contained herein is true and correct as reflected in the records of this IRB. WE CERTIFY THAT THIS IRB IS IN FULL COMPLIANCE WITH GOOD CLINICAL PRACTICES AS DEFINED UNDER THE U.S. FOOD AND DRUG ADMINISTRATION (FDA) REGULATIONS, U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES (HHS) REGULATIONS, AND THE INTERNATIONAL CONFERENCE ON HARMONISATION (ICH) GUIDELINES.



Permission and Approval Letters

Unity North Letter of Support



Join the Journey Inside

April 13, 2018

Robin Reeves-Oppenheim, LCSW, DCSW, ThD.C.
Out-of-the Box Solutions, Inc.
Holos University Graduate Seminary
robinopp@bellsouth.net

Rev. Richard Burdick
Unity North Atlanta
rburdick@unitynorth.org

Dear Ms. Reeves-Oppenheim,

It is my pleasure to inform you that the Unity North Atlanta Board of Directors have approved your request and agreed to partner with you on your doctoral research study, *"The Effects of Bio-Intrinsic Transformational Therapy™ on Depression and Anxiety in Adolescents."* As per our agreement, the staff and Board of Directors of Unity North Atlanta have given our permission to for you to recruit teens from our congregation and other sources in Cobb and Cherokee County, to facilitate all aspects of your study at our location and to provide an initial presentation to our congregation and Y.O.U. group (*Youth of Unity*). As part of our agreement we are offering appropriate spaces to conduct enrollment interviews, orientation and debriefing meetings, pre and post testing, to facilitate all treatment intervention and wait list control groups and to collect data.

It is an honor to partner with you and Holos University on this project and we are looking forward to supporting you in any way we can.

If I can be of any further assistance, do not hesitate to connect with me at any time.

In gratitude,

Rev. Richard Burdick
Unity North Atlanta
4255 Sandy Plains Rd.
Marietta, GA 30066
678-819-9100 ex. 141

Compass Prep Academy Letter of Support



September 13, 2018

Robin Reeves-Oppenheim, LCSW, DCSW, ThD.C.
Out-of-the Box Solutions, Inc.
Holos University Graduate Seminary
robinopp@bellsouth.net

Laura L. George, Director
Compass Prep Academy
124 P. Rickman Industrial Dr.
Canton, GA 30115

Dear Ms. Reeves-Oppenheim,

It is my pleasure to write this letter of support and approval to partner with you on your doctoral research study, *"The Effects of Bio-Intrinsic Transformational Therapy™ on Depression and Anxiety in Adolescents."* As the owner/director of Compass Prep Academy, I give my permission to recruit teens from our school population and facilitate all aspects of your study at our location.

It is an honor to partner with you, Hummingbird IRB and Holos University on this innovative and unique research project. We look forward to supporting you in any way we can.

If we can be of any further assistance, do not hesitate to connect with us at any time.

Respectfully,

A handwritten signature in cursive script that reads "Laura L. George". The signature is written in black ink and is positioned to the right of the word "Respectfully,".

Laura L. George, Director
Compass Prep Academy
678-602-1241
laurageorge@compassprep.org

P.O. Box 691 * Holly Springs, GA * 30142
www.compassprep.org
404.643.9424

*HeartMath Permission to Use Materials***Robin Reeves-Oppenheim**

From: Jeff Goelitz <jgoelitz@heartmath.org>
Sent: Wednesday, August 16, 2017 9:55 PM
To: Robin Reeves-Oppenheim
Subject: Re: Article on HeartMath tools and Worksheet

A big yes.
 Jeff

On Aug 16, 2017, at 6:51 PM, Robin Reeves-Oppenheim <robinopp@bellsouth.net> wrote:

These are great and perfect for my study!
 Can I use these as handouts as part of my protocol?

Robin Reeves-Oppenheim, LCSW, DCSW, CHT, DCC
 President & CEO, Out-of-the Box Solutions, Inc.
Holos University Th.D.C.in Spirituality and Health/Transformational Psychology
 242 Creekstone Ridge
 Woodstock, Georgia 30188
 (o) 678-445-4184
 (f) 678-445-5146

The information contained in this message and any attachments may be privileged and confidential and protected from disclosure. If the reader of this message is not the intended recipient, or an employee or agent responsible for delivering this message to the intended recipient, you are hereby notified that any dissemination, distribution, use of contents or copying of this communication is strictly prohibited. If you have received this communication in error, please notify the sender immediately by replying to the message and deleting all electronic copies of this communication including attachments, and destroying any hard copies which may have resulted.

From: Jeff Goelitz [<mailto:jgoelitz@heartmath.org>]
Sent: Thursday, August 17, 2017 12:55 AM
To: Robin Reeves-Oppenheim <robinopp@bellsouth.net>
Subject: Article on HeartMath tools and Worksheet

Hi Robin,
 As we talked about yesterday, I am sending you a few things related to your study. Let me know if you think they might be helpful.

Talk to you soon.

Best,
 jeff

HeartMath Education -- <https://www.heartmath.org/programs/education/pre-k-12th-grade/>
Science of the Heart – **Overview of HeartMath research**

*Dr. Brian Weiss Permission to Use Materials***Robin Reeves-Oppenheim**

From: in2healing@aol.com
Sent: Saturday, October 14, 2017 10:40 PM
To: robinopp@bellsouth.net
Subject: Re: Brian L. Weiss, MD Contact form inquiry

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Robin,

Congratulations on going for your doctorate! I wish you luck and success.

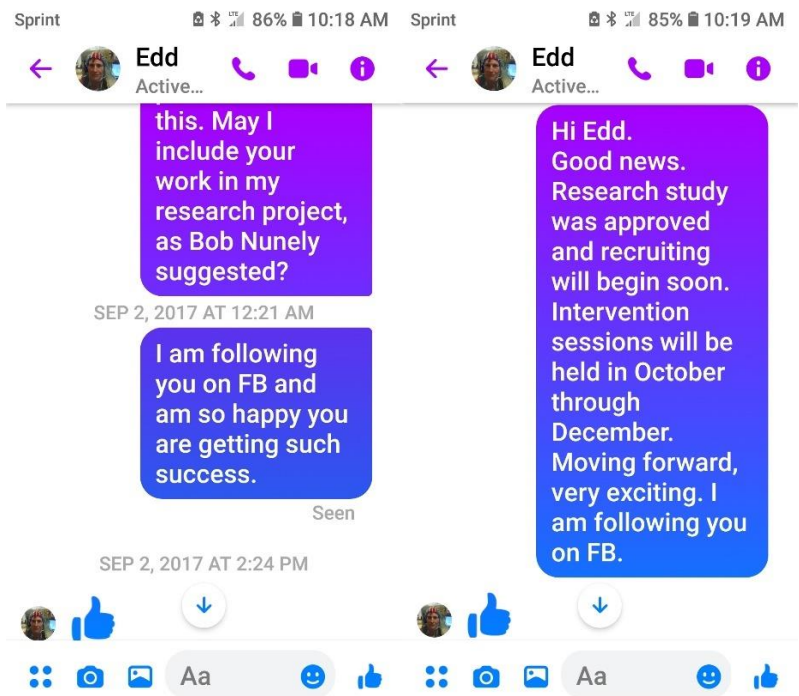
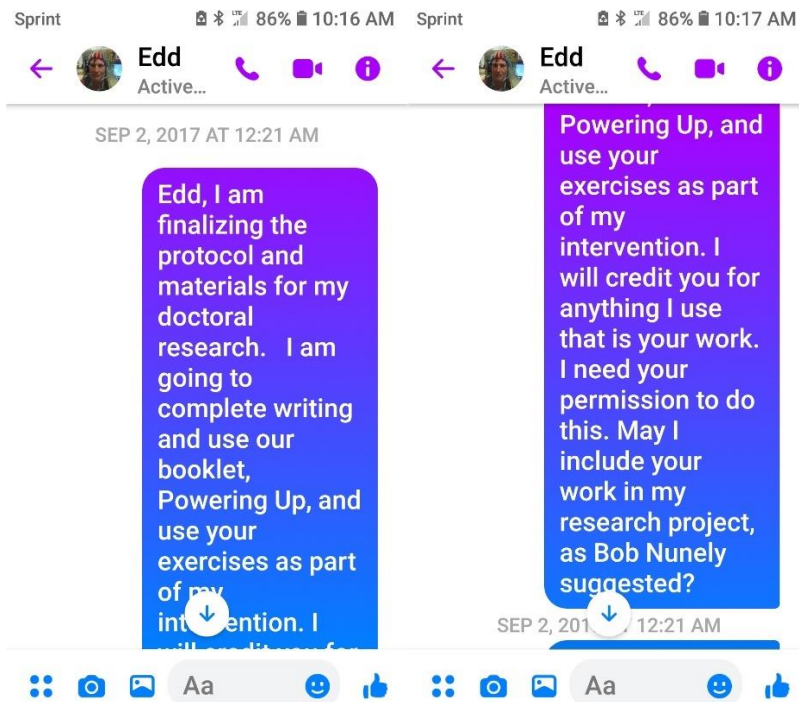
Brian gives his permission to use the exercise and adapt it for your purposes. I transcribed this from one of Brian's workshop meditations, but you can cite the manual if you want - whatever works for you. Please let me know if you need anything more. It's best to email me at caroleweiss@aol.com . I rarely check and no longer use Facebook messenger as it was the source of a pretty back hack.

Fondly,
 Carole

Enter Your Message Here:

Dear Brian, I am using this venue to ask permission to use an adapted version of the progressive relaxation guided imagery exercise in the PLR training manual on page 35-38(2008). I will cite the source in my doctoral dissertation. I don't know if you remember me, but we have met three times. I took your Omega PLR training in October 2008 and the Soul Survival workshop in 2009. I also met you in Atlanta around 2010 at a workshop you presented. I am currently a doctoral candidate at Holos University (Dr.Norm Shealy was the first president)and will be facilitating research for my dissertation soon. The title is "The Effects of Bio-Intrinsic Transformational Therapy on Depression and Anxiety in Adolescents". I cannot use the hypnotic language or do any regression in this study. I plan to adapt your induction and focus on progressive relaxation with healing light and walking down a staircase to a place of peace. In their place of peace I will have them meet a wise and loving being. (After I receive my ThD, I would love to do a future study focused on the Effects of PLR Therapy with Adolescents.) Please respond to give me permission so I can proceed with finalizng my protocol and submit my IRB proposal by early November. With Love and much gratitude to you and Carole, Robin Reeves-Oppenheim, LCSW, ACSW, DCSW, CHT, DCC

Edd Edwards Permission to Use Powering Up™ Materials



APPENDIX B

Participants

B. 1 Letter of Invitation

Out-of-the-Box Solutions, Inc.
242 Creekstone Ridge
Woodstock, Georgia 30188
Phone (678) 445-4184 Fax (678) 445-5146

Inviting You to Participate in Research

Do you experience stressful emotions like irritability, anger and frustration? Do you feel sad? Are you worried and stressed out? Do you feel drained and out of sync? Are you age 13 to 18?

If so, I invite you to join my research study. It's called "*The Effects of Bio-Intrinsic Transformational Therapy™ on Depression and Anxiety in Adolescents.*" You will learn fun and simple tools that may help.

I am Robin Reeves-Oppenheim, a Licensed Clinical Social Worker in the field of mental health and a doctoral student at Holos University Graduate Seminary.

Purpose: The purpose of this study is to measure if teens' moods improve using these simple tools. Your participation will help us gain valuable insights into this subject.

Participation: You must be age 13 to 18 to be in this study. There is no cost to join. Participation is completely voluntary, and no payment will be provided. You will participate in seven group meetings over a twelve-week period. You will rate your stressful feelings on a simple scale before and after each intervention session. You will also complete two simple questionnaires. Each will take about 5 minutes. You will repeat these questionnaires three times during the study at intervals of about six weeks apart.

If you join, it means that you agree to attend the entire study. However, if you feel uncomfortable or unsafe, you may refuse to answer any questions. You may leave the study at any time without blame or negative consequences.

Risks/Discomforts: Participation in this study may cause some discomfort. You may feel some anxiety caused by answering questions or doing some of the exercises. Although this rarely happens, if you experience discomfort we have some ways to help you. Please tell us or talk to your parent(s). We will help you find a professional mental health provider if you need additional help. You can withdraw from the study, at any time, without penalty of any kind, by notifying (or having your parent(s) notify) the research staff verbally or in writing.

Confidentiality: Your answers and private information will remain confidential, and your names will not be connected to any data you provide.

Benefits: There are no direct benefits to be in this study. You may not benefit directly, but you will help us learn if there is any difference in symptoms of depression and anxiety in teens who use these tools.

Location: This study will take place at Unity North Atlanta church, 4255 Sandy Plains Road, Marietta, Georgia 30066. It will take place during the academic school year of 2018/2019.

Act now! Don't delay. Space is limited. We will accept only the first 80 teens. Complete the enclosed documents. Return them to me at the address above.

Contact: For questions or concerns about the research, please contact me by phone or by email.

Warmly,

Robin Reeves-Oppenheim, LCSW, Th.D. Candidate at Holos University
President & CEO
Out-of-the Box Solutions Inc.
robinopp@bellsouth.net

B. 2 Demographic Information Form**Demographic Information**

DATE _____

PARTICIPANT LEGAL NAME _____

STREET ADDRESS _____

CITY _____ STATE _____ ZIP CODE _____ COUNTY _____

PHONE NUMBERS: (HOME) _____ (CELL) _____

(EMAIL) _____ BEST WAY TO CONTACT YOU:

DATE OF BIRTH ___/___/___ AGE _____ GENDER IDENTITY _____

PARENT NAME(S): _____

PARENT MARITAL STATUS: MARRIED SEPARATED DIVORCED NEVER MARRIED

LIVES WITH: BOTH PARENTS MOTHER FATHER FOSTER OTHER

LEGAL GUARDIAN/CUSTODY: _____

PARENT PHONE NUMBERS:

MOTHER

(DAY) _____ (CELL) _____ (HOME) _____

FATHER

(DAY) _____ (CELL) _____ (HOME) _____

GRADE IN SCHOOL _____ READING LEVEL _____ NAME OF SCHOOL _____

HAVE YOU EVER BEEN DIAGNOSED OR TREATED FOR DEPRESSION OR ANXIETY? ___YES ___NO

IF YES, WHAT IS YOUR DIAGNOSIS

IF YES, WHEN WERE YOU TREATED

MEDICATIONS YOU ARE CURRENTLY TAKING:

DO YOU HAVE THOUGHTS OF SUICIDE OR SELF HARM? ___YES ___NO

EXPLAIN _____

DO YOU HAVE THOUGHTS OF HOMICIDE OR VIOLENT HARM TO OTHERS? ___YES ___NO

EXPLAIN _____

DO YOU SEE OR HEAR THINGS THAT OTHERS DO NOT? ___YES ___NO

DO YOU THINK THAT OTHER PEOPLE ARE CONSPIRING AGAINST YOU? ___YES ___NO

B. 3 Main Informed Consent Form

Informed Consent to be in a Research Study

To Be Used with Parent/Guardian or Persons Over the Age of 18

Title: The Effects of Bio-Intrinsic Transformational Therapy™ on Depression and Anxiety in Adolescents

Principal Investigator: Robin Reeves-Oppenheim, MSW, LCSW, Th.D.C.

You or your child are invited to participate in a research study. In order to decide whether or not you want you or your child to be a part of this study, it is important that you read and understand this form. It is also important that you ask questions that you may have and that you understand all the information in this form. This process is called “informed consent.”

Purpose of this Study

The purpose of this study is to see if adolescents’ moods improve using fun and simple tools to deal with stressful emotions. We will learn if there is any difference in symptoms of depression and anxiety in adolescents who use these tools. You or your child will learn and practice these fun and simple tools in this study.

What will happen to you in this study

You or your child will participate in a total of seven group meetings over a 12- week period. Each group session will last for 90 minutes. Four of the group sessions will take place once a week for four consecutive weeks. In those group meetings you or your child will learn and practice a series of fun and simple tools designed to deal with stressful emotions. You or your child will be given a simple visual scale to measure your moods at the beginning and end of each these group sessions. You or your child will complete two simple questionnaires about depression and anxiety. Each questionnaire will take about 5 minutes to complete. They will be repeated three times during the study in intervals of about six weeks apart.

Benefits

There are no direct benefits to be in this study. It is an important study as it may help us learn if there are any differences in symptoms of depression and anxiety in teens who use these tools. There is no cost to join. Participation is completely voluntary, and no payment will be provided.

Risks

Participation in this study may cause some discomfort. You or your child may feel some anxiety caused by answering the questions or by doing some of the exercises. Although this rarely happens, if you or your child experience discomfort, we have some ways to help you. Please tell us. We will help you find a professional mental health provider if

you or your child needs additional help. You or your child can withdraw from the study, at any time, without penalty of any kind, by notifying the research staff verbally or in writing.

Disclaimer

If you or your child are injured in the course of this study, we will help you or your child find appropriate treatment. We will contact emergency services if necessary. However, we have not funds set aside to pay for this care or to compensate you or your child if something should occur.

Confidentiality

Your or your child's data will not be associated with your/their name but only with a number. Your/their information will be stored in a locked and secured computer and/or file room. The computers will only use a number to represent you or your child.

Data will be kept in a in a locked and secured file room at Out-of-the Box Solutions Inc. located at 242 Creekstone Ridge, Woodstock, Georgia 30188. When the results are published, data will be presented without association to any particular subject. You or your child's name will not appear. In some cases, information may also be shared with those who make sure the study is done correctly like the Institutional Review Board and Holos University.

Contact

If you have questions at any time about this study or the procedures (or you or your child experiences adverse effects as a result of participating in this study) you may contact the researchers:

Robin Reeves-Oppenheim, MSW, LCSW, Th.D. C
Principal Investigator
242 Creekstone Ridge
Woodstock, GA 30188
678-445-4184
robinopp@bellsouth.net

If you have questions about your or your child's rights as a person in this study, you may also contact Hummingbird IRB:

David Dennett
Hummingbird IRB c/o New England IRB
197 1st Avenue, Suite 250
Needham, MA 02494 Phone: 1-855-447-2123 (toll free)
Email: info@hummingbirdirb.com

The IRB is a group that helps monitor research. You should call or email if you want to talk to someone who is not part of the study about your rights as a research subject, questions, and/or concerns or complaints regarding this research study.

Participation

You or your child's participation in this study is strictly voluntary and you/they may decline to participate at any point in the study. If you decide to participate, you or your child may withdraw from the study at any time you want. If you choose to withdraw, please let the researchers know as soon as possible. There will be no penalty if you choose to withdraw from the study.

Consent

I have read and understand the above information. All questions I have about this information have been answered to my satisfaction. Having this knowledge, I agree to participate in this study _____. Or having this knowledge, I allow my child to participate in this study_____.

Participant's or Parent/guardian name _____
(please print)

Signature_____

Investigator's name _____
(please print)

Signature_____

Date _____

B. 4 Child Assent Form

CHILD ASSENT TO PARTICIPATE IN RESEARCH

Title: The Effects of Bio-Intrinsic Transformational Therapy™ on Depression and Anxiety in Adolescents

Principal Investigator: Robin Reeves-Oppenheim, MSW, LCSW, Th.D.C

My name is Robin Reeves-Oppenheim. I go to school at Holos University and am getting my doctoral degree.

What is a research study?

When scientists want to learn more about a new way of helping teens cope with stressful emotions such as depression and anxiety, they must test it on people to see if it really helps people and does not hurt them.

Why do you want me to be in your study?

If you are feeling stressful emotions such as irritability, frustration, sadness, tiredness, or worry, I invite you to be in my research study. This study will measure whether your moods improve using some fun and simple tools to deal with these stressful emotions. You will learn and practice these fun and simple tools in this study.

Your parent or legal guardian has given permission for you to be in this study, but you get to make the final choice. It is up to you whether you participate.

What do I have to do?

If you choose to be in this study, you will attend 7 group meetings over a 12- week period. Each group session will last for 90 minutes. 4 of the group sessions will take place once a week for 4 weeks in a row. In those group meetings you will learn and practice a series of fun and simple tools designed to deal with stressful emotions. You will rate your moods on a simple visual scale at the beginning and end of each these group sessions. You will also complete two simple questionnaires about symptoms of depression and anxiety. Each questionnaire will take about 5 minutes to complete. They will be repeated three times during the study in intervals of about six weeks apart.

What if I don't want to be in this study?

No one will be upset with you if you decide not to participate or if you change your

mind later. You are free to ask questions at any time and you can talk to your parent/guardian any time you want. You do not have to answer any question you do not want to. You do not have to do anything that you do not want to.

What is confidentiality?

Everything you say and do will be kept private, and even your parents will not be told what you say or do while you are taking part in the study. When I tell other people what I learned in the study, I will not tell them your name or the name of anyone else who took part in the research study.

Will anything in the study hurt me?

Although it rarely happens, sometimes people feel slight discomfort or anxiety caused by answering the questions or by doing some of the exercises. If you experience discomfort, feel afraid or don't feel well, we have some ways to help you. Please tell us or tell your parents. We will help you find a professional mental health provider if you need extra help. If anything in the study worries you or makes you uncomfortable, let me know and you can stop.

Will I get anything for being in this study?

There is no cost to join and you will not get anything for being in this study. Although you may not benefit directly from being in this study, you will help us learn something very valuable, You will help us answer the question, are there any differences in the symptoms of depression and anxiety in teens who use these tools.

If you want to be in the study, sign or print your name on the line below:

Name and Signature, Date

Check which of the following applies (*completed by person administering the assent.*)

- I understand this form and I want to take part in this study.
- I understand this form and I do not want to take part in this study.

Signature of Person Obtaining Assent, Date

B. 5 Consent to Use and Disclose Confidential Information

Out of the Box Solutions, Inc.
242 Creekstone Ridge, Woodstock, GA 30188
(Phone) 678-445-4184 (Fax) 678-445-5146

Consent to Use and Disclose Confidential Information for Research

The U.S. government has a rule to protect your confidential information while enrolled in research. The HIPAA Privacy Rule protects your private health information. This document describes your rights. It explains how your private health information will be kept and used for this study.

If you sign this form, you allow me to collect your private health information. Federal laws HIPAA and CFR 42, Part 2 protect your private health, mental health, and alcohol & drug abuse information. The law does not allow anyone to release or give it to anyone without your or your legal guardian's written consent. We will store it at the address above and will keep it securely.

I have received a copy of this form. I acknowledge that I have read (or had it read to me) and understand it. I voluntarily give my consent to allow my confidential and private mental health information to be collected and stored by this primary investigator.

Participant's Name (print)	Date
Legal guardian or authorized representative (print)	Date
Participant or Authorized representative (signature)	

B. 6 Enrollment Script

Script to schedule enrollment interview.

Hello and congratulations! My name is _____. (or) I am calling on behalf of Robin Reeves-Oppenheim. I am calling you today to schedule an enrollment interview for our research study about the Effects of Bio-Intrinsic Transformational Therapy™ on Depression and Anxiety in Adolescents. That is where you will make your final decision about enrolling in our study.

I am calling you today because you completed and returned all the necessary forms in the information packet. You indicated that you understand and accept the terms and conditions and that you are willing to complete the entire study.

Is this correct? If so, I want to schedule an appointment with you and at least one of your parents or guardians to attend an enrollment interview. What would be a convenient day and time for your interview appointment? (caller will state open interview days and times for participant to choose from)

In order to schedule this interview appointment for you, I need verbal confirmation from your parent/guardian. Can you put them on the phone now? If not, when would be convenient time for me to call them?

I want to thank you for your willingness to participate in this important study. We look forward to seeing you soon. Goodbye and have a good day.

B. 7 Letter of Acceptance

Out of the Box Solutions, Inc.
242 Creekstone Ridge
Woodstock, Georgia 30188
Phone (678) 445-4184 Fax (678) 445-5146
Letter of Acceptance to Research Study

Congratulations! You have been accepted into my research study. It's called "***The Effects of Bio-Intrinsic Transformational Therapy™ on Depression and Anxiety in Adolescents.***"

You are receiving this letter because you have completed and returned all the necessary forms in the information packet. You have had your enrollment interview. You understand and accept the terms and conditions. You are willing to complete the entire study. You want to learn fun and simple tools to deal with stressful emotions.

You will participate in a total of seven group meetings over a 12- week period. Each group session will last for 90 minutes. Four of the group sessions will take place once a week for four consecutive weeks. In those group meetings you will learn and practice a series of fun and simple tools designed to deal with stressful emotions. You will be given a simple scale to measure your moods at the beginning and end of each session. You will also be asked to complete two simple questionnaires about depression and anxiety. Each questionnaire will take about 5 minutes to complete. They will be repeated three times during the study in intervals of about six weeks apart.

Location: This study will take place at Unity North Atlanta church, 4255 Sandy Plains Road, Marietta, Georgia 30066. It will take place during the academic school year of 2018/2019.

Your group meetings are circled below:

Orientation Meeting (Pre-test given): month/day _____, 2018 at _____ PM

Group A: 4 consecutive sessions

Week 1: _____	Tues. 6 PM	Sat. 1 PM	Sat. 3 PM
Week 2: _____	Tues. 6 PM	Sat. 1 PM	Sat. 3 PM
Week 3: _____	Tues. 6 PM	Sat. 1 PM	Sat. 3 PM
Week 4: _____	Tues. 6 PM	Sat. 1 PM	Sat. 3 PM

Debriefing Meeting (Post-test given): month/day _____, 2018 at _____ PM

Group B: 4 consecutive sessions

Week 1: _____	Tues. 6 PM	Sat. 1 PM	Sat. 3 PM
Week 2: _____	Tues. 6 PM	Sat. 1 PM	Sat. 3 PM
Week 3: _____	Tues. 6 PM	Sat. 1 PM	Sat. 3 PM
Week 4: _____	Tues. 6 PM	Sat. 1 PM	Sat. 3 PM

3rd data collection (post-test given): month/day _____ 2018 at _____ PM

If you have questions at any time about this study or the procedures (or you experience adverse

effects as a result of participating in this study) you may contact the researchers:

Robin Reeves-Oppenheim, MSW, LCSW, Th.D. C

Principal Investigator
242 Creekstone Ridge
Woodstock, GA 30188
678-445-4184
robinopp@bellsouth.net

If you have questions about your rights as a person in this study please contact Hummingbird IRB:

David Dennett
Hummingbird IRB c/o New England IRB
197 1st Avenue, Suite 250
Needham, MA 02494 Phone: 1-855-447-2123 (toll free)
Email: info@hummingbirdirb.com

We look forward to having you participate in this important study,

Robin Reeves-Oppenheim, LCSW, Th.D. Candidate at Holos University
Primary Investigator
robinopp@bellsouth.net

B. 8 Recruitment Flyer

Self Help Research Study Just for Adolescents!!!!

Are you feeling sad, irritable, angry, worried, tired or stressed?

Would you like to

- **Get your brain and heart in sync**
- **Recharge your inner battery**
- **Think more clearly**
- **Learn fun and easy ways to deal with stressful emotions**
- **Learn empowering tools to use in daily life**

Our self-help research study will teach new tools to do this.

These incredibly powerful tools

- **are fun and easy to learn.**
- **can be used by one individual or in a group.**
- **No cost is involved.**
- **Gain amazing insights.**

Learn these exciting empowering techniques:

- **Heart-Focused Breathing™**
- **Quick Coherence Technique®**
- **Inner-Ease™ Technique**
- **Powering Up™: recharging your inner battery**
- **Progressive Relaxation and Creative Visualization**

Act today! Don't Delay! Only the first 80 adolescents are accepted.

To join our study or for more information contact:

Robin Reeves-Oppenheim, LCSW, DCSW, Th.D.C.

Call 678-445-4184 or email robinopp@bellsouth.net

*B. 9 Cover Letters***Cover Letter to Accompany Information Packet**

Out of the Box Solutions, Inc.
242 Creekstone Ridge
Woodstock, Georgia 30188
Phone (678) 445-4184 Fax (678) 445-5146

Dear _____,

I am sending you flyers and information packets about a unique and exciting research study I am conducting.

I am very grateful for the opportunity to recruit subjects for my study through your organization,

 Please feel free to direct any interested person to my office for more information. My staff and I are available by phone and email. Our contact information is provided below. It is also on the flyer and in the information packet.

I am available to present the information in person at your convenience. If you need more flyers or packets, please feel free to contact me and I will provide the materials you need.

Thank you for giving your valuable time and attention to this research study. I appreciate your support and interest. I am grateful that I can provide this unique opportunity to adolescents in our community.

With Kind Regards,

Robin Reeves-Oppenheim, MSW, LCSW, Th.D. C .
 Principal Investigator
 242 Creekstone Ridge
 Woodstock, GA 30188
 678-445-4184
 robinopp@bellsouth.net

Cover Letter to Schools and Churches

Out of the Box Solutions, Inc.
242 Creekstone Ridge
Woodstock, Georgia 30188
Phone (678) 445-4184 Fax (678) 445-5146

Dear _____,

I have enclosed a sample flyer and information packet regarding a unique and exciting research study that I am conducting. I am a doctoral student at Holos University Graduate Seminary. There is no cost to participate in this innovative research study. Participation is voluntary. Please post the flyer in an appropriate place where potential participants can view the information. I will provide any assistance necessary to promote your teens' participation in this study. I am available to present the information in person at your convenience. If you need more flyers or packets, please feel free to contact me and I will provide the materials you need. If you feel there is enough interest, I am available and willing to conduct an introductory presentation about the study to your staff, the adolescents and their parents/guardians that your organization serves.

Please feel free to direct any interested person to me for more information. I am available by phone and email. My contact information is provided above. It is also on the flyer and in the information packet.

I am very grateful for the opportunity to advertise my study through your organization, _____ . I am happy to provide additional copies of flyers and packets for your convenience.

Thank you for giving your valuable time and attention to this research study. I appreciate your support and interest. I am grateful for this unique opportunity to serve the adolescents in your community.

With Kind Regards,

Robin Reeves-Oppenheim, MSW, LCSW, Th.D. C .

Principal Investigator

242 Creekstone Ridge

Woodstock, GA 30188

678-445-4184

robinopp@bellsouth.net

B. 10 Email Requests to Professional Groups

PRE-STUDY EMAIL TO HELP PROMOTE RESEARCH

The Effects of Bio-Intrinsic Transformational Therapy™ on Depression and Anxiety in Adolescents

Robin Reeves-Oppenheim, LCSW, Th.D. Candidate, Holos University (678)445-4184

Dear Colleagues,

In a few days, you will receive an email asking for your help to recruit participants for an important and innovative research study that I am conducting for my doctoral dissertation at Holos University. My research study will measure if teens' moods improve using fun and simple tools to get in sync, charge their inner battery and deal with stressful emotions.

My research study, *The Effects of Bio-Intrinsic Transformational Therapy™ on Depression and Anxiety in Adolescents*, will teach teens the use of these fun and simple tools to deal with stressful emotions such as symptoms of depression and anxiety.

I am writing in advance because most people like to know ahead of time so that they can watch for the email. This study is an important one to help identify what types of innovative, complementary and alternative interventions are effective with adolescents dealing with stressful emotions.

Thank you for your time and consideration. I hope you will help me spread the word about my study. My doctoral research can only succeed with the generous help from people like you.

Sincerely,

Robin Reeves-Oppenheim, MSW, LCSW, Th.D. C
Principal Investigator
242 Creekstone Ridge
Woodstock, GA 30188
678-445-4184
robinopp@bellsouth.net

EMAIL REQUEST TO HELP PROMOTE RESEARCH STUDY

The Effects of Bio-Intrinsic Transformational Therapy™ on Depression and Anxiety in Adolescents

Robin Reeves-Oppenheim, LCSW, Th.D. Candidate, Holos University (678)445-4184

Dear Colleagues,

Do you know any teens from 13 to 18 who are experiencing symptoms of depression or anxiety, or other stressful emotions? I need your help to recruit participants for a unique and exciting research study I am conducting for my doctoral dissertation at Holos University. My research study, *The Effects of Bio-Intrinsic Transformational Therapy™ on Depression and Anxiety in Adolescents*, will measure if teens' moods improve using fun and simple tools to deal with stressful emotions. I will teach 80 teens these valuable tools.

I am attaching a flyer that you can duplicate and post in your office waiting room or in other appropriate places. The flyer contains important information about this study including how to enroll.

I have information packets to give to interested teens and their parents/guardians. I can make these materials available to you to distribute if you wish.

Participation in this study may cause slight discomfort or anxiety caused by answering the questions or doing the exercises. Although this rarely happens, if the participant experiences discomfort, we have some ways to help them. They can tell us or talk to their parent/legal guardian at any time. We will assist them in finding a professional mental health provider if they need additional help. Participants can withdraw from the study, at any time, without penalty of any kind, by notifying (or having their parent/legal guardian notify) the research staff verbally or in writing.

There is no cost to join. Participation is strictly voluntary. Participants may not benefit directly from being in this study, but their participation is valuable. It will help us learn if there is any difference in depression and anxiety in teens who use these tools.

Please help me spread the word about my study. Thank you in advance for any help you can give to support my innovative research.

Sincerely,

Principal Investigator: Robin Reeves-Oppenheim, MSW, LCSW, Th.D. C

242 Creekstone Ridge, Woodstock, GA 30188, 678-445-4184 robinopp@bellsouth.net

APPENDIX C

Exercises and Handouts

C. 1 Icebreakers

Icebreakers play an important role in helping you connect with one another in a group environment. Icebreakers enhance your learning by helping you feel more comfortable and to stimulate cooperation and participation.

My name is?

Going around the circle, you each must state your name and attach an adjective that not only describes a dominant characteristic about you, but also starts with the same letter of your name, for example, generous Graham, dynamic Dave.

20 Questions

1. If you had a time machine that would work only one time, what point in the future or in history would you visit?
2. If you could go anywhere in the world, where would you go?
3. If your house was burning down, what three objects would you save?
4. If you could talk to any one person now living or in the past, who would it be and why?
5. If you HAD to give up one of your senses (hearing, seeing, feeling, smelling, tasting) which would it be and why?
6. If you were an animal, what would you be and why?
7. If you had a pet, what sort of pet would you like?
8. Name a gift you will never forget?
9. Name one thing you really like about yourself.
10. What's your favorite thing to do in the summer?
11. Who's your favorite superhero, and why?
12. Does your name have a special meaning and or were you named after someone special?
13. What is the hardest thing you have ever done in your life?
14. If you are at a friend's or relative's house for dinner and you don't like the food, what would you do?
15. What was the best thing that happened to you this past week?
16. If you had this day to do over again what would you do differently?
17. What's the weirdest thing you've ever eaten?
18. What book, movie or video have you seen/read recently you would recommend? Why?
19. If I gave you \$10,000, what would you spend it on?
20. If you were sent to live on a space station for three months and only allowed to bring three personal items with you, what would they be?

UFO Ball

The UFO ball is an interesting science toy that many science teachers purchase. It lights up and makes cool sounds. But looking at the lights flashing and the speaker making noise, what is the scientific reasoning for the UFO ball to operate? Well, UFO balls are powered by many circuits that are all stored inside of the ball. But the circuits contained inside are not completed. That final step is up to you. On the sides of the UFO ball, there are strips of metal that attach to the two circuits. One of the circuits controls the light of the UFO ball and one controls the sounds. When you touch both of the circuits with the appropriate hands, the lights will activate, causing an interactive toy that will keep children busy. Since there are two series circuits, they can also be considered as parallel circuits. A parallel circuit is a circuit in which the loads are connected side by side. In the UFO ball, the loads are either the speaker or the LED light. The parallel circuits work well because if one series circuit was to stop, the LED light or the speaker, the other would still be able to function properly without the other one. The UFO ball will not work if the circuit is not complete. If you touch the UFO ball one side with your hand and one side with someone else's hand it will not operate. This occurs because when you and the other person are touching the ball it's a full circuit since half of the circuit is coming from you, half from the other person. But if you touch the skin of the other person it will operate because the circuit is complete. In, the UFO ball works because the operation of the parallel and series circuits inside of the ball being powered by the circuitry and will only operate properly only if the entire circuit is complete.

C. 2 The Human Biofield Defined

The human biofield is the energetic blueprint or matrix that creates the human form. Every human being, and every living creature on this planet, has such a blueprint. The human biofield is multidimensional, offering 3D physical form along with the vibrational aspects of the emotional and mental planes and beyond. The biofield is holographic and predetermines who we are, while at the same time reflects our state of being moment to moment. If any portion of the physical body is removed, the holographic blueprint of that tissue remains. The biofield can be [read](#), scanned and interpreted in many different ways, just like any blueprint.

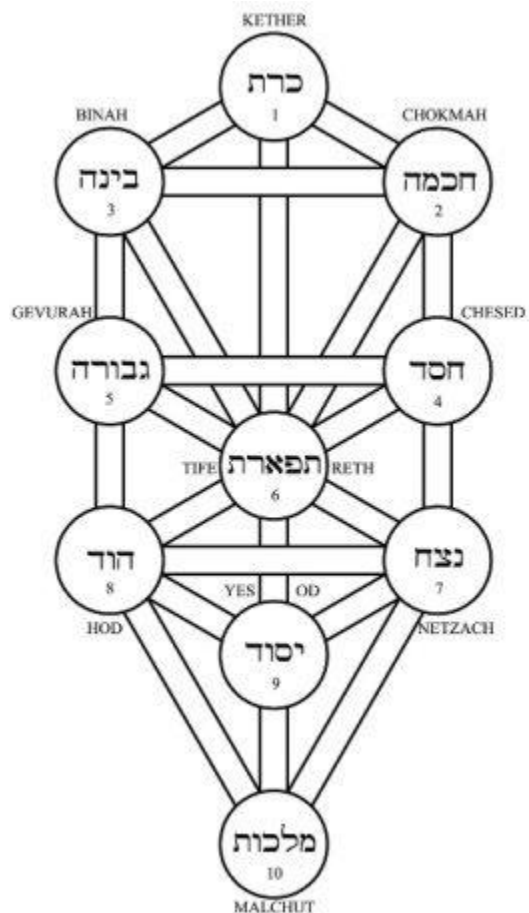


The human biofield is holographic.

It directly links the bodies cellular activity with the meridian pathways to [create](#) the physical form and all other vibratory aspects of the being. This energetic field is like a superhighway that allows the DNA in our cells to communicate faster than light and maintain a coherent, holistic, intelligence, in the organism. The biofield is commonly referred to as the aura, but this is not strictly accurate as the biofield is comprised of multiple frequencies and information.

Every one of us is an energy being. In fact, we are all beings of light existing across multiple dimensions. We all consume different frequencies of light in multiple ways to create who we are. Your biofield is a complex living structure and the energy of that structure is sometimes referred to as Quantum Energy. Indeed, we are very complex beings existing as a combination of up to 22 vibratory states, interconnected with up to 14 strands of DNA, all of which are based on light energy.

These vibratory states coalesce or form around the zero point of your central cord. Note that I said central cord, not silver cord, which is a different concept. Each state is in turn supported by energy spheres or sephirot as depicted in the Hebrew Tree of Life. *(Please note I'm not wanting to introduce any religious aspects here. It's just the closet model I have to help describe what I perceive.)* This is a classic descriptive term for the central mystical symbol used in the Kabbalah of esoteric Judaism, also known as the 10 Sephirot. The tree, visually or conceptually, represents as a series of divine emanations of God's creation. In this way, Kabbalists developed the symbol into a full model of reality, using the tree to depict a map of Creation.

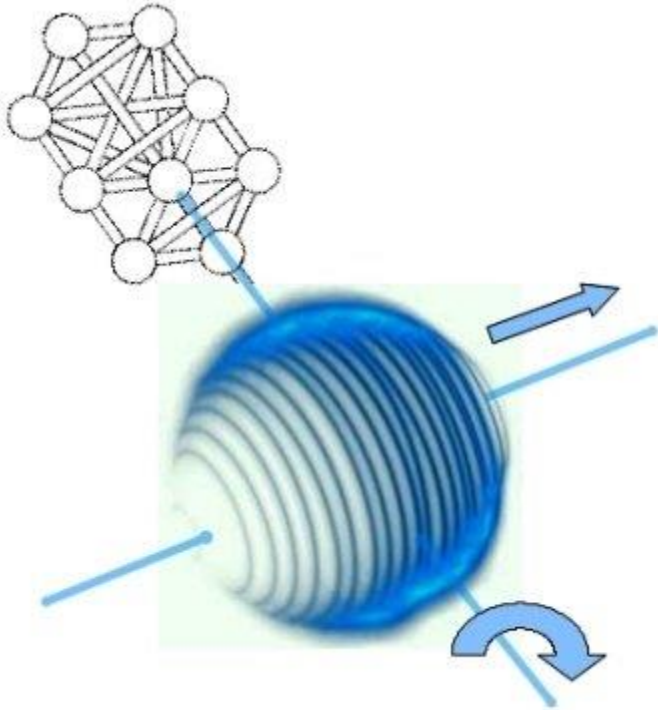


The Tree of Life

When I was first exploring energy healing, this concept was introduced to me and I failed to grasp it. I have to be honest and say that I still do not understand the concept fully, but I do perceive similar patterns within the biofield during a healing session. The patterns I perceive are commonly much more complex than the 10 Sephirot portrayed in this image.

Just to keep it simple, you could interpret each energy centre as an independent gyroscope, with dimensions within dimensions. Gyroscope is an apt description because that's how they are presented to me in a healing session. Sometimes they become unbalanced or slow down and fail to maintain the correct alignment. When this occurs, we need to make adjustments on multiple

planes and it's like adjusting wheels within wheels until the correct alignment is found. Think about that for a moment. If your gyroscope is stuck, how can you stay on course?



You could interpret each energy centre as an independent gyroscope, with dimensions within dimensions. These energy centres [support](#) the various vibrational planes of the biofield. They often need re-tuning and even replacing; adjustments to one plane will affect another.

The human biofield as light.

The total number of energy centres will differ for each individual. Every person is unique, emerging as one of many possible combinations. We recognise that your strands of DNA can become constricted, and it requires unique healing practises to uncoil or open the DNA, allowing for greater expression of light. In the end that's what we are, expressions of light.

The term Human Biofield is often referred to as the Human Energy Field. Some will also describe it as your Aura but that is not really accurate, as I've already mentioned. If a person can see your aura in some form, they are usually perceiving a small frequency range within a very complex, energy field. It would be the equivalent of looking at an image on a television screen and ignoring the complexities involved in transmitting that image; ignoring the millions of pixels that make up the image. Just as I can [see blockages](#) within the human energy field, it's only within a particular frequency range. As valuable as it may be, it's still not the whole picture.



As an energy being, your health is reflected in your biofield.

Nobel Prize laureate Albert Szent-Györgyi once said, “We live by a small trickle of electricity from the sun,” and he's right. The miracle of photosynthesis transforms the sun’s light frequencies into green plants, trees, grasses, and medicinal herbs. When consumed and digested, these plants release nutrients and multiple light frequencies into the human body. In addition, as humans we directly absorb light energies from the sun into our bodies.



We are all light beings.

We are all light beings and we need the nourishment of light to survive. Most people would be aware that we need to get some exposure to direct sunlight every day for good health. The benefit of direct sunlight is taught in basic, school physiology. Along with the production of Vitamin D there are a myriad of other functions dependent on light. But we also need access to other light frequencies to nourish the Human Biofield and in turn our body.

Cosmic (yang) energy is directly collected through the crown while other frequencies are assimilated through the remaining chakras. We also need to be grounded to Mother Earth (yin) to release damaging energies in exchange for other healing frequencies. Other sources of light energy must be consumed through our foods. I'm talking about fresh, preferably organically

grown, fruits and vegetables that have captured light energy and transformed it into living nutrients. [Nutrients](#) that are rapidly absorbed and assimilated into the cells of our bodies, not dead, lifeless, processed rubbish. Our [water](#) intake needs to be considered the same way. Bottled water for instance is lifeless water.

The Human Biofield or Energy Field has the potential to be corrupted and the energy flow blocked. When the flow is blocked or disrupted, a natural healthy balance cannot be maintained, and states of disease will become evident. Contaminated and lifeless foods, environmental [toxins](#), parasites, chronic viral infections, surgery, [emotional trauma and negative thought patterns](#), as well as misguided energies and [inter-dimensional interferences](#), all have the potential to interfere with your energy flow.

Everything we consume, both physically and mentally, have consequences. Those consequences can be supportive to our health or degrade it. What many people do not realise is that genetic hereditary patterns, and even past lives can have an effect on the light energy of the biofield. This is where energy healing comes into it's own by providing the [techniques](#) to cross multiple dimensions and make positive changes. So having defined the Human Biofield we can move onto the realm of [Energy Healing](#).

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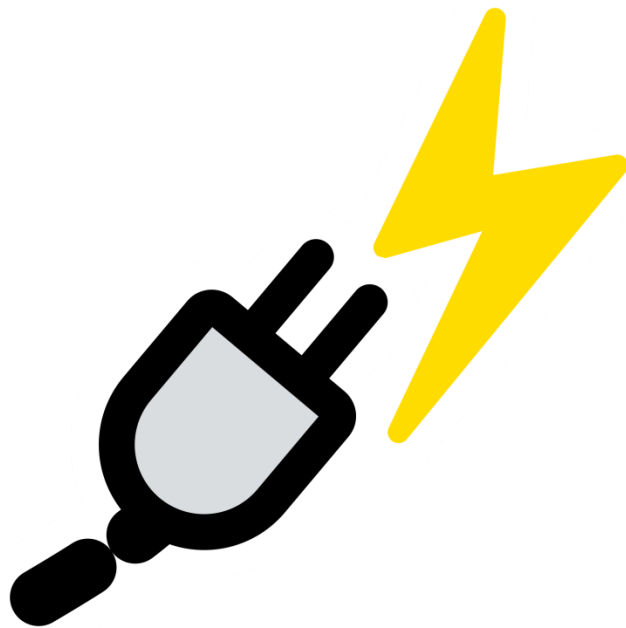
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C. 3 Powering Up™ Handbook

Powering Up™



A Handbook for Connecting to Source Energy

in Seven Simple Steps

By Edd L. Edwards & Robin Reeves-Oppenheim, LCSW, ThD.C

Edited by Anne Giles

© 2014. Second Revised Edition 2018

Version 1.0
02June2018

Hummingbird IRB
Approved
06/14/2018

Introduction by Robin Reeves-Oppenheim

I first met Edd Edwards online in a doctoral class on Mysticism at Holos University. As a psychotherapist who understands and experiences the healing effects of subtle energy, I was very interested in his new form of energy work.

I invited Edd to visit my office in Woodstock, Georgia to teach me his exercises. Edd generously volunteered to give several free workshops to the teens and adults in my private practice in Woodstock, Georgia. I really appreciated Edd's innocent, fun-loving, and simple approach. The teens responded with enthusiasm to Edd's exercises. I saw how valuable it was to incorporate these new and empowering techniques into my psychotherapy practice. I call this approach Bio-Intrinsic Transformational Therapy™. ¹

Through Edd's encouragement and his freely sharing his knowledge, I was able to write this handbook as a way to teach this approach to adolescents and children of all ages.

Edd's Story

Edd's paternal grandmother, a Southern Baptist faith healer named Cona Edwards, practiced the laying on of hands while she recited Bible passages. When Edd was a sickly toddler, his grandmother ran source energy through him for long periods of time. She also taught

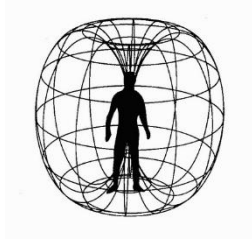
¹ Bio-Intrinsic Transformational Therapy™ is a form of psychotherapy or biofield therapy with three parts:

1. Understanding the human body's electromagnetic energy fields.
2. Directly changing them to improve health and well-being.
3. Adding the knowledge and practices in the world's great spiritual and mystical traditions to western psychology.

Edd how to “play with energy” as a child. As he was growing up, Edd played with energy in his hands and body constantly.

Edd’s favorite subjects in school were science and physics. He searched for a scientific explanation of the energy he was experiencing. In 1994, he met the physicist, Dr. William Levensgood of Grass Lake, Michigan. Dr. Levensgood was able to measure Edd’s energy output in his laboratory. For several years, Edd worked on lab experiments with Dr. Levensgood, Dr. John Gedye and Charles Pyle. He learned how to increase his energy, to turn the energy off completely, to switch his energy from positive to negative, and to affect lab equipment from great distances. Edd and the scientists designed and carried out countless experiments. Edd’s measurable output of energy continually increased. At the same time, his control of his energy became more and more precise.

Questions and answers



What is Bio-Intrinsic Resonant Energy™?

This type of energy activates the brain and the healing systems already present in your body. It is a true energy field that science can measure.

The National Center for Complementary and Integrated Health (NCCIH)

says that we can measure energy fields. Scientists use either mechanical vibrations (such as sound) or electromagnetic forces, including visible light, magnetism, monochromatic radiation (such as laser light), and other light rays.²

1. What is Powering Up™?

You can activate the electromagnetic field (your *biofield*) in and around your body by practicing and playing with the energy in your hands. You link to source energy and become one with it (lock in). You can use the power of your brain to intensify the energy and create positive and negative electrical fields. You can create the natural flow of energy in your body that allows you to heal and recharge your inner battery.

2. How does it work?

You can develop control of your biofield by stimulating both hemispheres of your brain. You do this by switching back and forth between the left and the right sides of your brain at 1.6 hertz. This is within the rate of our normal heartbeat. By aligning our brain and our heart together you

² NCCAM, “BACKGROUND – “Energy Medicine: An Overview,” August 2005, 1. (Accessed on November 22, 2005).

can increase the frequency of the energy field in and around your body. By practicing the exercises in this handbook daily, you can create a measurable magnetic force that you can control and use.

3. What can I expect to learn?

First, you will learn to feel and be aware of your biofield. You will manually activate this energy and lock in (connect) to the magnetic fields of our planet and our universe. We will give you simple instructions to follow, and you can practice them every day.

4. What is the energy that we transmit? Where does it come from?

“Creation energy” is the predominate energy of the universe. All of us can be taught to lock into it.

5. Can anyone benefit from strengthening their biofield?

Yes. Strengthening your biofield can increase your immune system. It can balance your emotions by getting your stuck energy to flow freely and naturally. It also can help clear your mind thus creating a positive sense of well-being. It can allow you to be a channel to help others as well.

6. Can I learn to strengthen my biofield myself?

Yes, but you need to practice daily. The more you put these exercises into practice, the more you will increase your control of your energy field. Don't be afraid to feel and strengthen your biofield and lock into source energy. Fear of playing with this energy will turn off your ability to use it.

7. How do we teach others to do this?

In the same way that you learn by using this handbook and practicing these energy games, you can teach others how to get started and “play” with their bio-intrinsic energy.

Using Bio-Intrinsic Resonant Energy™ exercises to Powering Up™

Edd Edwards developed the exercises in this handbook as a child. His intuition guided him to develop control of his energy through these fun and simple games. Although Edd used a scientific approach to energy, many of these exercises bare stark similarities to ancient Tai Chi exercises and other approaches described in many of the world's great spiritual and mystical traditions.

Step 1—Getting started



Stand up. Rub your hands briskly together. Hold your hands with palms together in front of your stomach. Very slowly pull your palms about an inch apart until you feel a tingling and warm sensation. Be aware of your hands. Feel this life force energy in

each hand. Also feel the connection of energy between your two hands. You can manually activate your bio-intrinsic energy field this way.

Step 2—Energy ball

Pull your hands 2-3 inches apart to intensify your electromagnetic field. Many people feel like their hands are magnets at this point. What you are feeling is the edge of your own electromagnetic field of one hand in the palm of your opposite hand. Pull out your hands to the size of a coconut. You may feel a spongy feeling between your hands. You are feeling an actual ball of electrical energy. Push and pull in and out to intensify the energy ball between your hands.



Maintain a slow and steady rhythm. Feel the energy in your hands as well as the energy connecting them. See if you notice any changes in these energies. Keep your hands a constant distance apart. Slowly move them so one hand is on top and the other is on the bottom. Move the bottom hand move forward while the other moves back toward you. Always maintain the same distance between your hands. Continue rotating the energy ball. Playing with the energy in your hands manually activates the field in your body that links you to source energy.

Step 3—Ball of light

Close your eyes and focus both eyes on an internal TV screen in the middle of your forehead. Imagine a bright ball of white light in the middle of a black background. Imagining that you are bouncing the light from side to side like a ping pong ball will cause the brain to become an electrical generator.



Step 4—Neuro Ping Pong: With your eyes closed, mentally move the ball from the left side to the right side of your brain, back and forth between both sides. Feel a gentle pull in the same direction as you move the ball of light. If you can't visualize a ball, you will get the same effect if you imagine a giant magnet pulling on one side of the brain and then on the other side. You can also move your eyes back and forth. Pay attention to the electrical sensations in your brain. Pay attention to the pulling sensation back and forth between the two hemispheres of your brain.

Attune your brain to the beating of your heart. Our resting heart rate is normally between 60 to 100 beats per minute (1.0-1.67 hertz). You may start to hear or feel a low, humming vibration.



Powering Up™: Increase the speed of moving the light or ping pong ball back and forth. By increasing the speed, you will strengthen your energy field. Playing with this will balance and rewire both hemispheres of your brain. It is called bilateral stimulation. It will make you feel more emotionally balanced and in sync.

Step 5—Push and pull your whole body



Stand in front of the mirror. Line yourself up with a stationary object behind you so you can see yourself move. Use neuro ping pong to intensify electromagnetic gravity fields in and around your body. Using your thoughts, switch your field to a positive or negative gravity field. To create a positive field, imagine that you are pushing out your field to make it bigger. A positive field will expand and push you backwards (away from the mirror). To create a negative field, imagine you are pulling in your field to make it smaller. A negatively charged field will contract and pull you forwards (towards the mirror). You can push and pull your body using your

thoughts to change gravity fields from positive to negative. The expansion and contraction feels like breathing, only in your mind.

Step 6—Interactive energy



Now start to intentionally send an interactive energy ball through different parts of your body. First feel the energy ball in your right hand. Project the energy to your left hand. Feel the sensation of throwing and catching the energy ball. Now visualize and feel sending the energy ball up your arm and down your leg. Now do it with the other side. Playing with energy like this will help you to develop energy awareness. With this awareness, you'll be able to direct your energy to any part of your body that you want.

Step 7—Becoming a receiver and transmitter



Learn to feel this energy and play with it. Be child-like. Have fun with it. Lock into the energy of your heart. Make an energy ball and send it to another person. Make sure you have their permission to send your energy to them. Focus your conscious thought on that person and imagine sending positive and loving energy to them.

Now you have all the skills you need to Powering Up™ and Lock In to Source Energy in 7 Simple Steps. You can use your intention and power for good. You can make this world a better place for us all to live in. That's all there is to it!

Background notes

The past 50 years have revealed both that there is a remarkable endogenous electric character to organisms, and, also, that there are equally remarkable effects in biologic systems when they are exposed to electromagnetic fields.³

Dr. Abraham Liboff (2004), a researcher in Physics at Oakland University in Michigan, wrote that over the past 50 years a big change occurred in our understanding of the human body and living organisms. Before that time, western science described all living things in terms of molecular biology. Scientific research published from the past five decades prove a shift in the western medical thinking that takes into consideration the positive influence of electromagnetic fields on living organisms.

Liboff said that all abnormalities and traumas manifest as changes in the normal field of the human body. The body compensates for these variations by going back to equilibrium (the “normal field”), returning to its normal state. These deviations are compensated for by the homeostatic tendency of the homeostatic tendency of the human system to return to a normal state.

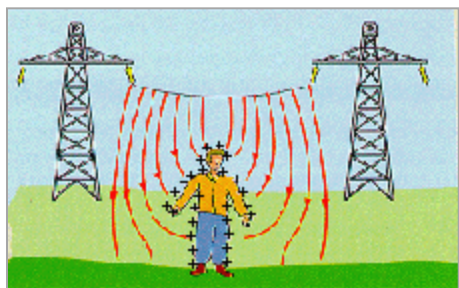
All pathologies, abnormalities and traumas are manifested by deviations from the normal field and, within limits, these deviations are compensated for by the homeostatic tendency of the system to return to⁴{the normal field}.

³ Liboff, Abraham R, Ph.D., “Toward an Electromagnetic Paradigm for Biology and Medicine,” *The Journal of Alternative and Complementary Medicine*, vol. 10, no. 1, 2004, 44.

⁴ Ibid., 45.

The National Center for Complementary and Alternative *Medicine* (NCCAM)⁵ describes two types of electromagnetic fields. They describe the energy within your body as biofields or “putative energy fields.”⁶ “Biofield therapies involving these energy fields are based on the idea that human beings are filled with a subtle form of energy.”⁷

Human biofields interact with veritable energy fields. Magnetic fields outside your body affect the fields within your body. The World Health Organization describes how these currents cause stimulation of your nerves and muscles. They affect your biological processes.



Veritable fields can be easily measured by current scientific techniques. A putative field consists of subtle energy. Subtle vibrations are outside the range of normal human sight. They can be measured only with special technology.

Lynn McTaggart in her book, *The Field*,⁸ suggests that all “life is an expression of the electromagnetic force.” This force is produced within an organism or system. It is natural and essential to the human organism. The human energy field has an inborn drive to

⁵ Now known as the National Center for Complementary and Integrated Health (NCCIH)

⁶ NCCAM, “BACKGROUND – “Energy Medicine: An Overview,” August 2005, 1. (Accessed on November 22, 2005).

⁷ <http://www.who.int/peh-emf/about/WhatisEMF/en/index1.html>

⁸ McTaggart, Lynne. *The Field: The Quest for the Secret Force of the Universe*. (New York: HarperCollins, 2008).

return to normal functioning and wholeness. This innate drive towards wholeness is called *syntropy*.

Albert Szent-Gyorgyi, a research biologist twice awarded with the Nobel Prize (1937 and 1955), defined the term *syntropy* as an innate “drive in living matter to perfect itself.” He described it as “psychological drive towards synthesis, towards growth, towards wholeness and self-perfection.”⁹

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⁹ Albert Szent-Gyorgyi, *Synthesis: The Realization of the Self*, vol 1, no. 1. (Redwood City, California: The Synthesis Press, 1974).

C. 4 Tai Chi Exercises

Start with the first exercise and get comfortable with that. Then, when you're ready, move on to the other exercises.

Exercise 1: Creating Tai Chi Ball of Energy.

Rub your hands briskly together. This is the same motion you'd use to warm your hands on a cold day. But this time, add your intention and awareness to the move.

Intention. Hold the intention of bringing and feeling your qi or life force to your hands.

Awareness. Be aware of your hands and feel for this life force energy in each hand. Also feel the connection of energy between your two hands.

Pull your hands gently apart. After your hands feel that they're filled with warmth and qi, and the connection between them is strong, pull them apart gently and slowly.

Keep your hands and fingers soft. Let them flow smoothly through the air. Keep them relaxed and fluid.

Bring your hands closer together. When you feel the connection between your hands weaken, bring them back slowly together.

Don't let your hands touch.

Continue to pull your hands apart and bring them closer together. Repeat this process of slowly moving your hands apart and then back together. Maintain a slow and steady rhythm.

Feel the energy in your hands as well as the energy connecting them. See if you notice any changes in these energies as you complete the exercise.

At first, it may be more of a mime routine. Your body may simply go through the motions. With a bit of practice, you're likely to notice a sensation between your palms. Some feel this as heat while others describe it as the force between two repelling magnets.

To end. At the end of this exercise, simply pull your hands slowly apart and let them drop down at your sides. After you've mastered the basic energy ball exercise, here're some variations.

Exercise 2: Rotating the Energy Ball.

- Create and feel the ball of energy between your hands, just as described above.
- Keep your hands a constant distance apart. Slowly move them so one hand is on top and the other is on the bottom. Or, one may move forward while the other moves back toward you, but always maintaining the same distance between the hands. Continue rotating the energy ball.

Those with interests in the martial arts can rotate the ball quickly, but always smoothly.

Now combine Exercises 1 and 2.

- Create and feel the energy between your hands.

Exercise 3: Shrinking, Growing, and Rotating the Energy Ball.

- Keeping the connection between your hands, move them slowly apart and then back toward each other.
- At the same time, rotate your hands. You will be pulling and shrinking the energy ball from different directions.

Exercise 4: Projecting and Receiving Energy.

- Create and feel the energy ball as in the first exercise.
- Now, start to project energy from your right hand. You may have a sense of throwing the energy ball to your left hand. Catch it with your left hand and then project the energy back to the right.

- Enjoy the sensation of throwing and catching the energy ball between your hands—or feel your hands projecting and receiving the energy.

Exercises like this help to develop energy awareness. With this awareness, you'll be able to deepen your tai chi practice by working directly with energy as you execute the movements.

Tai chi is not about visualizing energy, but about working directly with it. The energy ball exercises are a useful step in learning to work with energy smoothly and powerfully in tai chi.

<http://www.beginnerstaichi.com/tai-chi-exercise-ball.html>

C. 5 State of Ease Brochure

The State of Ease

from Doc Childre, founder of HeartMath®

One of the first things most of us do when children (or adults) are overwhelmed with inner turbulence is: we instinctively try to calm them down into a state of ease before starting to sort out solutions. Why do we do this? Because we intuitively sense that the *state of ease* helps us to get back in our heart which helps to re-stabilize the mind and emotions—this re-connects us with our reasoning capacity and clear view. As we grow into adults, we occasionally remember the wisdom of such practices, but it's often after the fact and after much personal energy drain. This article suggests a few advantages of accessing our state of *inner-ease*, not just for bailing out of emotional turbulence, but to use throughout the day for maintaining connection and coherent alignment between the heart, mind and emotions.

More and more people share that they are feeling an intuitive nudge to add more heart warmth and deeper connection within themselves and with others. At the speed of life today, operating with low heart energy is often compared to a vehicle that's operating low on oil, which increases the vulnerability to stress and malfunction. Learning to address life from the *state of ease* can help increase the heart/care connection in our interactions and can especially help reduce and prevent much stress.

Our personal space of “inner-ease” can be accessed with minimum practice and a little time spent. When operating in the ease-mode, it's easier to choose less stress-ful perceptions and attitudes and re-create “flow” in our daily routines. Practicing inner-ease creates “flow” by helping to regulate the *balance* and cooperation between our heart, mind and emotions—*coherence*. Increased coherence promotes more intuitive connection with our higher potential for effective reasoning, discernment and people interactions. The lack of coherent alignment between the heart, mind and emotions generates resistance to “flow,” resulting in stress from anxiety, indecision, frustration, impatience, anger, self-judgment and much more—the familiar list. One reason the “flow” is often hard to access is because increased time pressures and overload exaggerate the mental and emotional angst we can often experience—this jams the connection with our heart's intuitive input. When our heart connection fades, the mind and emotions often become chaotic and drive us at a faster pace than our heart's intuitive guidance can assist us. Most all of us are aware of how being stuck in this loop increases self-perpetuating stress and what that brings with it. Shifting to our inner-ease space *at the onset of stressful feelings* helps to prevent many stress-typical scenarios and creates a much easier transit through challenges and resistances. (Dread and anxiety are examples of what I mean by *resistances*.)

Practicing inner-ease is not intended to instantly dissolve all of our challenges on the spot. Yet it creates an extra time-window, allowing deeper discernment for competent choices—conscious choices that can help prevent and resolve many unnecessary challenges and unwanted predicaments. The state of inner-ease helps us attune our mental and emotional nature to the most reasonable and effective way for responding to each situation that life brings us—challenging, normal or creative.

Operating in the ease-mode does not suggest that we move through the day at the speed of a snail nor is it a sleepy-time relaxation state: It's about slowing down our inner body language—the mechanical mental and emotional reactions that we often regret at the end of the day; the ones that cause avoidable mistakes, compromise friendships, create “under-grumble” and excessive internal drama. These examples and others can drain much more of our energy than a hard day's work and then follow us to sleep to compromise our rest. Such experiences don't happen because we are bad or inept; they're just highly predictable outcomes when our mind and emotions rush through a day without the connection to the heart's guidance and the practical facilitation it brings. Practicing inner-ease increases our *conscious memory* to include our heart, as our mind and emotions navigate through daily choices and feelings that decide the quality and direction of our life. Inner-ease is like a quiet doorway into our Presence, while also being a simple reflection of our instinctive common sense.

The following steps for accessing the *ease-state* can be used when you are experiencing stress or for the general maintenance of balance and resilience in your mental and emotional system. The ease-state is especially helpful and effective when used to “prep” *before* engaging in potentially stressful situations, projects, communications, complex decisions, etc. You can use it in the morning to prep for the day—and remember to reboot the process occasionally.

Basic steps for accessing the State of Ease:

Inner-Ease™ Technique

- (1) If you are stressed, acknowledge your feelings as soon as you sense that you are out of sync or engaged in common stressors— feelings such as frustration, impatience, anxiety, overload, anger, being judgmental, mentally gridlocked, etc.
- (2) Take a short time out and do heart-focused breathing: breathe a little slower than usual; pretend you are breathing through your heart or chest area.
(This is proven to help create coherent wave patterns in your heart rhythm—which helps restore balance and calm in your mental and emotional nature while activating the affirming power of your heart.)
- (3) During the heart-focused breathing, imagine with each breath that you are drawing in a feeling of *inner-ease* and infusing your mental and emotional nature with balance and self-care from your heart.
It's scientifically proven that radiating love and self-care through your system activates beneficial hormones and boosts your immunity. Practicing will increase your awareness of when the stressful emotion has calmed into a state of ease. The mind and emotions operate on a vibrational level. Slowing down the stressful vibration helps re-establish the cooperation and balance between heart, mind and emotions.
(Like an old electric fan that rattles until you turn it to a slower speed, which often quiets and restores the unbalanced vibration.)
- (4) When the stressful feelings have calmed, affirm with a heartfelt commitment that you want to anchor and maintain the *state of ease* as you re-engage in your projects, challenges or daily interactions.

It's okay if a disruption takes you out of the ease-state through the day; just reset your intention with a genuine heartfelt commitment and move on. You'll have to reset your commitment periodically; yet soon you can remain longer in the *ease-state* and with lower maintenance. In a short time you won't need to labor through all the steps; you will be able to skillfully and consciously just "breathe" yourself into the ease-state. But first, practice the steps for a while to increase the awareness of when you have effectively shifted to the state of ease, which is often a little deeper than your first few attempts achieve. Some emotions take longer for the vibrational rate to slow down; just relax with it, no force. Remember, you're not trying to fix the emotion; the ease-state helps to quieten the significance within the emotion so you can reason and discern with objectivity. This reduces stress and inspires creative and practical solutions for handling or adjusting to situations.

This article regarding inner ease is not intended to re-invent a concept that most all of us are already familiar with, from childhood on. Its intention is to illuminate the stress reducing potentials and energy balancing benefits of practicing *ease*.

I would like to recall six of the principal benefits of the state of ease:

- (1) Practicing inner ease creates "flow" by helping to regulate the *balance* and cooperation between our heart, mind and emotions. It allows us an extra time-window to discern effective choices, reactions, decisions, and how we respond to life and to others. Clear choices prevent much energy drain from mistakes and "re-do."
- (2) The state of ease helps us to attune our mental and emotional nature to the most reasonable and effective way for responding to each situation that life brings us—challenging, normal or creative. *Ease* helps to maintain the cooperative alignment of the mind and emotions with the balancing energies of our heart.
- (3) Practicing *ease* will help to prevent and eliminate much personal stress and facilitate quicker recoup from unexpected stressful occurrences that we all encounter. This benefits our health, well-being and quality of life.
- (4) The ease-state is especially helpful and effective when used to "prep" *before* engaging in potentially stressful situations, projects, communications, complex decisions, etc.
- (5) Shifting to our inner-ease space *at the onset of stressful feelings* helps to prevent many stressful scenarios and creates a much

easier transit through challenges and resistances.

- (6) When in the ease-mode, it's easier to include the heart's intelligence in all interactions. When the heart is open, it allows for a warmer, more genuine connection with our authenticity and with others.

If you are not already practicing techniques that include the values of *ease*, then hopefully this content may inspire experimentation.

With Deep Care,

A handwritten signature in black ink that reads "Doc Childre". The script is fluid and cursive, with the first letters of "Doc" and "Childre" being capitalized and prominent.

Doc Childre

About Doc Childre

Doc Childre is the founder of the Institute of HeartMath, a nonprofit 501 (c)(3) research and education organization. For many years, the Institute of HeartMath has been dedicated to mapping and validating the importance of the heart-mind connection in intuitive development and personal growth.

The Institute's research on stress, intuition and emotional physiology has been published in peer-reviewed scientific journals and presented at numerous scientific conferences worldwide. HeartMath tools for stress relief and emotional management are being used by companies, government, the military, hospitals, clinics and schools.

Doc Childre is the co-author of the following books: *The HeartMath Solution*, *From Chaos to Coherence*, *Transforming Stress*, *Transforming Anxiety*, *Transforming Anger*, *Transforming Depression* and *The HeartMath Approach to Managing Hypertension*.

C. 6 Progressive Relaxation and Creative Visualization Script

SCRIPT FOR RELAXATION AND CREATIVE VISUALIZATION

Adapted from the Professional Training Manual of Dr. Brian Weiss Page 35-38

Just relax and allow your eyes to gently close.

At first focus on your breathing..... and allow your breathing to be nice deep and even, breathing from way in to way out..... comfortable breathing. Focusing on your breathing. It is so important and relaxing. It is the way within.

Take four deep, relaxing breaths, inhaling through your nose and exhaling through slightly pursed lips, as if you are blowing out a candle.

Relax *{take a long pause for the four breaths}*.

Imagine yourself, with each breath inhaling the peaceful, positive energy that is all around you. And with each breath out, exhaling all the tensions and anxieties and aches and pains that you store in your body.

With each breath let yourself go deeper and deeper into a serene, relaxed and tranquil state. This is so healthy for your body and your mind.....to go within....to feel the peace...With each breath deeper and deeper....relaxed, peaceful and calm.

And as you do this, as you focus on your breathing, relax all of your muscles and feel yourself sinking deeper and deeper into the chair (or floor). Visualize, imagine, feel all of your muscles completely relaxing now.

Relax your facial muscles and your jaw ...

Relax the all the muscles of your neck.... A lot of tension is stored in this area.

And now relax the muscles of your shoulders. Let them feel light and loose, completely relaxed. *(pause)*

Relax all the muscles of your arms and back, both your upper back and your lower back...completely relaxing each muscle now.

Relax the muscles of your stomach, so that your breathing stays beautifully relaxed, deep and even. With each gentle breath, allow yourself to become more and more deeply relaxed. *(pause)*

And lastly relax the muscles of your legs.....completely relaxing your whole body now. As your breathing stays nice and deep, relaxed and peaceful, feel yourself more deeply relaxed.....

Now visualize, imagine, feel a beautiful light coming in through the top of your head....and beginning to spread down your body from above to below...a beautiful, powerful, healing light. Glowing beautifully in the light....you choose the color or colors you need for your healing today... (*pause*).

This light is connected with the light above and around you....a divine light....a powerful light....a healing light because it heals every tissue, every organ, every muscle, every fiber, every cell of your body ...getting rid of all aches and pains, getting rid of all discomfort, and restoring all of these cells to a normal, healthy state. This is a deepening light because it will bring you to a deep state of ease and relaxation. And you feel more and more relaxed, more peaceful and serene.

Next visualize, imagine, feel the light slowly spreading down from the top of your head ... down past your forehead ...behind both eyes, smoothing out the muscles of your eyes...beneath your scalp...beneath the deep bones and muscles of your face, relaxing you even more.

And the light slowly spreads into your jaw relaxing the muscles around your mouth.

Now the light is flowing into the back of your neck, completely relaxing the muscles of the neck and throat, smoothing out the lining of your throat. And you relax even more (*pause*).

Now you see and feel the light spreading into your shoulders. down both arms, all the way to your hands and your fingers (*pause*).

And it flows into your chest and fills your lungs...and it fills your heart, releasing the beautiful energy that is stored in your heart. And your heart is gently pumping the light throughout every blood vessel of your body so that it reaches everywhere. And you feel very calm, relaxed and very, very peaceful. (*pause*).

See, imagine, or feel the light spreading into your stomach and abdomen.....filling up your abdominal organs and healing them. And relaxing the muscles and nerves of your stomach and abdomen. ...And now see, feel, experience the light flowing into your hips ...past your hips and down both legs..... so that it reaches way down your feet and into

your toes... and now your entire body is filled with the beautiful, bright, healing light.

And you feel very, very peaceful and very, very relaxed.

Now visualize, imagine, feel the light completely surrounding the outside of your body as well... as if you are in a bubble, a cocoon, a halo of light. And this light protects you.

No harm can come through the light, only goodness..... only positive, loving energy.

..And the light heals your skin and outer muscles and deepens your state even more.

And you feel very, very peaceful now, very calm, and relaxed.

In this state of relaxation, imaging yourself walking down a beautiful staircase... down into the deepest recesses of your mind...into a place where there is no time and space...a place of connection....a place of oneness.....a place of wisdom....a place of safety and peace....Walking down deeper and deeper.... down...down...each step increasing your relaxation even more.

And as you reach the bottom of the stairs, you will be in your safe place, a place of peace.

It may be a beautiful garden, a sun-filled beach, a mountain or anywhere you have ever been, or somewhere where you have never been. You decide.....

Now you are in your place of peace. Relaxed, safe, secure.

Imagine a wise and loving being comes to join you in your place of peace. You can communicate with this being; whether through words or symbols or images or thoughts or feelings, it doesn't matter. You can ask questions and listen for the answers. You can ask for what you need.

It does not matter whether this is a guide, a friend, a reflection of your higher self or something different. Listen for the wisdom. Feel the peace and the love ...Listen for the answers.

Whenever you need this type of communication, you can be in your place of peace. If you feel safe, close your eyes to go deeply within, just take a few deep breaths and fill yourself with light. Put yourself back in your place of peace and you will be there.

If you are in a situation where you cannot close your eyes, just take a few deep breaths and immediately you will feel the peace, the relaxation and serenity. You will be in complete control, alert, in full control of your body and mind, you will be filled with peace and understanding, calmer, and more joyful than before.....*(long pause)*

Now it is time to come back to the awareness of this room. I will guide you through five deep healing breaths. With each breath you will feel more and more aware and alert, in full control of your body and your mind, feeling wonderful.....Feeling great, refreshed, relaxed and filled with a beautiful energy.

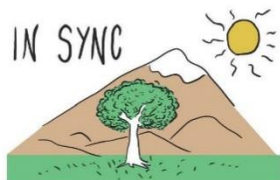
1. gradually becoming more aware of your surroundings... feeling wonderful. . . .
2. more and more aware of your body...feeling great ...
3. more alert, begin to wiggle your fingers and toes start to stretch and yawn....
4. you are completely aware of the room,
5. alert and refreshed, feeling wonderful. Slowly open your eyes and slowly start to move around.

C. 7 Two Tools Article

ARTICLE

UNIT 4: TWO TOOLS TO HELP YOU GET IN SYNC

Lots of things these days can create storms in our inner weather and drain the energy in our inner battery: parents who don't understand us; pop quizzes; people saying weird things; and bad hair days.



When we experience stressful emotions, they get in the way of accomplishing our goals and performing at our best. **While we can't get rid of the daily stress events, we can learn to respond to them with more intelligence.** When we are more in sync, our thinking is clearer

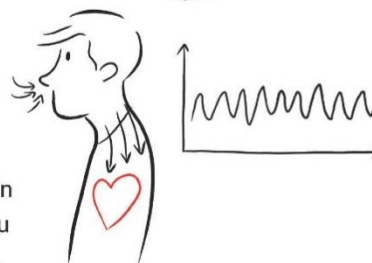
and our inner weather improves.

There are two simple tools to help you get in sync: **Heart-Focused Breathing™** and **Quick Coherence®**. You can use these techniques anytime, anyplace. And no one will even know you are doing it.

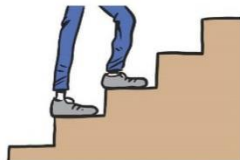


Heart-Focused Breathing™

When you start to feel impatient, bored or angry, simply focus your attention in the area of your heart. Imagine your breath is flowing in and out of your heart or chest area – breathe a little slower and deeper than usual.



Sometimes, it helps to count to four or five as you're breathing in and again as you're breathing out. You can have your eyes opened or closed.



This tool is really helpful for reducing energy drains and is the first step to getting back in sync. But to fully get in sync, there is one more step.

ARTICLE

Quick Coherence®

While you're doing Heart-Focused Breathing, add a positive feeling to it. You can recall a positive feeling from some experience that made you feel good. Try to re-experience it. It could be a person you care about, a fun memory or even your pet.



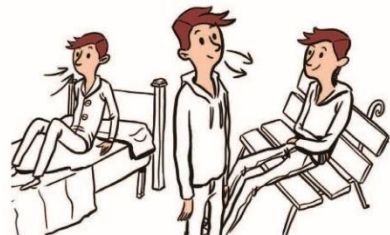
Yes, pets are a great source of appreciation. **The key is to actually feel that uplifting feeling.**

What these techniques do is give you a little pause before your reactive, out-of-sync brain takes over. These tools shift your heart rhythms to become more ordered and coherent.

Your brain then gets the message from the heart to chill out, making emotions like anger, frustration or worry less present.



This gives you more control in the decisions you make, the actions you take, and your ability to perform your best.



What are two or three times during the day when you can practice these techniques for several minutes so getting in sync becomes a habit?

Getting in sync can give you the ability to do big things with your life because you will function

at your best. Try it on the spot when you get into a stressful situation, or even better, before the stress ever happens.



You have nothing to lose if you try. The benefits will be worth it when you do.



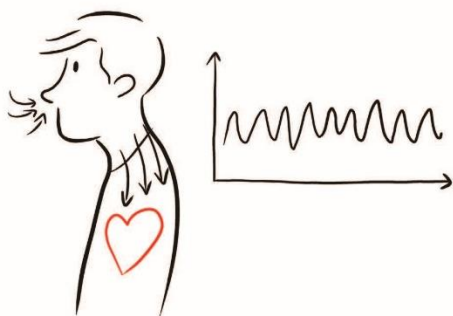
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C. 8 Two Tools Activity Worksheet

ACTIVITY WORKSHEET

UNIT 4: TWO TOOLS

There are two simple tools that will help you get in sync: the Heart-Focused Breathing™ and Quick Coherence® Techniques. You can use these anytime, anyplace, and no one will even know you are doing it.



Heart-Focused Breathing

When you start to feel impatient, bored or angry, simply focus your attention in the area of your heart. Imagine your breath is flowing in and out of your heart or chest area. Breathe a little slower and deeper than usual. Sometimes, it helps to count to four or five as you breathe in and again as you breathe out. Your eyes can be open or closed.



Quick Coherence

While you're doing Heart-Focused Breathing, add a positive feeling to it. Remember a positive feeling you had during a fun experience or while you were doing something that made you feel good. Try to reexperience that feeling. You can think of a person you care about, your pet or a fun memory.

ACTIVITY WORKSHEET

UNIT 4: Two Tools

Heart-Focused Breathing and Quick Coherence: What's different and what's the same?

Instructions: Draw a line connecting the steps of each tool below to the correct technique on the right. Some steps will connect to both tools.

Steps

1. Add a positive feeling to the experience.
2. Breathe a little slower than usual.
3. Your eyes can be open or closed.
4. When you start to feel impatient or angry, focus your attention in the area of the heart.
5. Sometimes, it helps to count to four or five as you breathe in and again as you breathe out.
6. You can think of a person you care about, your pet or a fun memory.

**QUICK
COHERENCE[®]**

**HEART-FOCUSED
BREATHING[™]**

When to Use the Tool

Think of two or three times during the day when you can practice these tools for several minutes so getting in sync becomes a habit. Examples: Before a test; before playing sports; during a difficult conversation; on the way to school; eating with people; during a hard class; when using social media or when you are impatient or angry.



1. _____
2. _____
3. _____

C. 9 Heart-Focused Breathing™ and Quick Coherence® Technique

Heart-Focused Breathing™

Heart-focused breathing is about directing your attention to the heart area and breathing a little more deeply than normal. Breathe in slowly through your nose, imagine you are breathing through your heart, and, as you breathe out slowly through your slightly pursed lips as if you are blowing out a candle, imagine you are breathing through your heart. *(In the beginning, placing your hand over your heart as you breathe can help you in directing your focus to your heart.)*

Breathe in counting slowly to 5 and breathe out counting slowly to 5. Be sure your breathing is smooth, unforced and comfortable. Although this is not difficult to do, it may take a little time to become used to it, but eventually you will establish your own natural rhythm.

Heart-focused breathing won't take a lot of time out of your day, but it can add lots of benefits to your life. Many people find that heart-focused breathing is an excellent way to start and finish their days, but there are times in between when it is especially beneficial. Try it during a break at school or while doing your homework.

There is no more important time for a few minutes of heart-focused breathing than when you feel your stress buttons being pushed. These vary from one person to the next, but some you may be familiar with include a presentation, and important meeting or performance; a big test at school; or a dreaded encounter with someone you'd rather avoid.

Steps for Quick Coherence® Technique

Step 1: Focus your attention in the area of the heart. **Imagine your breath is flowing in** and out of your heart or chest area, breathing a little slower and deeper than usual.

SUGGESTION: INHALE 4 SECONDS, EXHALE 4 SECONDS (OR WHATEVER RHYTHM IS COMFORTABLE).

Step 2: Make a sincere attempt to experience a regenerative feeling such as appreciation or care for someone or something in your life.

Suggestion: Try to re-experience the feeling you have for someone you love, a pet, a special place, an accomplishment, etc. or focus on a feeling of calm or ease.

APPENDIX D

Measurement Instruments

D. 1 Beck Depression Inventory



Name: _____ Grade: _____
 Date: _____ Sex: _____
 Date of Birth: _____ / _____ / _____ ID: _____
Month Day Year

Here is a list of things that happen to people and that people think or feel. Read each sentence carefully, and circle the one word (Never, Sometimes, Often, or Always) that tells about you best, especially in the last two weeks. THERE ARE NO RIGHT OR WRONG ANSWERS.

	0	1	2	3
1. I think that my life is bad.	Never	Sometimes	Often	Always
2. I have trouble doing things.	Never	Sometimes	Often	Always
3. I feel that I am a bad person.	Never	Sometimes	Often	Always
4. I wish I were dead.	Never	Sometimes	Often	Always
5. I have trouble sleeping.	Never	Sometimes	Often	Always
6. I feel no one loves me.	Never	Sometimes	Often	Always
7. I think bad things happen because of me.	Never	Sometimes	Often	Always
8. I feel lonely.	Never	Sometimes	Often	Always
9. My stomach hurts.	Never	Sometimes	Often	Always
10. I feel like bad things happen to me.	Never	Sometimes	Often	Always
11. I feel like I am stupid.	Never	Sometimes	Often	Always
12. I feel sorry for myself.	Never	Sometimes	Often	Always
13. I think I do things badly.	Never	Sometimes	Often	Always
14. I feel bad about what I do.	Never	Sometimes	Often	Always
15. I hate myself.	Never	Sometimes	Often	Always
16. I want to be alone.	Never	Sometimes	Often	Always
17. I feel like crying.	Never	Sometimes	Often	Always
18. I feel sad.	Never	Sometimes	Often	Always
19. I feel empty inside.	Never	Sometimes	Often	Always
20. I think my life will be bad.	Never	Sometimes	Often	Always

RS TS



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D. 2 Beck Anxiety Inventory



Name: _____ Grade: _____
 Date: _____ Sex: _____
 Date of Birth: _____ / _____ / _____ ID: _____
Month Day Year

Here is a list of things that happen to people and that people think or feel. Read each sentence carefully, and circle the one word (Never, Sometimes, Often, or Always) that tells about you best, especially in the last two weeks. THERE ARE NO RIGHT OR WRONG ANSWERS.

	0	1	2	3
1. I worry someone might hurt me at school.	Never	Sometimes	Often	Always
2. My dreams scare me.	Never	Sometimes	Often	Always
3. I worry when I am at school.	Never	Sometimes	Often	Always
4. I think about scary things.	Never	Sometimes	Often	Always
5. I worry people might tease me.	Never	Sometimes	Often	Always
6. I am afraid that I will make mistakes.	Never	Sometimes	Often	Always
7. I get nervous.	Never	Sometimes	Often	Always
8. I am afraid I might get hurt.	Never	Sometimes	Often	Always
9. I worry I might get bad grades.	Never	Sometimes	Often	Always
10. I worry about the future.	Never	Sometimes	Often	Always
11. My hands shake.	Never	Sometimes	Often	Always
12. I worry I might go crazy.	Never	Sometimes	Often	Always
13. I worry people might get mad at me.	Never	Sometimes	Often	Always
14. I worry I might lose control.	Never	Sometimes	Often	Always
15. I worry.	Never	Sometimes	Often	Always
16. I have problems sleeping.	Never	Sometimes	Often	Always
17. My heart pounds.	Never	Sometimes	Often	Always
18. I get shaky.	Never	Sometimes	Often	Always
19. I am afraid that something bad might happen to me.	Never	Sometimes	Often	Always
20. I am afraid that I might get sick.	Never	Sometimes	Often	Always

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D. 3 Visual Analogue Scale

Visual Analogue Scale

Subject Number _____

Run Number _____

Please reflect on your state of anxiety. Use and X on the line to mark you answer to the question.

Mark the line below with an X at the point that summarizes your overall state at this moment.

Low level of Anxiety

High Level of Anxiety

Please reflect on your state of depression. Use and X on the line to mark you answer to the question.

Mark the line below with an X at the point that summarizes your overall state at this moment.

Low level of Depression

High Level of Depression

D. 4 Evaluation Form

EVALUATION FORM FOR RESEARCH STUDY
The Effects of Bio-Intrinsic Transformational Therapy™
on Depression and Anxiety in Adolescents

Primary Investigator Robin Reeves-Oppenheim, LCSW, ThD.C.

Please check the appropriate boxes:

#		Excellent	Good	Fair	Poor	NA
1.	The objectives for this study were clear.					
2.	New terms and ideas were clearly explained.					
3.	Materials were easy to understand.					
4.	Audio/visuals enhanced understanding.					
5.	Primary Investigator was prepared.					
6.	Primary Investigator responded to questions.					
7.	Primary Investigator encouraged participation.					
8.	How would you rate the study overall?					
9.	How helpful was the study to you?					

10. What was the most beneficial part of the study for you?

11. What was the least beneficial part of the study for you?

12. What did you learn from participating in this study?

General comments:

Raw Data from SPSS Analysis

Demographic Frequency Table

		Gender			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	11	32.4	32.4	32.4
	Female	23	67.6	67.6	100.0
	Total	34	100.0	100.0	

		Grade			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	8	7	20.6	20.6	20.6
	9	5	14.7	14.7	35.3
	10	5	14.7	14.7	50.0
	11	7	20.6	20.6	70.6
	12	10	29.4	29.4	100.0
	Total	34	100.0	100.0	

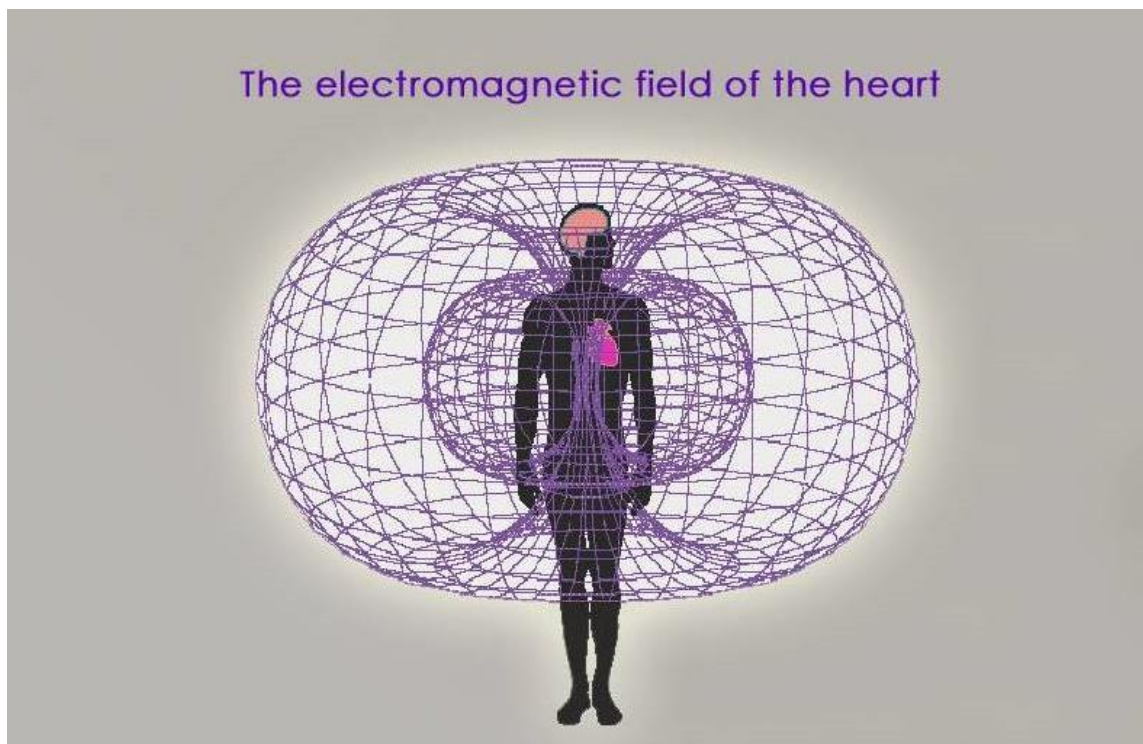
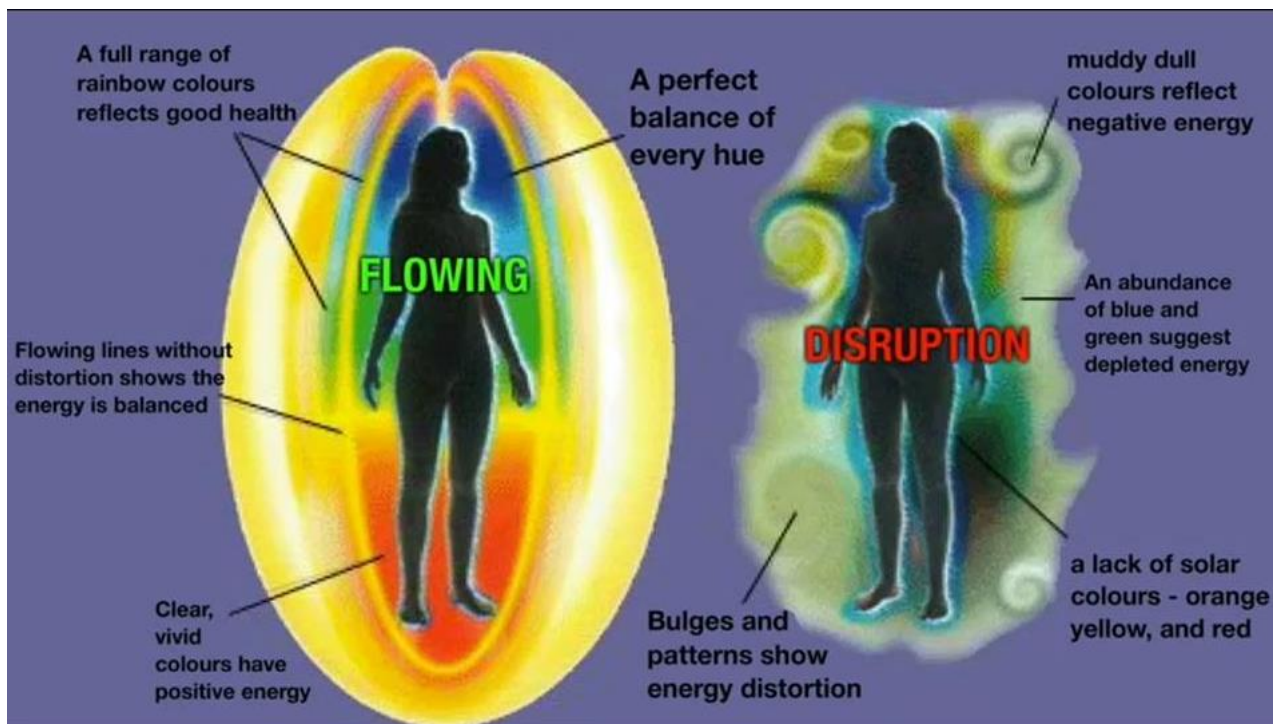
		Dep			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	21	61.8	61.8	61.8
	Yes	13	38.2	38.2	100.0
	Total	34	100.0	100.0	

		Anx			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	21	61.8	61.8	61.8
	Yes	13	38.2	38.2	100.0
	Total	34	100.0	100.0	

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APPENDIX E

Presentation Slides



([Illustration, The Electromagnetic Field of the Heart], 2015)



Clear your energy field

Connect you to Source

Activate your Divine DNA

Support your physical manifestations

YOU ARE LIGHT

Support your light body

Create your sacred space and zero point alignment

Quiet your mind

Align you with higher energies