

**The Effects Of Guided Imagery And Music On Anxiety**

**By**

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The work reported in this dissertation is original and carried out by me solely, except for the acknowledged direction and assistance gratefully received from colleagues and mentors.

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### **Abstract**

The study examines the effects of guided imagery/music and music on anxiety. Subjects (n = 49) were assigned to either a guided imagery/music intervention (test group) or a music intervention (control group) to compare the effects of these interventions on anxiety symptoms, using a home-based audiotope program. Subjects completed self-reports of anxiety, using the state and trait portion of the State-Trait Anxiety Inventory and the Personal Stress Assessment. The study showed statistically significant findings. Both guided imagery/music and music can be beneficial interventions in the reduction of both state- and trait-anxiety. Subjects listened to the audiotope three times a week over a three-week period, assessing their anxiety level before listening to the audiotope on the first day of the week and then at the end of the session on the last day of the week, allowing for a total of nine listening sessions over the three weeks. The study suggests that health care providers can offer both guided imagery/music and music as effective methods of relaxation and reduction of anxiety.



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## INDEX OF ABBREVIATIONS

A-state.....	State-Anxiety refers to “present moment” situational anxiety.
A-trait.....	Trait-Anxiety refers to a predisposition to experience anxiety.
GAD.....	Generalized Anxiety Disorder
GIM.....	Guided Imagery and Music
HRSRR.....	Holmes-Rahe Social Readjustment Rating
ICD.....	International Classification of Diseases
OCD.....	Obsessive-Compulsive Disorder
PAD.....	Panic Attack Disorder
POST.....	Post-test after the intervention
PRE.....	Pre-test before the intervention
PSA.....	Personal Stress Assessment
PTSD.....	Post Traumatic Stress Disorder
SD.....	Standard Deviation
SE.....	Standard Error
SPSS.....	Statistical Package for Social Sciences
STAI.....	State-Trait Anxiety Inventory

## CHAPTER 1: INTRODUCTION

Modern day medicine in the United States has been focused on the management and suppression of symptoms such as anxiety and emotional distress. In our society the medical profession has treated emotional imbalances such as anxiety by prescribing pharmacotherapy and/or recommending psychotherapy to address these conditions. Yet, with the rise in the cost of psychopharmaceutical drugs and the lack of adequate medical coverage for psychotherapy services, a need for effective alternatives has provided an opportunity to explore therapeutic tools to assist in the treatment of, or act as a stand alone treatment for anxiety. The intervention methods that form the basis for this dissertation research are guided imagery and music and the effects that these interventions have on anxiety. The orientation of this study is holism, focusing on the whole person rather than on treating symptoms or separate parts and fostering a subject's ability to be an active participant in his or her own healing process.

Because Western medicine has generally been focused on treating symptoms, the cause of the imbalance within the body has not been fully explored. As Western medicine has grown in our society and its "scientific" principles accepted, people have taken less and less responsibility for their health and lost touch with their own capacity to participate in their own healing process. "American medical doctors are assigned the active (powerful) roles while patients are resigned to passive (powerless) ones,"<sup>1</sup> remarked Harriet Beinfield and Efram Korngold in regards to one of the differences between American and Chinese health care cultures. American culture is centered on finding a "magic" solution to alleviate each symptom that arises. According to Beinfield

and Korngold “sages describe a state without suffering and a way to get there. That way is not to search for a single remedy, a panacea, a ‘magic bullet,’ but to engage in the ongoing process of learning to become more animated, more connected: more charged with life.”<sup>2</sup> This process includes looking beyond issues of physical health and into the mental, emotional, and spiritual aspects of a person.

Since the orientation of Western medicine has been focused on rectifying particular symptoms; viewing those symptoms in the context of “whole” persons and their relationships to nature has been overlooked. Rather than accepting the symptom as a messenger and an indicator of an imbalance that lies within the person, Western medicine has focused on the management of symptoms and has attempted to regulate symptoms with medicines that can cause other side effects. This process of symptom management has further distanced patients from understanding the messages that their bodies are communicating.

When the body is viewed as a finely tuned communications vehicle rather than a system to be suppressed, it can provide valuable messages of health as well as signals of disease. The body can signal to a person when there is an imbalance within the body and transmit it back to a person in the form of such messengers as pain, discomfort, anxiety, or disease. Using affective, cognitive, behavioral, and physiological symptoms as indicators of “unfinished business” that still needs to be resolved, a person can explore these messages as essential parts to a greater whole in understanding the cause of the imbalance. “Health and disease are ways through which our bodies speak to us, telling us what’s right and wrong in our lives, what’s good and should be preserved and

strengthened, and what's bad and needs to be reevaluated and adjusted,"<sup>3</sup> stated Dr. Mona Lisa Schulz, a psychiatrist and medical intuitive. One of the ways in which these messages are communicated to us is through our body. By interpreting the body's signal, a person has a tool for self-reflection and a feedback mechanism to translate the message. Physiological symptoms as well as affective, cognitive, and behavioral symptoms are indicators that the body is in distress and out of balance. Dr. Schulz further stated the importance of listening to the body's signals in reference to one of her clients. "Yet she had so feared listening to what her body was telling her that for six years she had drowned out its voice-and the voice of her intuition-by loading herself with medication, masking the memories and the emotions in her body and numbing the pain that was a steady warning signal that something was wrong in her life."<sup>4</sup>

Being able to tune into the body's intricate, intuitive communications network allows each of us to be in touch with its messages as a tool for self-awareness and action. Schulz notes, "You can gain intuitive understanding by tapping into your own intuition network, by scoping out which emotional center has an imbalance between power and vulnerability, which emotional centers and their associated organs trigger painful memories or call your attention to emotional situations that you need to examine."<sup>5</sup> Being able to use the body's messages to understand the imbalance can be a helpful guide in bringing a person back to a state of health and wholeness.

In understanding the derivation of the word "whole," a new perspective encompassing a broader view of health and all of its components can be realized. The word holism has its roots in an ancient Greek word, "holos" meaning "whole" and its

derivatives, “holy,” “whole,” “health,” and “heal.”<sup>6</sup> This leads to an awareness of a connection between health, healing, and the sacred as being essential elements to achieving a greater sense of wholeness.

Wholeness is at the root of holistic health and encompasses a much broader focus than the physical body alone. It also includes the mental, emotional, and spiritual aspects of an individual. In treating a person, holistic health involves the integration of all of these elements and explores the interplay of each of these on the whole organism. Each plays an important role in creating the delicate balance of the whole. The dynamics of each of these parts and their interrelationships has a profound impact on the whole. “Stress is considered to be a state of imbalance between parts of the organism in relation to the whole.”<sup>7</sup> Holistic health enlists the active participation of individuals and encourages them to be self-reliant and responsible for their own health. The focus of holistic health is on helping individuals to view their illness as an opportunity for personal growth and enlightenment.

When people begin to view life experience as “lessons” to learn, they can begin to seek ways to balance life through adjusting the physical, mental, emotional, and spiritual components to restore health and well being. Using this approach elicits a personal responsibility to focus inwardly and gain understanding. As a result a person can discover personal and relationship imbalances that are at the core of the problem. With this introspective view a person can discover the cause of the imbalance and seek ways to rectify the factors that have perpetuated or contributed to the onset of the current health condition. When we begin to take responsibility for our own health, dependence on

medical professionals is lessened and, instead, a partnership can be created with our health care provider to help bring the body, mind, and spirit back to health.

As we understand the personal power that is created by undertaking responsibility for our health and connect that with the remarkable capacity of the human organism to restore imbalances in the body, a process for self-healing is possible. Dr. C. Norman Shealy and Dr. Caroline Myss realized the importance of motivating the healing potential in patients. “Ultimately we need to recognize the importance of empowering the human spirit.”<sup>8</sup> Tapping into our own introspective guidance, we can access our own intuitive information for guidance in search of wholeness. Through empowering the self, a person opens up to the bank of intuitive information that is available through accessing the unconscious mind to assist and guide an individual through the healing journey. Once a person understands and embraces this concept, interventions that engage the physical, mental, emotional, and spiritual aspects of health can be employed to stimulate the healing response.

Through the use of interventions that facilitate the integration of the physical, mental, emotional, and spiritual components of a person’s life, a connection is created that helps link together all the parts and strengthens the whole. Guided imagery, visualization, and music are interventions that have been used throughout history to help the human spirit transcend the limitations of its past history and heal the mind and body. “Our bodies contain our histories-every chapter, line, and verse of every event and relationship in our lives. As our lives unfold, our biological health becomes a living, breathing biographical statement that conveys our strengths, weaknesses, hopes, and

fears.”<sup>9</sup> According to Dr. Myss, thoughts are forms of energy that are stored in a person’s cellular memory. This energy can have an emotional, mental, psychological, and/or spiritual orientation, as the memory is stored in the body’s tissues. For years the author of this research study has referred to this as “issues in the tissues.” In understanding how a person’s experiences have informed the energy that is stored in the body’s cellular memory, a person can become consciously aware of the connection between the body and mind. This level of consciousness can be used as a tool for personal transformation. Helping others tap into their capacity for personal reflection and insight, opens the doors to self-healing and personal transformation. “Indeed, this unified concept is much more scientific, even though we do not yet have all the facts to support the interrelationships. Bringing in intuitive influence leads one to accept that there is a capacity to perceive electromagnetic influence of consciousness.”<sup>10</sup> Using interventions that encourage self-examination and self-reflection helps a person transform a health issue into an opportunity that promotes conscious awareness for positive change and healing.

### **STATEMENT OF THE PROBLEM**

Although there have been a wide range of studies on the effects of guided imagery and music as interventions for pain and anxiety for inpatients in hospital or institutional settings, the development of scientific research on home-based audiotape programs is an important step towards their acceptance and recommendation by health care practitioners as interventions for the general public to use as drug-free choices in dealing more

effectively with anxiety. The author has chosen this opportunity to explore a home-based audiotape program using guided imagery and music to investigate their effects on anxiety.

## **GOAL AND OBJECTIVE**

The specific purpose of this study was to explore the positive relationship between guided imagery and music and its effects on anxiety symptoms in forty-nine adult subjects between the ages of 18-70 years in a home-based setting. This study did not seek to classify subjects into different anxiety disorders, but focused on studying subjects who self-reported experiencing anxiety symptoms. In this study a home-based audiotape protocol was used to investigate subject responses to one of two types of relaxation methods. One type of relaxation method focused on the anxiety level response of subjects who listened to an audiotape that included a guided imagery sequence with a musical background (test group). The guided imagery audiotape, known as the *Ring of Fire*, was used in this study to lead subjects through the human energy centers (chakras) and included positive affirmations, visualizations, and fire imagery to promote a therapeutic response. Throughout the audiotape sequence, the subject's attention was directed to each chakra center where the imagery of fire was used as a purification agent to facilitate the releasing and resolution of the subject's "unfinished business." The test group who used the guided imagery audiotape was then compared with subjects who listened to an audiotape program with the same music (control group), but without the guided imagery portion.

Current treatment of anxiety symptoms has been dealt with through the use of psychotherapy and/or pharmacotherapy (anxiolytics and antidepressants). The goal of this study is to emphasize to the general public and to health professionals that guided imagery and music can be effective therapeutic interventions that can be used as stand-alone treatments for mild anxiety symptoms, or as adjunct therapies to psychotherapy or pharmacotherapy for enhanced effectiveness in treating anxiety. Providing the general public and patients with drug-free interventions to deal effectively with anxiety symptoms is an important step for modern day medicine as it integrates more holistic, complementary, and integrative choices.

## **HYPOTHESES**

From the literature reviewed and the goals of this study, the following hypotheses were established:

*Hypothesis 1:* This study will show significantly that both guided imagery and music have a positive relationship in the reduction of state-anxiety.

*Hypothesis 2:* This study will show that guided imagery using chakras, color, affirmations, and positive suggestions will have a greater effect on anxiety reduction than relaxing music alone. If this hypothesis is proven true, then one can expect that there would be a significantly greater reduction of anxiety in the test group, who listened to a guided imagery audiotape with the musical background versus the control group, who listened to the music only audiotape.

Chapter Two is dedicated to a review of the literature on anxiety, guided imagery, music, and the chakras.

## CHAPTER 2: REVIEW OF THE LITERATURE

In reviewing the literature the author chose to investigate in more detail the areas of anxiety, guided imagery, therapeutic music, and the chakras or human energy centers. This literature discussion includes a historical as well as a current perspective on each of these areas.

### ANXIETY

#### General Definitions

The word anxiety comes from the Latin words *anxius* and *angere*. *Anxius* is defined as a state of agitation and distress. The Latin word, *angere*, means to cause pain, to choke or strangle, which are common symptoms in the anxiety-ridden person.<sup>1</sup> The American Heritage Dictionary further defines *anxiety* as: 1) a state of uneasiness and distress about future uncertainties; apprehension; worry; 2) a cause of such uneasiness: a worry; 3) intense fear or dread lacking an unambiguous cause or a specific threat. It also defines *anxiety* as feelings of fear and concern detached from objective sources, feeding themselves, as it were.<sup>2</sup>

*Worry* is a feeling of persistent doubt or fear that elicits a strong sense of aggravation. *Anxiety* can be viewed as a “tense emotional state” and is characterized by physical symptoms such as tension, tremor, sweating, palpitation, and increased pulse rate.<sup>3</sup> Anxiety states are also described as tensioned-filled moments, also associated with

feelings of apprehension, heightened nervous feelings, and worry.<sup>4</sup> The reactions to events by people with anxiety tend to be at a disproportionate level as compared to most others who would consider the situations less stress-producing.<sup>5</sup> Also people with anxiety tend to be more triggered by a broader range of stimuli.

Anxiety and fear are different processes that can be differentiated by their response states. “Anxiety . . . is based on an emotional process, while fear is a cognitive one.”<sup>6</sup> “Fear then, is the appraisal of danger; anxiety is the unpleasant feeling state evoked when fear is stimulated.”<sup>7</sup> Freud expressed the condition of anxiety as an unpleasant state of emotional turmoil with physiological and behavioral manifestations.<sup>8</sup> There does not seem to be a universally accepted definition of anxiety. Although most people “would agree that anxiety refers to an unpleasant subjective experience associated with the perception of real or imagined threat, some would wish to emphasize associated somatic aspects whereas others would insist on the importance of escape or avoidance behavior.”<sup>9</sup> Thus, the three-systems model of looking at anxiety with psychological, somatic, and behavioral aspects seems to be present in recent research on anxiety.<sup>10</sup> Prior to 1950, little research was conducted on anxiety, in part because of the lack of adequate measurements and understanding of theoretical constructs of anxiety.<sup>11</sup>

Throughout the ages, in order to survive, people have needed to respond effectively to danger or life-threatening situations. For self-preservation, a person must develop different states of alertness to respond effectively to the world. When faced with a stressful situation, a healthy individual reacts to a threat instinctually with such reactions as fight, fright, or flight. These are considered healthy stress states and are

necessary states to assure a person's survival in the world. On the other hand, people who feel a more constant sense of apprehension, fear, and uncertainty have developed inappropriate responses to current circumstances due to prolonged feelings of anxiety. In these cases, the present threat does not match the intensity of the response and can cause a person to withdraw, panic, or become immobilized. Anxiety can also occur as a symptom of other psychological or medical problems, such as depression, substance abuse, or thyroid disease.

### **Medical Psychiatric Definitions Of Anxiety Disorders**

Prior to 1950 attempts to classify psychopathology was a relatively informal process. The word "anxiety" was not included in the *International Classification of Diseases* (ICD) until its seventh edition in 1955.<sup>12</sup> Before that it was grouped under the broader heading of psychoneurotic disorders.

In recent years a number of different anxiety disorders have been defined. The two most common ones are generalized anxiety disorder (GAD), considered long-lasting and low-grade, and panic attack disorder (PAD), which has more dramatic effects, such as periodic anxiety and terror, with episodes lasting 15 to 30 minutes. The other anxiety disorders include phobias, performance anxiety, obsessive-compulsive disorder (OCD), and post-traumatic stress disorder (PTSD). The feeling of vulnerability seems to be at the center of anxiety disorders and undermines a person's problem-solving ability.<sup>13</sup>

Despite the frequency of GAD in our society, there are fewer research studies on it. This is probably because of the lower intensity of its symptoms, the challenge in its

diagnosis,<sup>14</sup> and also the fact that people tend to use self-administered treatments to deal with the symptoms.<sup>15</sup> These self-administered approaches are therapeutic treatments that involve either a written or audio taped format that is implemented by the client. Scogin and colleagues found that self-administered treatments were effective in treating anxiety conditions such as phobias and affective disturbances, suggesting that these interventions can help reduce anxiety in GAD subjects.<sup>16</sup> Research has shown that self-examination approaches have proven to be above the placebo effect for depressive subjects and also effective for GAD subject.<sup>17</sup> Therapies that employ the principles of self-examination try “to enhance people’s sense of control and actual control over the stressors.”<sup>18</sup>

### **Theoretical Constructs Of Anxiety**

The following definitions for stress, arousal, and anxiety are used throughout this paper for consistency and clarity. *Stress* is a condition that occurs when an individual is required to make a readjustment or adaptation in response to a life situation.<sup>19</sup> A state of *arousal* is a signal to individuals that they are in a stressful state and is generally characterized by physiological symptoms that manifest as a state of “readiness” to deal with the upcoming threat.<sup>20</sup> *Anxiety* is composed of a high negative affect and a future-oriented perspective with a sense of helplessness to cope with a situation that is the cause of the stress.<sup>21</sup> Another important distinction is the difference between *state-* and *trait-anxiety*.<sup>22</sup> *State-anxiety* arises as a situational response to a current life event and is often associated with the arousal of the autonomic nervous system. By contrast *trait-*

*anxiety* is connected with a perceptive view held by an individual when coping with situations in his or her environment. Trait-anxiety measures how predisposed an individual is to experience state-anxiety in a stressful situation based on his or her personality traits (Spielberger, 1983, 4-5).<sup>23</sup>

### **Symptoms Of Anxiety**

In its expression anxiety can range from cognitive and conceptual difficulties to affective, behavioral, and physiological symptoms. These symptoms can play havoc on a person's mental, emotional, and physical being. Researchers have found that "to understand the response of the organism to threat, we need to have a comprehensive view of the individualized actions and interactions of the cognitive, affective, physiological, and behavioral subsystems to a given threat at a given time."<sup>24</sup> The problem with anxiety is that "a person remains geared for defensive action long after a danger has passed."<sup>25</sup>

Anxiety can manifest itself through cognitive symptoms such as sensory and perceptual conditions that include "foggy" thinking, self-consciousness, and hypervigilance. Other cognitive conditions include difficulties in concentration, inability to control thinking, impaired reasoning ability, and trouble with recall. Also in the cognitive area are symptoms that involve conceptual signs such as cognitive distortion, experiencing frightening visual images, and repeated fearful thoughts. In addition, fears associated with losing control, not being able to cope, fear of physical injury or death, fear of a mental disorder, and fear of negative evaluations are additional cognitive symptoms.<sup>26</sup>

Affective symptoms appear to be the most dramatic and most recognized symptoms associated with anxiety. These include feelings of being edgy, impatient, fearful, scared, frightened, alarmed, jittery, jumpy, anxious, nervous, tense, and wound-up. The behavioral symptoms show up as either an overly activated behavioral response, or a greatly diminished activity such as flight response, restlessness, hyperventilation, inhibition, immobility, avoidance, and impaired coordination.<sup>27</sup>

Physiologically, the subsystems that are affected by anxiety are the cardiovascular, respiratory, neuromuscular, gastrointestinal, urinary, and skin. The cardiovascular symptoms include palpitations, racing heart, increased blood pressure, decreased blood pressure, decreased pulse rate, and faintness. Respiratory signs of anxiety include rapid breathing, shortness of breath, pressure on chest, shallow breathing, and a lump in the throat. With anxiety affecting the neuromuscular system a person can experience insomnia, tremors, spasms, pacing, strained facial expression, unsteady feeling, twitching of the eyelid, wobbly legs, clumsy motions, and generalized weakness. Symptoms that are manifested in the gastrointestinal tract are abdominal pain, loss of appetite, gain of appetite, nausea, abdominal distress, heartburn, and vomiting. The urinary system is impacted by an increased frequency to urinate and increased pressure to urinate. Finally, skin can respond to anxiety with a flushed face, pale coloring, palm sweating, generalized sweating, hot and cold temperature fluctuations, and itching.<sup>28</sup>

In terms of a specific anxiety disorder, medical diagnosis is based on the severity and duration of symptoms and on additional behavioral characteristics that accompany the symptoms of anxiety. For example, GAD symptoms can include: a feeling of being

on edge, very restless, tired and irritable; having difficulty with concentration; having muscle tension; and experiencing sleep disturbances. Some of these symptoms occur most days over a six-month period. Whereas in panic disorder, a person can feel intense fear or discomfort with at least four or more of the following symptoms: rapid heart beat, shakiness, sweating, shortness of breath, choking sensation, dizziness, nausea, feelings of unreality, numbness, hot flashes or chills, chest pain, fear of dying, and fear of going insane. To be considered a panic attack, a person must experience two recurrent, unexpected panic attacks followed by at least one month of fear of another occurrence. Generally, in phobic disorders a person has fear of specific objects or situations. OCD is characterized by persistent mental images, thoughts or ideas, which result in repetitive, rigid, and self-developed behavioral patterns that are intended to prevent the obsession. On the other hand, a person suffering from PTSD may experience symptoms that can occur weeks, months, and years after the traumatic event has occurred. Symptoms for PTSD range from mental flashbacks to disturbing thoughts and memories that recall or mentally revisit the traumatic event.

### **Psychoneuroimmunology and the Brain**

Scientific research has shown that prolonged stress, anxiety, and depression have a detrimental effect on the immune system adversely affecting the body's ability to fight off disease. When anxiety and depression are reduced, then the body's immune defenses are better able to effectively promote the body's healing mechanisms.<sup>29</sup>

Researchers in the field of psychoneuroimmunology have explored the workings of the mind/body connection and discovered how the brain and the physical body's immune system work together to promote health. In this field, researchers uncovered evidence that the brain transmits signals through the nervous system to help the body ward off disease. These scientists have discovered that electrical signals in the form of thoughts, beliefs, and emotions are carried along the nervous system, affecting physiological factors associated with stress and anxiety.

Dr. Candace Pert, a leading neuropharmacology researcher in the United States, discovered small protein-like chemicals that are produced in the brain and are responsible for mood changes. These chemicals, called neuropeptides, are categorized as endorphins and have mood-altering effects on the body. They have also been found connected to macrophagic cells, impeding their mobility in the body. Because macrophagic cells are responsible for fighting infection and warding off disease, the relationship between our thoughts, emotions, and our immune system seems clearly connected. Dr. Myss' statement further supports the connection between the body and our emotional self, "Our emotions reside physically in our bodies and interact with our cells and tissues."<sup>30</sup> This field of research has been helpful in alerting scientists to the connection between our moods and our overall state of health.<sup>31</sup>

In a similar manner, Gerald Renoux, a researcher from France, discovered that the interconnection between the right and left hemispheres of the brain can affect the immune system. Because the right hemisphere of the brain controls imagery and creativity and the left hemisphere specializes in verbal and numerical tasks, finding ways to integrate both

hemispheres is important to maintaining the symmetry between these lobes of the brain. Through using interventions such as guided imagery, visualization, and music that stimulate both hemispheres of the brain through creative imagination and words that support optimism and positive attitudes, the immune system function can be strengthened and communication between the hemispheres is enhanced.<sup>32</sup> Interventions such as guided imagery, visualization, and music can be effective therapies to help guide the body back to its state of balance.

## **Vibrational and Energy Medicine**

Interest in energy-based interventions such as guided imagery, visualization, and music have been steadily increasing over the past ten years. With the advent of electromedicine approaches, new ways of treating pain and illness are gaining interest and scientists are exploring ways to understand just how these energy-based therapies work. Dr. Richard Gerber in his book, *Vibrational Medicine*, discusses the culmination of twenty years of research into alternative medical diagnosis and treatment:

“the applications of electromagnetic energy to treat human illness may begin to open up the scientific minds of the medical establishment to the possibilities of healing with energy. As we begin to extend our understanding of the wider spectrum of known energies, it will be seen that many of the so-called “fringe areas” of medicine are, in fact, applying slightly different principles of ‘energy medicine.’ The energies being applied here, however, are the subtle energies of the life-force itself and its many octaves and harmonics.”<sup>33</sup>

Throughout the ages, cultures and healers have used guided imagery, visualization, and music to elicit the healing response and help the body to rebalance itself. Energy-based therapies can help the body recalibrate itself back to its normal healthy vibrational level. Assisting the body to harmonize itself with its natural vibration, these therapies can positively affect the human energy field. “Vibrational healing modalities are effective because of their ability to impact upon the subtle unseen hierarchical levels of human physiology, which include the physical and etheric bodies, the acupuncture meridians, the chakras and nadis, and the astral, mental, causal, and higher spiritual bodies.”<sup>34</sup> As a result, the quality of vibrational energy can “positively affect those energetic systems

that may be out of balance due to disease states.”<sup>35</sup> Through rebalancing the vibration in the energy field, the body can then return to its natural state of harmony. Using relaxation techniques has produced significant physiological changes such as increased peripheral blood flow, electrical resistance of the skin, and the production of slow brain waves. In addition decreases in oxygen consumption, carbon dioxide elimination, blood lactate levels, respiratory rate and volume, heart rate, skeletal muscle tension, epinephrine level, gastric acidity and motility, sweat gland activity, and blood pressure have been found through the use of relaxation exercises.<sup>36</sup> The following pages describe the effects of these interventions and their effectiveness throughout history to present time.

### **GUIDED IMAGERY**

In understanding the definition of guided imagery it is important to distinguish it from other forms of mental relaxation such as meditation. Guided imagery is the directed focusing of the mind through the use of imagination and visualization of imagery. It uses creative thoughts and imagery to help connect the mind, the body, and emotions and can be focused on the past, present, or future. In guided imagery, visual images are predominant with auditory, tactile, olfactory, and proprioceptive sensations also used to create a multiple sensory experience. In therapeutic applications, guided imagery has been used to alleviate responses to negative stimuli, reduce anxiety, decrease pain, and elicit the imagination for healing purposes.

In contrast to guided imagery, meditation is a self-reflection process of releasing and letting go of thought-forms. In meditation the mind is focused in the present moment

and not engaged in the experiences of the past or planning events of a future-orientation.<sup>37, 38</sup> Meditation uses a focusing device like a mantra to direct the attention of the mind as a way of changing mind patterning. Both guided imagery and meditation are approaches that have been used to connect the mind, body, and spirit. For the purposes of this study, guided imagery is one of the interventions investigated to determine its effect on anxiety symptoms.

Even though mind/body medicine is an emerging field in the Western medical world, techniques that foster mind/body integration (such as visualization) have their seeds in earlier traditions.<sup>39</sup> “The Greeks named the system of mind/body techniques the Egyptians practiced in pursuit of expanded consciousness 'gymnosophism.' The disciplines they described-rhythmic breathing, visualization, chanting to rhythmic accompaniment-appear to be similar to many of the Yogic practices of Hinduism.”<sup>40</sup> In Tibetan traditions tantric texts are filled with visualization exercises. Paramahansa Yogananda recommended that his followers visualize their futures and energize these thoughts through the practice of focused concentration. Persian Sufis from the twelfth century believed in the powerful influence that visualization played in shaping one’s future by accessing the human energy centers or chakras through “idea-images” that ultimately altered the path of one’s life. The kahunas of Hawaii believed that our personal images become the sources of energy that are stored in our human energy field as thought-forms, creating our future experience. Edgar Cayce also felt that “thoughts are the builders” of the future and that through our images and patterns we affect our

future.<sup>41</sup> The Egyptians believed that “thought was a vibrational energy that pervaded the physical world.”<sup>42</sup>

In exploring how different traditions used the powers of the mind we can understand that:

“our minds are inexhaustible storehouses of images, and accumulating evidence suggests that, under the right conditions, these images may work their way into the nervous system, into the immune system, into our organs, muscles, sinews, and bones. Psychologists have long recognized that images are preverbal, deeply linked to our emotions and unconscious mind, and therefore able to reflect feelings and internal states that we are unable to put into words or thoughts.”<sup>43</sup>

Viewing the mind as a storehouse of one’s life experience, it is important to assess how a person’s ability to image can affect the outcome of a visualization exercise as a therapeutic intervention. According to Dr. O. Carl Simonton, a cancer researcher, “the emotional meaning of a particular symbol may vary greatly for individuals, so that a symbol that means strength and power ... may mean anger and hostility to someone else.”<sup>44</sup> Therefore, imagery that works for some individuals may not be an effective tool for others.

Over the years guided imagery has had great success in addressing physical and psychological conditions. It has been used to reduce stress and also to improve attitudes in people who are dealing with conditions such as cancer,<sup>45</sup> heart disease, AIDS, and arthritis, in addition to reducing pain.<sup>46</sup> One of the benefits of guided imagery is that it affects positive change in attitudes, as well as physiological changes in the body within a

short duration of time. Sometimes patients have reported lowered anxiety levels after a single or several guided imagery sessions. After guided imagery sessions, patients report a sense of relaxation and peacefulness.<sup>47</sup>

Guided imagery has also been found to enhance the immune system, which protects the body against outside invaders such as viruses, bacteria, and even cancer cells.<sup>48</sup> Imagery can positively affect the physiology of the body by lowering blood pressure and heart rate, both beneficial in treating and preventing heart disease, and reducing blood flow in severely injured patients.<sup>49</sup> Imagery can decrease pain and alleviate the side effects of many drugs, including chemotherapy.<sup>50</sup> Surgical patients who used guided imagery experienced lower cortisol levels, less state anxiety, and less surgical wound erythema than the control group.<sup>51</sup>

Not only has guided imagery played a significant role in helping patients deal with the side effects of cancer treatment, but it has also been used on a deeper subconscious level to affect change. Cancer researchers, Dr. O. Carl Simonton and Stephanie Matthews-Simonton expanded upon Jung's psychoanalysis work with spontaneous images by creating an "Inner Guide" process to access the storehouse of unconscious material that communicates with the conscious self through emotions, dreams, and intuitive thoughts. The "Inner Guide" is an inwardly directed process taught to cancer patients to help them gain important information that is contained in their own psyche. Reconnecting with this internal repository of information has assisted these cancer patients to refocus their own source of power from the demands of others to using its guidance to take responsibility for their own health.<sup>52</sup>

Using imagery as an essential part of this process, patients are able to tap into a profound inner resource of unconscious “knowing” to guide them into rebalancing their lives and promoting a greater sense of well being. During this process patients are able to connect with this unconscious information not normally accessible to the conscious mind through the use of imagery and relaxation techniques. Just as in Jungian psychology, accessing the unconscious plays an important role in guiding a patient into discovering essential insights to help them transcend the “stuck” places of their conscious mind and to overcome the limitations of their thoughts, beliefs, attitudes, and conditioning. The “guided daydream” of the Simonton’s fosters the connection with a person’s inner guidance to assist them in following the insights that have been uncovered through this process of self-reflection.<sup>53</sup>

Techniques that employ both relaxation and imagery have been scientifically shown to affect physical changes in the body. Dr. Joan Borysenko, a pioneer in mind/body medicine and cancer researcher, describes the relaxation response as a state of “very low energy expenditure characterized by deep rest and relaxation.”<sup>54</sup> She further details the physiological effects of this response:

“When the relaxation response is called on, heart rate and blood pressure drop. Breathing rate and oxygen consumption decline because of the profound decrease in the need for energy. Brain waves shift from an alert beta-rhythm to a relaxed alpha-rhythm. Blood flow to the muscles decreases, and instead, blood is sent to the brain and skin, producing a feeling of warmth and rested mental alertness.”<sup>55</sup>

In her cancer research, Dr Borysenko focused on the mind, body, and spirit connection and incorporated her training in meditation and yoga along with creative imagination techniques to stimulate relaxation responses in cancer patients. Borysenko established the Mind/Body Clinic with colleagues in 1981, to integrate mind/body therapies along with non-drug therapies such as nutrition, stretching exercises, and relaxation/creative imagination exercises for health promotion. In her work Dr. Borysenko distinguishes between different mind/body techniques that promote the healing process. “There is an important difference between the use of creative imagination and meditation. While imagination is an outgrowth of meditation, the mind is guided into absorption in a directed fantasy. There is a goal. Meditation is not goal directed; instead, it trains the capacities of self-observation and letting go.”<sup>56</sup> In the Mind/Body Clinic she notes that the patients were able to distinguish between their experience of the quality of positive and negative emotions as they learned to observe and release their emotions.

“Patients often recognize certain similarities between recalled positive emotions and negative ones. Positive emotions create bodily sensations of openness and expansiveness. They invite the world in. The body feels relaxed, even though some emotions such as joy are very energizing. In contrast, negative emotions create a tight, contracted feeling. Everything pulls inward. The world is pushed away. Positive feelings invite unity. Negative feelings invite isolation.”<sup>57</sup>

In her experience with patients in the clinic, Dr. Borysenko recalls that a person’s fear and their identification with the mind are two important factors at the core of the disease. “Since the most prevalent disease is fear and identification with the mind, creative

imagination can be used very effectively to dis-identify the cares of the mind and let go into an experience of pleasure that is absorbing.”<sup>58</sup>

Over the past ten years more and more research has been conducted on the relaxation response and its effects on the mind, body, and spirit. In a research study, 39 inpatient psychiatric subjects used relaxation techniques such as breathing, guided imagery, and soft music to significantly reduce state-anxiety.<sup>59</sup> Fried studied 50 subjects who were suffering from a number of psychological and somatic disorders and used biofeedback-assisted deep breathing along with a guided imagery technique.<sup>60</sup> In this study he found that 54% of the subjects’ breathing patterns and rate were significantly reduced and matched the slower rates of meditation practitioners with a breath rate of 3 to 5 breaths per minute. In a study of 60 postpartum women it was discovered that both postpartum anxiety and self-esteem was improved in new mothers during the first 4-weeks after delivery through the use of a relaxation and guided imagery protocol.<sup>61</sup> In a study conducted with nursing students, Dr. Valerie King discovered that state-anxiety was significantly reduced when subjects listened to a 30-minute guided imagery intervention three times at two-week intervals.<sup>62</sup>

In using the power of the mind to heal and change the mind pattern, the field of psychocybernetics employs a transformation of negative memories into positive images. According to psychocybernetics, the human brain along with the nervous and muscular systems automatically steer the individual to the selected result through the use of visualizations (or images) focused on an end goal.<sup>63</sup> Using the principles of psychocybernetics to restructure the memory of the “real” experience, imagery of a

positive and “welcomed” outcome can be used to build a new framework of memories to replace the unwanted memories that are stored in the body/brain memory system.

Therefore, the focus of this approach is the replacement of old memories with more positive data for future reference and recall.

Guided imagery is an effective tool that uses the principles of reframing and re-creation of new images for healing purposes. It can be used therapeutically to alter and transform past experiences into positive memories that replace and restructure the negative past associations.

Reviewing research in the area of imagery has revealed mixed results in the effectiveness of imagery. In a study to explore imagery effectiveness, researchers studied 60 graduate students to determine if their imagery generation ability and personality trait absorption were effective predictors in relieving anxiety through the use of guided imagery. They noted that 20% of the patients in their subsample (3 subjects in the study) reported an increase in anxiety after listening to imagery. In their findings they concluded that non-enjoyment of the imagery may exacerbate negative symptomatology.<sup>64</sup> As a result, Kwekkeboom developed and tested an imaging ability instrument to determine a subject’s ability to effectively image and utilize an image for therapeutic purposes. Imaging ability was divided into two categories: image generation and image absorption. Subjects were tested for their ability to generate an image as well as being able to absorb the image and use it to reduce their anxiety level.<sup>65</sup> The study concluded that a person’s ability to create mental images and successfully be absorbed in the imagery was a significant factor in the effectiveness of the intervention and that it was

measurable. A person's ability to be absorbed in the imagery was even a more discriminating factor in the success of the imagery intervention than a person's ability to generate vivid mental images.<sup>66</sup> References to a person's ability to be absorbed in an experience are also cited in earlier studies where researchers noted that the qualities of "total attention" and "openness to experience" were present in a person's ability to be hypnotically susceptible.<sup>67</sup>

The means to determine imaging ability can be a helpful tool for health care providers to assess which patients or clients will most likely benefit from using a guided imagery intervention for anxiety and other ailments.

### **MUSIC AS SOUND THERAPY**

The word music is related to the word "mousa" or "muse" meaning inspiration. It also is defined as harmonious "sounds intended to elicit an aesthetic response in a listener."<sup>68</sup> Using the harmonious, inspirational, and healing qualities of music, healers, and therapists have found music an effective way to promote a greater sense of well being. "Whether it comes from a hand-carved, primitive wooden flute or an ultrasonic instrument created by twentieth-century scientists, the music-its sound vibrations and energy-work hand-in-hand with universal forces to help the body heal itself physically, emotionally, and spiritually."<sup>69</sup>

Throughout the ages music has been used for entertainment, to alter consciousness, transcend unpleasant or mundane existence, promote harmony, inspire creativity, and heal the body. More recently music has played a powerful role for

influence in films and commercials. Music has been performed by cultures throughout history to inspire rituals, ceremonies, and festivities, honoring life through dance, rhythmic drumming, and chanting to elicit different emotional states for a variety of traditional purposes. Many cultures believed that music held powerful influences that could either strengthen a nation or bring about its demise. The Chinese held the belief that music could fashion a society into whatever the mood of the music was emphasizing. The Greek philosopher and mathematician, Pythagoras, was noted for his contributions to Western European music through his use of mathematical formulas embedded into musical scores. “Pythagoras and his fellow scientists developed a set of geometric ratios and proportions that they believed, if used in the composition of music, would resonate in harmony with the universal forces and enhance life physically, emotionally, and spiritually.”<sup>70</sup> The Egyptians, “believed that mind, body, and spirit could be aligned with the ultimate divine intelligence by meditative practices coupled with the sacred sounds created by voice and musical instruments.”<sup>71</sup>

In the field of medicine, music was used as a therapeutic tool to facilitate the healing process by physicians who also acted in the role of the musician to ease the pain and distress of medical interventions. Music, however, lost its place as a therapeutic tool over the years.

Today the healing effects of music are being rediscovered and a resurgence of “sound therapy” is underway within our society. Researchers in mind/body medicine are coming to the forefront to understand and investigate music and its therapeutic effects. “Changes in the public mind from a narrow technological description of disease and of

mechanisms of healing to a more holistic approach that includes the total resources of the person open the door for greater inclusion on the healing scene for the creative arts. This openness has created a climate for music as therapy.”<sup>72</sup>

Music therapy can be defined as “the systematic application of music as directed by the music therapist to bring about changes in the emotional and/or physical health of the person. As such its functional rather than its aesthetic and entertainment aspects are emphasized.”<sup>73</sup> According to Dr. Helen Bonny, developer of The Bonny Method of Guided Imagery and Music (GIM), the characteristics that contribute to the effectiveness of music as a therapeutic tool are numerous.

- ? Music is a non-verbal communications vehicle that allows the listener to pass through verbal communications barriers and experience multi-dimensional levels.
- ? Music stimulates emotional release and influences mood states.
- ? Music elicits physiological changes in the body, decreasing heart rate, blood pressure, breath rate, and promoting other relaxation responses.
- ? Music fosters symbolic imagery.
- ? Music can stimulate sensory synthesis, promoting heightened sensory responses.<sup>74</sup>

When the body is viewed as an instrument, it is easier to understand the connection between the body and its ability to make its own sound as well as to respond to sounds and rhythms from the external environment. Throughout human history, our

bodies have synchronized with the pulses and rhythms of the earth and other celestial bodies. The cycles of the earth's rotation and the lunar cycles of the moon are two examples of the natural rhythms that we resonate with on a regular basis. Surrounded by natural rhythms our bodies are also instruments filled with rhythms-from the beat of our hearts to the coursing of our blood through its veins. In viewing the body's ability to resonate with sound, one can further understand how exterior sounds can co-mingle with the body's resonance to affect and alter the body's own rhythm. "Rhythm, the energizer of music, is related to heart rate, blood pressure, breathing, and the whole multitude of vibrational periodicities that make up the body structures."<sup>75</sup> It is no wonder that the body responds so succinctly to rhythm as a natural state of harmony.

Understanding the role that rhythm and vibration play in creating balance and harmony in the body, some researchers are using vibrational sounds to break up dissonance in the body by using musical notes played near the body's energy field to re-pattern and restore the vibrational level of the body to a more normal state. Dr. Mitchell Gaynor, Director of Medical Oncology and Integrative Medicine at the Strang-Cornell Cancer Prevention Center affiliated with New York Hospital, is a strong proponent of the healing qualities of music and the use of quartz crystal bowls in the treatment of disease. He states, "While aspects of this theory are speculative, my patients' as well as my own experience with quartz crystal bowls strongly support the hypothesis that the overtones they produce have resonant and healing properties unlike anything we have encountered."<sup>76</sup> In this way music and sound have the ability to entrain the brain and body tissues with its repetitive melodies and rhythms much like the repeated mantra used

by meditators. With entrainment two objects vibrating at similar frequencies will tend to interact on a vibrational level and synchronize frequencies until they are resonating at the same speed. This repetitive sequence of rhythms and melodies allows the body to “match” itself with the exterior rhythms of sound, such as a slower musical tempo to decrease the heart rate, reduce blood pressure, ease pain, and facilitate the healing process. According to Gaynor, research on the relaxation effects produced by theta brain wave levels achieved by both Buddhist meditators and rhythmic drumming suggest that sound “can entrain brain waves in a manner that is clinically significant, both for altered states of consciousness and for healing.”<sup>77</sup> Entrainment is a process of joining and becoming one with the music. “Musically, entrainment involves a merging with, or synchronizing to, the pulse of the music.”<sup>78</sup> As the body harmonizes with the vibration of the therapeutic sounds, the natural rhythms of the body can be restored and rebalanced.

Music also acts as a diversional activity for the brain to focus on instead of pain or anxiety. Using music as a diversion can help people to deal more effectively with invasive medical procedures by alleviating the pain or anxiety related to the procedure or to help reduce distress as the result of an illness or disease.<sup>79</sup>

Music has been used in nursing for a variety of applications such as pain management, anxiety reduction, performance enhancement, aggressive behavior modification, and to create a greater sense of well being in patients.<sup>80</sup> Other therapeutic applications of music include reduction of blood pressure, heart rate, and free fatty acids.<sup>81</sup> Although the research on the effects of music as a therapeutic method are small in number, the research evidence is encouraging that music is an effective non-

pharmacological intervention that can be used for a variety of medical conditions, such as the reduction of pain and anxiety in patients while in intensive care,<sup>82</sup> and also while undergoing flexible sigmoidoscopy<sup>83</sup> and chemotherapy.<sup>84</sup> Through scientific research music and relaxation were shown to significantly lower blood pressures throughout the entire outpatient gastrointestinal (GI) examination.<sup>85</sup> In this study of 63 outpatients, anxiety and blood pressure were reduced as the result of patients participating in a home-based program of relaxation instructions and a calming music audiotape in preparation for an outpatient GI exam.

Music with guided imagery and deep relaxation has shown the reduction of anxiety and depression symptoms, increased well being as well as reduction of pain symptoms.<sup>86</sup> Using music scores (such as Pachelbel's Canon) with a slower beat than the heart rate (under 72 beats per minute) helps the body to slow down and match the beat of the music.<sup>87</sup>

In four urban Midwestern intensive care units, music was used as an intervention for promoting relaxation and the reduction of anxiety in 54 patients receiving ventilator assistance. The patients listened to music with 60 to 80 beats per minute from a variety of choices in the categories of classical, New Age, country western, religious, and easy listening, depending on the patient's preference. The evidence showed that the test group who listened to the music experienced significantly less anxiety than the control group who had a rest period instead of the music. Physiological symptoms such as heart rate and respiratory rate also decreased over time as compared to the control group.<sup>88</sup>

Researchers studied the effects of classical music on acute myocardial infarction (AMI) patients with an average age of 63 years in two Midwestern hospitals. The findings concluded that in addition to reduction in anxiety levels as measured by the state part of the State-Trait Anxiety Inventory, physiological measures such as heart rate, respiratory rate, and myocardial oxygen-demand decreased as a result of the music intervention.<sup>89</sup>

Two patient groups who were receiving chemotherapy for the first time were investigated to determine the effects of a personal message from their physician recorded over music and how it affected their anxiety and the side effects associated with chemotherapy. Of the 97 patients in the study, the 47 participants receiving the message and music intervention (experimental group) versus the control group (null intervention) showed a significant difference between pre- and post-intervention scores based on the state-anxiety scale of the State-Trait Anxiety Inventory. Although there was no difference noted in side effect improvement (such as diarrhea, loss of appetite, and skin rash) between the groups, the experimental group receiving the message/music intervention demonstrated that this method can be a cost-effective tool to reduce anxiety in patients receiving chemotherapy.<sup>90</sup> Another study using guided imagery and music with cancer patients before and after chemotherapy, revealed a decrease in the patient's perceived degree of vomiting and length of vomiting.<sup>91</sup> Patients used a nausea and vomiting questionnaire to self-rate the degree of each symptom before and after the intervention on a scale (0 - 9).

A study investigating the effects of music on ambulatory surgery patients' preoperative anxiety showed that patients who listened to relaxing music and received preoperative instruction (experimental group) had significantly lower heart rates than the control group who only received preoperative instruction. Subjects selected a preferred tape from a variety of available choices and listened to the tape for 15 to 30 minutes before the surgical procedure. Researchers concluded that music can be more beneficial than preoperative instruction alone in reducing the anxiety level for patients who are receiving ambulatory surgery.<sup>92</sup> Music was also found to significantly reduce anxiety in patients who were in the surgical holding area.<sup>93</sup> Patients receiving chiropractic care showed significant reduction in state-anxiety and Likert scale ratings in all three of the interventions used: (1) instruction to relax in silence, (2) listen to New Age music with deep breathing visualization relaxation instruction, and (3) preferred music listening.<sup>94</sup>

In a research study on the therapeutic use of music for dyspnea and anxiety in patients with chronic obstructive pulmonary disease (COPD), researchers found that there was a significant decrease in dyspnea and a reduction of anxiety in week two of the study, but no significant change was noted in either condition over the five-week period of the study. Researchers concluded that these findings indicate that music is effective in reducing dyspnea and anxiety at a single time period and that change in anxiety was not found over time.<sup>95</sup>

Significant findings, however, were not found in all studies where music was investigated as an intervention. In a study of ninety-six patients who underwent elective heart bypass surgery it was discovered that the use of music, music video, or rest periods

did not significantly reduce the anxiety of patients after coronary artery bypass grafting. Although the anxiety levels were not significantly decreased by the interventions, the researchers found that the mood ratings showed significant improvement among subjects in the music-only group. Also there were significant changes in heart rate and systolic and diastolic blood pressure over time with all of the interventions, indicating a generalized relaxation response based on the physiological improvements.<sup>96</sup>

In a study conducted on patients undergoing fiberoptic bronchoscopy, the researchers concluded that relaxation music administered through headphones to patients during the flexible bronchoscopy procedure did not significantly reduce state-anxiety. Their findings also noted that music did not reduce the need for anxiolytic medication during the procedure.<sup>97</sup>

Although music is not always an effective intervention in all cases, there is strong evidence that music is also an effective intervention for psychological purposes. The benefits of music are not only related to its ability to improve patients' physiological response during and after medical procedures, but it can also assist an individual with emotional issues. "In a sense, music can serve as a stimulus to assist us in our descent into the darkness to explore our fear," notes Dr. John Ortiz, a psychologist and composer.<sup>98</sup> In his private practice Dr. Ortiz uses psycho-musicology techniques with his clients to deal with and transform psychological conditions such as anger, depression, stress, and sleep disturbances. His techniques involve the use of entrainment tapes that are created by his clients with his assistance to transform moods into a more positive direction. This approach involves the client selecting 3 or 4 musical selections that

represent where their mood is presently and then choosing other selections that move their mood into their desired direction.<sup>99</sup> According to Dr. Ortiz, this method has provided antidotal support to the power of music in assisting the transformation of psychological distress.

In addition to her research work, Dr. Bonny trains music therapists and other health professionals in the uses of music as a therapeutic intervention. Dr. Bonny advocates using music to unlock emotional blockages for therapeutic value.

“The power of music to release emotion and feelings, to energize the physical body and provoke it to movement, to uncover meaningful memories, to become a metaphor-a holder-of life experience, to relax the body and mind, to offer spiritual nurturance and self-exploration is available for exploration. At the present time an amazing array of processes and procedures is in use by the music therapist.”<sup>100</sup>

Dr. Bonny’s approach is based on the reflective quality of music and uses classical music selections to evoke images for the purposes of resolving past psychological distress. “The process involves listening to classical music in a relaxed state to invite images in the form of daydreams, memories, colors, feelings, kinesthetic, and sensory reactions to arise from the deep or inner self for the purpose of psychological resolution, personal growth, and spiritual understanding.”<sup>101</sup> Through her experience working with individuals and groups, music therapy has been proven clinically effective with eating disorders, depression, life transition, personal growth, dissociative and anxiety states, autism, post-traumatic stress disorder, and also with victims of sexual abuse, violent crimes, and trauma. It has also been shown to be effective with closed head

injuries, hypertension, cancer, AIDS, rheumatoid arthritis, and other psychoneuroimmunological conditions.<sup>102</sup> Because of the ability of music to open up its listeners, music acts as a powerful tool that facilitates the passage into altered states of consciousness and provides the opportunity to explore the inner workings of psyche. Music assists people in transcending the fixed notions of how they have interpreted their life and allows them to explore a multi-dimensional space of past, present, and future. Through this exploration new awareness and healing can take place to promote a greater sense of well being.

In fostering a healing response in the listener, music can affect and alter the brain waves to lower and lower frequencies, creating more and more physiological body relaxation. Using lower frequencies in musical scores, alpha, theta, and delta wavelengths can be produced in the brain to stimulate deep relaxation, imagery states, altered states of consciousness (ASC), or sleep response.<sup>103</sup> With GIM, people who are seeking self-actualization and transpersonal experiences can effectively use music to achieve the altered states of consciousness that promote insight, awareness, and ultimately a sense of unity experience.

Research that helps to provide a deeper understanding of the interplay of a person's thoughts, feelings, beliefs, and attitudes and the physical body is a promising field of study to further explore the mind/body connection. Investigating interventions and therapies directed at stimulating positive changes in the brain chemistry can make important contributions towards understanding how the mind and the body work in tandem to elicit physiological as well as psychological changes in the body. "Studies have

found that the chills, tingles, and goose bumps we feel while listening to music may be due in part to the release of endorphins, the morphine like chemicals in the brain.”<sup>104</sup>

### **CHAKRAS/HUMAN ENERGY CENTERS**

Using the chakras or human energy centers as a basis for self-reflection and healing has been a focus of this dissertation study due to the contents of the guided imagery tape focusing on the chakra centers. Understanding the historical perspective and nature of the human energy system and its role in the integration process is essential to understanding the part that it plays in the development of consciousness and the healing process.

Rosalyn Bruyere, a healer who participated in an eight year research study on the human electromagnetic field conducted at UCLA with Dr. Valerie Hunt, described the significant role that chakras play in bridging the gap between understanding our bodies and energy, “The more I studied Native American culture as well as the ancient traditions of the Egyptians and Greeks, the philosophies of the Hindus, and the religions of the East, the more I realized the potential value of the chakra system as a means of understanding life and energy and the symbolic relationship between them.”<sup>105</sup>

“Chakra is a Sanskrit word used by Hindus. It literally means ‘wheel of light.’ While most traditions refer to seven major chakras, some name fewer centers. Tibetan literature, for instance, identifies only six chakras.”<sup>106</sup> For the purposes of this dissertation, seven chakra centers will be discussed. The chakra energy system, also known as the human energy centers or emotional centers of the body, have been described by Eastern philosophies and religions as seven energy centers located along the body’s

spinal cord with each energy center associated with different organs and glands. Through her research at UCLA on the human energy field and the chakras, Dr Valerie Hunt, “discovered that the electrodes of the electromyography could pick up another field of energy radiating from the body, much subtler and smaller in amplitude than the traditionally recognized body electricities but with frequencies that averaged between 100 and 1600 cps, and which sometimes went even higher. Moreover, instead of emanating from the brain, heart, or muscles, the field was strongest in the areas of the body associated with the chakras.”<sup>107</sup> According to Barbara Brennan, noted healer and scientist, the chakras are vortices of energy spinning at different frequencies, “Each vortex metabolizes an energy vibration that resonates at its particular spin frequency.”<sup>108</sup>

Each chakra is “located along the path of the autonomic nervous system, which governs the body’s involuntary or subconscious actions”<sup>109</sup> and is also related to an endocrine gland and nerve plexus. The chakras serve to energize or vitalize the body by acting as gateways to receiving the universal energy that supports all life. The chakras then “break it (universal energy) up into component parts and then send it along energy rivers called *nadis* to the nervous system, then endocrine glands and then the blood to nourish the body.”<sup>110</sup> When there is disruption of the energy in any of the chakras, pathological effects can occur as the disruption of the energy affects all of these components.

As vortices of energy, the chakra energy centers act as recording devices that store the stages of a person’s life and his or her emotional responses to these experiences. Dr. Caroline Myss has made a tremendous contribution to the field of Energy Medicine

through her insightful description of how these energy centers serve as tools for conscious living.

“Practitioners of energy medicine believe that the human energy field contains and reflects each individual’s energy. It surrounds us and carries with us the emotional energy created by our internal and external experiences-both positive and negative. This emotional force influences the physical tissue within our bodies. In this way your biography-that is, the experiences that make up your life-becomes your biology. The emotions from these experiences become encoded in our biological systems and contribute to the formation of our cell tissue, which then generates a quality of energy that reflects those emotions.”<sup>111</sup>

The chakras provide a framework for understanding an individual’s maturation process through the seven major stages of life. Religious traditions have used these stages of life, similar to the chakras as a teaching method to help followers understand the maturation process for personal reflection and examination. In her book, *Anatomy of the Spirit*, Dr. Myss describes the significance that these centers play in a person’s journey towards enlightenment.

“The chakras are vertically aligned, suggesting that we ascend toward the Divine by gradually mastering the seductive pull of the physical world. At each stage we gain a more refined understanding of personal and spiritual power, since each chakra represents a spiritual life-lesson or challenge common to all human beings. As a person masters each chakra, he gains power and self-knowledge that becomes integrated into his spirit, advancing him along the path toward spiritual consciousness in the classic hero’s journey.”<sup>112</sup>

This energy communications system is so sophisticated that it contains detailed information that reflects a person’s response to their life experience. Dr. Myss stated,

“Your physical body is surrounded by an energy field that extends as far out as your outstretched arms and the full length of your body. It is both an information center and a highly sensitive perceptual system. We are constantly ‘in communication’ with everything around us through this system, which is a kind of conscious electricity that transmits and receives messages to and from other people’s bodies.”<sup>113</sup>

As a communications center a person is constantly getting energetic feedback through emotions, body sensations, dreams, and physical symptoms about what’s in or out of balance in one’s life. Dr. Myss believes that using our intuition as a guide to correcting the course of life can alter our life and affect our physical health. Dr. Myss contends, “If a person is able to sense intuitively that he or she is losing energy because of a stressful situation-and then acts to correct that loss of energy-then the likelihood of that stress developing into a physical crisis is reduced, if not eliminated completely.”<sup>114</sup> Being able to understand and put into practice the messages from our chakra energy system allows us to have insights for positive transformation in our lives. The messages that are generated by the body provide a person with the necessary information “to bring the conscious mind to an awareness of the imbalance or disease.”<sup>115</sup> Once a person understands the feedback mechanism of the body’s messages, one can then take action to resolve and rectify the situation.

Dr. Mona Lisa Schulz, in her book, *Awakening Intuition*, refers to the chakras as emotional centers that a person can use to make personal assessments about one’s response to life situations. Once the initial assessment is made, it can act as a road map to help a person adapt their responses to cope with life in a more empowered way. Dr.

Schulz notes, “As you examine your life and health in terms of the organs and emotional centers-you can take stock of your powers and vulnerabilities in each area (emotional center) to help you determine how best you can cope with and adapt to improve your life and health.”<sup>116</sup>

Using the chakra energy system as the body’s language of balance or imbalance can help empower people. Awareness gained in using these centers as a self-examination tool can help people be more in tune with their body, mind, and spirit in support of their soul’s purpose. It serves as a feedback mechanism to help one determine the current situation and chart the course of action to get back on track. Dr. Schulz emphasized that, “If we unmuzzle our intuition and learn to listen to the language of our bodies, we too can become empowered. We can learn to balance power and vulnerability in all the emotional areas of our lives. We can use the information our intuition sends us to map out a better course for our lives and build a foundation for a healthier, more balanced life in the future.”<sup>117</sup>

## **The First Chakra**

### ***The Energy Center of The Group Mind and Building the Foundation***

The first chakra represents our connection with our tribe. “Archetypically, the word ‘tribal’ connotes group identity, group force, group willpower, and group belief patterns.”<sup>118</sup> Through this chakra a person is connected to a group energy that helps form a foundation of thinking and acting in the physical world. It is related to developing a person’s roots, life foundation, the physical body, and sense of survival in the world.

Developing a strong foundation is important to a person's development and maturation. It is necessary to strengthen that foundation through developing roots that are solid and deep. The first chakra helps build a strong and healthy body and fosters a person's sense of stability in the world. It is located at the base of the spine and involves the feet, legs, bones, rectum, base of spine, and immune system.

In the language of Sanskrit, the word for the first chakra means "root." In the earliest stages of development a person needs to create a strong sense of grounding and take care of survival needs and the physical body. According to the developmental stages outlined by Erik Erikson, the issue of trust or mistrust is developed during this stage. In this stage, children learn the importance of caring for their body and providing what their body needs. Without a solid foundation it is hard to ground the energy to manifest what a person needs or wants in life.

The first chakra develops throughout a person's life and is most strongly impacted during the first year of life. It is influenced by an individual's connection to traditional familial beliefs that support the formation of his or her identity and how a person feels about his or her ability to survive in the world. In childhood, if a strong sense of survival and stability is imprinted on the infant, a child will have stronger skills to manifest its needs as it develops. If the child experiences a weak sense of survival, a sense of abandonment and isolation can pervade unless steps are taken to transform these experiences. Early trauma, physical abuse, hardship, hunger, or physical difficulties adversely affect the first chakra. As a result a person's basic program to survive is hindered and a sense of mistrust can pervade. Pain and trauma can cause a person to

override his or her body's needs, to ignore them, and sublimate them. In energetic terms, a child begins to pull his/her energy upward, away from its roots, dramatically affecting its ability to grow physically, mentally, and emotionally.

“The first chakra is the foundation for emotional and mental health. Emotional and psychological stability originate in the family unit and early social environment. Various forms of mental illnesses are generated out of family dysfunctions, including multiple personalities, obsessive-compulsive disorder, depression, and destructive patterns like alcoholism.”<sup>119</sup>

Healing the first chakra involves making an assessment of the belief systems that do not serve a person as an adult. Discovering experiences and tools that help transform and release old patterns is essential. Going back and healing the “inner child” and recreating a sense of welcoming, honoring, and bonding are necessary for transformation to take place. Developing a sense of trust in a person's ability to manifest what he or she needs to survive in the world is what creates a secure first chakra.

## **The Second Chakra**

### ***The Energy Center of Relationships and Control***

The second chakra is the human energy center that helps a person to discover and understand who he or she is in relation to other people. As a person connects with others, relationships serve as a mirror to see the particular issue that he or she needs to understand, resolve, heal, and/or accept in order to mature and grow towards higher states of awareness.

The energy of the second chakra acts as a magnetic force, drawing people or relationships that will enhance a person's ability to know him or herself. The whole idea of "magnetic attraction" is the second chakra energy drawing the relationships that will help a person learn more about who he or she is in relation to others.

The second chakra becomes more distinct around the age of seven when a child begins to expand its universe beyond its family or tribal relationships and seeks to broaden his/her world in relating to others. It is influenced by a person's need to feel a sense of self-sufficiency and security to survive in the world. Within this conceptual framework lies a person's need to master his or her ability to relate to others and to provide care for the self physically (i.e. through relationships, money, sex, power) in the world. Fears that are associated with the second chakra are "fears of loss of control, or being controlled by another."<sup>120</sup>

Located at the navel center of the body, the second chakra is the center that affects the areas of the body such as the large intestine, reproductive organs, hips, lower vertebrae, pelvis, and bladder. When energy is blocked or impeded in this area, it's the body's signal that something is out of balance in relationship to others. Often it reflects a person's fears about sex, money, and power struggles that focus around relationships with others. A person's ability to survive in the world is based on his or her ability to feel a sense of power based on financial security. Also the dynamic of power struggles between partners is an outgrowth of the second chakra as a person seeks to find his or her own sense of power. As a person learns to be more conscious about his or her motivations, changes can be made in a more positive direction.

## **The Third Chakra**

### ***The Energy Center of Personal Responsibility and Individuation***

The third chakra, located between the navel and the base of the sternum, deals with a person's sense of personal power and a feeling of personal responsibility. This chakra deals with the individualization process through which an individual progresses to discover one's true identity. The formation of a person's "ego" and personality is essential to developing a sense of self-esteem and self-care. Through her description of the third chakra, Dr. Schulz further clarifies its significance. "In our quest to establish ourselves as powerful in the outer world, we struggle with our feelings of adequacy or inadequacy, with competitiveness and aggression versus non-competitiveness and defensiveness. We struggle to develop a sense of responsibility, to set up boundaries, and to understand our limitations."<sup>121</sup>

When the third chakra has been developed in a healthy manner, a person is self-confident, values self-worth, and is capable of self-care. On the other hand, a weakened third chakra can lead to self-doubt and self-judgment. Since the emotional experiences that are stored in this chakra are related to a person's feelings about his or her power to exist in the world, the third chakra is responsible for formulating an inner strength that can deal with the outside world.

The organs of the body's gastrointestinal system are affected by an energetic imbalance in the third chakra. The organs include the pancreas, stomach, liver, gallbladder, small intestines, and upper colon.

True power comes from a person's ability to create harmony between the polarities or opposites in his or her life. A sense of personal power involves balancing the power between the mind and the body, the self and others, and also an internal sense of passion and compassion. The energy in this center is increased as a person combines the opposites: the male and female sides, areas of strength and vulnerability, and light and shadow sides.

### **The Fourth Center**

#### ***The Energy Center of Emotions and Mediation***

The fourth chakra, also known as the Heart Chakra, is the center of the chakra system. The heart acts as a bridge between the body and the spirit through its ability to mediate our emotional responses to our physical world events. In understanding the root of the word emotion, "emovere" is a variant of Latin and its definition means "to move out."<sup>122</sup> In controlling the heart chakra, Persian Sufis felt that one could control one's destiny.<sup>123</sup> Being able to harness the powerful energy forces of our emotions and express them is an ability that supports the connection between our exterior world and our interior world, our body to our spirit-through the gateway of the heart. Through the qualities of love, compassion, and forgiveness, a person can rectify the past imbalances of hurt and rejection, and transcend to the higher levels of the chakras, and connect with the spirit for a greater sense of wholeness.

Past experiences become stored in the body as energy imprints much like a computer stores its files. When the energy in the heart chakra has been imprinted with past hurts, a person needs to develop an internal loving relationship to begin to change the

energetic imprint that is stored in the heart center. A person's desire to heal is very important for it acts as a powerful force to energize the heart center and shift the energy imprint in this center towards a positive direction. Changing old patterns can be a challenging endeavor, much like reprogramming a computer.

Focusing on self-love is the instinct or desire to promote a person's own sense of well being and happiness. In self-love a person needs to develop appreciation for things in one's life and to forgive the self and others for past mistakes, foibles, and betrayals. Being able to overcome past rejections through forgiving others helps to facilitate the balancing of energy in this chakra. Because this chakra deals with the center of the body, the organs most affected are the heart and circulatory system, breasts, thymus gland, rib cage, lungs, diaphragm, shoulders, arms, and hands. The qualities of forgiveness and compassion help a person move towards transformation and enlightenment.

## **The Fifth Center**

### ***The Energy Center of Willpower and Communication***

According to the chakra energy system, the fifth chakra is located in the throat area and is the center of will, choice, and personal communication of our thoughts and feelings. Holding back expression can block the energy flow in the throat area and lead to stagnate energy flow and possible illness. This can manifest itself physically in sore throats, thyroid dysfunction, TMJ (temporomandibular joint dysfunction), neck pain, tightness, and other throat/voice related imbalances.

Our fifth energy center is related to following our dreams and direction in life. Its spiritual lesson is associated with our ability to turn our personal will over to divine guidance. As part of our development it is essential that we develop a strong will to deal with our lives. At some point we need to release our impulse to control other people's behavior and open up to being guided by the inner voice of universal wisdom. This involves having faith in listening to our intuitive voice and following the divine guidance.

Another avenue that this center focuses on is our ability to follow our heart's work and determine ways to get on track with our life purpose. As we begin to clear the traffic of our mind through the use of meditation and other ways of resolving the past, a quiet place in our mind brings clarity and opportunities to manifest our heart's desires.

Viewing addiction as a behavior that is fueled by fear, we can understand how a person who feels "out of control" (second chakra issue) and has weaker will power (fifth chakra) can find himself or herself in an addictive cycle that can create a life of frustration, shame, and guilt.

To begin the process of transformation we must begin to heal the past relationships that are draining our energy and strengthen our ability to express ourselves freely and honestly in the world. Being conscious of our thoughts by observing or expressing our ideas and emotions helps to keep the energy flowing through the energy system of our body. Communicating what's in our heart without holding back for fear of loss or disapproval helps to free up the energy blockage and strengthen this energy center. Opening up this center promotes the movement of energy from within and helps to rebalance the energy of the fifth chakra through communicating an individual's innermost

feelings and desires. Following our inner guidance and being able to express our desires and needs, allows a person to manifest their dreams and fulfill his or her guidance.

## **The Sixth Center**

### ***The Energy Center of Intuition and Wisdom***

The sixth chakra houses our intellectual reasoning ability and our psychological attitudes and beliefs. Known as the “third eye” center, it represents a person’s ability to see beyond the personal implications of his or her experiences and develop an impersonal mind that “sees” through the “false beliefs” to seek guidance through connection with universal “truth.” Without developing the capabilities of the “third eye,” a person lives a life filled with illusion and fears. Fear of the shadow side of one’s own unconscious mind, creates a stagnation of energy and an inability to think for oneself. When this center is imbalanced, a person lacks faith in his or her inner guidance because the mind is overrun with illusions, and fears, limiting thoughts, and beliefs. With its location in the center of the forehead, this center governs the brain and the neurological system of the body as well as the eyes, nose, ears, and the pituitary and pineal glands in the brain.

The path to developing an impersonal mind involves overcoming “conditioned” beliefs and attitudes that were acquired earlier in life. Developing an open mind involves an awareness of the limitations of our upbringing and creating a new set of values and mental constructs that create an opportunity for personal growth and connection with a higher level of consciousness and intuitive guidance. This chakra allows us to transcend the limitations of our past and expand our imagination and thinking, opening to the

richness of symbolic sight. Opening up spiritually to a higher source of guidance and turning over our inner fears can provide the basis for transforming years of suffering and pain into a life of joy and sense of oneness. It involves developing a faith greater than oneself to follow for direction in one's life.

## **The Seventh Chakra**

### ***The Energy Center of Transcendence and Purpose***

The seventh chakra center is located at or just above the “crown” of the head and represents our connection with our purpose in life. It represents the center of transcendence, prayer, and meditation, connecting a person with his or her relationship with the Divine force. This center contains our devotional connection and our ability to “live in the present moment” and be free from all of our past associations and limitations. Having faith in something greater than oneself is an important quality of this center that allows hope to transcend fears and illusion. The energy of this center creates a sense of oneness and connection with all living beings. As a person develops this center, being connected to the Divine means moving beyond duality to oneness with all life. This center resonates with serenity, peace, unconditional love, and acceptance that we are truly at one with the world around us.

## **Integration of the Chakras**

Each of the seven chakras represents an approach to understanding the stages that each of us progresses through life. Every chakra has its own significance and role that it

plays in our expansion and ultimate liberation from our limitations and confinements.

The process of integration involves the continued refinement of each stage in our life. The integration of the chakras serves as a vehicle to help facilitate this lifelong process of “letting go” and releasing “unfinished business.” Nothing new is born without the passing away of that which preceded it, and this requires a letting go of the old as well as the embrace of the new. It represents our ability to accept and forgive others and ourselves and resolve our conflicts through insights and awareness that arise from our ability to lead a conscious life. Being conscious allows each of us the ability to “see” and perceive the significance of our life events and view our life with “symbolic sight” to sift through our experiences and weed out the insignificant parts, thus uncovering the messages of Divine guidance and inspiration.

“Symbolic sight is a way of seeing and understanding yourself, other people, and life events in terms of universal archetypal patterns. Developing symbolic sight will enhance your intuitive ability because it will teach you a healthy objectivity that brings out the symbolic meaning of events, people, and challenges, most especially perhaps the painful challenge of illness. Symbolic sight lets you see into your spirit and your limitless potential for healing and wholeness.”<sup>124</sup>

Interventions such as guided imagery and music provide a therapeutic tool for a person to release “unfinished business” and to open up to the Divine connection and alignment with his or her sacred purpose. They can help to accelerate the release of outmoded aspects of one’s life—from unhealthy relationships and work situations to imbalances in the energy field around and within the body. Through visualization, imagery, and music a person can align with his/her sacred purpose and gain spiritual

fulfillment. These interventions can provide an opportunity for healing that can assist a person in releasing the negative thoughts, attitudes, beliefs, and behaviors that are still fostering the imbalance or illness and set a person on the road to physical and spiritual wholeness.

The next chapter focuses on the design and methodology used in this study. It explains the procedures implemented and details the psychometric measurements used to collect data throughout the course of the study.

## CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY

### SUBJECT REQUIREMENTS

The criteria for participation in the study involved the following eligibility requirements for subjects:

*Eligibility Criteria:* Subjects were included in the study based on stringent guidelines that were reviewed with the subjects at the initial meeting. These guidelines were developed to help assure compliance with the study parameters over the course of the four-week study.

Subjects agreed to:

- ? Self-present anxiety symptoms and willingness to participate in this research study on holistic, drug-free approaches to dealing with anxiety.
- ? Attend an initial session for explanation of the study and pre-assessment.
- ? Meet the age requirement (18-70 years old).
- ? Commit to fully listening to the home-based audiotape regimen for three times a week over a three-week period for a total of nine times. (Note that subjects were instructed not to listen to audiotape during the fourth week of the study and to assess their anxiety at the end of that week.)
- ? Provide an audiocassette player for their use during the duration of the study.  
(The study did *not* provide subjects with an audiocassette player.)

- ? Complete the general demographic questionnaire, the self-report State-Trait Anxiety Inventory, and the Personal Stress Assessment for the pre-and post-measurements.
- ? Agree to submit by mail their journal entries and the State-Trait Anxiety Inventory and other assessments as required by the study on a weekly basis.

*Ineligibility Criteria:*

Subjects were excluded from the study if:

- ? They either started or ceased psychotherapy, pharmacotherapy, or herbal supplements for anxiety during the course of the study.
- ? They could not provide an audiotape player to use for this study.
- ? They did not submit their weekly self-report assessments and journal entries.

## **RECRUITMENT PROCEDURES**

Participants were recruited through several sources. Subjects were recruited through advertisements in local health and retail store newspapers. Also flyers and posters describing the study were distributed and displayed at the offices of physicians and other health care providers, the YWCA, health food outlets, retail stores, and community meeting places. Press releases were sent to the city paper and also displayed on a web page for the holistic health center where the author has her private practice. In addition to the newspaper ads and the referrals from physicians and other health care providers, subjects who already participated in the study told their friends, so word of

mouth was also another form of recruitment for subjects. Each subject who met the study eligibility criteria was offered participation in the study. Of the 65 subjects who were recruited for the study, 35 were assigned to the GIM intervention group and 30 were assigned to the music intervention group. Sixteen subjects did not complete the study either due to incomplete data, moving out of the area, illness, hospitalization, or other life-altering events such as family problems and college graduation. Two subjects in the study dropped out due to the adverse reactions that were stimulated from the imagery of the fire. As a result, there were 31 subjects in the GIM group and 18 subjects in the music group who completed the study.

## **RESEARCH DESIGN**

The design of this study is a pre-test, post-test study using participants suffering from anxiety. The subjects in the study used one of the following types of interventions:

? Guided Imagery/Music (GIM) intervention group: a fifteen-minute guided imagery audiotape with musical background (Pachelbel's Canon in D Minor), titled *Ring of Fire* developed by C. Norman Shealy, M.D., Ph.D.

? Music intervention group: a fifteen-minute musical audiotape (Pachelbel's Canon in D Minor) without the guided imagery.

## **PROCEDURE**

Subjects were required to attend an initial meeting. At the initial meeting subjects met in groups and were informed that they would receive a guided imagery/music (GIM)

audiotape or music audiotape to test the effectiveness of that intervention on anxiety. During this session the eligibility and ineligibility criteria were reviewed with the subjects and an informed consent form (Appendix A) was obtained from those who were eligible to participate in the study. A duplicate consent form was provided for their own use and reference. The subjects were presented with a packet of information that contained the consent forms, written instructions on the audiotape regimen (Appendix C), the journal questions, the audiotape, and the self-report assessment measures used for both the initial meeting and the weekly pre- and post-tests for the home-program use. Also contained in the packet were four weekly segments that included instructions for each week and the self-assessment tools that the subjects were required to complete throughout the course of the study.

At the initial meeting, the audiotape regimen was explained to the subjects. The audiotape regimen required subjects to listen to their audiotape three times a week, using an every other day listening cycle. The subjects chose one of three weekly listening cycles: (Monday, Wednesday, Friday; Tuesday, Thursday, Saturday; or Wednesday, Friday, Sunday). The subjects were asked to measure their anxiety levels using the State-Trait Anxiety Inventory (STAI), before their initial weekly listening session (i.e. Monday) and after their last listening session (i.e. Friday), for each of the three weeks of the listening portion of the protocol. There were a total of eight STAI assessments completed by each subject over the course of the study: one at the initial meeting, six from the beginning and end of each of the three weekly sessions, and one at the end of the fourth week (See Figure 1). The subjects were also asked to complete the journal

statement: “Describe your experience (can include: physical, mental, emotional, and spiritual aspects),” (Appendix D) after each listening session for a total of nine journal entries over the course of the study. In addition, subjects also completed the Personal Stress Assessment (PSA) to assess their stress levels. Subjects were instructed to return the self-report assessment forms completed for the week in a stamped-addressed envelope, along with the study journal entries mentioned earlier.

Subjects received the relaxation audiotape at no cost and were *not* paid for their participation. In order to encourage subject compliance to adhering to the home-based audiotape program and fulfilling the self-assessment requirements, clients were asked to mail in their self-assessment forms at the completion of each weekly listening session. It took subjects approximately sixty minutes to complete the assessment measures and other personal history forms, and receive instruction on the home-based audiotape program.

During the course of the study participants were mailed reminder cards or called on the telephone to encourage them to mail in their weekly assessment forms and to also answer any questions that they may have had. The context of these calls related to clarification of the study protocol and no therapy was provided. Telephone calls lasted no longer than 5 minutes.

**Figure 1: Study Design**

**Recruitment** --? **Consent** --? **Initial Meeting** Pre-Assessments -Demographics -STAI -PSA (Holmes-Rahe) --? **Intervention Group** 1. GIM 2. Music --?  
**Weekly Measures Beginning (B) of Week End (E) of Week** -1st week - STAI (B/E) - 2nd week -STAI (B/E) -3rd week -STAI (B/E) -3rd week-PSA (Holmes-Rahe) (E) -4th week-STAI (E)

All of the self-assessment forms and their usage are explained in the following section on Measurement Tools.

## MEASUREMENT TOOLS

Subjects were asked to complete the following self-assessment forms to determine their anxiety level, stress level, and gather other relevant personal history. The self-assessment measures used were demographics questionnaires, the State-Trait Anxiety Inventory, and the Personal Stress Assessment.

- ? *The Anxiety Research Study - Form A* (Appendix B) was used at the initial meeting to gather demographic data such as name, address, telephone number, relationship status, age, gender, education level, ethnic group, medication, and psychotherapy status. *Anxiety Research Study - Form B* (Appendix B) was used as a post-test questionnaire to determine medication or psychotherapy changes and occupation.
- ? *State-Trait Anxiety Inventory (STAI) Forms Y-1 and Y-2*, developed by Charles D. Spielberger, Ph.D., was used as a pre-and post-test measure to determine anxiety levels at the initial meeting, at the beginning and end of each week for three weeks, and at the end of the fourth week. It is a forty-item, self-reporting inventory that has been scientifically proven to have good reliability and validity. There are two measurement sections that comprise this inventory: state-anxiety (Y-1); and trait-anxiety (Y-2). Each section has twenty items evaluating its specific anxiety characteristics, and its score is based on a sum of responses, ranging from a minimum score of 20 to a maximum score of 80 for each of the two sections of the inventory.

Characteristics of state-anxiety (A-state) deal with the assessment of the current state of a person's consciously perceived feelings of apprehension and

tension along with stimulation of the autonomic nervous system. State-anxiety determines how a person feels currently. Statements (i.e. feeling nervous, calm, tense) are used to measure state-anxiety and help to assess an individual's situational response to a stressful event. Subjects were instructed to complete the state-anxiety form based on their feelings in the "present moment."

Whereas, trait-anxiety is the description of the anxiety that deals with a personality trait that is associated with individuals who are prone to experience anxiety (state-anxiety) in response to stressors in their life. Statements that focus on personality trait qualities (i.e. feeling steady, confident, insecure) are used to detect trait-anxiety. Trait-anxiety assesses how a person generally feels and whether they have personality traits that predispose that individual to experience state-anxiety in response to a stressful situation. Subjects were advised to rate their trait-anxiety based on how they "generally" feel.

? *Personal Stress Assessment*, developed by C. Norman Shealy, M.D., Ph.D., includes the Holmes/Rahe Social Readjustment Rating (HRSRR) for quantifying life events experienced within the past twelve months and the total life stressors that include dietary choices (sugar, caffeine, and salt), environmental (exposure to soil and air pollution, and water quality), chemical (drug usage, nicotine, and alcohol), physical (overweight, level of physical activity, and work stress), and emotional factors (sleep, relaxation, work frustrations, marital status, and general mood). Because each life stressor has a wide range of points, based on personal

consumption, activity levels, and exposure to pollutants, the minimum and maximum scores can vary.

The HRSRR scale, contained within the PSA, includes forty-two different life events that need to be rated, with each stressor (death of a spouse, divorce, marital separation, or mortgage over \$20K) weighted from 11 points as the lowest to 100 points as the highest stressor. Scores on this scale can range from 11 to 1440 points, depending on the life events that subjects have experienced during the past twelve months. The purpose of this measure was to determine whether a life-altering event that occurred during the course of the study would affect the outcome of the study results.

## **MATERIALS**

- ? *Ring of Fire* audiotape with guided imagery with music (Pachelbel's Canon in D Minor) developed by C. Norman Shealy, M.D., Ph.D.
- ? *Pachelbel's Canon in D Minor* audiotape.
- ? *State-Trait Anxiety Inventory Forms Y-1 and Y-2* developed Charles D. Spielberger, Ph.D.
- ? *Personal Stress Assessment* developed by C. Norman Shealy, M.D., Ph.D.
- ? *Anxiety Research Study Forms A and B* for collection of demographic data.
- ? Journal questions.
- ? Audiocassette player (not provided to participants).

In summary, this chapter detailed the different psychometric measurements used to assess anxiety and to gather other relevant statistical data that will be analyzed in the next chapter. The next chapter is dedicated to the statistical analyses performed on the data collected for this study and incorporates tables and figures that further explain the result findings.

## **CHAPTER 4: RESULTS**

### **STATISTICAL ANALYSES**

Paired t-tests were used to assess changes within the groups over the intervention period and within each of the three weeks. In addition, univariate analysis of covariance tests, controlling for the initial score were used to detect differences between intervention groups. Pamela Snyder of Kittanning, PA, helped in the analysis of the data, using the computer software program, Statistical Package for Social Sciences (SPSS), version 10.0.

### **RESULTS**

Independent t-tests and chi square tests were performed to determine if there were any intervention group differences across demographic variables. Intervention was not associated with any of the demographic variables. Results revealed that there were no statistically significant differences in demographics between the GIM group and the music group. However, t-tests showed a significant difference for pre-test trait-anxiety for gender ( $t = 2.46, p < .05$ ). Men scored higher on trait-anxiety, (mean = 50.0) than women (mean = 44.45). Also a significance difference ( $t = 3.33, p < .01$ ) was found in the pre-state-anxiety rating between single subjects versus subjects who were in partnership or marriage.

### **SUBJECT DEMOGRAPHICS**

In Table 1, the details of participant demographics are shown. Sixty-five subjects in total were recruited for the two groups: GIM (n = 35) and music (n = 30). Of the sixty-five who started the study, 49 successfully completed the four-week study. Several people did not complete all the data for weeks two and three as indicated in Tables 5, 6 and 7. This resulted in thirty-one subjects in the GIM group and 18 in the music only group.

**Table 1: Demographics of Sample.**

					<b>No.</b>	<b>(%)</b>			
<b>Total number of subjects</b>					49	(100)			
<b>Sex</b>	(female)			(male)	41	8	(84)	(16)	
<b>Age Range</b>	(Mean = 47 years)	20-49	50-67		25	24	(51)	(49)	
<b>Education</b>	Less than high school	High school diploma		Undergraduate degree	0	5	23	10	2
	degree	Other		Master's degree	0	0	(0)	(10)	(47)
				Doctoral	0	2	9	(4)	(18)
<b>Relationship</b>	Single	Married	Separated	Divorced	Widowed	Partnership	14	20	2
							9	1	3
									(27)
									(41)
<b>Ethnic</b>	Caucasian				49		(100)		
<b>Therapy Status</b>	Psychotherapy				26		(53)*		
	Anxiety Pharmacotherapy				8		(16)*		
	Antidepressant Pharmacotherapy				14		(27)*		
	Herbal Remedy for Anxiety				4		(8)*		
	Herbal Remedy for Depression				4		(8)*		

\* Overlap due to subjects using combinations of therapies.

There were no significant differences between the dropouts and those who completed the study on the demographic variables or on the pre-test measurements. The dropouts appear to be at random and there does not appear to be a trend or pattern associated with the individuals who withdrew from the study.

The mean age of all the subjects who completed the study was 47 years old and the range of age was between 20 - 67 years old. Eighty-four percent of the sample size was female (n = 41) and 16% were male (n = 8). Eighty percent of the males and 75% of the females completed all or part of the study. In terms of the educational level of the subjects, 90% had a college degree or higher level of education and 10% had only a high

school diploma or less. Of the forty-nine subjects, 47% were in partnerships (married or partnered) and 53% were single (single, divorced, widowed, separated). All (100%) of the subjects were Caucasian.

Sixteen percent ( $n = 8$ ) of the subjects were on prescriptive medications for anxiety and 27% ( $n = 14$ ) were on antidepressant medications. Seven people (14%) were on both anxiety and antidepressant medications. Regarding psychotherapy, 53% ( $n = 26$ ) of the subjects were in psychotherapy during the course of the study. In detailing the breakdown of these study subgroups, it is important to note that some subjects ( $n = 16$ ) were using a combination of psychotherapy, pharmacotherapy, and/or herbal remedies. Of the 26 people who were in psychotherapy, 7 were taking anti-anxiety prescriptions, 11 were taking antidepressant prescriptions, 1 was taking herbal remedies for anxiety, and 3 were taking herbal remedies for depression.

Of the 49 participants in the study, 23 of subjects were not in psychotherapy. In this group, only 1 was taking an anti-anxiety prescription, 3 were taking antidepressant prescriptions, 3 were taking herbal remedies for anxiety, and only 1 was taking a herbal remedy for depression.

There were a total of 38 subjects who were not taking any medications or herbal remedies for anxiety and 33 participants who were not taking any medications or herbal remedies for depression.

Of the subjects in the study, 17 were not in psychotherapy or on any drugs/herbals used to treat anxiety or depression. Of the subjects in the study 20 were not in psychotherapy or on prescription drugs.

Regarding the dropout population in the study, of the 16 subjects who dropped out of the study at some time prior to completion of the study, 1 subject was taking an antidepressant prescriptive drug, 2 were using herbal remedies for anxiety, 4 were on herbal remedies for depression, and 6 were in psychotherapy.

For subjects in the study who were using psycho-pharmaceutical drugs or herbal supplementation for anxiety or depression, no significance was found in the state- or trait-anxiety for the pre-test scores.

In summary, from these findings, it is interesting to note that those subjects who were in psychotherapy and taking prescription medications at the beginning of the study were still experiencing anxiety even though they were being treated for anxiety through one of these medically accepted treatments for anxiety/depression. This may indicate the need to explore alternative therapies such as guided imagery and music to assist in the treatment of anxiety.

### **Comparison Of STAI With National Norms**

In Table 2, comparing the pre-test means and standard deviations of the subjects in this research study to the national norms developed by Charles Spielberger for similar groups, significant findings showed that the subjects in this study exhibited higher scores on both the state- and trait-anxiety in comparison to Spielberger's normative "working adults." Comparisons showed that the males in this research study sample group exhibited higher pretest levels of anxiety than Spielberger's normal "working adults"

( $p < .10$ ) for state-anxiety ( $p < .01$ ) for trait-anxiety. Significant differences were also noted for study sample females exhibiting significantly higher state-anxiety ( $p < .01$ ) and higher trait-anxiety ( $p < .01$ ) than Spielberger's normative sample for "working adults."

**Table 2: Differences Between Study Sample And Spielberger's Normative Working Adults At Baseline Time Using Mean Scores (SD).**

State-Trait Anxiety Inventory Normative Sample) Mean (SD) music) Mean (SD)	Working Adults (Spielberger's Study Sample (Combined GIM &			
	Male n = 1387	Female n = 451	Male n = 8	Female n = 41
State-Anxiety	35.72 (10.40)	35.20 (10.61)	45.00 (11.55)*	43.05 (12.50)**
Trait-Anxiety	34.89 (9.19)	34.79 (9.22)	54.50 (5.10)**	47.90 (11.80)**

\* $p < .10$   
\*\* $p < .01$

In Table 3, a significant difference ( $p < .01$ ) was found in state-anxiety between Spielberger's neuropsychiatric patients suffering from anxiety reaction and the subjects in this research study sample group. The subjects in this research study sample group exhibited lower state-anxiety than Spielberger's neuropsychiatric group. Trait-anxiety levels were almost the same between the groups.

**Table 3: Differences Between Study Sample And Spielberger's Neuropsychiatric Patients At Baseline Time Using Mean Scores (SD).**

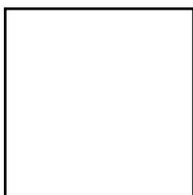
State-Trait Anxiety Inventory Patients (Anxiety Reaction) Mean (SD) n = 60 music) Mean (SD) n = 49	Spielberger's Neuropsychiatric Study Sample (Combined GIM &	
State-Anxiety	49.02 (11.62) 48.08 (10.65)	43.37 (12.26)**
Trait-Anxiety		48.98 (11.22)

\*\* $p < .01$

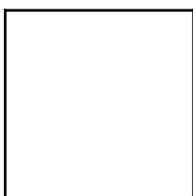
### **Analyses Within Intervention Groups**

Figure 2 and Figure 3 illustrate a steady downward linear trend in both state- and trait-anxiety levels from the baseline measure at the beginning of the week one to the end of week three in both intervention groups.

**Figure 2: State-Anxiety Pre-Post.**



**Figure 3: Trait-Anxiety Pre-Post.**



The beginning of week one was used as the baseline pre-test measure instead of the initial meeting pre-test score because of the variability of subject starting times from the initial meeting to the start of the intervention. The baseline chosen was a more consistent timeframe than the score taken at the initial meeting. The same reasoning holds true for using the third week when the intervention ended as a post-test score instead of the fourth week.

In Table 4, paired t-tests were used to compare the changes in mean scores within the intervention groups between baseline and the end of intervention. The mean change

score used in Tables 4 and 5 is defined as the beginning mean minus the end mean, thus a positive number represents a decrease in anxiety.

**Table 4: Changes In Subject Mean Scores (SD) Within Interventions On Psychometric Measurements Between The Baseline And When The Intervention Ended.**

Measure	GIM n = 31				Music n = 18	
Anxiety Inventory	State	Trait			Mean Change 4.63 (14.03)+	
					4.40 (6.92)**	
PSA	Diet	Emotional	Environmental	Physical	Chemical	Holmes-Rahe
						13.48 (30.87)

+p < .10  
 \*p < .05  
 \*\*p < .01

The findings in Table 4 support hypothesis 1, that subjects using the GIM intervention and music intervention would exhibit less state-anxiety over the course of the 3-week study. The change in the mean score for state-anxiety for the GIM intervention was 4.63 (t = 1.81, p < .10) and the change for the music intervention group was 5.31 (t = 2.0, p < .10). The changes in mean scores for the GIM intervention group and the music intervention group indicate a trend that future studies might confirm in terms of the reduction of state-anxiety over the course of the study.

Trait-anxiety levels were reduced at statistically significant levels for both the GIM intervention group and the music group. The change in the mean score for trait-anxiety for the GIM group was 4.40 (t = 3.48, p < .01) and the change for the music group was 5.50 (t = 3.05, p < .01).

The findings in Table 4 show significant levels of change in PSA for both the GIM intervention group and the music intervention group. Mean changes were 13.48

( $t = 2.43, p < .05$ ) for the GIM group and 16.43 ( $t = 2.9, p < .05$ ) for the music group. Changes noted in the PSA subscales showed a positive change between the baseline and when the intervention ended for the emotional stress subscale for the GIM group, 5.94 ( $t = 1.93, p < .10$ ). Both interventions groups showed a positive change in the scores for the physical stress subscale. Both these changes in the emotional and physical subscales indicate a trend that may be confirmed by future studies. Mean change for the GIM group was 4.35, ( $t = 1.71, p < .10$ ) and the mean change for the music group was 6.31 ( $t = 2.08, p < .10$ ). T-tests on the Holmes-Rahe scale did not show a readjustment factor between the pre- and post-tests.

**Table 5: Changes In Subjects' Mean Scores (SD) On State-Trait Anxiety Inventory Within Interventions By Week.**

Measures by Week	GIM Mean Change	Music Mean Change
Week 1 State Trait	n = 31 6.90 (11.14)** 2.52 (6.48)*	n = 18 0.58 (10.57) 1.33 (5.12)
Week 2 State Trait	n = 30 6.63 (10.14)** 2.10 (3.30)**	n = 17 4.25 (8.89)+ 2.47 (4.46)*
Week 3 State Trait	n = 31 1.03 (15.65) 1.72 (4.67)+	n = 18 0.72 (13.11) 0.56 (4.95)

+  $p < .10$   
 \* $p < .05$   
 \*\* $p < .01$

In Table 5, paired t-tests were used to compare the scores within the interventions within week one, two, and three. This table illustrates the changes in the mean score at the beginning of the week and at the end of the week for the three-week study period. Subjects in the GIM intervention group showed a significant difference on the state-anxiety scores in weeks one and two. The mean changes were 6.90 ( $t = 3.45, p < .01$ ) for week one, 6.63 ( $t = 3.58, p < .01$ ) for week two, and 1.03 ( $t = 0.36, p = .72$ ) for the third week.

T-tests also showed statistically significant differences in trait-anxiety for the GIM intervention group in all three weeks showing a steady decline in the trait-anxiety scores. The change in the mean score for week one is 2.52 ( $t = 2.16, p < .05$ ) for week two, 2.10 ( $t = 3.48, p < .05$ ), and for week three, 1.72 ( $t = 2.01, p < .10$ ). The difference suggests that the GIM intervention reduced their trait-anxiety.

For the music group (Table 5), t-tests showed a reduction in state-anxiety for week two, 4.25 ( $t = 1.97, p < .10$ ). In terms of trait-anxiety a significant change in week two was also found, 2.47 ( $t = 2.28, p < .05$ ). The difference suggests that the music intervention reduced subject state- and trait-anxiety only during the second week of the study.

### Between Intervention Group Analyses

In Table 6, analyses of co-variance were used to compare the differences between the GIM intervention group and the music intervention group.

**Table 6: Effects Of GIM And Music Interventions On Post Measurements (Adjusted Means And SD).**

Measure		GIM (SE) n = 30	Music (SE) n = 18	Significance	
Anxiety Inventory	State		40.68 (2.02)	39.92 (2.61) 43.0	
	Trait		43.88 (1.25)	n = 31	
PSA	Diet	Environmental	Physical	Chemical	Holmes-Rahe
	Emotional				79.26 (4.57) 11.41

Hypothesis 2, subjects receiving the GIM intervention would demonstrate lower levels of anxiety than subjects receiving the music intervention, was not supported. No significant differences were found between the groups, suggesting that neither of the

intervention groups reduced state- anxiety or trait-anxiety more than the other group. No significant differences were found between intervention groups as measured by the PSA and its subscales.

In Table 7, analyses of co-variance were used to determine if any differences existed between the intervention groups within the weeks. The only significant finding was in the first week where the adjusted mean score for state-anxiety for the music intervention group was 44.7 and GIM was 38.49 (F 1, 48, p < .05). No other levels of significance were found between groups within the three weeks. These findings suggest that the only significant change between intervention groups occurred in state-anxiety during the first week and showed that the GIM intervention group experienced less state-anxiety than the music intervention group at the end of week one.

**Table 7: Differences Between Intervention Groups Within Weeks.**

Measures by Week	GIM (SE)	Music (SE)
Week 1 State Trait	n = 31 38.49 (1.80) 45.79 (1.02)	n = 18 44.71 (2.36)* 47.25 (1.34)
Week 2 State Trait	n = 30 37.88 (1.49) 44.26 (.683)	n = 17 40.74 (1.98) 44.01 (0.91)
Week 3 State Trait	n = 30 40.56 (2.18) 43.16 (0.87)	n = 18 40.16 (2.82) 44.29 (1.13)

\*p< .05

In summary, the statistically significant findings in this study on the effects of guided imagery and music on anxiety indicate that both interventions have shown a positive trend in the reduction of state-anxiety and significant changes in trait-anxiety over the course of the study. The next chapter will discuss in more detail the findings in this study and also delineate implications for future research.

## CHAPTER 5: DISCUSSION

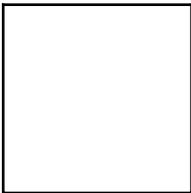
The results of this study indicate that both the state- and trait-anxiety levels were reduced for the GIM intervention group and the music intervention group as illustrated in Tables 4 and 5. Both groups demonstrated a downward decline in both state-and trait-anxiety over the course of the study. These findings suggest a decrease in anxiety from the beginning to the end of the study for both groups. The slight elevation in state-anxiety levels for both groups from the initial STAI test obtained at the interview session to the beginning of the first week may be due to the subjects' anticipation of the intervention and beginning their involvement in the study.

Earlier studies indicated that using GIM interventions<sup>1, 2</sup> and music interventions<sup>3,4,5,6</sup> have demonstrated significant findings that support the effectiveness of these interventions as therapeutic tools for the reduction of state-anxiety symptoms for a variety of medical conditions and during invasive medical diagnostic procedures. The results of this study support the effectiveness of both GIM and music interventions for reducing not only state-anxiety, but trait-anxiety as well.

In support of hypothesis 1, that the GIM and music groups would both reduce anxiety, the findings of this study showed a reduction in state-anxiety for both groups. In addition to the decline in anxiety for both groups from beginning to end, state-anxiety scores in the GIM intervention group (Figure 4) dropped dramatically at the end of the first week and second week compared to the music intervention group. The sharper

drops in state-anxiety in the GIM intervention group may be attributed to the hypnotic content of the guided imagery sequence and also a greater effect of being absorbed in the imagery.<sup>7</sup> The GIM intervention group also experienced an upward rise in state-anxiety between the end of the first week and the beginning of the second week and also between the end of the second week and the beginning of the third week. This rise in anxiety levels may be the result of the short-term hypnotic impact of the content of the GIM audiotape, resulting in an increase in anxiety levels after the intervention ended. Another explanation of the ‘zigzag’ effect of the state-anxiety levels in the GIM group may be explained by the momentary and transient nature of state-anxiety. For the music group, the drop in state-anxiety between and beginning of the second week and the end of the second week may be due to the subject developing a comfort level with the music, resulting in a reduction of state-anxiety.

**Figure 4: State-Anxiety Scores Over Time.**

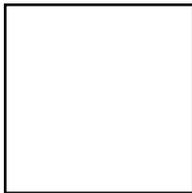


These marked changes in the GIM intervention group may be explained by the content of guided imagery audiotape that fostered the release of past psychological issues and supported the transformation of “unfinished business.” Explanations provided by Tellegen and Atkinson<sup>8</sup> may shed some light on these findings. According to their research a person’s “openness to the experience” can promote experiences of deep involvement in the imagery that can be either temporary or lasting. In their explanation of

a person's ability to be absorbed in the experience, they described that in the altered states of consciousness experienced through deep absorption in the imagery, a hypnotic-like effect is created where the attentional object created in the imagination is experienced as "real." This explanation may account for the fluctuations in state-anxiety in the GIM intervention group throughout the course of the study.

Earlier research findings, however, generally have supported drops in state-anxiety as opposed to trait-anxiety with GIM and music interventions. Spielberger cited that "measures of A-state were expected to decline following relaxation training and to fluctuate non-systematically over time, while measures of A-trait were expected to be impervious to relaxation training and to be stable over time."<sup>9</sup> The findings in this study have shown (Figure 5) a steady decrease in trait-anxiety over the course of the study.

**Figure 5: Trait Anxiety Scores Over Time.**



The reduction of trait-anxiety in both intervention groups may be explained by the subjects' deep absorption in the interventions over a three-week time period and the cumulative effect of the interventions over time. The absorption factor can create altered states of consciousness that can affect a person's experience. These findings may be further understood by the research conducted on the effects of absorption in the experience. Tellegen and Atkinson<sup>10</sup> describe a "state of total attention during which the available representational apparatus seems to be entirely dedicated to experiencing and

modeling the attentional object, be it a landscape, a human being, a sound, a remembered incident, or an aspect of one's self." This absorption in the guided imagery and music experience may account for the drops in trait-anxiety. Also the entrainment factor with the slower music beats per minute could have supported the attainment of deeper states of relaxation that facilitated reduced anxiety in both the GIM and music group. In addition, the subjects in both groups used their journaling entries as a tool for self-reflection, this aspect of the study may have supported a change in behaviors that reduced trait-anxiety. This explanation seems to be supported by the research on GAD and trait-anxiety. This research suggests that effective interventions for trait-anxiety for GAD may "involve cognitive restructuring, relaxation, and exposure, and that such effects can be maintained for six to twelve months."<sup>11</sup> Practices such as journal writing and self-reflection can act as tools for cognitive restructuring. The following are some poignant comments from the journal entries of the GIM intervention group:

- ? *"After 25 years of on/off therapy and a lot of spiritual work, it feels really good to burn out all the remnants of a difficult past-I ended in a quietness. Over the years I have shed many layers of old stuff-this is touching the core."*
- ? *"I felt a sort of resonance between the sound of the voice, the music, and vibrations in my chakras. I also saw a lot of colors and felt very much at peace."*
- ? *"What this meditation is doing is allowing me to not even care about whatever is left over, letting it go, I don't need to know what it is. I don't need to dwell on it, just surrender it to the fire-It is very liberating."*

- ? *“Listening to the tape made me feel infused with the colored light and feeling lighter and less burdened. My mind was clearer-emotions more even keel. Spiritually, I was comforted by the existence of this self-centered, energetic, integrating system that we have access to, and do find myself being more conscious during different times of the day to plug into its spiritual power.”*
- ? *“I felt cleansed after gathering ‘debris’ and concentrating on areas of ‘unfinished business’ and purifying fire.”*
- ? *“I do know that since I’ve started listening to this tape, my luck has changed. People seem to be nicer to me and I think I am somewhat calmer.”*
- ? *“I actually felt the ring of fire throughout my body and understood about tapping into it whenever necessary. I feel empowered today and nothing can pull me down into my depression.”*
- ? *“Very physically exhausted today, however once I did this I felt grounded and peaceful. I’m beginning to hear the part about communicating my will louder. I believe that is the area of my life I want to work on now. My spirituality is very strong lately-whenver I feel restless and anxious I call upon my higher power and my inner fire for strength and guidance-turn my will and life over to their care.”*

The following journal entries are from the music intervention group:

- ? *“My heart beats unusually fast on a regular basis, and after the tape I found my heart rate seemed lessened and not as intense as it was prior to and at the beginning of the listening.”*

- ? *“As I felt myself thinking of bothersome things, I tried to let them just flow by and focus on the beauties of the music. I always feel calmer after I am done listening-peaceful, balanced. During the listening I feel very spiritually inclined. I feel more motivated and secure about going out and tackling the day’s tasks.”*
- ? *“What I’m finding interesting is that sitting down and putting my thoughts and feelings in writing seems therapeutic. The music seems to allow relaxed thoughts to take place. The beauty of the music makes me more appreciative of God-given talent and hard work. Wouldn’t this be a better thing to do than watching the evening news and bringing myself down.”*
- ? *“I woke up anxious this morning, garbage and worries spinning through my head. I was tired but couldn’t get back to sleep. I got up and listened to the tape. As usual, my mind fought it a bit, but eventually quieted and I became calmer and felt less panicky and more in control. I noticed my thoughts slowing down to a more manageable level.”*
- ? *“I wasn’t really even trying, but my mind relaxed quickly and I saw myself rising from the ground through the trees and floating just above the treetops. I stayed there with that image in my mind until the tape was finished. I feel a sense of calm when the tape is over that usually stays with me for several hours.”*

Journal entries from both the GIM intervention group and the music intervention group provide a possible explanation of the phenomena of the absorption factor and how a person’s immersion into the experience can alter not only physical symptoms, but can

act as a therapeutic tool to facilitate an altered state of consciousness, and a heightened sense of control, security, and empowerment.

Research studies have shown the therapeutic qualities of journal writing. Dr. James Pennebaker has researched the effects of disclosure on health and well being over the past ten years. His findings indicate the therapeutic nature of self-disclosure, “The mere act of disclosure is a powerful therapeutic agent that may account for a substantial percentage of the variance in the healing process.” Pennebaker discovered a relationship between individuals who confront their personal issues through self-disclosure and improved physical health and enhanced feelings of well being.<sup>12</sup> This suggests that tools such as self-reflection, journal writing, and relaxation interventions may contribute to the reduction of trait-anxiety.

Hypothesis 2, the guided imagery intervention would have a greater effect on reducing anxiety than the music intervention, was not supported by this study. This may be due to the contextual nature of the guided imagery audiotape. Subjects may not have been familiar with references to their “electromagnetic field” and the body’s “energy centers” and this may have caused confusion and concentration difficulties. As more people become aware of the “electromagnetic” fields of the body and the principles of energy medicine and vibrational medicine, the use of these concepts in guided imagery audiotapes may further enhance their ability to more fully experience these concepts for resolving unfinished business. This is supported by research studies conducted on a person’s ability to be absorbed in the imagery. Being absorbed in the imagery has been found to be an important factor in the success of an imagery intervention.<sup>13</sup> Using an

imagery absorption test as a preliminary measure may help to further match subjects with imagery that would promote increased absorption in the imagery sequence. As noted in the research study by Tellegen and Atkinson, absorption in the imagery creates a total attentional focus that “is believed to result in a heightened sense of reality to the attentional object”<sup>14</sup> and includes “an empathically altered sense of self.”<sup>15</sup> This idea may further explain why the guided imagery intervention did not have a greater effect in anxiety reduction than the music intervention because of the unfamiliarity of the subject matter contained in the guided imagery sequence.

Although anxiety levels were reduced in both groups, there was no difference detected between the groups. This lack of a difference in anxiety reduction between the GIM and the music groups may be the result of the effectiveness of both interventions in reducing anxiety as discussed earlier. The inclusion of a null group could have possibly shown a significant difference in the decrease in anxiety levels between the interventions and the null group. A lack of difference between the groups may be due to the high dropout rate of the music group (40%). This may indicate that those who found the music beneficial continued to use the tape and complete the study, while those who did not find the audiotape helpful dropped out. As a result a fair comparison between the groups may not have occurred due to the high dropout rate in the music group.

In terms of the Personal Stress Assessment findings, a decline in the PSA totals for both the GIM intervention group and the music intervention group suggest a reduction in stress levels from the baseline to the end of the third week. The findings showed a lower stress score in emotional stress for the GIM group. Reduced state- and trait-

anxiety for the GIM group may have supported the lower level in the emotional stress score for the GIM group. Also there was a reduction in the physical stress scores for both intervention groups. There may have been a Hawthorne effect in the reduction of the stress scores. The act of completing the PSA with numerical values assigned to stressors may have provided sufficient motivation and information about what factors contribute to stress for some subjects to alter their lifestyle behaviors and lower their stress score.

Findings in both the STAI and PSA measurements suggest anxiety and stress level reductions due to the GIM and music interventions over the course of the study. Being able to modify the intensity of an anxiety response or stress level can give subjects a sense of personal control in reducing their anxiety and stress levels. As interventions of GIM and music continue to demonstrate positive stress-relieving results, they can provide subjects with a sense of empowerment and active participation in their care, and also provide them with a modicum of control over their anxiety and stress levels. Taking time to listen to guided imagery or music audiotapes can provide subjects with an opportunity for self-reflection. Through self-reflection a person can become aware of how their reactions and style of living can either create a sense of relaxation or generate higher levels of stress and anxiety. Interventions such as guided imagery and music can be used as therapeutic tools to assist in the reduction of anxiety.

## **LIMITATIONS**

Despite the encouraging results found in this study for anxiety reduction, some limitations exist in the design of the study.

- ? By not including a null group or a “true” control group it becomes more difficult to segregate the effects of the interventions without the comparison to no intervention.
- ? A significant population of the study was drawn from a mainly holistic-oriented audience because advertising was focused in holistic publications and websites, as well as announcements that were displayed at holistic retail establishments or through the recommendations of holistic practitioners. These volunteers are more likely to be drawn to holistic therapies and be more motivated to use them as self-administered therapies than the general population to date.
- ? This study did not have a representative cross-section of subjects because 100% of the participants were Caucasian and 90% of the sample had a college degree or higher level of education, thus limiting the generalizability of the results to a larger population.

### **FUTURE RESEARCH**

The use of audiotapes of GIM and music as therapeutic interventions offers potential benefits to individuals in the reduction of symptoms such as anxiety, alleviation of stress, enhancement of well being, and the promotion of a sense of personal control. Based on research in this area, the most successful strategies engage a person’s beliefs,

values, preferences, and needs. To gain the optimal results from an intervention, a careful assessment must be made to match the imagery with the individual.

- ? Although self-administered treatments appear to be effective for anxiety disorders, it cannot be concluded that they are as effective as traditional treatments until self-administered treatments are directly compared with traditional treatments. Future research would be beneficial to compare self-administered treatments, such as guided imagery and music, with traditional psychotherapy and pharmacotherapy.
- ? Additional research on the efficacy among other self-administered treatments such as guided imagery, music, and journal writing exercises for GAD subjects could prove beneficial in discovering cost-effective tools for the treatment of anxiety.
- ? Future studies could include three groups: a control, test, and a no intervention group to further define the significance between the interventions and a null group.
- ? Another approach for a future study would be conducting a shorter study for two weeks and requiring subjects to listen to the tape every day instead of every other day.
- ? Using a longer audiotape time (20-60 minutes) may improve the benefits of these types of interventions.
- ? Anxiety-reducing modalities such as breath work, or positive thinking could be studied and compared to guided imagery and music interventions.

- ? Investigate astrological signs of participants and their response to different types of imagery and compare the differences between the Earth, Fire, Water, and Air zodiac signs.
- ? A longer study with more participants to determine the effects over a longer period of time than four weeks.
- ? Open up the study population to include more of a cross-section of the general population instead of holistically oriented volunteers.
- ? Inclusion of a Absorption of Imagery Index as a pre- and post-measurement would be helpful in determining the effectiveness of the guided imagery intervention based on the ability of the subject to become immersed in the imagery.
- ? Further research is needed to test the effectiveness of each intervention as a stand-alone intervention, with and without the self-reflection component, to determine its effect on the reduction of anxiety and especially trait-anxiety.

## **CONCLUSION**

As a result of the limited research currently available in this area, the following discussion has suggested some preliminary conclusions. The findings of this study indicate that GIM interventions and music interventions are both beneficial interventions to decrease both state- and trait-anxiety symptoms and reduce stress levels. By using interventions that promote deep absorption into the experience, music entrainment,

hypnotic-states of altered consciousness, and tools like journal writing that promote self-reflection, both state- and trait-anxiety may decrease.

It was interesting to note the high number of subjects in the study who were in psychotherapy and using pharmacotherapy and still experiencing anxiety. This finding points to the potential benefits that may be derived from using therapies such as guided imagery and music to assist in the treatment of anxiety. Further investigation is needed to explore this finding and understand the benefits of mind/body therapies that promote hypnotic states to address anxiety symptoms.

Although hypnotic-states, guided imagery, and music were studied in the past, a renewed interest has occurred over the past five years as holistic, alternative, complementary, and integrative therapies have emerged as treatment options. There is room, however, for improvement to further understand the effect of these interventions as separate variables and in combination with one another. This present study has provided an overview of the literature that has also supported GIM and music as noninvasive therapies that can assist people in managing their symptoms and providing a self-care modality for anxiety reduction. GIM and music can act as stand-alone therapies or as adjuncts to psychotherapy for addressing anxiety symptoms. Research directed to effectively define holistic, drug-free approaches to anxiety reduction is essential to providing choices to encourage personal responsibility for health and therapeutic tools that support anxiety reduction and personal transformation.

## NOTES

### CHAPTER 1: INTRODUCTION

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### CHAPTER 2: REVIEW OF THE LITERATURE

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## **CHAPTER 5: DISCUSSION**

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## RESEARCH INFORMATION AND PARTICIPANT CONSENT FORM

Subject's Initials \_\_\_\_\_ Case #: \_\_\_\_\_ Date Approved: \_\_\_\_\_

**Title: Effects of Guided Imagery and Music on Anxiety**

### Description

A research study is currently being conducted to study the effects of guided imagery/music or music on participants with anxiety symptoms by Michele Bertini, M.Ed., a doctoral student at Greenwich University, Norfolk, Australia and HoloS University, South Dakota under the supervision of C. Norman Shealy, M.D., Ph.D., Robert Nunley, Ph.D., Berney Williams, Ph.D. and Robert Matusiak, Ph.D.

Because you are suffering from anxiety, you are eligible to participate in this study. A group of approximately sixty male and female participants, ranging in age from 18 to 70 years of age, will participate in this study. If you agree to participate, you will need to attend an initial interview with the researcher that will last approximately one to two hours. This interview will serve to verify and determine your eligibility for this research study and include questions about your history, health, feelings, recent symptoms, use of drugs and alcohol, and current medications/supplements you may be taking. It will also include the administering of a brief assessment tool for anxiety, if you are eligible for the study.

If you meet the criteria for this study determined at the initial interview, you will be scheduled to begin the protocol. As part of the study it is required that you will listen to the entire audiotope you receive three (3) times per week for a three (3) week time period. Nine (9) audiotope listening sessions will be required of you during the course of this study. The audiotope listening sessions will require you to use an audiotope player (*not provided by this study*), answer some brief questions about your experience after each listening session, and rate the level of anxiety you are experiencing using an assessment measure for anxiety. You will be asked to pay attention to your thoughts, memories, emotions, and physical sensations that you experienced by listening to the audiotope.

The anxiety self-assessment tool that will be used to measure your anxiety levels is The State-Trait Anxiety Inventory (STAI-Forms Y-1 and Y-2). This measurement takes about 5-10 minutes to complete and asks about your level of distressful feelings and moods. It will be used by you during the course of the study to assess your level of anxiety at the start and conclusion of each week's listening session.

### Benefits and Risks

Guided imagery and music have been shown through scientific study to relieve anxiety, reduce stress, and promote relaxation and healing. Imagery has a wide range of applications and has been used in medicine to assist in the treatment of conditions such as a headache or a life-threatening disease such as cancer. It is a proven method for anxiety reduction, pain relief, for helping people tolerate medical procedures and treatments and also reducing their side effects, and for stimulating healing responses in the body during recovery. No health care coverage is provided by this study. **Do not operate machinery or drive a motor vehicle while listening to these tapes. By participation in this study, you may discover techniques for reducing anxiety and also help future patients and therapists with the information that will be uncovered as a result of the research findings.**

### Costs and Payments

Neither you, nor your third party insurance provider will be billed for the research procedures provided in this study. Participation in the study is free to all participants.

**Confidentiality**

All records pertaining to your involvement in this study will be strictly confidential and your name will *not* be used in this study. Only the study results will be used as part of the dissertation report and publication of the study findings. In order to protect your identity a case number will be used instead of your name. Once the data has been collected and analyzed all the name and addressees will be destroyed.

**Right to Withdraw**

If you should change your mind, you can withdraw from the study at any time. Your adherence to the eligibility requirements (such as you begin or cease psychotherapy after the start of the study, you engage in active substance abuse, you begin or cease taking medications and herbal supplements, or you do not comply with the audiotape regimen) is critical to the validity of the study results. Please discuss any changes in medication/herbal supplementation, psychotherapy, and diagnosis with the research investigator as they occur.

**Voluntary Consent**

In the case of a problem contact the research investigator, Michele Bertini, M.Ed. at 412-365-2020. Your participation in this study is voluntary. You will not receive payment for participation in this study. All of the above has been explained to me and all of my questions have been answered by the research investigator, Michele Bertini. If I have further questions I can contact her, or her research advisor, Berney Williams listed below. If I have questions about my rights as a participant in this research, I can contact Dr. Berney Williams, Department Chair, Energy Medicine, Holos University, on email at [berneyw@ku.edu](mailto:berneyw@ku.edu).

Research Investigator:

Michele Bertini  
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412-365-2020

Berney Williams, Ph.D.  
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Robert Matusiak, Ph.D.  
[matusiak@ruralnet1.com](mailto:matusiak@ruralnet1.com)

By signing this form, I agree to participate in this research study.

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----- Subject Signature Date

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----- Witness Signature Date

I certify that the nature and purpose, the potential benefits, and possible risks associated with participation in this research study have been explained to the above individual and that any questions about this material have been answered.

Investigator’s Signature

Date

Anxiety Research Study -Form A

By Michele Bertini  
For purposes of Ph.D. Dissertation  
Greenwich University/Holos University

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Please complete the following categories based on your current status. Please choose only one answer in each category.

Name  
Address  
Day Phone Number

Date  
City/State/Zip  
Evening Phone Number

**1. Current Relationship Status:**

- ? Single
- ? Married
- ? Separated
- ? Divorced
- ? Widowed
- ? Partnership

**2. Age:**

- ? Less than 18
- ? 18-24
- ? 25-34
- ? 35-44
- ? 45-54
- ? 55-64
- ? 65-74
- ? 75-84
- ? 85 or older

**3. Gender:**

- ? Male
- ? Female

**4. Years of Education (highest level):**

- ? Less than high school
- ? High school diploma
- ? Undergraduate Degree
- ? Master's Degree
- ? Doctoral Degree
- ? Other (list) \_\_\_\_\_

**5. Ethnic Group (Main Category):**

- ? Afro-American
- ? Caucasian
- ? Asian
- ? Latin American
- ? Hispanic
- ? Native American
- ? Indian
- ? Other (list) \_\_\_\_\_

**6. Medication Presently Taken:**

- ? Anti-anxiety Prescription
- ? Anti-depression Prescription
- ? Herbal remedy for Anxiety
- ? Herbal remedy for Depression

**7. Psychotherapy Status:**

- ? I am presently in psychotherapy
- ? I am not in psychotherapy

**Anxiety Research Study-Form B**

Case # \_\_\_\_\_

By Michele Bertini

For purposes of Ph.D. Dissertation  
Greenwich University/Holos University

---

Please complete the following categories based on your current status. Please choose only one answer in each category.

Name  
Address  
Day Phone Number

Date  
City/State/Zip  
Evening Phone Number

**1. Since the onset and during the course of this study:**

(Please check what pertains to you).

- ? **I have not stopped**
  - ? psychotherapy
  - ? pharmacotherapy for anxiety

- ? herbal remedies for anxiety.
- ? **I have not started:**
  - ? psychotherapy
  - ? pharmacotherapy for anxiety
  - ? herbal remedies for anxiety.
- ? **I have not altered my dosage for:**
  - ? pharmacotherapy for anxiety
  - ? herbal remedies for anxiety.
- ? **None of the above applies to me.**

## 2. Occupation:

- ? Executive, Administrative, Managerial? Professional-Specialty (Doctor, Lawyer, Psychologist, etc.)
- ? Professional-Educational (Teachers)
- ? Technician
- ? Sales
- ? Machine Operators
- ? Transportation
- ? Clerical/Office Worker
- ? Construction
- ? Manufacturing
- ? Clergy
- ? Government agency
- ? Artist/Graphic/Designer/Photography
- ? Other (List)\_\_\_\_\_

## Instructions on Home

### Listening Audiotape Program

This study is designed to explore the effects of guided imagery and music on anxiety symptoms. In a study of this nature it is important that you follow the procedures outlined on these pages explicitly so that the scientific results can be replicated, if necessary, and followed by others in order to give people drug-free choices to deal with anxiety. **Your participation in this study is greatly appreciated and can serve to help others deal more effectively with anxiety in their lives.** Your involvement in this part of this research study requires you to spend twenty (20) minutes every other day for a period of three (3) weeks, assessing your anxiety levels before and after listening to the provided audiotape. The total amount of time to complete the study will be 4-6 hours of your time.

#### Getting Ready

1. **Set aside approximately 20-25 minutes** of uninterrupted time to take your anxiety assessment measure (5-10 minutes) and listen to the audiotape (approximate time 15 minutes), every other day over a period of three (3) weeks.
2. **Choose an every other day listening schedule to follow** (i.e. Monday, Wednesday & Friday, or Tuesday, Thursday & Saturday, or Wednesday, Friday & Sunday) and repeat throughout the study.
3. **Find a comfortable, quiet location** where you can listen to the audiotape uninterrupted for approximately 15-20 minutes. Give yourself permission to sit and rest for this period of time. Sit in an upright position to avoid falling asleep while listening to the audiotape.
4. **First Day** of your listening schedule each week (i.e. Monday) **before** you listen to the audiotape, complete the anxiety assessment measure to measure your anxiety levels. Be sure to write in the date on the form, then listen to the entire audiotape. Complete the journal question.

5. **Skip a day. Then on the Second Day** of your listening schedule each week (i.e. Wednesday), just listen to the entire audiotape and complete the journal question.

6. **Skip a day. Then on the Third Day** of your listening schedule (i.e. Friday), **first listen** to entire the audiotape, then complete the anxiety assessment measure1 to measure your anxiety levels. Be sure to write in the date on the form. Complete your journal question. **At the end of the week, mail** in the weekly assessments and journal questions you completed from that week in the stamped-envelopes provided.

7. **Repeat the above schedule for three (3) weeks.** Be sure to mail in all your assessments each week.

8. **At the end of the Third Week**, in addition to completing the anxiety assessment measure1 and the journal questions as before, please complete the additional assessment measures (Anxiety Research Study-Form B and the Personal Stress Assessment-Total Life Stress Test) included in the third week's assessments.

9. **You may receive reminder cards**, reminding you to mail in the weekly assessments and periodic telephone calls, addressing any questions you may have.

10. **Six months from the completion** of your program, you will receive a packet of assessment forms to complete to determine the effects of the audiotape program over a longer period of time.

11. **Each week's assessments forms** are carefully identified in your packet of information for clarity. If you have any questions, please do not hesitate to call 412-365-2020.

1 SELF-EVALUATION QUESTIONNAIRE -STAI (Forms Y-1 and Y-2),

## Instruction Schedule

**Remember to listen to the audiotape THREE (3) TIMES A WEEK, EVERY OTHER day.**

DAY 1	DAY 2	DAY 3
WEEK 1 Date: 3. Complete journal question.	Date: _____ 1. Complete anxiety assessment.1 2. Listen to audiotape. Date: _____ 1. Listen to audiotape. 2. Complete journal question.	Date: _____
WEEK 2 Date: 3. Complete journal question.	Date: _____ 1. Complete anxiety assessment.1 2. Listen to audiotape. Date: _____ 1. Listen to audiotape. 2. Complete journal question.	Date: _____
WEEK 3 Date: audiotape. 3. Complete journal question.	Date: _____ 1. Complete the anxiety assessment.1 2. Listen to Date: _____ 1. Listen to audiotape. 2. Complete journal question.	Date: _____
Week 4 Date: After the fourth week, if you feel the tape has been helpful, please feel free to use it. SIX MONTHS LATER Assessments forms will be mailed to you for your completion to determine the effects of the program over a six-month period.	DO NOT LISTEN TO AUDIOTAPE DO NOT LISTEN TO AUDIOTAPE	DO NOT LISTEN T

**1 SELF-EVALUATION-STAI (Forms Y-I and Y-2) =Anxiety Assessment**

**2 Anxiety Research Study - Form B.**

**3 Personal Stress Assessment -Total Life Stress Test**

**Remember** that if you need to start, stop or alter your psychotherapy or pharmacotherapy during the course of the study, please advise the research investigator. Your health and safety are most important.

**Journal Question:** Each day after you listen to the audiotape, please answer the following question.

Date: \_\_\_\_\_ Week # \_\_\_\_\_ Initials \_\_\_\_\_ Case # \_\_\_\_\_

**Day 1**-Describe your experience (can include: physical, mental, emotional, spiritual aspects). Use back of paper or additional paper if more space is needed.

Date: \_\_\_\_\_

**Day 2**-Describe your experience (can include: physical, mental, emotional, spiritual aspects ). Use back of paper or additional paper if more space is needed.

Date: \_\_\_\_\_

**Day 3**-Describe your experience (can include: physical, mental, emotional, spiritual aspects ). Use back of paper or additional paper if more space is needed.

Mail in at end of week.

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