

**THE EFFECTS OF CRYSTAL BOWL TONING ON THE CHAKRAS
AS MEASURED BY THE GAS DISCHARGE VISUALIZATION
TECHNIQUE` (GDV) AND SCORES ON THE PROFILE OF MOOD
STATES SCALE**

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for the degree of

DOCTOR OF THEOLOGY

Dedication

This dissertation is dedicated to my husband, Jimmy Cowan
We have been together for over twenty five years
You are the love of my life, my strength and support.

I also want to dedicate this to my three children
James Rankin, the third, Rachel and Alexandra Cowan.
You have brought the most joy to my life and
Have been a source of great learning and healing.
I am so proud of each one of you and have a great love for you all.

*A final mention to those who remain in my heart forever
But have passed into spirit
I feel your presence and gentle guidance
You have urged me on in this endeavor
In my dreams and meditations
To my father, Austen
My sister, Nancy
And my wonderful grandmother, Helen, my mentor
And best friend.*

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

Maryanne L. Cowan

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ABSTRACT

The objective of this study is to investigate the effects of Crystal Bowl toning on the chakras as measured by the Gas Discharge Visualization Device (GDV) and scores on the Profile of Mood States. A randomized experimental Pre-test Post-test design was used based on the Gas Discharge Visualization Technique and Profile of Mood States Inventory. The subjects included two groups: N=41 who received Crystal Bowl treatment as the independent variable and N=41 the control group who did not receive treatment. In the treatment group, the Crystal Bowl was set to the tone of C. Each subject received fifteen minutes of either Crystal Bowl toning or Control group sitting quietly. The dependent measures were Gas Discharge Visualization Technique and the Profile for Mood States Inventory. Subjects completed these measures in a one hour period in the office setting. The subjects in the treatment group completed the Profile of Mood States Inventory followed by the GDV reading, which included three baselines five minutes apart, Crystal Bowl toning for a fifteen- minute period and two post readings. Post one immediately following toning and post two GDV and post POM twenty minutes following post one. Subjects then received results of their GDV readings. The Control group received the same protocol. However, during the fifteen-minute Crystal Bowl toning they were asked to remain in the same room and sit quietly while the researcher remained present. Statistical significance was found in the fifth chakra reading, without filter. No significance was found in the results of the Profile of Mood States.

Key Words: Holistic healing, holistic healing modalities, sound healing, chakras, chakra balancing, crystal bowl toning, crystal bowl healing, Gas Discharge Visualization Device.

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CHAPTER 1: **INTRODUCTION**

Included in this chapter is the background of the problem in which I discuss the origins of sound and healing from ancient civilizations to present day theorists. I also examine the statement of the problem which addresses the difficulties science has experienced in measuring the human energy field and chakras. We introduce the Gas Discharge Visualization Device and its ability to now measure the human energy field and chakras in a research setting. The human body is examined as an information network, connected to cellular functioning and chakras. The purpose of this research study is to examine how the crystal bowl affects readings on the GDV and whether this sound can change subject's chakras.

Background of Problem

Sound and healing has been found in ancient civilizations of India, Tibet, China, Africa, Europe, South America, and the Aborigines of Australia. The American Indians and Shamans around the world use sound, tones, and chants to heal. It is well documented that these ancient practices are being utilized in holistic medicine today.

Randall McClellan holds the view that:

Music and sound healing contrasts with the academically established music therapy in that the later has been closely associated with behaviorist's psychology since its inception in the 1930's. By comparison, the study of the therapeutic application of music and sound evolved from within the disciplines of anthropology, ethnomusicology, philosophy and religion. Its origins are very ancient. Anyone familiar with recent discoveries in quantum physics can surmise that this is the logical extension of art/science that at its core is a physical and psychic energy force.¹

R. McClellan feels that “traditional music therapy has embraced many of its concepts; hospitals, hospices now use music for its therapeutic benefits. Current research promises the realization of the predictions of earlier visionaries that sound and music will emerge as a primary healing modality.”² Therefore, a study that uses the GDV to analyze the effect of sound on the human energy body, leads the way in this type of research.

The use of vibroacoustic therapy, sound healing and music therapy are yielding positive results in healing practices and as therapeutic tools. In his book, *Sounds of Healing*, Mitchel Gaynor, a Manhattan oncologist, discusses his use of crystal and Tibetan bowls along with allopathic medicine to treat cancer patients.³ Another example of ancient sound utilized presently is Jonathan Goldman who employs the harmonics of sound, vibratory resonance, vocalization, visualization and vowel sounds in his healing repertoire.⁴ John Beaulieu is another sound healer who uses tuning forks and mediation to produce a healing effect.⁵ These are just a few of the holistic practitioners utilizing ancient sound in healing. While these techniques are reported to be effective, an understanding of how sound affects the energy field and physical body remains unverifiable in scientific studies.

Specifically, studies have been conducted to examine the effects of music and healing on emotional and physical disorders ranging from depression, anxiety, post-operative healing, cancer, and general states of well-being. However, there is no evidence from these studies demonstrating how sound affects the energy field and chakras. This study examines how the crystal bowl, tuned to the note of C, affects readings on the Gas Discharge Visualization Device (GDV-see definitions) and Profile of Mood States (POM) questionnaire (see definitions). The study researches the effects of

this note on the chakra system to evaluate measurable change in GDV readings that can be quantified.

Statement of the Problem

To date, research has not been able to evaluate specifically how chakras react to external stimuli. There are many holistic practitioners utilizing sound and healing, as noted in the previous section, on the chakras and energy field, but we have not been able to evaluate or quantify the results. However, gallivanted skin response studies by H. Motoyama,⁶ which show interesting responses between chakras and reported symptoms by yogis, do not provide direct evidence of an intervention and a subsequent measurable response. The ability to ascertain how a client or subject felt following exposure to a note or sound for a specific time has been reported anecdotally thus far.

Science has not been able to measure the chakra system effectively however, now through the work by Dr. Konstantin Korotkov⁷ and the Gas Discharge Visualization Technique, this highly sensitive computer software program, has enabled the researcher to measure the chakras, energy field, and diagram system. The GDV technique, while based upon the Kirlian effect, offers state of the art advancements, such as fiber optics digitized TV matrix and image processing with computer software. The computer imaging is called GDV-grams and the class of pictures pertaining to the biological process is called BEO-grams.”⁸ A photograph is taken of each of the ten fingertips and the BEO-grams are analyzed by the software’s mathematical program and a resulting analysis is calculated based on the meridian points of Chinese Medicine.

When taking a GDV reading, the client puts each of his/her ten fingers, one after another, on the device's optical glass, while the high voltage pulsed electrical field applied to the ten fingertips creates a miniature lightning storm and the camera records each corona discharge as it appears. Following the computer analysis of the fingertip readings, the computer screen displays images of the chakra system, energy field and diagram system. The researcher and subject then receives an accurate image, on the computer screen, analyzing whether the chakra system is balanced and how the person's energy system behaves and functions at the time of the reading.

It is important to understand that the energy field or chakra system display, based on the corona pictures, provides a meaningful map of the energy system onto an outline of the body which is visually presented on the computer screen. For example, when looking at a chakra reading, what we are viewing is an inference about the entire energy system based on the samples derived from the fingertip readings. The readings can provide information about the general health of the subject and whether there are any possible disease states present.

According to Dr. Korotkov, in his book, *Human Energy Field: Study with GDV, Bioelectrography*, the GDV is a camera and software program that reads the subjects energy state on a variety of different levels including:

1. Analysis of the psychoemotional state and psychophysiological potential of an individual.
2. Assessment of the energy state of systems and organs according to both Eastern and Western medicine.
3. Analysis of the health quality and the level of anxiety.
4. Monitoring of patient's reaction to various interventions, such as: medical treatments, medications, exercise, etc.
5. Analysis of dynamics of energy states under the influence of specially designed test loads.
6. Effects of homeopathy, wave therapy, and low-intensity treatments.

7. Investigation of the influence of one or more people upon another.
8. Selection of optimal times of day for a specific individual to receive medications and treatments.⁹

The GDV is able to measure a vast amount of physical, emotional, interpersonal and scientific effects on the human energy field, chakras and diagram system. The GDV measures test loads, such as the effects of subtle influences on the body including flower essences, essential oils, herbal remedies and types of healing modalities on the human energy field. In the field of energy medicine and holistic healing, the GDV is thus capable of measuring the effects of the numerous environmental influences on the human energy field.

In a discussion by Dr. Korotkov in his first book, *Human Energy Field: Study with GDV Bioelectrography*, the GDV Chakra analysis “allows evaluating normal, low or increased activity of different chakras. It is very interesting to observe changes in the chakra’s energy in the process of energy treatments influencing specific chakras.”¹⁰ This gives us a strong indication of how the GDV yields important data when measuring the tone of a crystal bowl and the effect on the chakra system in this study.

In Korotkov’s recent book *Measuring Energy Fields: State of the Science* he discusses the capabilities of the newer GDV software stating that “it is now possible to quantitatively estimate the energetics of chakras and graphically display their level of activation, and indicate whether this level of activation is above or below the level found from large numbers of subjects.”¹¹ Again, we see that the GDV has been utilized in research to begin to understand the functioning of the chakras and provide the diagnostic capability to measure how environmental variables influence this sensitive system.

The chakra system analysis provides a reading of each of the seven chakras with zero being the balance and values deviating in a hypo (below) or hyper (above). The range in value is 6.0 or -6.0. This enables the researcher to evaluate how the chakras are functioning and responding to outside stimuli. In this study the effects of the crystal bowl on the chakra system is evaluated using the GDV. The researcher measures whether sound affects the chakras and which chakras are affected. For a more detailed discussion of the GDV consult the review of the literature in Chapter Two.

According to Carolyn Myss, “Your physical body is surrounded by an energy field that extends as far as your outstretched arms and the full length of your body. It is both an information center and a highly sensitive perceptual system.”¹² This system is in constant contact with everything around us and affects human functioning on an emotional and physical level. The human energy field holds in it the history of emotions, life experiences, and traumas of the individual and stores this as an information network. There is a constant interrelationship between the energy field and the physical body. According to James Oschman, “Energy and information stream through these circuits to every nook and cranny of the body. These flows can be influenced by subtle energies in the environment. Moreover, disease and disorder alter these flows in predictable ways.”¹³ James Oschman has created the term “living matrix”¹⁴ to describe the continual ebb and flow of subtle energies on the energy field, chakras, physical body and the cellular, biological system of the body. In his view, a “sensible design for a living system is one in which every cell receives information on the activities taking place in every other part of the body.”¹⁵

When examining the role of the energy field we must also understand how the chakras are an integral part of this system in order to begin to perform further research into the study of sound and healing. The chakras are the energy centers of the body and are constantly being affected by subtle energies in the environment and personal emotional states. Richard Gerber states that:

The chakras appear to be involved with the flow of higher energies via specific subtle energetic channels into the cellular structure of the physical body. At one level they seem to function as energy transformers stepping down the energy from one form and frequency to a lower energy level. This energy is, in turn translated into hormonal, physiologic, and ultimately cellular changes throughout the body.¹⁶

The chakras act as energy conductors via the energy field, environment, emotions, and physiology.

In examining the role of chakras on the physiology, Rosalyn Bruyere holds the opinion that “vibration, color and sound are all interrelated and all represent a means of determining or monitoring the frequency of energy in the auric field.”¹⁷ The chakras and auric field, therefore, appear to have a color, sound, note or tone associated with its vibrational frequency. It is apparent that the energy field, chakras and human physiology are connected in a continually flowing interrelationship.

The problem being examined in this study addresses how we begin to measure scientifically, the chakras and how these energy centers respond to the introduction of a C note or tone in a controlled laboratory environment. The exposure of participants to the sound of the crystal bowl for a period of fifteen minutes, while using the GDV, as a measuring tool, for potential changes in the chakras, is a way to begin evaluating how sound affects this system.

The Purpose of the Study

The purpose of this study is to measure the effects of sound and vibration on the chakra system. The scientific community, healers, therapists, and holistic practitioners need a way to accurately measure the effects of their healing on a client and the chakra system. There is evidence of the impact of the chakra behaviors on the human body, both physically and emotionally¹⁸. The chakras are a theoretical model of an ancient Hindu understanding of the energy field and energy centers. However, there needs to be an accurate way of measuring changes as a result of an intervention in this system. In order to make chakra healing a verifiable science, researchers must be able to show quantifiable changes in these systems. Authors and researchers such J. Oschman, R. Gerber, C. Pert, Wm. Tiller, H. Motoyama, R. Gerber, and others, point to a scientific understanding of this relationship. However, the instrumentation had not been available to measure accurately the energy field or chakras. We had not been able to quantify changes in chakras or produce the data needed to make an assessment of effects in relation to a healing technique. Until recently, the theoretical understanding of the chakra system has been on an esoteric level. Parishioners, healers, and clairvoyants sense, feel, and may see the chakra system, however, cannot verify or validate in a scientifically acceptable manner what they are doing or accomplishing in the treatment.

The use of the Gas Discharge Visualization Technique has been clinically proven in scientific studies as an effective tool in measuring the energy field, chakra system and diagram system of the subject.¹⁹ The use of this device in establishing quantifiable, statistically significant data on how the chakra system responds to sound is the goal of this study.

Research Questions

This study addresses the questions:

1. What are the effects of Crystal Bowl toning and vibration on the energy field and chakras? Is it truly a healing tool which effects measurable changes on the GDV and POM?
2. Can we effect changes in a chakra with a fifteen-minute intervention of the Crystal Bowl and the specific note of C?
3. How does sound and vibration effect changes in chakras and which specific chakra produce significant results.

Importance of the Study

This study is the first of its kind in attempting to bring an esoteric, theoretical model into the field of science and energy medicine. There have been many questions posed by this principle investigator concerning the reasons for this research. There are numerous clinicians and healers²⁰ utilizing crystal bowls, gongs, tuning forks, voice, and music as healing tools.²¹ However, there are no studies to date showing the effect of sound and vibration on the chakras. With the availability of the Gas Discharge Visualization Device this type of study is finally possible. Therefore, this is pioneering research because for the first time the effects of sound, on the energetic body can and has been measured. Definite correlations between sound and the behavior of the chakras are established in this study.

Scope of the Study

The scope of this study is to understand the potential of sound healing on the energy field, chakras, and organ system as measured by the Gas Discharge Visualization Technique and Profile of Mood States questionnaire. The measurement of chakras after being exposed to a fifteen-minute period of crystal bowl toning can provide data concerning the ability of sound to affect healing. In addition, it demonstrates whether sound affects levels in chakra readings. If changes occur in the chakras, energy field, or the diagram system after the crystal bowl toning, inferences and deductions can be made about how these bodies respond to sound vibrations and how the healing process begins.

A scientific validation with statistically significant data, suggesting that there are indeed changes that take place, enhance further comprehension of the subject. This research also sheds light on the question how long it might take a person to respond to sound, in this case to the crystal bowl note.

This study was conducted in a suburban town in Ridgewood, N.J. The design is a randomized sample of 82 subjects from the tri-state area including New York and Connecticut. The sample was large and diverse enough to make this applicable to other regions, states and countries. There was also a wide-age range of 18 to 79 included in the sample population.

The methodology used in this study is the Gas Discharge Visualization Technique and Profile of Mood States questionnaire. The GDV data was taken and stored on each subject on an I-Omega. Upon completion of the study the data was exported into numerical values and placed on an excel spread sheet for statistical analysis (see [Appendices B.1](#)). The Profile of Mood States is a questionnaire that measures the well-

being, emotional and physical state of the subject during the last week including the day of the study. Upon completion of the questionnaire, each question is given a numerical value based on the subject's response and a total sum score is received. It is based upon this score that a subject's mood state is evaluated. These two measures were statistically analyzed pre and post testing.

This study can be replicated with any adult population to assess changes in the energy field, chakras, or diagram system utilizing the GDV and POM.

Definition of Terms

For the purpose of this study the following terms and words are utilized and defined as follows:

1. The Gas Discharge Visualization Technique is referred to as the GDV. This is the name given to this device by its inventor Dr. Konstantin Korotkov, a Russian physicist.²²
2. The Profile of Mood States is called POM. This is the questionnaire utilized in the study to assess the subject's mood state.²³
3. Crystal Bowl: The Crystal Bowl is a crystalline bowl with a rubber ended mallet for playing the bowl. The bowls have a loud, deep tone and bowls are tuned to various notes which correspond to each chakra. In this study a C note bowl was used because it encompasses all the notes in the musical octave.
4. The Energy Field consists of the subtle energy bodies surrounding the physical body and is a very sensitive information system, communicating between environmental energies and the energy system of the person. It encompasses

physical and emotional issues and is connected to every cell in the body.²⁴ The energy field reading on the GDV is a color computerized display of what the subject's energy field looks like on the particular day of the reading. The subjects' energy field is in continual change. However, the reading will indicate areas of concern in relation to emotional and physical disturbance.

5. Chakras refer to the basic seven energy centers of the body residing along the spine, center of the body, forehead and crown of the head. These centers influence the health and healing of an individual. Residing in these etheric centers are emotional and physical issues and physiology of the person.²⁵ The chakra reading on the GDV is a computerized visual display of each of the seven chakras along a horizontal line showing the chakras hyper or hypo balance of the system.
6. The Diagram system is the computerized reading of the GDV displaying the subject's organ system based on fingertip readings and converted into values based on Chinese medicine meridian system. From this computerized display the researcher can determine whether the subject has any imbalances present in the physical body. This assists in early detection of possible medical problems.

This chapter has given the reader an understanding of this research study utilizing the crystal bowl, sound and whether it affects the measurements on the Gas Discharge Visualization Device and Profile of Mood States. This is the first study of its kind in measuring the chakras' response to sound and having data from the GDV with which to examine the results statistically. The literature

review focuses on the history of sound and healing as well as a scientific understanding of how kinetic waves and extremely low frequencies (ELF's) affect the physical body and cellular interactions.

Chapter 1 Endnotes

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- ²¹ Olav Skille, "The Music Bath – Theory and Description." *Symposium in Norway* (November 1972).
- ²² Korotkov, *Measuring Energy Fields: State of the Science*
- ²³ Douglas McNair and JW Heuchert, *Profile of Mood States: Technical Update* (Towanda: Multi-Health Systems, Inc., 2003).
- ²⁴ Myss, *Anatomy of the Spirit*.
- ²⁵ Daniel J. Benor, *Spiritual Healing: Scientific Validation of a Healing Revolution* (Southfield: Vision Publications, 2001).

CHAPTER 2: REVIEW OF LITERATURE

In the Review of the Literature , the reader is taken on a historical journey through the history of sound and healing beginning with Pythagoras in ancient Greece to contemporary theories of cellular functioning, piezoelectricity and how healing is occurring in the human body. Vibrational waves and how they relate to sound frequencies, the musical scale and the chakra system is discussed. A scientific understanding of energy medicine and James Oschman's theory of the "living matrix" is related to how cells operate within this matrix. A discussion of crystal bowls and how they are made is examined in providing an understanding of their properties and how a kinetic wave affects the chakras. The human body and energy field again focuses on James Oschman's theories of how the body reacts to acoustic waves and the effects of cellular functioning.

Within this chapter, ancient healing modalities using sound are explored from a cultural and spiritual background. The musical octave of C is discussed to help the reader understand how the notes function on the diatonic scale and in what manner they are affecting the chakras.

A perusal of the literature includes research studies conducted on the science of sound, healing, and vibration. The science of healing and the body's response is a discussion of how electromagnetic frequencies affect the body and cellular functioning. Vibrational healing and the living matrix further elaborate on the theories of piezoelectricity and the scientific indication that everything in our body is connected to the DNA.

A thorough examination of the chakras and leading theorists in the field would bring an understanding of their functioning related to the physical body, sound and healing. The GDV and its ability to measure the energy field and chakras are detailed along with a historical understanding of its origins. Included in this part are GDV readings from the subjects in the study to assist in understanding what this device is able to provide graphically on the computer screen.

History of Sound and Healing

Sound and music therapy has its beginnings in Pythagoras, the Greek philosopher who lived approximately from 580 to 500 B.C. Pythagoras saw music as being based on the laws of nature. He felt that the “human mind was capable of perceiving the (lawful) vibrations and tone proportions as musical notes and intervals; notes and intervals are reflections of a cosmic spiritual level, at times inaudible to the human ear.”¹ In addition, according to Pythagoras, “the planets vibrate to the same frequencies and proportions as audible music”² Hence the term “music of the spheres” was conceived. Pythagoras also postulated that the seven planets produced, by their orbit, a particular note according to the distance from the center of the earth. The planetary sounds were considered to be inaudible to the human ear, however, “governed and regulated all temporal cycles, such as the seasons, biological cycles and the rhythms of nature.”³ This appears to be the beginning of the concept of sound, music, vibration and the relation to a universally organized mind, body, and spirit connection. Pythagoras called his method of healing “musical medicine with certain melodies composed to cure the passions of the psyche, including despondency and mental anguish.”⁴ There is an interesting anecdotal story of Pythagoras curing a young man of alcoholism by prescribing a melody with certain rhythmic intervals. This illustrates that,

Pythagoras was practicing sound healing and viewing vibration and sound as connected to the rotation and vibration of the planets. Pythagoras's ancient theory has survived and has been utilized as the basis of music therapy, vibroacoustic healing as well as modern mathematics. His work is the cornerstone in geometry as well as music theory.

[Sound as Vibrational Frequency](#)

Jonathan Goldman defines “sound as vibrational energy which takes the form of waves. These waves are scientifically measured in units called hertz (Hz) which measures the cycles per second this energy creates.”⁵ This rate is objectively known as frequency or pitch. The human ear hears within a limited range of vibration between 16 and 25,000 Hz. Most people hear sound at 10,000 Hz and much depends on the age of the subject. Sound above 25,000 Hz is called ultrasonic and is generally inaudible to the ear. Extremely low sounds, at 16 Hz or lower, are called ELFs or extremely low frequencies. Although the human ear cannot perceive the sound, it is feeling the vibration. This is an important key in understanding how sound and music therapy work. The subject does not necessarily have to hear the sound to benefit from it. The subject is actually responding to the vibration or frequency at all levels. According to J. Goldman, “different frequencies which have specific measurements create the different notes that make up the musical scale we use today.”⁶ These notes C, D, E, F, G, A, B, C, all vibrate to a different frequency. The lower notes vibrate at a lower rate and the higher notes at a higher rate. In terms of the chakra system, there are seven chakras which correspond to the seven notes on the musical scale. Each chakra, as postulated by Jonathan Goldman, vibrates or is affected by a different sound: “One relationship that seems to be fairly consistent is that of the pitch of a sound and the chakra. It

seems that the lower chakras are influenced by the lower sounds and the upper chakras are influenced by the higher sounds.”⁷

We now examine the theory of entrainment which occurs not only in music and sound, but in heart beat, brain waves, sleep states, meditation, healing and shamanic practices.⁸ If we theorize that a stronger vibration has the ability to alter, change or become unified with a weaker vibration then we can begin to understand entrainment.

The process of entrainment is viewed by J. Goldman as “the ability of more powerful, rhythmic vibrations of one object to change the less powerful rhythmic vibrations of another object and cause them to synchronize their rhythms with the first object.”⁹ What is expected to occur is that the rhythmic vibration of the less powerful object will come into synchronization with the more powerful rhythmic vibration. This has implication for crystal bowl healing in that the tones of the bowl can synchronize and rebalance the vibration of a human subject.

[The Concept of Resonance](#)

On every level of life there is rhythm and entrainment, according to John Beaulieu, a music therapist. For example, as two separate cells are examined under a microscope, they can be seen pulsating to their own rhythm. Beaulieu believes that “pulse is the basis of the ultrasonic core and gives rise to the yin and yang energies of the snake of the caduceus,”¹⁰ which forms the chakras or energy centers. He defines the chakras as having a pulse and qualities “known as the elements of ether, air, fire, water and earth. They are universal and can be found in the human body – psyche, as well as in music, nature and speech.”¹¹ The five elements are the qualities and properties found in life and determine the rate and speed

of their motility. For example: Earth is seen as very slow movement; water is moderately slow; fire is moderately fast; air is very fast; and ether is silence-space. Beaulieu relates this to every occurrence in music and as the foundation of life.

Our mind and body is seen as a resonating sounding board for spirit as “resonance occurs when the vibration of one object reaches out and sets off vibrations in another object.”¹² In music therapy J. Beaulieu utilizes this concept in healing with tuning forks, each calibrated to a different note or tone for healing. It is very interesting to note how Beaulieu views healing with sound. He sees resonance as vibrating with the sacred sound within us. For example, the body harmonics ratio can be determined by dividing the smaller distance and relating the fraction to a musical interval, which is expressed as a formula for healing the body in this theory. J. Beaulieu describes “the geometric alignment of the physical body as a healing method used to bring the individual back to proportions of sacred sound.”¹³ He discusses his method of healing with tuning forks as a way to return the body to a “still point” or a “return to silence.” In his opinion, the tapping of the forks directly affects “the central driving mechanism of the cerebrospinal fluid which is known to osteopaths as the primary respiratory rate.”¹⁴ According to William Sutherland, founder of Cranial Osteopathy, “the cerebrospinal fluid is the highest known element in the human body...the great river of life.”¹⁵ When the fluid is balanced, it is theorized, the body can be restored to its natural state. It is believed that in this space the body becomes very relaxed, muscle tension leaves, and the body is able to realign.¹⁶ When the same effect is created with tones through the tuning fork or the crystal bowl, the body may be able to balance harmonically and organizes to the sound or vibration of the central nervous system. This is one the theoretical ideas proposed in the present research project.

The Helen Bonny Technique of Guided Imagery Music (GIM) was developed in the 1960s, which is steeped in the Transpersonal Psychology movement of Carl Roger, Abraham Maslow, and Carl Jung. Helen Bonny developed GIM as a way to heal emotions through accessing the collective unconscious¹⁷ and growth motivation, the self-actualization model of Abraham Maslow. The theories of growth and healing are based in the belief that psychological issues are not aberrant but an opportunity for growth.¹⁸ Bonny utilized this theory with her unique choice in music to guide the client on a journey of rebalancing and healing since “music through GIM method can intervene with each of these rings of consciousness or levels as subjects learn to deeply relax and to trust in letting the music take them into deeper states. The music gives the “traveler” the freedom to approach the guided imagery material when the persons psyche is ready.”¹⁹ The GIM utilizes the unconscious to access deeper levels of the psyche to promote healing through music on a psychological level. As the clients relax deeper into the music on a guided journey, they are able to probe deeper psychological issues. This technique is much like the *Inner Counselor* by Ann Nunley.²⁰ In Dr. Nunley’s work, the client follows the historical flow of blocked energy patterns, emotional hurts and wounds through accessing the higher self in this journey into the unconscious. Through this method, the client is able to release and balance these deep emotional states that would not be normally accessible in a traditional manner in psychotherapy. This method takes the client into a journey into the unconscious much like the Helen Bonny technique.

It is with this theoretical underpinning that it is hypothesized, for the purposes of this study, that the tones and notes emanated by the crystal bowl can have an effect on a subject’s emotional and physical state. Bonny’s view of the collective unconscious, John Beaulieu’s

harmonic balancing with tuning forks, and Jonathan Goldman's theory of entrainment and specific vibrational rates affecting energy fields all point to the potential for notes, tones, and vibrations to have the ability to promote healing.

Vibrational Waves: Sound and Frequencies

Sound and music are vibrational waves and music therapy can be understood on that theoretical and scientific basis. Jonathan Goldman points to the various frequencies and waves which make up the musical scale and chakra system and are measured as vibrational waves in hertz.

Somatic listening can be understood as the way the physical and energy body perceives various forms of music, vibration and sound. In this study, the crystal bowl treatment can be termed somatic listening as the subject's energy field and physical body are expected to respond to the tones of the crystal bowl.

Kenneth Bruscia defines somatic listening in music and sound therapy as "the use of vibrations, sound and music in various elemental and combined forms to directly influence the client's body and its relationship to other facets of the client."²¹ Bruscia defines the use of entrainment, resonance or toning, music feedback and a newer approach called vibroacoustical music as a healing modality. Vibroacoustical music is "the administration of vibrational frequencies to the client's body while listening to music; or the application of the vibrational patterns of music directly to the client's body."²² The concept of music as healing with vibroacoustical treatment parallels the use of the crystal bowl in administering vibrational frequencies, notes, or tones to the subject producing a healing effect. Bruscia conceives music "as something more than a human creation, rather it is a condition of the

universe itself. Here music is a living energy form that precedes and presupposes the early musical creations of individual human beings.”²³ With these theories and techniques in mind; music and sound healing can be taken to a more spiritual level as a life force energy and vibration. While Goldman, Bonny, and Bruscia have reported some very interesting results with their type of sound healing, there is not enough research to support the science of this treatment.

Fabien Maman, a French Bioenergeticist, studied the effects of sound on a healthy cell “by using a camera mounted on a microscope, studying the inner structure of both healthy and cancer cells as they reacted to various acoustical instruments; e.g. gong, xylophone, acoustical guitar and the unaccompanied human voice for duration of 21 minutes.”²⁴ Maman found the most dramatic results by singing into the cells. As he sang the musical scales, he found that the structure of the cell disorganized. He also found the same results with the gong.²⁵ The use of the gong and the human voice singing scales were utilized as they were able to move more air mass than the guitar and xylophone. In order to produce a strong tone and vibration, a focused pitch and the strength of a gong or a strong human voice is needed. These findings indicate that sound, music, and vibration may have an effect on cells. Much more data will be required on cellular changes as a result of tones and vibration in order to understand these phenomena clearly.

In another study Mark Rider, also a music therapist, used guided imagery and music to reduce stress hormones and raise the levels of immune cells in his subjects. Rider’s findings were that the SLGA (secretory immunoglobulin A) production was significantly higher in the treatment group.²⁶ These findings support the efficacy of sound and vibration healing on changing physiology in subjects as well as lowering stress.

Dr. Mitch Gaynor, a Manhattan oncologist, utilizes crystal and Tibetan bowls in his practice, as an adjunct in healing with cancer patients. He teaches his patients how to meditate with crystal bowl music and, while in his office, he has his patients listening to music while he examines them. A number of times a month he conducts group healing sessions with numerous bowls, tuned to different notes, and plays for approximately one hour and a half while his patients lie back in meditation. He has written two books and a number of articles discussing his approach with patients.²⁷ While he reports positive results with cancer patients, no controlled studies exist that would indicate the curative property of this approach. It is anecdotally reported that patients are able to learn to relax and meditate with the bowls and that this may, indeed, be assisting with their healing.²⁸

Vibrational healing falls under the broader heading of energy medicine. Vibrational healing may be comprised of music therapy, sound and healing, crystals, homeopathy, healing touch, use of light, acupuncture, magnetic healing, psychic and spiritual healing.

A Scientific Understanding of Energy Medicine

James Oschman describes the Living Matrix as a “continuous and dynamic supramolecular webwork, extending into every nook and cranny of the body: a nuclear matrix within a cellular matrix within a connective tissue matrix.”²⁹ This theory explains that any compression or touch on one part of the body has a reverberating effect on each part of this interconnected system to a molecular level. Therefore, a living matrix means that “every cell receives information on the activities taking place in every other part of the body.”³⁰ This definition points to a highly sophisticated system where environmental and energetic influences are affecting the energy field and the human body at all times. The body

simultaneously responds at every level and each part simultaneously signals the entire system, creating a supercommunication system in and around the body. In other words, the entire living matrix is simultaneously a mechanical, vibrational or oscillatory, energetic, electronic, and informational network. Hence, the entire composite of physiological and regulatory processes we refer to as the living state takes place within the context of a continuous living matrix.”³¹ In addition, the cells are arranged in a crystalline manner and generate an electrical field when they are compressed or stretched. This is termed piezoelectricity. Piezoelectricity is occurring within the body and is generated into the environment. This explains further how vibration; i.e., sound, tones, notes, and vibroacoustic therapies thus affect the body and energy field. As James Oschman points out, “Any therapeutic interaction, whether it uses sound, heat, laser beams, herbs, aromas, or movements involves one or more portions of this energy system.”³² He further elaborates that “any object has a certain natural or resonant frequency. Strike it, bump it, pluck it or heat it, and it will tend to vibrate at a specific frequency.”³³ When two objects with a similar vibration interact, their vibrations can become entrained and there is resonance. This is thought of as a natural process, continually occurring within and around the body due to piezoelectricity within the body and kinetic energy surrounding the body. Therefore, these explanations pave the way to a more complete understanding of how the frequency of a crystal bowl can enter the energy field through kinetic energy causing this rippling, piezoelectric effect within the system or living matrix. This is the process by which any other sound, vibration, touch, or healing affects the energy field and the physical body.

Crystal Bowls

Crystal bowls are manufactured from a substance called silica sand. Silica sand is considered to be pure quartz and is utilized in making fiber optic glass. The sand silica is found throughout the world. In the United States silica is found in New York, California, and Ohio. The bowl is made from the sand “being dropped into a centrifugal force spinning mold, and at the proper instant, in the center of that mold, there is an electric arc torch that is ignited to several thousand degrees centigrade. It integrates the individual particles of sand.”³⁴ The bowls are tuned to the diatonic musical scale. This scale is most “familiar with Western musicians, has eight tones to the octave as in the Doh, Ray, Me, Fa, Soh, Lah, Te, Do.”³⁵ The bowls are tuned to a certain note with digital technology, which then creates a very pure wave form, or sine wave, which carries the sound of the note to which it has been tuned.

Human Body and Energy Field

The human body is composed of liquid crystal and crystalline lattice type molecules. When using crystal bowls, a sine wave travels to the energy field and physical body producing a resonance or vibration of the crystalline structure. In other words, a kinetic effect on the energy field and body is achieved. This vibration is causing a ripple effect in the Living Matrix and sending signals to all parts of the body because it is creating a piezoelectric effect in the crystalline structure: “From a scientific viewpoint, quartz crystal is a mixture of the elements silicon and oxygen that takes a hexagonal form. Quartz contains the property of piezoelectricity, which means it has the ability to produce a programmable electrical impulse.”³⁶ This electrical impulse creates diffusion “along the nerve pathways to

the organs, and affects touch systems, tissues, and cells, in turn, affecting blood circulation, metabolism, endocrine and chakra balance.”³⁷ It is the living matrix that is responding to the kinetic wave signaling the body’s response. This clearly suggests that the body may be reacting to sound waves from the bowl. The bowl is crystalline and the body is made up of a liquid crystalline substance. Therefore, there could be a very intricate process occurring in the body when the vibration is received from a crystalline object such as the bowl.

The acoustic principle of resonance, which applies to the human body, is also noteworthy. As the sound waves create vibrations in the body, they are acting on a cellular and molecular level, resulting in an intricate, interactive effect between the vibration and kinetic waves on the physical body, energy field, and chakras. It is precisely these effects of crystal bowl toning on the chakras and the changes resulting from sound and vibration on the living matrix that are the topic of this research study.

Sound as Ancient Healing Modalities

Evidence of sound healing or toning can be found in ancient civilizations of India, Tibet, China, Africa, Europe, South America and the Aborigines of Australia.

American Indians and Shamanistic practices around the globe use sound to heal.³⁸ The Tibetans continue to use bells, chimes, bowls, and chanting as the foundation of their spiritual practices. The priests of ancient Egypt knew how to use vowel sounds to resonate energy centers and subtle energy fields.³⁹ Healing through sound goes as far back as the Legend of Atlantis where the power of sound was combined with the power of the crystals, “In fact, some people today still refer to the crystal bowl as being Atlantean bowls.”⁴⁰

Gregorian chanting within the Catholic Church has been an ancient practice of vowel sounds and harmonics. In the early 1960s, following the second Vatican Council, Dr. Alfred Tomatis made a pilgrimage to a Benedictine monastery in France. One of the decisions the Vatican made, at that time, was to eliminate the traditional chanting by the monks. Over several months changes in mood and energy levels became apparent with the monks. They reported feeling depressed and tired; lethargic, and less motivated. Dr. Tomatis was invited back to evaluate the situation and he requested that chanting be brought back into their daily routine. Approximately nine months later it was reported to him that the monks had returned to their normal rigorous life styles. The depression and lethargy had disappeared. It was decided that the “sacred chants from different traditions were rich in high-frequency harmonics and had a neuropsychological effect which charges the brain.”⁴¹ This example suggests a direct relationship between ancient sound and mood states.

Sound and healing is found in the Mystery School teachings of Alice Bailey.⁴² In the book, *Esoteric Healing*, Alice Bailey discusses The Seven Modes of Healing. In one excerpt she states that “healing by the means of sound will be one of the first healing enfoldments to be noted at the close of the next century.”⁴³ In the *Kabbala*, the Tree of Life, a person invokes the energy of God by speaking the names of Binah, Geburah, Hod, Kether, Tiphereth, Yesod, Chessed, Chokhma, Netcach and Malkuth. These are all sacred sounds for healing, invoking God and angels in the mystical Jewish tradition.⁴⁴

In the Sufi tradition, chanting the vowel sound of A, I, and U are “considered the universal harmonic constants and are used in all mystical paths that utilize sound.”⁴⁵ The vibratory nature of these sounds is thought to activate spiritually the heart center, pineal

gland and lungs. In addition, the chanting of Allah or God is another method used to open the heart center.

In the Christian tradition, Latin is considered a sacred language. It is still, to this day, the official language of the Catholic Church, sacred documents, and music. For example, the “Ah” sound is utilized to invoke the father or God.⁴⁶

There are many more examples of sacred chanting. The Tibetan monks began tantric chanting over five hundred years ago.⁴⁷ It is called the One Voice Chord and is a very low pitched sound incorporating three chords simultaneously. Indigenous cultures also utilizing ancient sounds are the American Indians, Aborigines of Australia, and Shamanistic practitioners around the world. As is apparent from this brief overview, sound has been present in religions and cultures since ancient times and is still utilized in healing modalities and religious practices today.

Musical Octave of C

An octave, in music, is the first interval between the first and eighth tones of the diatonic scale. The upper note of a perfect octave has a frequency of vibration twice that of the lower and in modern western notation the two have the same letter name. For example:

If we examine the piano we find there are eight octaves. The note C occurs eight times. The lowest note C on the piano is very deep, while the uppermost C is very high. These notes are not the same and yet they are interrelated. If you were to strike that lowest C on the piano, you would also set into resonance all the other C's on the piano. They are harmonics of each other.⁴⁸

In addition, from the first C note, the notes are C, D, E, F, G, A, B, and ending with the beginning of the next C octave. When you strike a C note, for example, on the piano, you are hearing tones from each note in the octave.

Each note in the octave corresponds to one of the seven main chakras. For example:

Note	Chakra Number	Chakra Name
C	First	Root
D	Second	Spleen
E	Third	Solar Plexus
F	Fourth	Heart
G	Fifth	Throat
A	Sixth	Third Eye
B	Seventh	Crown

In this study, the C note was chosen for the crystal bowl as it encompasses all the notes in the octave that could potentially affect each chakra.

The Science of Sound, Healing and Vibration

How do vibrations and music heal? An examination of scientific research as well as clinical and anecdotal reports follow that illustrate the effects notes and tones have on the human energy field, chakras, and the cellular functioning of the human body.

A classic in the field of music healing is the *Mozart Effect*.⁴⁹ How does playing the music of Mozart have an effect on human functioning? A study conducted at the Center for Neurobiology of Learning and Memory found that thirty-six graduate students scored higher on a spatial IQ test after listening to ten minutes of the Mozart Sonata for Two Pianos in D

Major.⁵⁰ In a follow-up study researchers tested spatial intelligence by projecting, on a screen, sixteen abstract figures of a one-minute period to seventy-nine students. The figures were also placed on folded pieces of paper and handed out to the students. The study tested whether the students could tell how the items would look when the pieces of paper were unfolded. There was a five-day period in which Group One listened to the Mozart sonata, Group Two was exposed to silence and Group Three was given a mixture of a dance piece, silence, and an audio-taped story. The researchers reported that Group One's pattern recognition increased by 62% compared to 14% for the silence group and 11% for the mixed group. The conclusion at which the researchers arrived suggests that "listening to Mozart helps organize the firing patterns of neurons in the cerebral cortex, especially strengthening creative right-brain processes associated with spatial temporal reasoning."⁵¹

The effects of stimulating and sedating music on cognitive and emotional components of anxiety were clinically studied by Smith and Morris.⁵² Results indicated that sedating music had an effect on the anxiety state of the subject. Conversely, stimulating music had the effect of increasing anxiety levels. D. Hodges found similar results with anxiety states and calming music.⁵³ R. Spintge determined that music in post-operative settings statistically lowered the threshold of pain.⁵⁴ This group of articles suggests that music may have indeed a positive effect on anxiety and pain states.

A study conducted by C. McKinney on the effects of guided imagery and music (GIM) therapy on cortisol levels in healthy adults showed a decrease in cortisol after exposure to GIM in a thirteen week study.⁵⁵ This has implications for hormonal regulation and mood changes for chronically stressed people and feelings of well-being in general. The findings seem to indicate that a series of short GIM sessions has the potential to affect mood

even after a six-week period utilizing cortisol blood samples and POM scores. This provides experimental evidence of physiological effects of GIM on a healthy adult population.

In a paper presented to the Holistic Nursing Association, Chris Boyd- Brewer and R. McCaffrey discussed vibroacoustic sound therapy and possible positive effects on improvement of pain and symptom reduction as well as tension, fatigue, headache, nausea and depression.⁵⁶ It was hypothesized that vibroacoustics may assist in cellular cleansing with positive results for health and illness. This appears to be an overview of a number of scientific articles and points to the possible efficacy of vibration and music as a healing modality. The implications for cleansing on a cellular level through vibrations establish a connection to Oschman's theory of a living matrix.

Olav Skille, a Norwegian educator and therapist, developed the vibroacoustic equipment utilized in his healing techniques called the music vibration table.⁵⁷ Vibroacoustic therapy uses frequencies within the range of human hearing. Low frequencies are coupled with music to provide relaxation and or pain relief. Skille documented that "vibratory frequencies between 30 Hz and 120 Hz are therapeutic, with the most beneficial being those between 40 Hz and 80 Hz."⁵⁸ It is apparent with the work of Skille that vibration and sound waves, at a specific hertz, may produce a specific type of healing based on this vibratory rate.

A study and doctoral dissertation by Anthony Wigram investigated the effects of vibroacoustic therapy on clinical and non-clinical populations where it was found that there was a significant difference in the heart rate of clinical and non-clinical patients when exposed to vibroacoustic therapy.⁵⁹ The study also found that the combination of music and low frequency sine tone was more effective in reducing muscle irritation than music alone.

This was a beginning examination of the effects of Olav Skille's work in the effectiveness of vibration on the physical body.

Another vibroacoustic study was performed by Jayne Standley, looking at the effect of vibrotactile and auditory heart rate and peripheral finger temperature in a dental office.⁶⁰ The findings indicated feelings of pleasure in response to music and vibration. There was little change in finger temperature and an increase in heart rate with vibration and a lowering with music alone. Listening to music has been documented as an effective clinical intervention and the findings of Skille showed a significant effect when music was paired with low frequency tones and vibration. This study suggested⁶¹ that music preceding the dental drill reduced the drill's adverse effect while the drill preceding music vibration produced a painful and stressful event. This indicated that the use of a drill in a dental office alone could raise anxiety in a subject, thus accounting for these findings. Skille was able to show the effects of a peaceful atmosphere coupled with vibroacoustic therapy producing a positive response by clients. This study points to the individual differences in responses to vibration, music, and the environment. When performed in a calm, quiet setting, the studies do suggest positive effects of vibroacoustic therapy.⁶²

In a study by C. Butler and C.J. Butler, with cardiac patients, it was found that post-operative use of vibroacoustic therapy significantly reduced the time which patients required for respiration on a ventilator in the coronary care unit.⁶³ In overall the hospital stay was decreased from nine to five days. This is significant evidence for the effect of vibracoustic therapy on healing, underlining once again the significance of Oschman's "the living matrix" as a means to understand the cellular interaction of the body and the piezoelectric effect. There appears to be an important link between vibration, tones, and healing.

The forerunners of the Music Bed and vibroacoustic therapy appear to be found in Pontvik and Terrich in the late 1950s.⁶⁴ They found that by localizing a musical tone in the room, the vibration is also felt and localized in the body.

In a symposium on the Music Bath, Olav Skille discussed how vibratory music has been investigated and documented the interesting results in the field.⁶⁵ In one experimental study by an Illinois farmer, creating identical conditions in two greenhouses, it was found that placing loudspeakers and playing music on one greenhouse yielded more grain and fertilization than the greenhouse with no music vibration.⁶⁶ However, seeds placed too close to the loudspeakers were damaged by the effects of the loudspeakers. It is interesting to note that music is now widely used in agriculture production in Canada as results of this experiment.⁶⁷

During the same symposium, Dr. Rayondo Beneson described the biological effects of music and vibration, such as muscular energy increasing, accelerated breathing, and marked effect on blood pressure, reduction of fatigue, voluntary motor activity increasing and changes in metabolism.⁶⁸ While this was not a scientific study, it was a description of the effects of vibratory stimuli and music.

Olav Skille reported that during his Music Bath the ears are blocked and the sound is transferred directly to the body. The sound is generated by amplifiers and loudspeakers and the sound sources are gramophones, a cassette deck, and a frequency generator placed directly under the body, under the chest and abdomen. “We may presume that the vibratory effect on the spinal cord is strongest when a person lies on the back and the effect of the solar plexus region is the strongest when a person lies on his stomach.”⁶⁹ Olav Skille went on to report that “one becomes conscious of a remarkable change in attitude, a change from within;

the vibration sensation is localized in the body. One could say that the tones are pulled into the inner self – they become closer to the physical ‘I’⁷⁰

Vibroacoustic therapy combines the physical vibrations of relaxing music with the vibrations of pulsed, low frequency sine tones. When it was first developed by Olav Skille, he used it to stimulate severely disabled children whom he taught.⁷¹ He began by playing the music through large speakers pressed against a bean bag, where the children were lying. He discovered that the physical vibrations of sound could relax and stimulate the children and judged that a pulsed low frequency sine tone (sine tone is a pure harmonic frequency) had a particularly significant therapeutic effect on the children.

Skille documented his years of anecdotal research and findings in his book *Manual of Vibroacoustics*, in which he described the efficacy of vibroacoustic therapy for a variety of illnesses including asthma, autism, cystic fibrosis, cerebral palsy, constipation, insomnia, pain, and Parkinson disease.⁷²

His findings include: 1) a spasmolytic and muscle relaxing effect; 2) an increase in blood circulation in the extremities and 3) marked, but varying effects on the vegetative system.⁷³ Vibroacoustic therapy is delivered to the body by a vibroacoustic bed or chair with speakers underneath the surface. According to O. Skille, the vibrations of the music and the frequency of the tones provide the client with an internal massage.⁷⁴

Skille reported success in the treatment of dysmenohrea, and sport injuries. It was found that vibroacoustic therapy relieves pain from over-use of muscles and the rehabilitate time can be much quicker.⁷⁵ In a single-blind study by A. Wigram, comparing the use of music versus low frequency tones, it was found that the use of low tones was more successful in healing than music alone.⁷⁶ This suggests the efficacy of the vibration and low sine tones

in healing. The question remaining from this study is this: Is it the vibration that is healing, or the music, or a combination of both?

Where is vibroacoustic therapy at this time? There are sets of CDs formulated by O. Skille that can be used for healing numerous medical conditions. For example the following frequencies are utilized for the corresponding illnesses: Base: 52 Hz: Back pains, menstrual pains, lung massage, asthma; Base 68 Hz: Neck, shoulder pains and stress; Base 86 Hz: Migraines, headaches, stress. Each CD has 3-21 minute tracks of Base frequencies for healing.⁷⁷ It is useful to note that there are also frequencies available for healing for stroke, colic, emphysema, insomnia, aphasia, cerebral palsy, menstrual pain, ulcers, varicose veins and stress.⁷⁸ It becomes apparent that the use of low frequency notes and tones are reported to be therapeutic and have been well recorded and documented in the last fifty years. The ability of frequencies, tones, and notes to change the healing process or alleviate stress appears to be an important aspect of music therapy and the concept of healing with notes and tones. This leads now to an examination of the research on the body's response to these frequencies, note, tones and vibration on a molecular level.

The Science of Healing: The Body's Response?

As a way to understand how energy medicine is effective in healing the body scientific studies that have formulated a theoretical model for understanding how healing occurs on a cellular and physiological level are examined. James Oschman is of the opinion that:

Healing energy whether produced by a medical device or projected from the human body is energy of a particular frequency or set of frequencies that stimulates repair of one or more tissues. The cascade of activities initiated by such signals may provide

essential information to cells and tissues and open channels for the flow of information that coordinates the repair processes.⁷⁹

According to Oschman, on all levels of the human organism there is a vibration or pulsing at every level of the organism, tissue and cell. Several frequencies, particularly low frequencies (ELFs), are being utilized for healing. Researchers are examining just how energy field therapies are effective. It is speculated that during these therapeutic processes information might be projected on tissues, which “triggers a cascade of activities from the cell membrane to the nucleus and on to the gene level where specific changes take place.”⁸⁰

Howard Wachtel conducted a study of the effects of electromagnetic fields on cellular tissue, in which he compared endogenous currents in and around cells with those induced by exogenous extremely low frequency magnetic fields.⁸¹ He found that weak signals, generated in living tissues by external magnetic fields, could be detected and responded to in the presence of much stronger endogenous electrical activity. Furthermore, the imposed signal must contain some substantially unique property, such as frequency content for special coherence or its pattern of repetitiveness over time that could distinguish it from the bioelectrical background. Endogenous bioelectric activity must be viewed as an important factor in determining which levels of electromagnetic fields are sufficient to change normal biological function.⁸² This study highlights the effects of electromagnetic fields on cellular tissue and the organism.

The findings by C. Bassett suggest that the use of pulsed electromagnetic fields, at an extremely low frequency range and at a certain Hz rate, promoted healing of the injured area on a patient.⁸³ This study supports the theory of J. Oschman and H. Wachtel that electromagnetic waves affect cellular regeneration and healing.

A study by Robert O. Becker on electromagnetism found that cells responded to electrical currents.⁸⁴ Much earlier, H. Frolich examined cellular changes resulting from varying and steady frequencies applied to cell membranes.⁸⁵ Another study, conducted by Robert O. Becker, demonstrated that living cells can be modified by subjecting them to the influence of the ions from an electrode causing a low frequency direct current to flow through the cells.⁸⁶ This group of early studies on cellular functioning and the influence of outside interaction effects point to the important role cellular functioning plays.

In his paper “Whispering between Cells: Electromagnetic Fields and Regulatory Mechanisms in Tissues,” Adey discussed a new concept of communication between cells which he described as a whisper across the barrier of cell membranes.⁸⁷ He determined that these phenomena appeared to depend on quantum states and resonant responses in biomolecular systems. Through this paper Adey furthered the discourse on how cells are connected and indeed interact in the biological system, which points to the idea of the living matrix.

The review of the literature highlights that cells respond and reorganize as a result of the electromagnetic fields that are directly introduced into that cell. This body of research supports the discoveries of Fabien Maman who reported cellular changes when singing or toning directly into a particular cell. These studies also suggest that frequencies, at varying rates, have the ability to alter, not only specific cells, but potentially energy fields, chakras, and organ systems of the body. The studies indicate and support the theory that pulses, waves, and vibrations alter cells, thus producing changes in the entire system or living matrix.

Dr. William Tiller, in his theory of reciprocal space/time proposes that the vacuum field is a domain of rates of oscillation rather than of distances and duration: it is the domain of the etheric.⁸⁸ A subtle substance called “deltron has been hypothesized to act as an energy bonding coupler between the etheric and the physical worlds.”⁸⁹ Tiller, at that time, was establishing a theoretical model of matter and energy as a means to begin discussing what is actually occurring when astral matter or higher vibratory energies interact with lower vibratory energies. He sees this as a type of magnetism in the emotional body. It is in this way that the idea of curing illness is equated to his theories of subtle energies, rates of vibration, and the effects between the astral energy world and physical world uniting. The idea of the deltron is a theory that assists in understanding what action brings these two worlds together to promote healing on an energetic level.⁹⁰

In more recent work, Tiller discussed the chakras as a

tuned circuit via which one may tap the energy of the cosmos. One can tune this circuit and produce magnetic current flow in the etheric circuit. Via deltron coupling, electric currents are caused to flow in the physical body and then back to nature both via direct radiation from the physical body and via back-flow to the etheric body and then radiation from that level to the environment.⁹¹

Dr. Tiller provided an explanation of how both subtle and environmental energies act on the chakras as currents or waves affecting systems in the body and the functioning of the chakras. This system is viewed as a way to almost step down energies from the etheric in wave-like forms to explain the functioning of the chakra and energy system. In taking this to the level of vibrational healing, chakras, tones and music, it serves as an understanding of the origins of wave-like energies interacting with the subtle energy bodies and the environment.

In reviewing and analyzing these research studies it is evident that the science behind music, vibration, and healing is related to an implicit order in the universe, encompassing

biological processes, quantum physics, and metaphysical theories, subtle and environmental energies. It is through these intricate relationships that healing occurs on a physical level and the interaction between spirit and science becomes apparent.

Vibration and the Living Matrix

The human body may be seen as frequencies that produce an energy field around the body. Sound consists of “acoustical frequencies which operate on the principle of compression and expansion of molecules and require a medium of gas, liquid or solid for transmission.”⁹² According to J. Oschman

Virtually all of the tissues in the body generate electric fields when they are compressed or stretched. The living matrix is a continuous and dynamic “supramolecular” webwork, extending into every nook and cranny of the body: a nuclear matrix within a cellular matrix within a connective matrix and when touched you are touching a continuously interconnected system of all molecules linked together in an intricate webwork.”⁹³

Such an understanding of the energy system views the human body and energy field as a living matrix, pulsing and interconnected in a system that is affected by other human systems and energies that surround all matter. This system is very delicate and can go out of balance or become dis-eased due to mental, emotional, physical or spiritual blockages of the energy centers or chakras.

In Dr. C. Norman Shealy’s book *Sacred Healing*, he defines piezoelectric as “the ability to convert pressure into electricity. The piezoelectronic property of bones was established in 1954. The piezoelectric mechanism produces an electrical stimulus evoked by mechanical stress or pressure.”⁹⁴ In other words, Dr. Shealy feels we are all “living piezoelectric generators”.⁹⁵ In more simple terms any kind of touch or pressure, on any part

of the body, has this effect in the human system. This phenomenon is naturally occurring and continuous. The research of Dr. O. Becker with electromagnetic fields and Dr. Shealy's concerns for the effects on human health and healing has its roots in piezoelectricity as we begin to examine human biology and the effects of electromagnetism. These earlier theoretical understandings corroborates Oschman's theory of piezoelectricity and it's mechanism of action in the living system.

Oschman suggests that "virtually all of the body structure is composed of liquid crystals capable of sustaining quantum coherence. They include the membranes of all cells, the contractile apparatus in muscle; the connective tissue found in bones, tendons, ligaments and cartilage; the array of micro-tubules in sensory and deoxyribonucleic acid (DNA)."⁹⁶ It appears that the physical body, cells, and DNA are composed of materials, in that on all levels; organs, tissues, cells, organelles and molecules behave like a liquid crystal.

This theory leads to the discussion of piezoelectricity and how it operates in the body, surrounding environment and energy field. The compression of the body creates an electrical impulse, "Piezoelectricity is an example of a collective property arising from the way atoms aggregate in a crystal. Connective tissue is piezoelectric (Greek for pressure electricity). Therefore, it generates electricity when compressed. Deformations of bones, teeth, tendons, blood vessel walls, muscles and skin all give rise to electric fields as a result of the piezoelectric effect."⁹⁷ The piezoelectric effect can be seen as an essential biological communication system in the body that acts to signal other areas of the body about what is occurring to cells, muscles, tendons, for instance, in the living matrix system. Through this electrical process, information is sent in the body; across all levels from organs, tissues, cells and organelles to a molecular level. It appears a logical next step to follow these signals as

they are then dispersed in the body's energy field and thus can be measured by the Gas Discharge Visualization Device. In order for the piezoelectric interaction to take place, the body's energy is processed by the GDV, with a very high voltage, very low amperage, and pulsed electromagnetic field and records the light emitted as a result of this interaction. The GDV's function is to measure the energy system by producing a high intensity, pulsed electrical field around an object and capturing it in a sophisticated camera and software. The important interaction occurring is that the piezoelectric effect allows the body's energy field to be accurately read by an instrument such as the GDV, which is producing a high intensity electrical field. When the fingertip of an individual and the electrical energy field (piezoelectric) is pressed gently on the lens of the GDV camera there is an electrical interaction between subject and device allowing the GDV to accurately capture energy from the body and then extrapolate and complete an assessment of the energy field and chakras. Due to piezoelectricity, resulting from compression of the body, we are continually producing this electrical interaction in the body and energy field. Oschman describes this interactive effect as follows:

All components of the living matrix are semiconductors. This means they are able to generate and conduct vibrational information. When two or more components interact (semiconductor junctions) there is a possibility of signal processing analogues to that taking place in transistors, integrated circuits or microprocessors found in computers and electronic devices. Semiconductor molecules convert energy from one form to another. This phenomenon occurs through the piezoelectric effect. Many of the components are piezoelectric. This means that waves of mechanical vibration moving through the living matrix produce electrical fields, and visa versa; this is waves of electricity producing mechanical vibrations.⁹⁸

There is evidently substantial evidence for this electrical interactive effect between the body, energy field and remote devices.

Just how does the crystal bowl interact with the energy field and physical body in light of the theory of piezoelectricity? Oschman sees the body structure as liquid crystalline. The crystal bowl emits sound waves referred to as kinetic vibrations. What then is the relationship between this kinetic vibration of the bowl and the electromagnetic oscillation (piezoelectric transductions) of the body? The review of the literature thus far would suggest that these kinetic vibrations from the crystal bowl may interact with the liquid crystalline materials and systems in the body. Theoretically, there may be an energetic effect occurring as a result of piezoelectricity that has yet to be studied or measured.

Oschman also points out that the piezoelectric properties exist because “the semiconducting living matrix is highly ordered or crystalline and many of the molecules are arranged in crystal-like lattices.”⁹⁹ In addition this occurrence results in an electromagnetic field “composed of giant coherent or laser-like oscillations that move rapidly throughout the living matrix and that also are radiated into the environment. These vibrations are called Frolich oscillations.”¹⁰⁰ A similar effect occurs when the crystal bowl’s kinetic vibrations interact with the body’s piezoelectric effect.

[The Chakras](#)

The introduction into the energy field or chakra of a note or tone, for example, a C note, has a specific frequency (34.648 Hz). A crystal bowl, tuned to C, when struck sends various vibrations at a frequency rate, in the shape of a wave, to the subject’s energy field and physical body. Theoretically, the resulting change in the subject’s energy field and chakras may be shown in this study as measured by the GDV. According to Caroline Myss, in *Sacred Contracts*,

The chakras ascend in a line from the first, or root chakra at the base of the spine through the seventh chakra just above the crown, just above the head. Between them, in ascending order, the other five chakras correspond to the genitals, the lower intestines; solar plexus and navel; heart; throat; and pineal gland or “third eye”. Although each of the chakras corresponds to different parts of the body, they are not material and actually reside with subtle energy sheaths that surround the body where physical and psychic energies interpenetrate each other. These invisible, but highly potent sheaths or levels of psychic energy are sometimes called the mental, emotional, etheric and astral bodies and they extend well beyond the physical dimensions of our frame.¹⁰¹

In addition seven musical notes are related to the main chakras, correspond to the seven colors of the rainbow and relate to different areas of the endocrine system and health of the human body.¹⁰²

ENERGY CENTERS AND CORRESPONDING NOTES AND COLORS

Chakras	Place on Body	Note	Color
1	Sacral	C	Red
2	Spleen	D	Orange
3	Solar Plexus	E	Yellow
4	Heart	F	Green
5	Throat	G	Blue
6	Third Eye	A	Indigo
7	Crown	B	Violet

The red, musical note C, is the first chakra located in the sacrum according to Myss. The issues surrounding the first chakra are linked to survival and fear. It is located at the base of the spine. The orange, musical note D, is the second chakra, located in the area just below the navel and is related to our emotions, sexuality and reproduction. It is reported that blockages in this area are related to emotional problems and sexual dysfunctions. The yellow, musical note E, is the third chakra, located in the Solar Plexus. This energy center

provides a sense of personal power and is related to how individuals see themselves in the world. This specific area is also referred to as the place where we find the seat of our emotions. The green, musical note F, is the fourth chakra, located in the Heart; the center for love. Blockages can manifest in heart problems, immune system dysfunctions or lack of compassion in the world. The blue, musical note G, corresponds to the fifth chakra which is located in the Throat. This is the center for communication and is tied to creativity and communication. When blocked these are issues of expressing oneself in the world. The indigo, musical note A, is the sixth chakra, located in the third eye; the center for intuition. It is connected to the pineal gland and is the place of clairvoyant vision. The violet, musical note B, is the seventh chakra, located in the Crown of the head. This is a place of understanding and connects one to the higher dimensions of spiritual life.¹⁰³

According to C.W. Leadbeater, a leading theosophist in his day, defines the word chakra, which comes from the Sanskrit and signifies a wheel: “The chakras or force centers are points of connection at which energy flows from one vehicle or body of a man to another. Anyone who possesses a slight degree of clairvoyance may easily see them show themselves as a saucer like depression or vortices in its surface.”¹⁰⁴ While the clairvoyant may see the chakras as vortices, an understanding of how the chakras function energetically is an important point. Just how does spiritual energy affect the chakras, make them function and how do they actually appear. According to Leadbeater:

The divine energy which pours into each center from without sets up at right angles to itself (that is to say, in the surface of the etheric double) secondary forces in inductive circular motion, just as a bar-magnet thrust into an induction coil produces a current of electricity which flows around the coil at right angles to the axis or direction of the magnet. The primary force itself, having entered the vortex, radiates from it again at right angles, but in straight lines, as though the center of the vortex were the hub of a wheel, and the radiation of

the primary forces its spokes. By means of these spokes, the force seems to bind the astral and etheric body together with grappling hooks.¹⁰⁵

These forces take on a flower or petal like appearance to the clairvoyant.

The following list provides the Sanskrit names for each of the major seven chakra centers as used by Leadbeater in his book *The Chakras*:

Force Centers		
English Name	Sanskrit	Situated
1 st Root or Base Chakra	Muladhara	Base of spine
2 nd Spleen or splenic chakra	Svadhishthara	Spleen
3 rd Navel	Manpura	Solar Plexus
4 th Heart or cardiac	Anahata	Over the heart
5 th Throat	Vishuddha	Front of Throat
6 th Brow or third eye	Ajna	Space between eye brow
7 th Crown or Coronal	Sahasrara	Top of Head or Crown

The above are the names denoted on the GDV software chakra program used in this study.

Along with the above primary seven chakras, located on the spine, mystical teachers refer to secondary chakras. In her first book, *Wheels of Light*, Bruyere stated that “in addition to the major chakras, there are 122 smaller, secondary chakras throughout the body. Secondary chakras are smaller vortices than primary chakras and exist wherever there is a joint in the body, the hips, shoulders, elbows, wrists and hands; consequently, secondary chakras are energy enters that are associated with a nerve plexus, a bone and a joint of some kind.”¹⁰⁶ These secondary chakras are of importance because any blockages in them can cause disturbance in the connective tissue that is responsible for carrying electromagnetic energy to the basic seven chakras, thus causing an imbalance in our system. According to Bruyere, the aura or electromagnetic field is produced by the spinning of the chakras.

Generally, these are the first, third and fifth chakras, empowering the physical, intellectual and etheric bodies. It is a combination of these three chakras that produces the primary auric field (the inner shield of the aura) which can be physically felt by the hands as it is passed over another's body. The secondary aura is produced from the interaction of all seven chakras.¹⁰⁷

This illustrates how the vibration of a chakra, spinning, frequency, color and sound may all be interrelated.

A study conducted by Dr. Valerie Hunt at UCLA "matched sound, color, and vibration correlating seven harmonics or bands of frequency to each chakra."¹⁰⁸ Those frequencies had an interrelationship. As the lower note was struck, the vibration had an effect on the higher chakras. In addition, the frequency of visible color was found to have a harmonic relationship to the auric color of each chakra.

In the UCLA Rolf study it was demonstrated that deep Rolfing of muscle tissue related to changes in electro-physical activity of muscles.¹⁰⁹ They also found changes in the body's energy field or aura. Electrodes were placed over major chakras and acupuncture points on the subject's body. As the subjects received Rolfing, there were definite changes in the readings of the oscilloscope on the chakra points. This study points to early findings of electromagnetic activity in the body's energy field and chakras.

According to S. Karagulla and K. Kunz, the harmonic balancing of the chakras; etheric, astral, and mental fields are an extremely important factor in maintaining the health of the individual. When the chakras are not balanced in the etheric, astral, and mental fields, the chakras become unbalanced and a potential disease state in that part of the body can develop.¹¹⁰ For example:

If we assume that the speed of the etheric center is one, then the astral centers speed should be double and the mental center's four times that rate, i.e., a ratio

of 1:2:4. In actuality, the rates are much higher, but this ratio would indicate that the chakras are working together harmoniously. If, on the other hand, the rate of an astral center is higher than that of the mental, as for example 1:5:3, the possibility of dissonance and disease associated with that astral Center is greater.¹¹¹

Dr. Hiroshi Motoyama extends this idea and claimed that

The chakras supply the energy that they accept from the outside world to the various bodies through a network of channels known as nadi in the Sanskrit. There are fourteen main channels pervading the astral body and thousands of tributaries. Nadi are reported to have a subtle and a physical form. The “gross nadi seem to be the exact same system known as the meridian system in Chinese Medicine and that they represent a physical, but invisible system of physiological control and sustenance which is located throughout the body in the pervasive connective tissue.¹¹²

Dr. Motoyama’s theories on chakras, nadi and the Chinese Medicine system, underline the importance of the Gas Discharge Visualization technique and its ability to measure the state of balance of chakras and analyze this data using Chinese Medicine. Dr. Motoyama’s connection between the Vedic chakras and Taoist meridian system corresponds to the interrelated functioning of the chakras and meridians in the body as used with the GDV.

This study attempts to show how the tone of C from the crystal bowl affects the chakra system as measured by the GDV.

Computerized Gas Discharge Visualization Technique

The GDV camera and software is the invention of Dr. Konstantin Korotkov, a Russian scientist.¹¹³ The GDV is purported to be the first device in the world which measures the distribution of energy levels of living organisms. It has successfully passed clinical trials in Russia, England, Germany, and the United States.¹¹⁴ It has been used as a measuring device of the human energy field in dissertation research.

A dissertation study conducted by Dr. Nancy Rizzo-Roberts, using the GDV to measure the accuracy of acupuncture meridians points versus sham points, found that measurements on the integers S of the GDV accurately discriminated between actual acupuncture needles on meridian points versus sham points.¹¹⁵ Nancy Robert's findings conclude that "devices able to reliably measure the changes in the electromagnetic field of the body as a result of interventional therapy, i.e. acupuncture stimulation, will perhaps be helpful in evaluating the efficacy of other therapies."¹¹⁶

Another study, conducted by Dr. Susan Gibson, examined the effects of listening to music and focused meditation on the human energy field as measured by the GDV and POM. She found that the human energy field was significantly strengthened in area and brightness as recorded by the GDV after meditation and music.¹¹⁷ In addition there was a significant improvement in mood state on post-testing.

Dr. Barbara Haydon compared the human energy field as measured by the GDV before and after stimulation of Dr. C. Norman Shealy's Rings of Fire, Earth, Water, Air, and Crystal.¹¹⁸ The findings conclude that a statistical change was detected in the Rings of Water, Earth, Crystal and Air without filter. Statistically significant changes were also found in the energy field with a filter in the Ring of Crystal and Ring of Earth.

It is evident from these cited dissertation studies that the use of the GDV measuring the chakra system following crystal bowl toning does yield significant results.

Origins of the Gas Discharge Visualization Device

Early Scientific Discoveries

The Gas Discharge Visualization technique (GDV) is based on the earlier and well-known Kirlian photography.¹¹⁹ The Kirlian photography records photoelectrical processes

coming off the body in what was inferred to be an auric field around the body. In actuality the photograph being produced was an electromagnetic discharge imaging around the body creating what appeared to be an aura similar to the Theosophical aura.¹²⁰ The GDV is the first tool that allows for a visual demonstration of the human energy field and makes it easily reproducible and graphically readable on a computer screen.

As a way to understand the technology of the (GDV), it is important to examine the origins of this science. The beginnings of electro-photography have been traced back to the late 1700s to a man named Georg Christoph Lichtenberg who observed static electricity and sparks in the dust.¹²¹ It was not until the twentieth century that vast developments took place through Kirlian photography. Kirlian photography was the invention of the Russian researchers Semyon and Valentina Kirlian in 1939.¹²² It is interesting to note that they discovered this process quite by accident. Semyon was an electrician who observed a patient being treated by electrotherapy. He saw small flashes of light between the patient's skin and the machine's glass electrodes. Kirlian substituted a metal electrode for the glass one used in the machine and, using himself as the subject, he was able to photograph the corona discharge. He and his wife worked for over thirty years developing equipment and studying electro-photography.¹²³

Kirlian photography has been referred to as electro-photography, electromagnetic discharge imaging (EDI) and radiation field photography.¹²⁴ Kirlian photography utilizes high voltage, low current electricity to expose film. The object to be photographed is placed on the film. A high voltage source is connected and the Kirlian device is turned on for a short time to make the exposure. The result is a Kirlian photograph.

The Kirlians' work was made public in the 1970s through a book entitled *Psychic Discoveries behind the Iron Curtain* by Ostrander and Schroeder.¹²⁵ According to Russian scientists, different parts of the aura yielded various colored corona discharges.¹²⁶ It was postulated by the Kirlians that a disrupted aura or alteration in coloring was indicative of a disease process. The Kirlians found that “besides showing evidence of how pain affects the aura, sudden strong emotions also bring changes of color and light emanating from the body. If a person is angry or exhausted, the Kirlian apparatus reveals that increase light pours from the body in a distinct pattern.”¹²⁷ Kirlian photography is used today as a means to capture the aura in an individual, however, the state of the science has progressed so much that it is not a meaningful interpretation of the actual energy field.

Dr. Konstantin Korotkov's Discovery

Konstantin Korotkov, the inventor of the GDV, is a physicist and Russian scientist at Saint Petersburg Federal Technical University.¹²⁸ The Gas Discharge Visualization technique was developed in 1997 and in January 2000 was certified by the Russian Ministry of Health as a medical instrument. It is widely used in a number of European countries as a diagnostic tool.¹²⁹

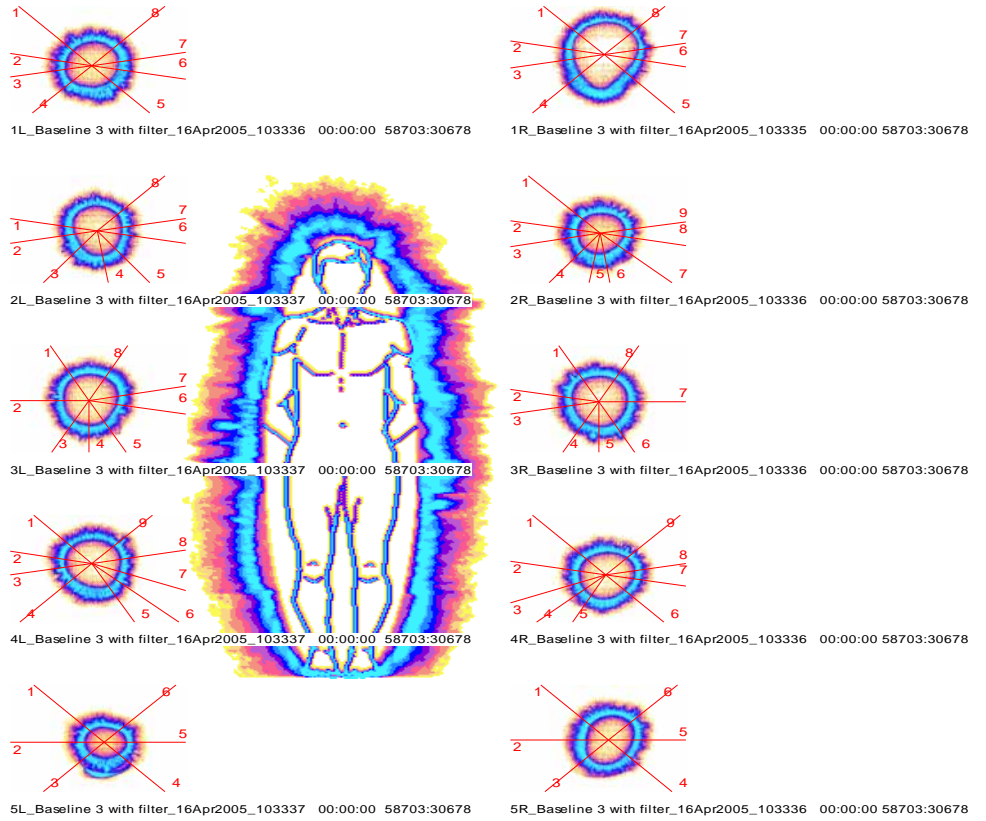
The GDV technique, having based upon the Kirlian effect, is a highly sophisticated computer software program, offering state of the art advancement in computer image processing. A photograph is taken of each of the ten fingertips called the GDV-grams which are then analyzed by the software's mathematical program. A resulting group of pictures depicting the biological effects of the subject are calculated based on the meridian points of Chinese medicine. The images are referred to as BEO-grams and are displayed on the computer screen for analysis. The GDV computer software “calculates more than thirty

parameters such as area, brightness, density, fractality and entropy scores. These various scores can then be statistically processed in order to evaluate how changes in health status, alteration in psychological states or participation in various therapeutic regimes are reflected in an individual's scores before and after such experiences."¹³⁰

When taking a GDV reading, the client puts each of his/her ten fingers, one after another, on the device's optical glass, while the high voltage pulsed electrical field applied to the fingertips creates a miniature lightning storm and the camera records each corona discharge as it appears. The energy field of the person and corresponding chakras are interpreted from these fingertip coronas and visualized on the computer screen and data describing the characteristics of the corona discharges are analyzed by the GDV software. The subject and researcher receive then an accurate picture on the computer screen with an analysis how this person's energy system behaves, how it is functioning and whether the chakras are balanced and functioning well.

The use of the filter distinguishes the activity of the sympathetic and parasympathetic nervous system. The filter on the lens gives the reading of the physical body or parasympathetic nervous system (see [Figure 1.](#)) and without the filter on the camera indicates activity in the emotional body or sympathetic nervous system. (See [Figure 2.](#))

NAME: .<Greg-Figure 1 with filter>
Year of birth: 1970
06:11:2005 13:43
Area 23867 Symmetry 92%



Kidionics Technologies International .

Figure 1. Human Energy Field with Filter.

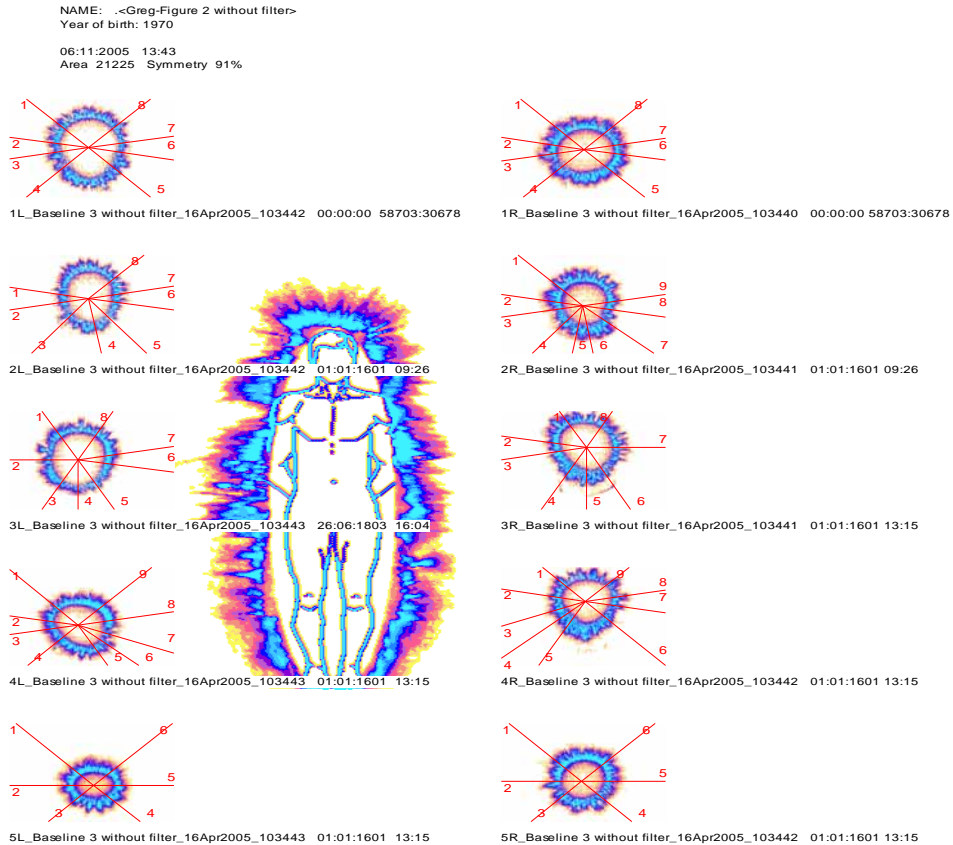
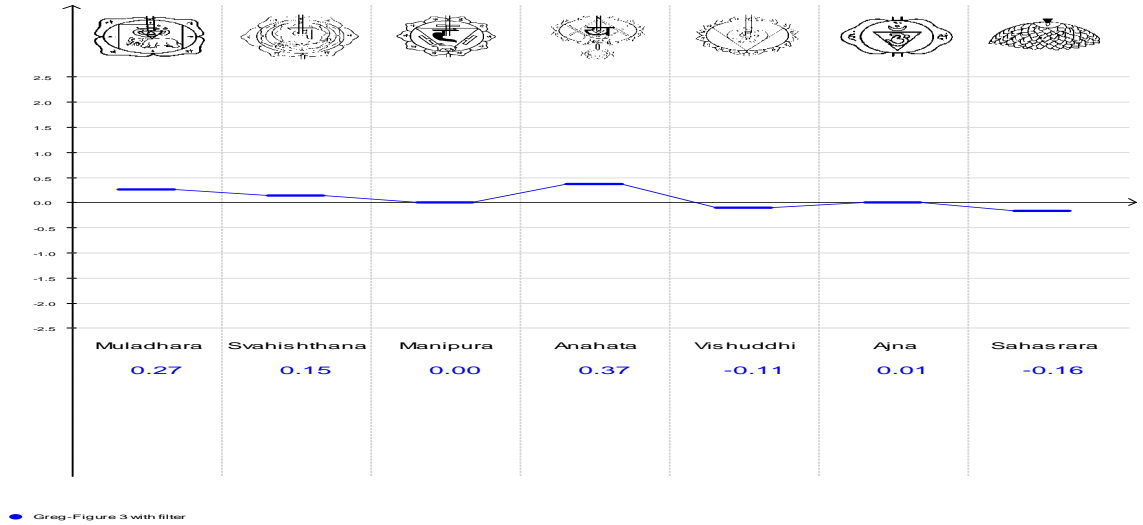


Figure 2. Human Energy Field without filter.

There is an observable difference between these readings at each of the programs of the software; energy field, chakra, and diagram readings. The fingertip readings with and without the filter are clearly different, with the rings on the filtered output more rounded and full. The unfiltered reading shows the rings to be somewhat more sparse and less full in appearance. See [Figure 3](#) for chakra readings with filter and [Figure 4](#) without filter.

NAME: <Greg-Figure 3 with filter>
 Year of birth: 1970
 06:11:105 13:46

Clear Noise 30 Level Background 250

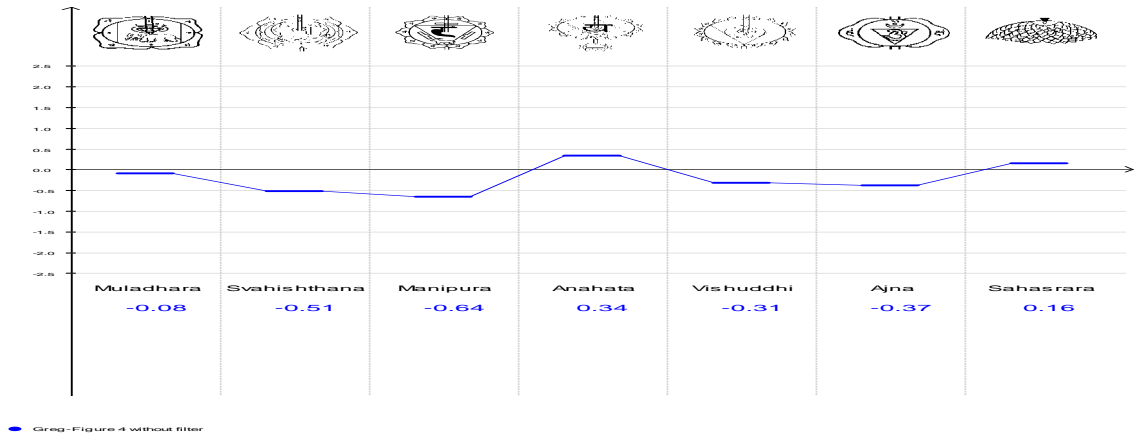


Analysis of data must be made by a certified specialist only
 Kirtana Technologies International

Figure 3. Chakra Analysis with filter.

NAME: <Greg-Figure 4 without filter>
 Year of birth: 1970
 06:11:105 13:47

Clear Noise 30 Level Background 250



Analysis of data must be made by a certified specialist only
 Kirtana Technologies International

Figure 4. Chakra Analysis without filter.

For readings on diagram See [Figure 5](#) with filter and [Figure 6](#) without filter.

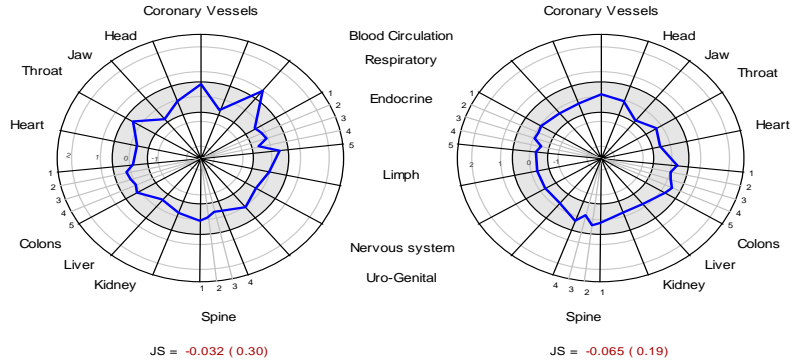
NAME: .<Greg-Figure 5 with filter>

06:11:105 13:49

Clear Noise 30 Level Background 250
Normalized Area

Left

Right



● Greg-Figure 5 with filter

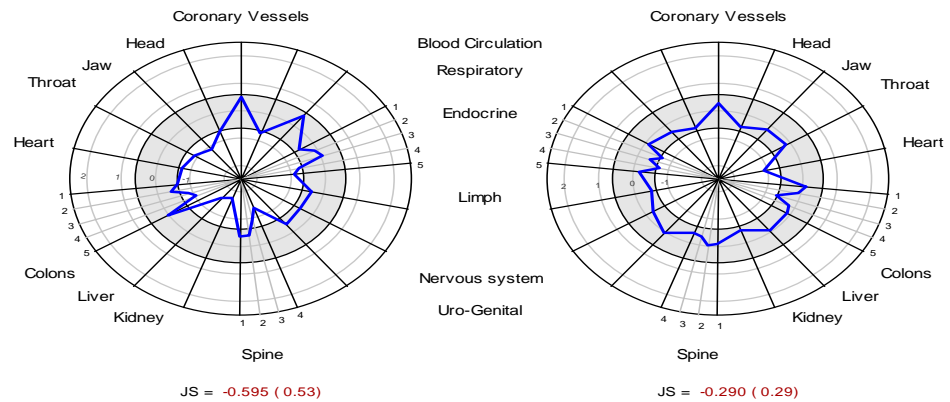
Endocrine system	Spine	Left Colons	Right Colons
1 System	1 Cervical	1 Transverse	1 Transverse
2 Pineal Gland	2 Dorsal	2 Descending	2 Ascending
3 Pituitary Gland	3 Lumbar	3 Sigmoid	3 Appendix
4 Hypothalamus	4 Sacral	4 Rectum	4 Caecum
5 Thyroid Gland		5 Ileum	5 Duodenum

Analysis of data must be made by a serтифициated specialist only
Kilronics Technologies International .

Figure 5. Diagram System with Filter.

Left

Right



● Greg-Figure 6 without filter

Endocrine system	Spine	Left Colons	Right Colons
1 System	1 Cervical	1 Transverse	1 Transverse
2 Pineal Gland	2 Dorsal	2 Descending	2 Ascending
3 Pituitary Gland	3 Lumbar	3 Sigmoid	3 Appendix
4 Hypothalamus	4 Sacral	4 Rectum	4 Caecum
5 Thyroid Gland		5 Ileum	5 Duodenum

Analysis of data must be made by a certificated specialist only
Kirilovics Technologies International .

Figure 6. Diagram System without filter.

The GDV calculates the following areas: GDV diagram is the calculation of the ten fingertips with and without filter resulting in the diagram (See [Figure 7](#) with filter and [Figure 8](#) with filter reading) of the energy system and corresponding organs of the body.

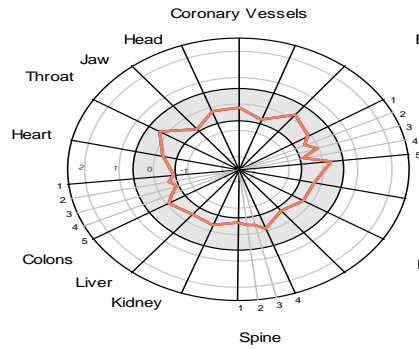
NAME: .<Linda-Figure 7 with filter>

06:11:105 13:55

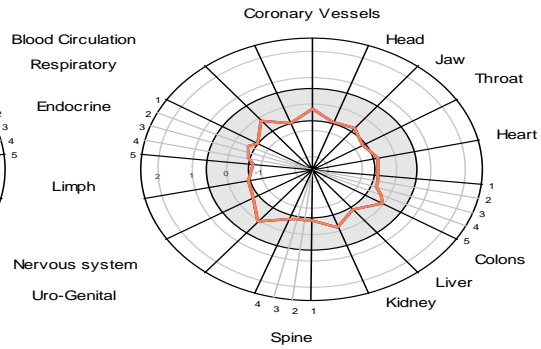
Clear Noise 30 Level Background 250
Normalized Area

Left

Right



JS = -0.245 (0.22)



JS = -0.442 (0.20)

- Linda
- Linda-Figure 7 with filter

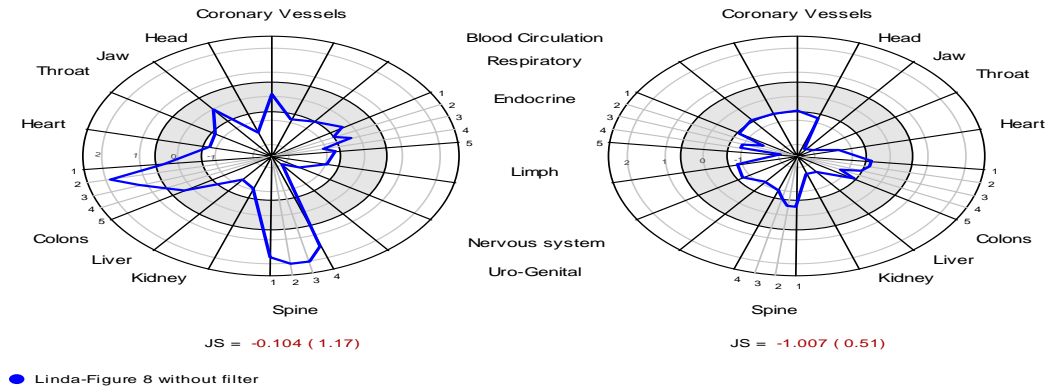
Endocrine system	Spine	Left Colons	Right Colons
1 System	1 Cervical	1 Transverse	1 Transverse
2 Pituitary Gland	2 Dorsal	2 Descending	2 Ascending
3 Pituitary Gland	3 Lumbar	3 Sigmoid	3 Appendix
4 Hypothalamus	4 Sacral	4 Rectum	4 Caecum
5 Thyroid Gland		5 Ileum	5 Duodenum

Analysis of data must be made by a certificated specialist only
Kiritonica Technologies International .

Figure 7. Diagram system with filter.

Left

Right



Endocrine system	Spine	Left Colons	Right Colons
1 System	1 Cervical	1 Transverse	1 Transverse
2 Pineal Gland	2 Dorsal	2 Descending	2 Ascending
3 Pituitary Gland	3 Lumbar	3 Sigmoid	3 Appendix
4 Hypothalamus	4 Sacral	4 Rectum	4 Caecum
5 Thyroid Gland		5 Ileum	5 Duodenum

Analysis of data must be made by a certificated specialist only
Kirionics Technologies International .

Figure 8. Diagram System without filter.

This diagram shows the area of normal energy distribution and areas of concern where the energy levels may be spiking into a higher value on the diagram or dipping to a deficient value.

The evaluation of stress levels (See [Figure 9](#) with filter and [Figure 10](#) reading) is the result of measurements taken with ten fingertips with and without filter and a calculation is derived indicating the health of an individual on a scale of 1-10. This score can indicate long-term stress, poor health, and needed life style changes for the individual.

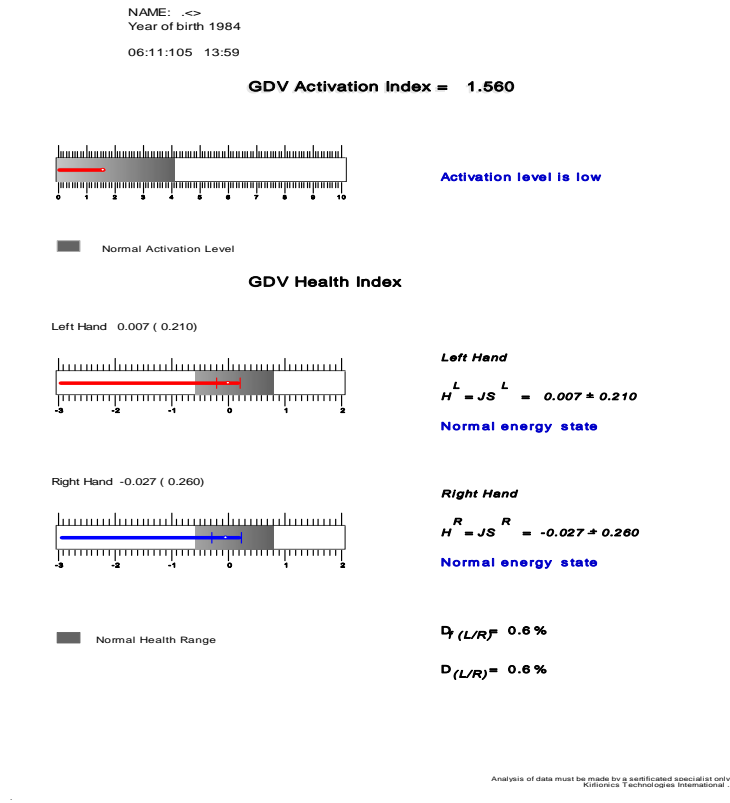


Figure 9. Stress Level Analysis with filter

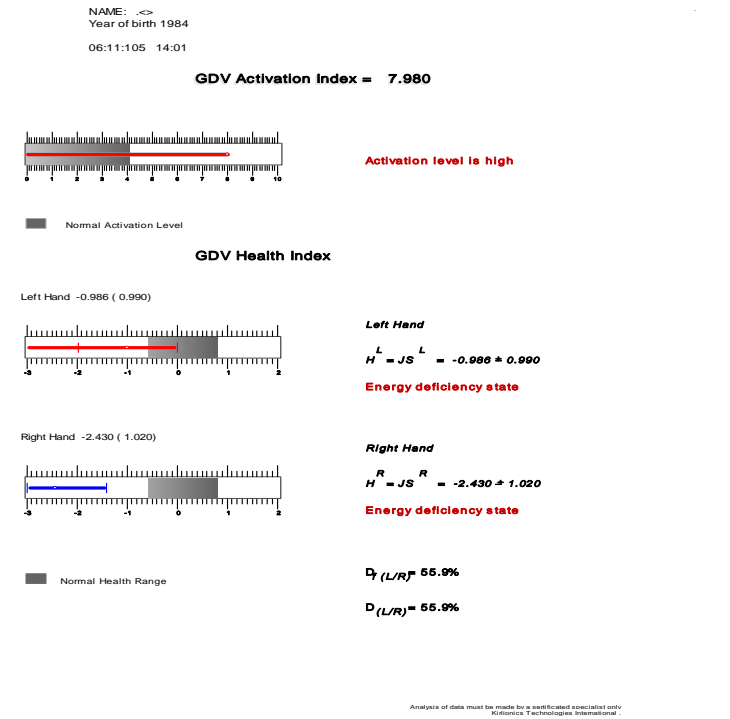


Figure 10. Stress Level Analysis without filter.

The Chakra measurement is an evaluation of the ten fingertips with (See [Figure 11](#)) and without filter (See [Figure 12](#)), resulting in a display of the seven chakras and the values of their energy levels both hyper and hypo with the values ranging from zero in balance to 6.0 either hypo or hypo on the continuum.

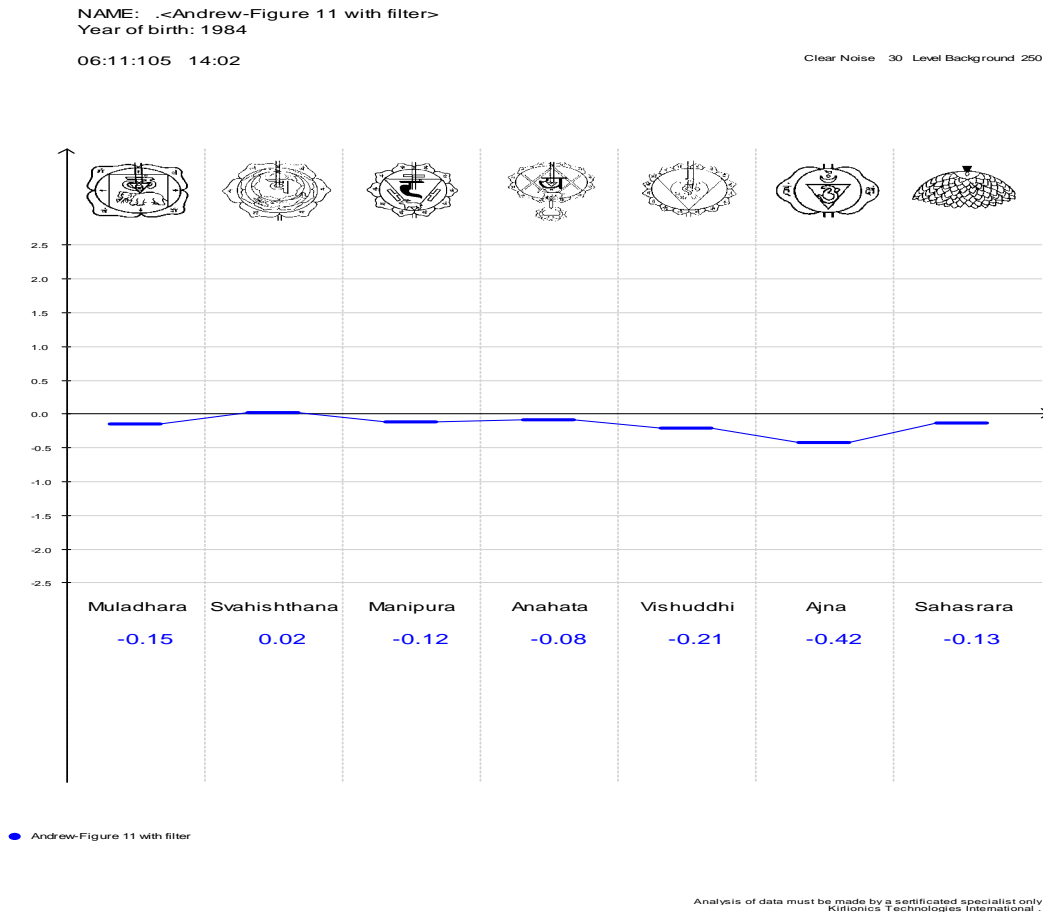


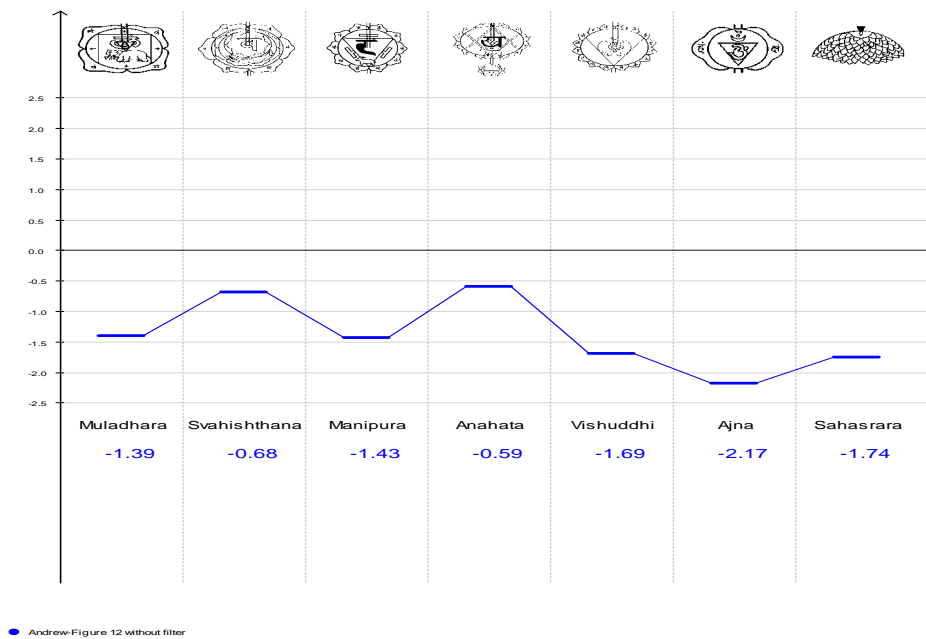
Figure 11. Chakra Analysis with Filter.

NAME: .<Andrew-Figure 12 without filter>

Year of birth: 1984

06:11:05 14:03

Clear Noise 30 Level Background 250

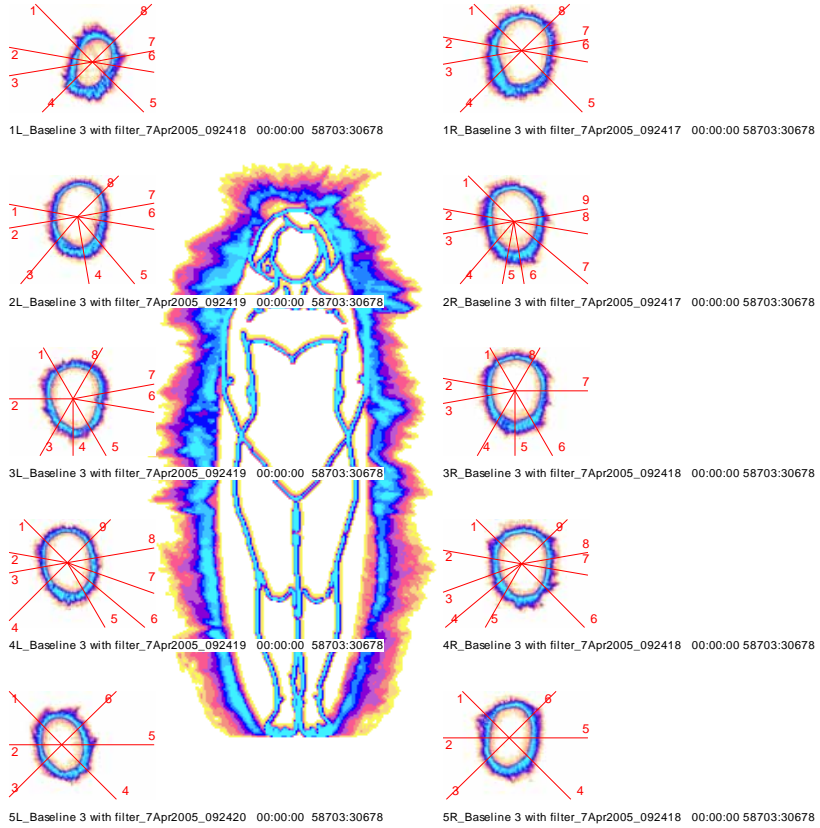


Analysis of data must be made by a certified specialist only
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Figure 12. Chakra Analysis without filter.

The energy field or aura is a display of the subsystem segments of the fingertip corona pictures, spliced together in a meaningful mapping onto the body outline. This is not an image of the field around the body. It is simply an inference about the whole energy field from these samples. The display is not an image of the body field, but is a constructed model from the fingertip readings. This reading can show the relative health of an individual. Assessment of possible disease states can be made by observing breaks in the energy field, unusual spiking and energy arrangements around the body field. (See [Figure 13](#) with filter and [Figure 14](#) without filter reading) The image indicates too little energy around the individual, which can be an indication of disease. All figures depict baseline number three readings with and without the filter.

NAME: <Susan-figure 13 with filter>
Year of birth: 1961
11:10:2005 16:18
Area 17155 Symmetry 92%



Kirilions Technologies International

Figure 13. Human Energy Field with Filter.

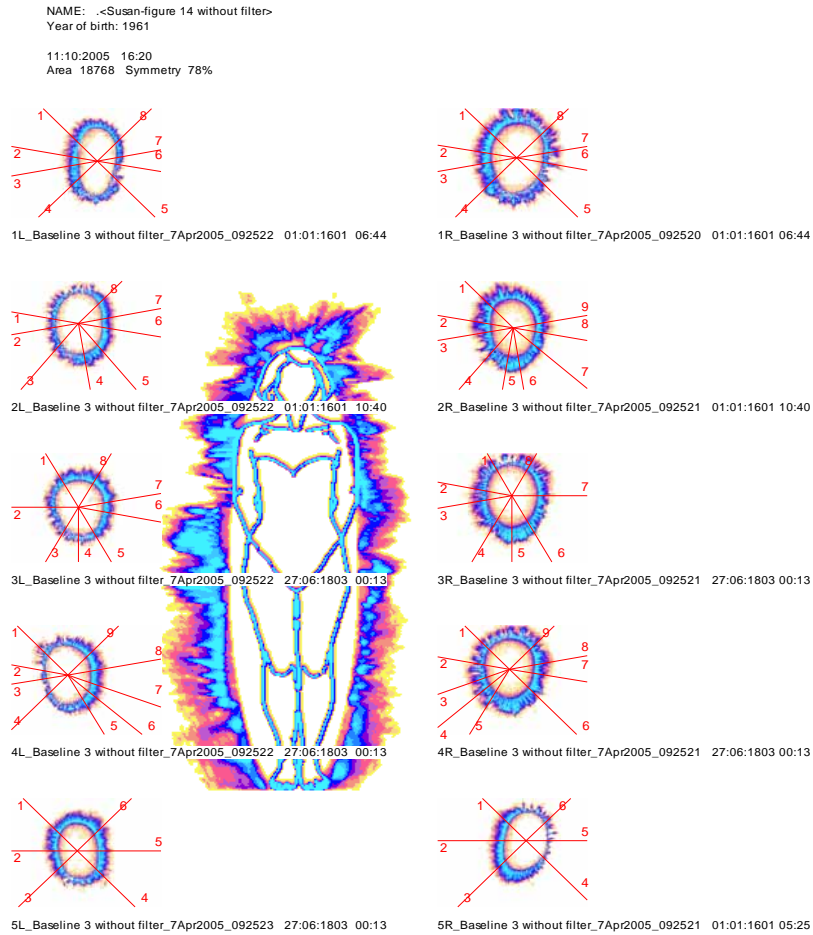


Figure 14. Human Energy Field without Filter.

The GDV, using a special electrode system, creates a high intensity field around an object, such that it produces a gas discharge in which the glow can be seen and measured on a computer screen, all the while the data is being stored and analyzed on the companion computer. The diagnostic table is based on the concepts of traditional Chinese medicine, micro-acupuncture systems and empirical data. The analysis includes utilizing information

on chakra, human energy fields and organ systems together with Ayurvedic medicine to additionally analyze the data received.

The GDV diagram estimates the general organism's energetics as compared to the energetic levels of a relatively healthy person. The computer read-out can provide the recipient with an understanding of early disease processes that produce changes in the energy field. Additionally, the GDV is able to produce a read-out of each chakra and measure how they are functioning according to a numerical value from zero balance to hyper or hypo on the computer display. This enables the researcher to assess, by this measurement, how balanced the chakras are at the time of the GDV reading.

The interpretation is achieved by means of traditional Chinese Medicine. The right and left diagrams characterize relative activity of the right (left hand) and left (right hand) cerebral hemispheres. The left hand is associated with the mental state, right hand with the physical state. A stress index shows the ratio of physical and mental fields, or in other words, sympathetic and para-sympathetic nervous systems. Scores include: 0-2: low stress; 2-4 normal stress; 4-6 heightened stress; 6-8 high stress; and 8-10 high stress.

The GDV aura or energy field analysis is the model of the energy field around the human body. The field of a healthy, active person is dense, uniform; having smooth change of color from blue to orange and yellow. Holes and energy outbursts in the computer read-out are indicators of an energy field disorder. These can point to dysfunctions on the mental, functional or organ level. A picture of the individual aura is an effective measure to provide the basis for correcting the individual's energy state through healing and traditional healing techniques.

The GDV chakra analysis estimates the energy states of various chakras. The green corridor corresponds to the equilibrium condition; up and down deviations indicate misbalances of energy distribution along chakras. An imbalance of the chakra characterizes either a psychological or physical suppression of some kind. The picture or field distribution enables us to establish direct contact with the energy field and chakra. In clinical trials this has demonstrated to be highly effective in the diagnosis of disease and psycho-functional disorders.

The GDV picture of the energy field of the human body is an objective image, reflecting the energy state of the person. It has been shown that a change in diet and hydration and physical exercise can change the reading on the GDV. Clearly, this device has numerous clinical applications.¹³¹

The effects of crystal bowl toning on the measurements of the GDV and scores on the POM were analyzed in this study. Specifically the researcher examined whether the chakra values on the GDV change as a result of being exposed to the sound of the crystal bowl. The Profile of Mood States yields data about changes in mood before and after the intervention. The ability to measure a chakra has never been shown with the GDV or any other recognized instrumentation. This provides the scientific community with useful information on whether chakras respond to sound and, if so, how.

With an understanding of the history of sound and healing and review of pertinent literature, a discussion of the research methods utilized in this study are examined in this next chapter. Included are the participants, sample population, inclusion and exclusion criteria, demographics, geographic location, and procedures. A detailed discussion of the treatment and control group is given along with how the GDV and POM function in this study. The

GDV will be explained in a detailed manner to give the reader a greater understanding of the capabilities of this equipment. The research design is enumerated and detailed in sections including randomization, independent variables, dependent variables, conditioning of the space, and location of the space. This is to provide a clear picture of precisely how the research study was conducted.

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CHAPTER 3: RESEARCH METHODS

Qualitative Methods

This chapter contains four sections: the participants of the study; the instrumentation; the research design; and the procedures used in the research study. This study employed an experimental pre-test/post test control group design to measure the effects of Crystal Bowl toning on the Gas Discharge Visualization device chakra readings and the Profile of Mood States Inventory.

Participants

The principal investigator recruited the participants for this study, ages 18 through 79, through a New Jersey area holistic journal and discussion with the editor concerning her research study. The principal investigator requested to submit an article for publication, detailing the research study, the Gas Discharge Visualization Technique and her need for people to become volunteers for this study. (See [Appendix A.1](#)) The editor of Inner Realm Magazine was very interested in the GDV and asked this principal investigator to submit her article for publication.

The article was published in the December 2004 issue of this magazine in hopes of recruiting the 80 subjects needed to begin the study in January of 2005. The article was not only informative, but offered potential subjects a computer print out of the subject's energy field and chakras for participating in the study. Within a few days of the magazine being distributed, my psychotherapy office telephone started ringing. I began receiving approximately ten telephone calls per day from people who wanted very much

to be included in this study. By the second week in January 2005, the principal investigator had enough people from the article to begin her research with the GDV.

The participants were screened over the telephone beginning, of course, with the age criteria and whether they were in any type of treatment that included the use of psychotropic medications or had any diagnosis that included schizophrenia, bi-polar disorder or severe depression. This was done to eliminate subjects who may skew the data with potent medications in their systems or severe mental illness that could give an inaccurate GDV reading. The appointments were made over the telephone and the respondents were told that the procedure would take one hour in the principal investigator's office setting. The respondents were asked not to eat within three hours and not to consume any alcoholic beverage or medication prior to the appointment time. In addition, the principal investigator ensured that there were no participants with a pacemaker or any other electronic device in their body, as the electro-magnetic discharge from the GDV could disturb the functioning of the medical device.

Other participants included clients currently in the principal investigator's psychotherapy practice who met the above criteria, friends, colleagues, former clients and the referral of other people who had volunteered to be a subject and wanted their friends to experience the study. The principle investigator either contacted the above people by phone detailing her study or they contacted the investigator requesting to be included in the research. In each contact with a potential participant, the principal investigator relied on the actual wording of her published article and did not deviate from the content. As a result of the many initial contacts from the article and word of mouth concerning the study after one month of recruitment, many referrals were made through secondary and

tertiary sources. In mid-January of 2005, eighty-six subjects enrolled in the research study. There were 41 in the treatment group and 41 in the control group. There was so much interest in the study that people continued to call well after March 2005 to be involved. Names and phone numbers were taken from the late callers to be notified for future studies with the GDV. The principal investigator also received referrals from her children's friends parents who heard about the study, interested persons connected with her children's sports activities and due to discussions at parties.

Samples

After all contacts were made, a total of 86 adults had responded to the study. One subject was excluded because he had a pace-maker and did not divulge this until he was in the principle investigator's office. Another subject arrived for his appointment with the information that he was bi-polar and taking prescribed medications. The principal investigator discussed with him that this was outside of this current study. Two more subjects were excluded due to an error in baseline readings which would skew the data. These subjects were replaced by two other subjects, whose three baselines and two post baselines were captured by the GDV.

Eight-six adults fulfilled the initial inclusion criteria:

1. The adults in the study had to be between the ages of 18 and 79 years of age at the time of the research.
2. The adults had to complete the consent form (See [Appendix A.2.](#)) and medical questionnaire (See [Appendix A.3.](#)) upon arriving for their appointment time. This form simply gave consent to be in the study, participate in either the treatment or control

group, experience the crystal bowl toning and receive 10 readings of the GDV; three baselines with and without filter and two posts with and without filter readings.

3. Inclusion in treatment or control group occurred by placing alternating participants on Group a list (Treatment) or Group B list (Control). The extra six subjects were utilized to ensure that if a subject failed to show for an appointment there would be additional subjects in the sample. In addition, the protocol of the study was to obtain ten GDV readings with and without the filter. The principle investigator's concern was that if a reading was missed; for example one of the baselines or post readings, it would exclude the subject from the study upon conclusion and at the time the data was being exported from the GDV. Therefore, this investigator decided to include four additional subjects to ensure the 80 participants needed for the study. As it turned out two subjects in the treatment group did have a missed baseline reading; therefore two additional subjects were utilized and two subjects were excluded due to a pacemaker in the subject and a diagnosis of bi-polar disorder.

4. The subjects agreed, on the telephone, to attend the one hour session to be in the study, complete the pre and post Profile of Mood States Inventory and ten readings on the Gas Discharge Visualization Device. There were no letters sent out confirming this information and the principle investigator only had one subject not come in for her appointment. She was replaced with another subject the next day. There was excellent compliance with appointments.

Exclusion criteria

1. The subjects could not be below the age of eighteen. The oldest subject that called to be in the study was 79; therefore that became the upper limit on the age. If an older person had called and were in good health, they would have been included in the study.

2. The subjects could not have a pace-maker or any other electronic device in their body for reasons described previously. The subjects had to be in reasonably good mental health. The principle investigator decided to exclude individuals with chronic, pervasive diagnoses including Bi-Polar Disorder, Schizophrenia and Chronic Depression. The subjects completed a medical questionnaire confirming any medical, psychiatric problems as well as any prescribed medication being taken regularly.

3. The third exclusion criterion included utilizing psychotropic medications to control symptoms of a psychiatric diagnosis.

Demographics

There were 82 adults participating in the study. In the treatment group there were a total of 41 subjects, 25 females and 16 males. The control group consisted of 41 subjects, 31 females and 10 males. The following age groups were represented in the Treatment Group: Among the 25 females there were two 18 year olds; one 20 year old; one 25; one 30; one 32; one 33; one 34; one 36; two 39; two 40, one 41; one 42; two 43; one 45; one 52; one 53; two 57; one 62; one 63 and one 64.

Table 1. Females in Treatment Group: Age Distribution.

Age 20: n=1
Age 25: n=1
Age 30: n=1
Age 32: n=1
Age 33: n=1
Age 34: n=1
Age 36: n=1
Age 39: n=2
Age 40: n=2
Age 41: n=1
Age 42: n=1
Age 43: n=2
Age 45: n=1
Age 52: n=1
Age 53: n=1
Age 57: n=2
Age 62: n=1
Age 63: n=1
Age 64: n=1

In the treatment group there were 16 males. Of the males, the ages were distributed as follows: There was one 19 year old; two 20 year olds; two 21 year olds; one 24 year old; one 25 year old; one 30 year old; one 31 year old; one 35 year old; one 39 year old; one 42 year old; one 56 year old; two 58 year olds and one 62 year old.

Table 2. Males in Treatment Group: Age Distribution.

Age 19: n=1
Age 20: n=2
Age 21: n=2
Age 24: n=1
Age 25: n=1
Age 30: n=1
Age 31: n=1
Age 35: n=1
Age 39: n=1
Age 42: n=1
Age 56: n=1
Age 58: n=2
Age 62: n=1

Control Group Age and Gender Distribution

In the control group there were 31 females and 10 males. The following is an age distribution among the females: There was one 18 year old; one 20 year old; one 21 year old; one 27 year old; one 38 year old; one 42 year old; one 43 year old; one 44 year old; three 45 year olds; one 46 year old; two 47 year olds; two 48 year old; one 49 year old; one 51 year old; three 52 year olds; two 54 year olds; two 55 year olds; one 56 year old; two 59 year olds; one 62 year old; one 68 year old and one 79 year old.

Table 3. Females in Control Group: Age Distribution

Age 18: n=1
Age 20: n=1
Age 21 n=1
Age 27: n=1
Age 38: n=1
Age 42: n=1
Age 43: n=1
Age 44: n=1
Age 45: n=3
Age 46: n=1
Age 47: n=2
Age 48: n=2
Age 49: n=1
Age 51: n=1
Age 52: n=3
Age 54: n=2
Age 55: n=2
Age 56: n=1
Age 59: n=2
Age 62: n=1
Age 68: n=1
Age 79: n=1

There were 10 males in the control group. The age distribution is as follows: two twenty year old; two 21 year olds; one 22 year old; one 47 year old; one 48 year old; one 61 year old; one 64 year old and one 77 year old.

Table 4. Males in Control Group: Age Distribution.

Age 20: n=2
Age 21: n=2
Age 22: n=1
Age 47: n=1
Age 48: n=1
Age 61: n=1
Age 64: n=1
Age 77: n=1

Geographic Location

The research study was held in one location in the principal investigator's psychotherapy office in Ridgewood, N.J. The laboratory was set up in the office and included a long table with the Gas Discharge Visualization Device, Dell Laptop Computer, I Omega to store GDV data, Dell HP desk top printer and two chairs for the principle investigator and the subject. There were also alcohol swabs to clean the lenses of the GDV in between readings of each subject and filters to be used for each subject. The filters were changed and lenses cleaned between each subject to ensure that the reading was not incriminated with previous fingerprints. The Dell Laptop Computer was designated solely for the research study that included capturing GDV data and storing this data on the I-Omega. The Dell Laptop was also not connected to the internet to ensure that the data would not be corrupted in any way by possible viruses from the internet connection.

The waiting room consisted of an entrance door where subjects could sit comfortably on a large couch with a table in front of it to fill in their consent forms, medical questionnaire, and Profile of Mood States Inventory Pre and Post.

The treatment room consisted of two chairs, large couch, desk and chair. The Crystal Bowl was positioned in the center of the room on a Persian rug. The principle investigator sat in one straight back chair with a side table that included a Time-Ex Stop Watch and Rolex Watch to record time intervals in the Crystal Bowl Treatment. This was also utilized to time the control group intervals between pre- and post-readings on the GDV.

Procedures

The subjects entered the waiting room at the designated time for the one hour period. Upon arrival the principle investigator greeted them and invited them in. They were told that they could sit on the couch and begin by filling out the POM pre-test evaluation. (See [Appendix A.6.](#)) A medical questionnaire and consent form was also given to the subjects at that time. The subject was told that they were to complete the POM with the question of how they have been feeling in the past week and today. They were advised that when they completed the questionnaire, they could inform me and we would begin by taking a first baseline on the GDV. This took the subject approximately ten minutes. After this, they were escorted into the treatment and research room. The subject was escorted to the research table where the GDV, computer software, and printer were located. They were asked to sit down next to the principal investigator who began by explaining the GDV and how readings would be taken. She explained that the GDV is a video camera and software program that takes readings based on each fingertip being placed on the lenses after being inserted into leather sheath to ensure that no light entered the lenses and filter when the photograph of their fingertip was being taken. She assured them that she was operating the computer and taking the readings as they placed each, individual finger through the leather sheath and onto the glass lenses. She asked them to try this out. Most subjects were initially unsure of the process and were questioning about how this would occur, but they were assured them of the process. Once each fingertip reading for the first baseline would occur they could relax and understand the process and protocol of the GDV. In addition, the principal investigator explained that there would be two readings taken with each of the three baseline and two post readings. There would be a first reading with filter (physical) and without filter (emotional). They

were instructed that the first baseline would include these two readings, i.e., with and without filter and that a five minute period would elapse between each baseline and post readings, with the exception of post-two GDV reading would be twenty minutes after post-one. The subjects were told that the first reading was to ensure that they would become comfortable with the process of readings being taken with the GDV and each successive reading would accurately display their emotional and physical state on the computer screen. After the first baseline reading was taken the subject appeared visibly more comfortable with the process of taking the GDV readings. The principal investigator informed them that the GDV reading was evaluating each finger tip, based on Chinese Medicine, computing the findings and that the sophisticated software would calculate the readings on the screens for the energy field, chakras, diagram system; all with and without filter or sympathetic and parasympathetic nervous system. The subjects were somewhat anxious about what the read-outs would show, but also excited to see this on the computer.

Treatment Group

The treatment group followed the procedure listed above, completed the pre POM and was escorted to the GDV for the three baseline readings with and without filter. In all they had six baseline readings. There was a five minute period between baseline 1; 2; and 3. For example, baseline 1 was taken with filter followed by without filter; a five minute period was observed and baseline 2 with filter and without filter was taken; a five minute period observed and baseline 3 with and without filter was captured. Following this the participants were escorted by the principal investigator to the area with the bowl and couches and asked to become comfortable for the Crystal Bowl treatment. The

principle investigator provided pillows and blankets for the subjects to become relaxed and comfortable in the treatment setting. Almost all subjects took off their shoes, lied down and covered themselves with the blanket to receive the treatment with the bowl. The principal investigator sat in a comfortable chair with the Rolex watch and Time-Ex Stop Watch at the side table and began playing the Crystal Bowl for a period of fifteen minutes. The bowl was struck in a gong like fashion and then played around the perimeter of the bowl for a period of fifteen minutes. When the principal researcher felt that the bowl needed to be louder, the bowl was gonged two or three times, which has the effect of making the sound louder and deeper. The principal investigator continued to sound the bowl taking the mallet around the perimeter of the bowl until the fifteen-minute time period was complete. At this time the subjects seemed to be in an almost altered state. The principal researcher went over to the research table and asked the subject how they were feeling. The subjects started to become more conscious and said they were fine. At this time the principal investigator ensured that the GDV lens had a filter placed on it and the appropriate post-1 reading was typed into the computer program. The principal investigator then asked the subject to come over to the research table and take a post GDV reading. This was a period of five minutes between the bowl ending and the subject coming over to the research table.

Once the subject was at the table a post-1 reading with filter reading was taken. The computer was then programmed for post-1 without filter and another reading was taken. The subject was then instructed to go into the waiting area where the POMs were kept and fill out a post Profile of Mood States while the principle investigator waited by the research table. The investigator timed this for each subject and it was a twenty-

minute period in between the first post GDV and the post 2 GDV reading. Upon completion of the post POM the subject was asked to come back to the research table for the final GDV post 2 reading before the subjects readings were reviewed on the computer screen. The subject came to the table and a post 2 with and without filter reading was taken. After completing the final GDV reading, the principal investigator brought up the results on the computer screen, which included the energy field reading, chakras, and diagram system with and without filter. Subjects were given computer print-outs of each reading from the GDV. The one-hour session was complete when the subject received the computer print-outs from the GDV analysis and the principal investigator had discussed with them her findings on the energy fields, chakras, and diagram systems and how it related to their general health and any areas that might be of concern. The subjects were very interested and engaged in conversations of their individual health problems and how they were being displayed on the GDV energy field analysis, chakras, and diagram systems. The session ended with the subjects leaving the office with their individual computer print-outs.

In total the subjects were involved in completing the study for a period of 45 minutes and 15 minutes to observe the GDV readouts, print copies and any discussion of the individual's energy field, chakra, or diagram system. The principal investigator, on some weekend days, spent up to seven hours performing the study, beginning each new session on the hour.

The Control group was exposed to the exact protocol as the treatment group. The subject came to the principal investigators office at the appointment time, was greeted

and thanked for being involved in the study and asked to complete the Profile of Mood States questionnaire as well as the consent form and medical questionnaire. They were instructed that as soon as they finished the pre-POM that they should come into the research area where the GDV, computer, and printer were located on the table and sit next to the principle investigator. The subjects were informed that they would be receiving the same GDV readings as group A (treatment group) but that they would not be exposed to the sound of the Crystal Bowl. Instead, they could choose to sit or lie on the couch, in the treatment area and remain quiet for a period of fifteen minutes while the principal investigator sat in the opposite chair quietly observing the fifteen-minute time frame. This is the same procedure used for the treatment group who received the Crystal Bowl toning. The treatment group was simply referred to as group A. As soon as the subjects completed the pre-POM (ten-minute period), they were asked to sit next to the principal investigator. The GDV camera and software was then discussed with them. They were told that they would place each fingertip on the lens beginning with the right hand thumb into the lens sheath and a photograph of each fingertip would successively be taken. The subject was shown the lens on the camera as a way to familiarize themselves with the GDV camera. The principal investigator showed them the leather sheath on the GDV, which protects the lens from the light and asked the subject to place their finger tip through the leather cover and gently onto the camera lens. The principal investigator then proceeded by taking the first baseline reading with the filter. Upon completion, the filter was removed and baseline 1 without filter was taken, again using all ten finger tips. After a five-minute waiting period was observed by the principal investigator, baseline 2 with and without filter was taken. Another five-minute waiting period was observed and

baseline 3 with and without filter was recorded. At this time the principal investigator asked the subject to sit or lie comfortably in the treatment area and a fifteen-minute period was observed. At the end of the fifteen minutes, the principal investigator went over to the research table and ensured that the GDV lens was with filter and the computer was ready for Post-1 with filter. The subject was asked to return to the research table (a period of five minutes following the end of the 15 minute quiet period) and the GDV Post-1 with filter was taken. Subsequently, the filter was removed and the computer was ready for Post-1 without the filter. Once this reading was taken, the subject was asked to complete the post POM in the waiting area and a twenty-minute time period was observed with the stop watch. The control group subject then returned to the research table and the computer and GDV was ready for the Post-2 with filter. Following this reading, the filter was removed and Post-2 without filter was taken. The subject and principal investigator then used the remaining time to examine the energy field, chakra and diagram system of the subject. The principal investigator printed out copies of each of these three readings pre and post for the subjects who were given an opportunity to discuss any questions they might have had about their readings. The session ended at the end of the hour and the subjects left with their computer print-out of the energy field, chakra, and diagram system.

Instruments

In order to measure the effects of crystal bowl toning on the chakra system and mood states, two instruments were utilized in this study. The principal investigator selected these measurements based on the following criteria:

The principal investigator chose the Gas Discharge Visualization Device because it is the state of the art computer software/video system that has been shown to measure accurately the human energy field, chakras, and diagram system with a finger tip reading based on Chinese medicine. The GDV has been tested for dissertation research and approved as an accurate instrument in Russian clinical trials. It is also utilized in a number of European countries as a means to diagnose the onset of illness and to follow success or failure of treatment regimes. The GDV has been approved by the Russian government as a medical device.¹

The principal investigator wanted an instrument that she would feel comfortable with, after being trained on the computer software/video system, and that would be able to save and store accurately the data taken from all subjects. This was vital for statistical purposes and visual readings of individual subjects. The principal investigator was the only person operating the GDV, taking readings, and storing the data. There were no research assistants at that point in the study. This assured that mistakes would not be made in taking readings and saving the data on the system. The GDV, computer, printer and I-Omega were used solely for the research study.

The Profile of Mood States Inventory was utilized by the principal investigator because it was found to be an effective measure in similar studies using the GDV by Dr. Korotkov.² The Profile of Mood States inventory was also very easy to use for data collection pre and post testing. The principal investigator wanted the subjects to be able to complete the questionnaire with relative ease and without the need for supervision. The time element was also important because maintaining the one hour session time

made the POM a simple but strong measurement to use. The POM can be completed by a healthy individual in three to seven minutes.³

The POM measures mood states and is not a clinical assessment of anxiety or depression. In this study the principal investigator wanted to assess changes in mood pre and post the Crystal Bowl toning as the subject population is randomized and not a specific population possessing diagnosed anxiety and or depression.

Gas Discharge Visualization Technique

The Gas Discharge Visualization Technique is a camera and software program that reads the subject's energy states on a number of different levels including the subject's psychological type, stress levels, condition of energy systems, diagram system and evaluating energetic functioning of organ systems and balance of chakra system.⁴ The GDV software program takes a fingertip reading utilizing the ten fingers and evaluating this based on Chinese medicine. The GDV, using a special electrode system creates a high intensity field around the finger, such that it produces a gas discharge in which the glow can be seen and measured on the computer screen, all the while the data from the fingertip readings are being stored and analyzed on the companion computer. Please see a more extensive discussion of the GDV in the literature review in Chapter Two.

The GDV estimates the organism's energetic health in the areas of 1) the energy field around the body; 2) Diagram system; and 3) the balance of the chakras. The GDV takes two different types of readings: with filter and without filter. The filter is a thin, transparent round, plastic type of equipment that fits directly on the lenses of the GDV camera. This reading shows the physical (parasympathetic nervous system) aspects of

the energy field functioning, chakras, and diagram system. The reading without the filter informs about the sympathetic nervous system or the emotional body of the subject. The readings with and without filter present themselves very differently in most subjects.⁵ For example, a subject with a very healthy looking energy field with a filter on the camera might reveal many problems when examining their readings without filter data that would be related to emotional issues, thus demonstrating a clear distinction between GDV computer reading with and without filter.

The Profile of Mood States Questionnaire

The Profile of Mood States was the questionnaire given to each of the eighty-two subjects in the study as a pre- and post-measurement. The principal investigator felt that this was the best choice in assessing moods based on similar studies conducted with the Gas Discharge Visualization Device and described in Dr. Korotkov's book "*Measuring Energy Fields State of the Science*".⁶ There were numerous studies cited including:

- 1) The Computer Evaluation of the Psychological Potential of Top Athletes utilizing the P.O.M.
- 2) A correlation between Psychophysiological and Genetic Factors for Top Athletes and Middle Athletes in Sports with Physical Endurance by Bundzen and Korotkov.
- 3) The Effects of Listening to Music in Focused Meditation on the Human Energy Field as measured by the GDV and POM by S. Gibson.
- 4) The use of the GDV in Intercessory Prayer Research: Findings and Considerations By J.H. Dunlap.⁷

According to CMHSR Measures Collection on the Profile of Mood States website, the original scale, developed by McNair et al, has sixty-five items describing feelings people have.⁸ There is a brief version, comprising eleven of the original POMs items, developed by Cella et al, in 1987. However, this version (Brief POMS) provides only one score for overall psychological distress. There is yet another version called the short form of the Profile of Mood States (POM-SF) developed by Shacham in 1983. The short version contains thirty-seven items, selected from the original POM. It retains the six subscale information provided by POMS.⁹ The principal investigator used the Quik Form for easy responses and scoring capabilities. The general purpose of this scale is to measure psychological distress. The variables that are measured include mood disturbance; six domains including fatigue-inertia; vigor-activity, tension-anxiety, depression-dejection, anger-hostility, and confusion-bewilderment.¹⁰ The subjects who

receive this type of questionnaire are a variety of healthy, physically ill, and some psychiatric populations. The general population is of a more healthy population where the researcher wants to evaluate natural fluctuations in mood states. It is reported that a healthy population takes from three to seven minutes to complete and a physically ill person may take up to twenty minutes.¹¹

The validity of the POMS has been long established for use with psychiatric outpatients. The POM has additionally been utilized as a measuring tool in the following areas:

The scales are particularly useful for monitoring patient response to therapeutic intervention, especially short-term treatments. They have also differentiated the effects of experimental manipulations of mood normal subjects and non-psychiatric subjects, such as college students, dental patients, and cancer patients. Since 1971, the POMS has been used in a myriad of applied and research settings such as drug development, mood relations to physical illness and the quality of life, smoking cessation, space travel, isolation in Arctic and Antarctic expeditions, HIV-AIDS, and the prediction of athletic performance. In the past decade, approximately 3,800 authors cited the POMS in 1,000 reports published in about 400 journals.¹²

The Quik-Score form allows easy scoring for each POM completed.¹³ The answers transfer easily because the form allows for responses to be transferred to each page for conversion and an easily calculated score. The Quik Score gives the option for three ratings for assessing mood: the Past Week including Right Now or some other determined time the researcher may decide to place in the POM.¹⁴ The principal investigator checks off for the subject how he wants them to respond. In this study the principal investigator requested in the pre-POM that the subject answered the questions in light of how they had been feeling in the past week. Upon completion of the Post-POM the subjects were requested to respond to how they are feeling right now. The principal

investigator felt that the Pre-POM responses of the participants to how they felt in the past week would give a good indication of the general mood of that subject during the past week. The Post-POM with the request of how the subject was feeling right now, would give an accurate reading of how the subject was feeling after the crystal bowl treatment or the effects of the control group with no crystal bowl, but a quiet fifteen-minute period.

The responses to the questions included 0= Not at all; 1=A little; 2=moderately; 3=Quite a Bit; 4=extremely.¹⁵ Most subjects found it easy to respond to the questions. However, there were a small number of subjects who appeared to be taking longer in completing the POM. The principal investigator attempted to answer all questions and encourage the participants to give their first impression or response. The subjects completed the pre-POM and post-POM during the one-hour session. The POM questionnaires were scored by the principal investigator and three research assistants and the data was recorded on an Excel spreadsheet for statistical analysis.

Research Design

The study was designed as an experimental pre-test/post-test design with random assignment of subjects. There were 82 subjects in the group, i.e., 41 in the treatment and 41 in the control group. The independent variable was the crystal bowl toning. The subjects in the treatment group received the crystal bowl toning. The subjects in the control group received fifteen minutes of sitting quietly in the treatment space.

Randomization

The research study was a random design as the respondents were placed in the treatment or control group as they called and each respondent was alternately noted as group A and B on a subject list. There were two groups. Group A was designated the treatment Group and Group B was the control group. Each subject was offered various appointment times. The principal investigator made the schedule very flexible to accommodate the subjects. No specific times were set aside for treatment or control group. In addition, the researcher determined the subjects' group association without their prior knowledge. They were informed of their specific protocol upon arrival. It is important to note that there was a cluster of treatment subjects in the first two weeks of the study. Similarly, due to the random subject list and prior designation, there was a cluster of control group subjects in weeks five and six of the study.

As an incentive for the subjects to agree to be in the study and make an appointment to be included in the research program, the participants in the treatment and control group each received a computerized read-out of their energy field, chakras, and diagram system upon the final post-GDV reading. This was a great impetus to be in the study as many of the subjects were calling to be included in the research to have their energy field read by the Gas Discharge Visualization Device.

This study was designed to measure the effects of crystal bowl toning on the chakra system as read by the Gas Discharge Visualization technique and Profile of Mood States questionnaire. This study was developed after fifteen years of working with the crystal bowl in meditation groups with adults and with children in an elementary school in Ridgewood, N.J. The crystal bowl was also utilized in the principal investigator's

psychotherapy practice as a healing modality with individual adult clients and female clients attending a women's spiritual development group.

The principal investigator did have attachment to outcome for two main reasons:

- 1) The principle investigator used the crystal bowl as a healing modality with both adults and children and shared the impact the crystal bowl tones had on emotional well-being.
- 2) The use of the crystal bowl arose out of years of personal use in spiritual healing groups. Therefore, the principal investigator did have certain expectations regarding the effectiveness of the crystal bowl on feelings of well-being, as indicated in the scores on the Profile of Mood States and the possibilities of effects on the chakra system as measured by the Gas Discharge Visualization Device. This study was conducted entirely by the principal investigator with all subjects in the treatment and control group. Her research assistants included three high school students who helped the principal investigator score the Profile of Mood States for statistical analysis.

Independent Variable

The independent variable used in this analysis was the intervention, a one-hour session, in which adult subjects were exposed to fifteen minutes of crystal bowl toning. The crystal bowl used in this study is a bowl tuned to the note of C. Group A (the treatment group) received the intervention after they completed the initial Profile of Mood States questionnaire and had three baseline GDV readings with and without filter. Each GDV with and without filter reading were five minutes apart. The treatment subjects were then exposed to the independent variable (crystal bowl) for a period of fifteen minutes. After a subsequent five-minute period they received a post reading with and without filter. They were then asked to complete the post POM. After a twenty-

minute period the subject returned to the GDV table to complete the final Post-2 with and without filter. Group B (control group) did not receive the independent variable (crystal bowl). They sat, however, or laid comfortably in the same chair and couch as group A for a period of fifteen minutes with the principal researcher present and sitting in the same chair used to play the crystal bowl. Following a five-minute period, group B subjects received a Post-1 with and without filter. They were then asked to complete the post POM. They then returned to the GDV table after a 20 minute period for the final Post-2 with and without filter.

Dependent Variables

There were two dependent variables utilized in this research study. These dependent variables were as follows: Profile of Mood States questionnaire for adults and the Gas Discharge Visualization Device. The scores for the POM were analyzed pre and post in both group A and B. The values of the GDV were compared with and without filter on the chakra reading. In addition the value of baseline three with and without filter was compared to Post-1 with and without filter in both groups A and B.

An additional analysis was undertaken to determine the percentage of all subjects in Group A who responded either positively or negatively to the crystal bowl on the chakra reading.

Research Study

This section describes the location of the research study, the conditioning of the space, the manner in which contact occurred with the participants, data collection, as well as the intervention itself in the one-hour research format.

Location of Study

The study was held in one location, in Ridgewood, New Jersey, in the principal investigator's office which was designated for the research study. The principal investigator secured this office setting in October 2004 to be certain to have an office large enough to have a laboratory setting for the Gas Discharge Visualization Device, Dell Computer, I-Omega for storage of data and a Hewlett Packard Printer to give subjects color print outs of their GDV readings. In addition, the space included a comfortable seating area that included a couch, two chairs, desk and Crystal Bowl. The floor was newly carpeted and lighting was natural light plus one lamp. The space was air conditioned for summer use as well as heated for cold weather. The research space also included a waiting room where subjects entered and sat down on a large couch. It was in this space that the Profile of Mood States questionnaire was completed as well as the consent form and medical questionnaire. The principal investigator had copies of the POM on the coffee table in front of the couch with each two POMs coded for pre- and post-test, as well as data on each subject, whether they were in group A or B , name and age. The subjects also completed a document consenting to be in the research study and that their information would be coded and kept confidential. There was an agreement clause that some readings may be used in the dissertation, however last names would not be utilized. (See [Appendix A.4.](#))

Conditioning the Research Space

The principal investigator also used the space as a psychotherapy office when not conducting the research study. The principal investigator wanted to ensure the conditioning of the space and therefore paid careful attention to the following aspects: First, psychotherapy sessions were held on days other than the research study. Second,

each morning the principal investigator spent a half hour in meditation and prayer to create a quiet and peaceful environment for each participant. Lastly, each morning a specific prayer was said to clear the space of unwanted confounding energies and a sage was lit in each of the two rooms for fifteen minutes prior to a subject coming for the study. (See [Appendix A.5.](#)) There also were quartz crystals in each of the two rooms as well as two crystal bowls. Several statues of Buddha from India were placed on the shelves as well as an angelic form made by a healer and teacher in Sedona for the specific office space and the principal investigator's research study.

When considering the comfort of each subject, the principal investigator chose to have two large blankets and four pillows in each of the two rooms. The principal investigator provided bottled water to each subject at the end of the hour research study. There was no music playing as the principal investigator did not want to have any other notes or tones in the research space other than the crystal bowl for the fifteen-minute period. Considering that the subject may require a break at some time during the hour, the principal investigator suggested that each subject use the restroom prior to the one-hour study session. This was to ensure the continuity of the study's protocol and that there would be no interference during the one-hour time period with the subject. There were no foods, substances, water or soda allowed during the one-hour research study. Upon making the appointment for the study, each subject was asked not to eat or drink within three hours of the testing except for water. This was to ensure that the GDV readings were accurate and not confounded by the introduction of a substance into the subject's body that could produce a change in a GDV reading. The principal investigator energetically cleared the research space in between each subject entering the laboratory

and GDV. This was accomplished while the new subject was completing the pre-POM and consent form. During this time, the principal investigator sat in a chair by the laboratory and energetically cleared the space for the next subject in the research group.

During the one-hour research session there was no one else in the office space other than the principal investigator and the subject. If a subject arrived early for his/her appointment, the principal investigator had a door that closed, separating the laboratory area from the waiting room/POM completion area. This allowed for privacy of the subject as well as maintaining the conditioned space.

Upon completion of the study, the GDV data was sent to a computer analyst who exported the GDV data on the eighty-two subjects and placed the data on an Excel spreadsheet for statistical analysis. This was completed in approximately two weeks. The data was then sent to the statistician designated for this research study.

At this time of the study, with all the testing complete, data in the hands of the statistician, the researcher awaits the results. For the researcher it is a time of examination of how the study was conducted and a reflection on what the results will provide based on the hypothesis. The next chapter, Results, gives us the answers to these questions.

Chapter 3 Endnotes:

¹ Konstantin Korotkov, *Measuring Energy Fields: State of the Science* (Fair Lawn: Backbone Publishing Company, 2004).

² Ibid.

³ Douglas McNair and JW Heuchert, Profile of Mood States: Technical Update (Towanda: Multi-Health Systems, Inc., 2003).

⁴ Korotkov, *Measuring the Energy Fields: State of the Science*.

⁵ Ibid.

⁶ Ibid.

⁷ Ibid., 19.

⁸ Website: www.gwbwen.wustl.edu, CMHSR Measures of Collection. Profile of Mood States, 1971.

⁹ Ibid.

¹⁰ Ibid.

¹¹ Ibid.

¹² McNair, Profile of Mood States: Technical Update, 1.

¹³ Ibid.

¹⁴ Ibid.

¹⁵ Ibid.

CHAPTER 4: RESEARCH FINDINGS

The following are the results of the statistical analysis of the data from the GDV and POM. In order to establish the stability of the baseline, the GDV baseline data was explored using a simple correlation coefficient among the measures within individual subjects. The data was treated as two series (Treatment group and Control group) of single subject repeated measures, taking each set of fourteen chakra measures (seven unfiltered and seven filtered) as a vector with fourteen data points. For each subject, baseline one is correlated with baseline two, baseline one is correlated with baseline three, and baseline two is correlated with baseline three. (See appendices B.15 graph of Pearson's r). The graph demonstrates that 80% of the correlations across all baseline measures in both Treatment and Control groups were greater than $r = .612$ $p = 0.02$. Therefore, we can conclude that the baseline data is extremely stable, with the average correlation coefficient at $r = 0.735$ $p < 0.01$.

There was significance found in the fifth chakra after conducting independent sample t-tests to analyze the differences between the control and treatment groups on their change scores at chakras one, five and seven. The results of comparison of change scores between control and treatment conditions show that there were no significant differences between these groups on either chakra one or seven ($p = .115$ and $p = .25$, respectively). However, the control and treatment groups were significantly different at chakra five ($p = .03$). The analysis performed was a one-tailed t test (See appendices B.16 showing group statistics and independent sample test performed).

The chakra data was initially analyzed for within group change over time using the Mixed Anova for the treatment and control group. There was no significance found between groups using this statistical analysis. The researcher then decided to analyze the data to ascertain whether the crystal bowl toning had the causative effect of values on the chakra graphics (-6.0 to zero or balance to +6.0) to return to a balanced state on post-testing. The results did not show numerical movement to balance or approaching balance in any significant manner in the treatment group.

After consideration, the researcher decided that what we are really attempting to demonstrate in this study is any response, either positively or negatively (-6.0 to +6.0) to the sound of the crystal bowl on the chakras. In this analysis, I compared the baseline unfiltered values to the post unfiltered values by finding the difference (i.e., the post values were subtracted from the baseline values) between them for each chakra and each group. These values were then organized and the treatment group's values for each chakra were subtracted from the control group's values. This data set was then graphically demonstrated to show the absolute value point at each chakra point on the graph. This data point is the result of subtracting the treatment group value for each chakra from the control group's values. Once these data points were demonstrated graphically (See table 9) we visually saw distinct changes in chakras one, five and seven. To assure statistical significance the t-test was conducted on these three chakras (as discussed in the second paragraph of results section) and significance was found in the fifth chakra ($p = .03$). The first and seventh chakra cannot be termed significant; however, there was visible changes noted graphically for these two chakras.

We can see that a graphical analysis would provide the best examination of the data. The graph on Table 5 demonstrates the stability of the baseline. Next, we examine the post test readings between groups across the seven chakras. Following this are two graphs demonstrating the changes from average baseline to posttest for the control and treatment group. Finally, we see the clearest indication of differences between the control and treatment groups across the seven chakras where significance was found in the fifth chakra. In the first and the seventh chakra there is a definite reaction to the bowl as seen by the data set points in Table 9. The results of the POM are graphically shown with no significance evident.

Results

Data transformations were performed on GDV readings in order to simplify the analysis and interpretation of the study findings. First, the stability of the baseline was calculated using the correlation coefficients among the measures within individual subjects. The data was treated as two series (Treatment Group and Control group) of single subject repeated measures. It was found that 80% of the correlations across all baseline measures in both Treatment and Control groups were greater than $r = .612$ $p = 0.02$. Therefore, this baseline was found to be extremely stable with average correlation coefficient at $r = 0.735$ $p < 0.01$ (See Table 5). Next, because the focus of the study was on the impact of toning on *changes* in the human energy field (not necessarily directional changes, positive or negative changes), change scores were calculated between the average baseline and posttest 1, and between average baseline and posttest 2; then, these GDV change scores, calculated for each individual participant in both the control and experimental groups, were transformed into absolute values (disregarding the positive or

negative sign signifying the direction of change). These absolute value change scores formed the basis of the change analyses across the chakras.

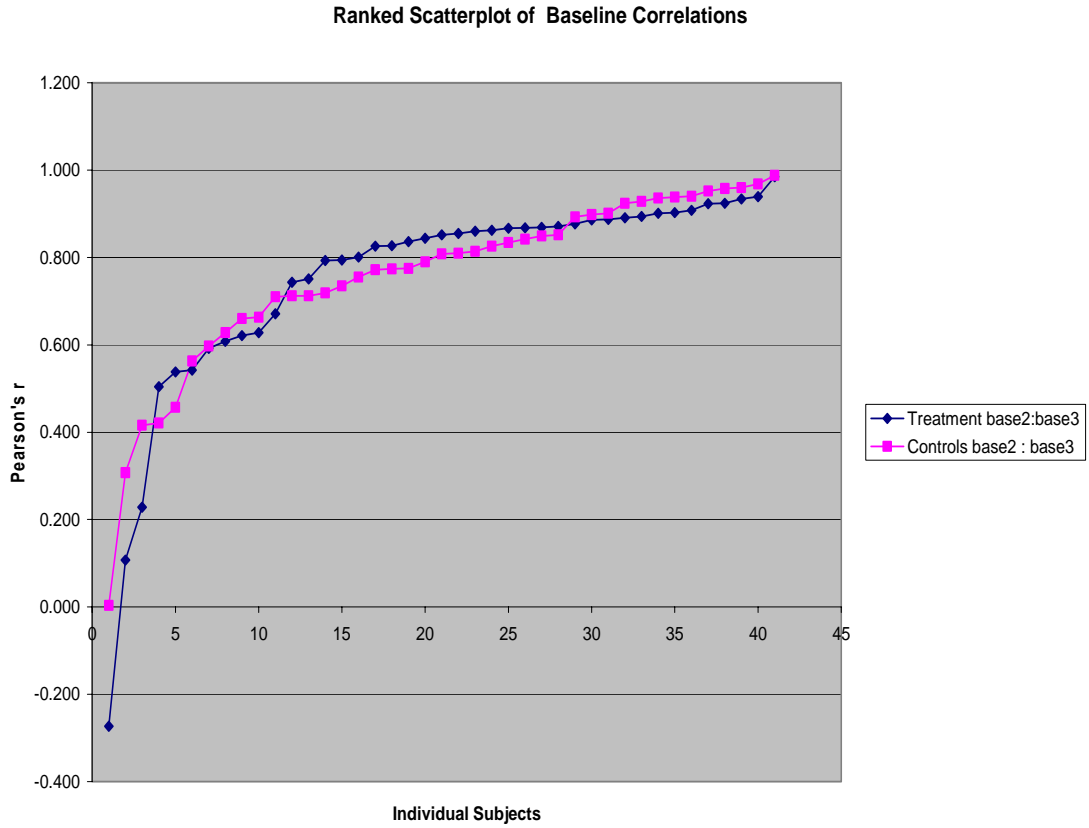
Given the need for a comprehensible data analysis strategy that allows for comparisons of repeated measures (baseline to posttest 1 and baseline to posttest 2), across two groups (control v. experimental), and across 7 chakras (See X-Axis Key below), it was decided that a series of simple graphical analyses would best tell the story of the variability inherent in these complex data.

X-Axis Key

1	Muladhara
2	Svahishthana
3	Manipura
4	Anahata
5	Vishuddhi
6	Ajna
7	Sahasrara

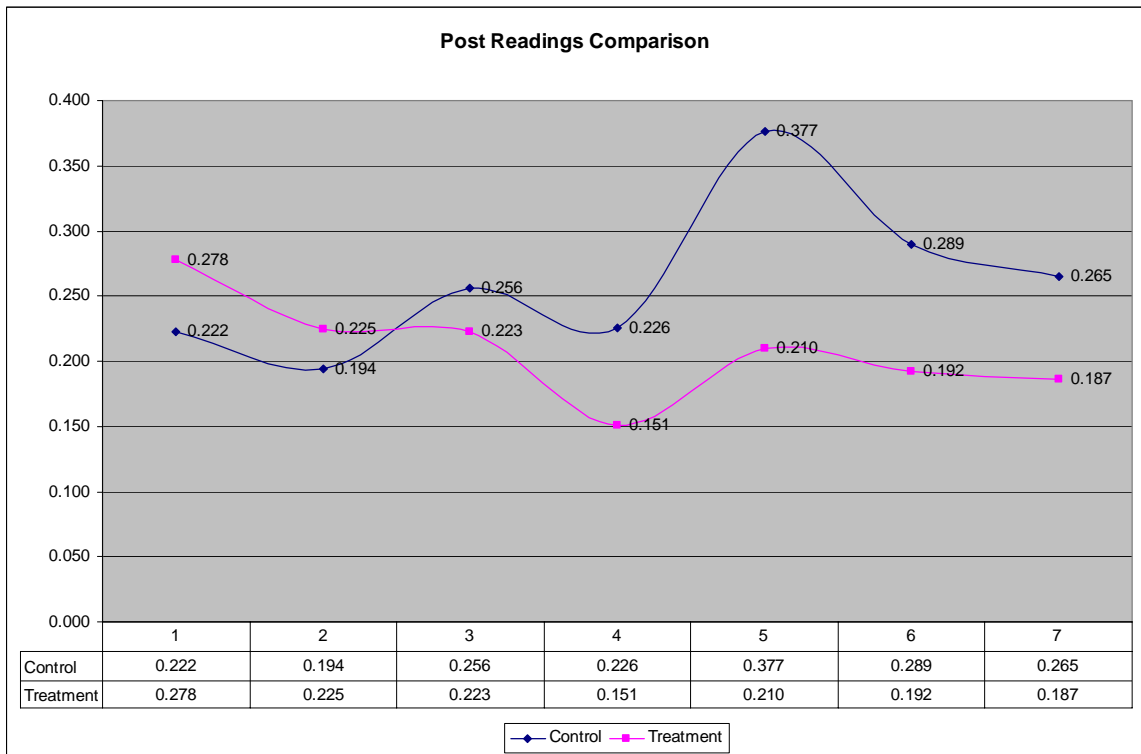
First, it is important to examine the stability of the baseline measures in both the treatment and control groups across the seven chakras comparing baselines utilizing correlation coefficients. Cross comparisons were calculated among all three baselines measures within each subject. This comparison shows very stable data with an average correlation value of $r = 0.735$ $p < 0.01$. In both treatment and control groups only a few outlying individuals did not have stable baselines, as shown, in the graph below, which plots the ranked correlations between baseline measure 2 and measure 3:

Table 5. Stability of the Baseline: Scatter Plot Displaying Stable Baseline.



Next, we examine the posttest readings between the two groups across the seven chakras:

Table 6. Posttest Readings--Treatment and Control Group Across Seven Chakras.



Then the following two graphs demonstrate the changes from average baseline to posttest for the control group and for the treatment group. The graphs indicate average scores of baseline and post in treatment and control before absolute values were calculated and demonstrated in Table 9.

Table 7. Changes From Average Baseline to Post Test in Control Group.

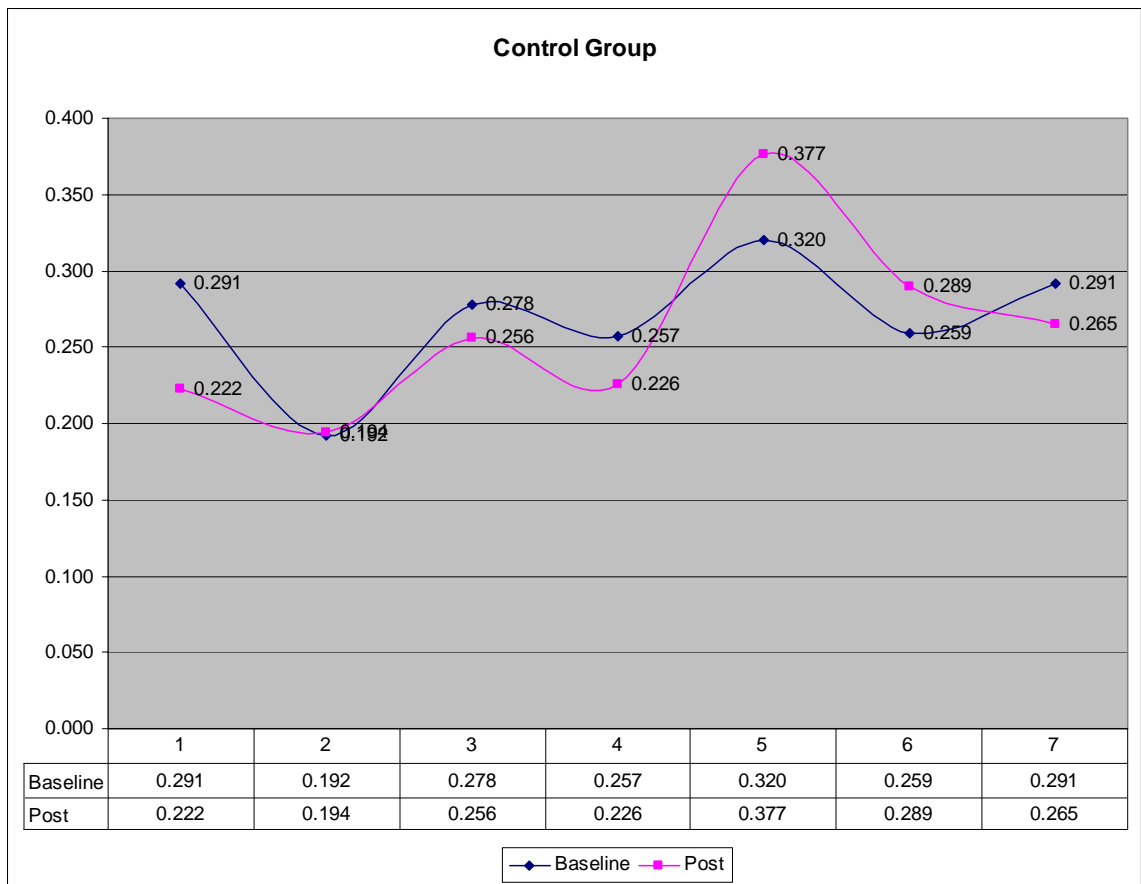
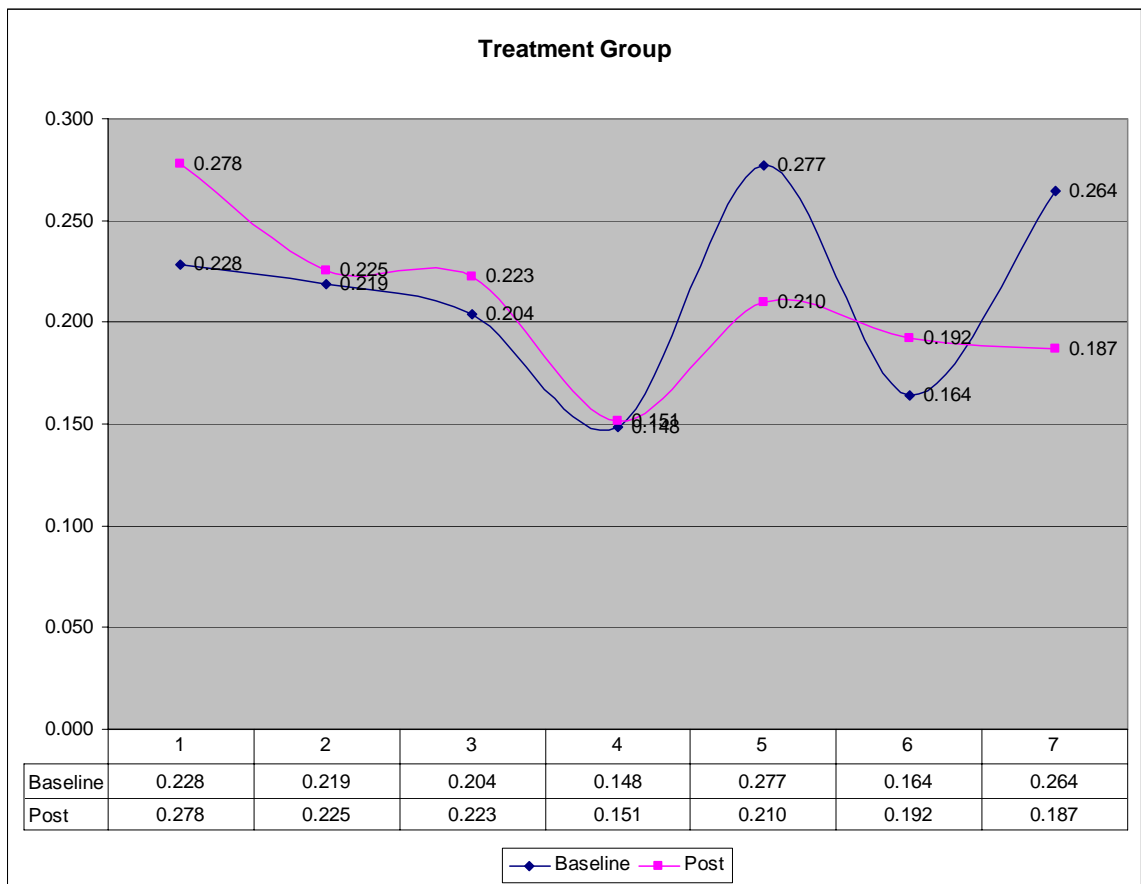
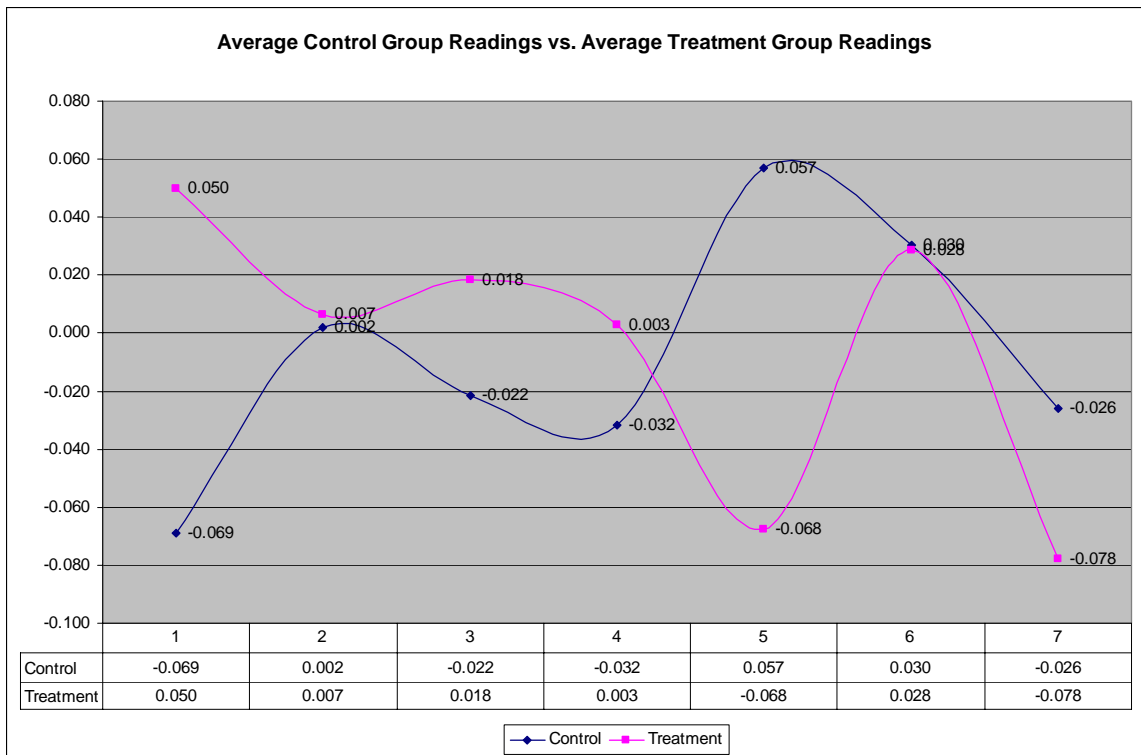


Table 8. Changes From Average Baseline to Posttest in Treatment Group.



Finally, we see perhaps the clearest indicator of differences between the groups in the following graph, which illustrates average control group GDV readings compared to average treatment group readings across the seven chakras. As we can see there is a response to the bowl in the first, fifth and seventh upon looking at the graph. Statistical significance was found in the fifth chakra ($p=.03$).

Table 9. Average Treatment and Control Readings Across Seven Chakras.

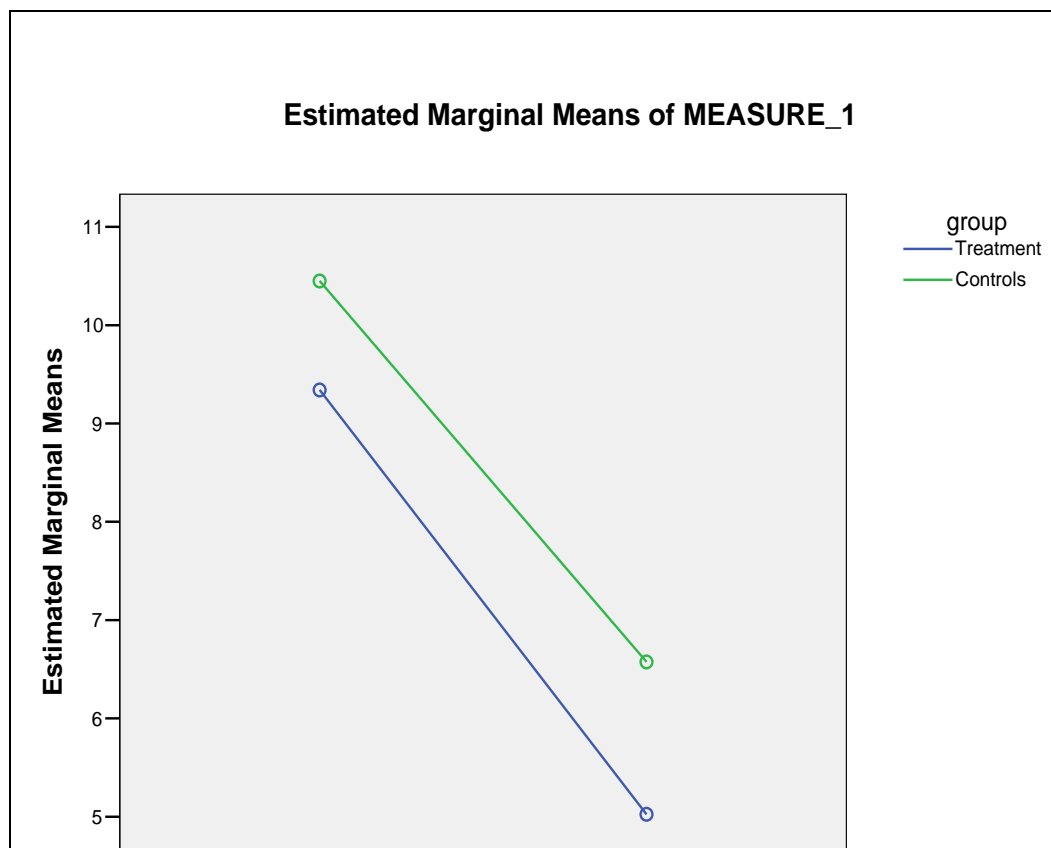


The Profile of Mood States (POMS) results were analyzed using a series of 2 X 2 Mixed Analyses of Variance with one two-level between group's factor (control v. experimental group) and one two-level within group factor (repeated measures from pre- to post-test). This analytical strategy allows for all relevant research questions to be

answered in a single series of analyses, with particular emphasis on the F-test for the interaction. That is, if there is a significant difference between the control and experimental groups across time on the POMS, this would be demonstrated by a significant F-test for the interaction.

Results of the series of Mixed ANOVAs revealed no significant interaction effects, and thus, no support for the hypothesis that those participants who received the toning intervention showed significant positive effects when compared to the control group. For example, results for the first POMS subscale are presented in the following graph:

Table 10. POM Readings Between Treatment and Control Groups.



As is easily discerned here, no interaction effect is in evidence as the two lines show a nearly parallel structure (with a significant interaction effect, the lines would diverge from each other more dramatically). The F-test for the interaction confirms that there is no significant interaction effect ($F=0.15$, $p=.70$). Each of the POMS subscales showed a similar pattern as noted above, and thus is not reported in this chapter.

With statistical data proving significance in the fifth chakra we can state that the crystal bowl, C note, does affect chakra readings on the GDV. We can also see from the graph in Table 9 that the first and seventh chakra had a reaction to the crystal bowl, but not in a statistically significant manner. The importance in these findings is that the sound of the crystal bowl does appear to affect the fifth chakra as shown in the data. The hypothesis has been proven that sound does affect the chakras as measured by the GDV, however, we can confidently state that statistical change was found in the fifth chakra. While the researcher was unable, in the beginning of the study, to predict which of the seven chakras would respond, it has been demonstrated that the fifth chakra is most reactive to the crystal bowl. There was a definite response to the crystal bowl seen in the first and seventh, however, statistically significant change was found in chakra five.

Chapter Five is a discussion of the results of the study, a summary, conclusion and graphical chakra readings providing GDV readings and responses to the crystal bowl. The summary includes suggestions for future research to further our understanding of the chakras and healing.

CHAPTER 5: CONCLUSIONS, DISCUSSION, AND SUGGESTIONS

This chapter summarizes and discusses the significance of the statistical analysis of this study. It also includes a discussion of the possible reasons for the findings, the need for future research, and theoretical understandings related to the study.

Summary

The purpose of this study was to determine whether the crystal bowl, tuned to the note of C, had an effect on the chakra system as measured by the Gas Discharge Visualization Device. In addition the Profile of Mood States was utilized to assess mood states prior to the crystal bowl treatment and following the intervention. The findings of this research study indeed demonstrated affirmatively that crystal bowl toning does affect the chakras . Statistically significant change was obtained in the Fifth (Manipura). In addition, the graphs and absolute numerical values indicate a strong response in the First (Maldahara) and Seventh (Sahasara), although the differences between treatment and control groups did not achieve statistical significance in these two chakras.

Conclusions

The treatment group consisted of forty-one subjects and the control group forty-one subjects. The treatment group received fifteen-minutes of crystal bowl toning and the control group sat quietly during the fifteen minute period. The Gas Discharge Visualization Device was used in the clinical setting to take readings of each subject; three baseline readings; five minutes apart, the fifteen minute intervention and two post-

readings with Post- two at 20 minutes from Post-one. The subjects completed the Profile of Mood States questionnaire when they first arrived for the study and completed a post POM following the first Post -1 reading.

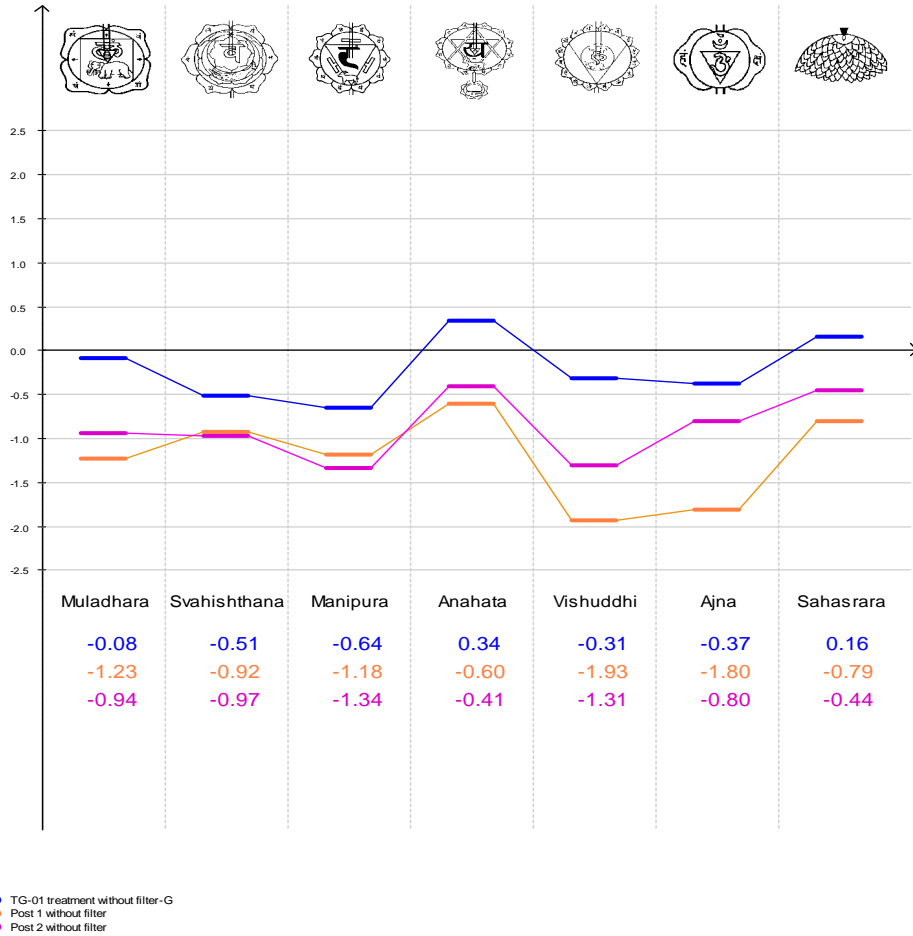
The theoretical basis of the study, as described in the literature review, demonstrates that sound as a vibrational energy wave, resonates at a designated frequency, similarly to the properties of the chakras. It is also theorized that chakras vibrate and are affected by the various musical notes and tones.¹ The purpose of this study was to investigate whether these theories could be proven in a research setting. The findings indicate that vibrational waves emanating from the tones of a crystal bowl does change certain chakras as measured by the Gas Discharge Visualization Device (See [Figure 15](#)) which shows the pre and post readings of a subject in the treatment group. The baseline three reading indicates the subject's chakra reading prior to the fifteen-minutes of the crystal bowl. Following the crystal bowl; post-one and post-two readings indicate a visible change in the readings in response to the crystal bowl.

NAME: .<TG-01 treatment without filter-G>

Year of birth: 1970

19:11:105 11:38

Clear Noise 30 Level Background 250



Analysis of data must be made by a certificated specialist only
Kirionics Technologies International .

Figure 15. Baseline Three: Pre and Post Chakra Reading in Treatment group.

The above figure clearly indicates the subject responding to the crystal bowl in the first, fifth and seventh chakra compared to the baseline three reading.

While statistically significant change was found in the comparison of the treatment and control groups for the response of the fifth chakra, there were some subjects whose readings showed a response in other chakras. (See [Figure 16](#)) This figure indicates a response in the heart chakra following the crystal bowl.

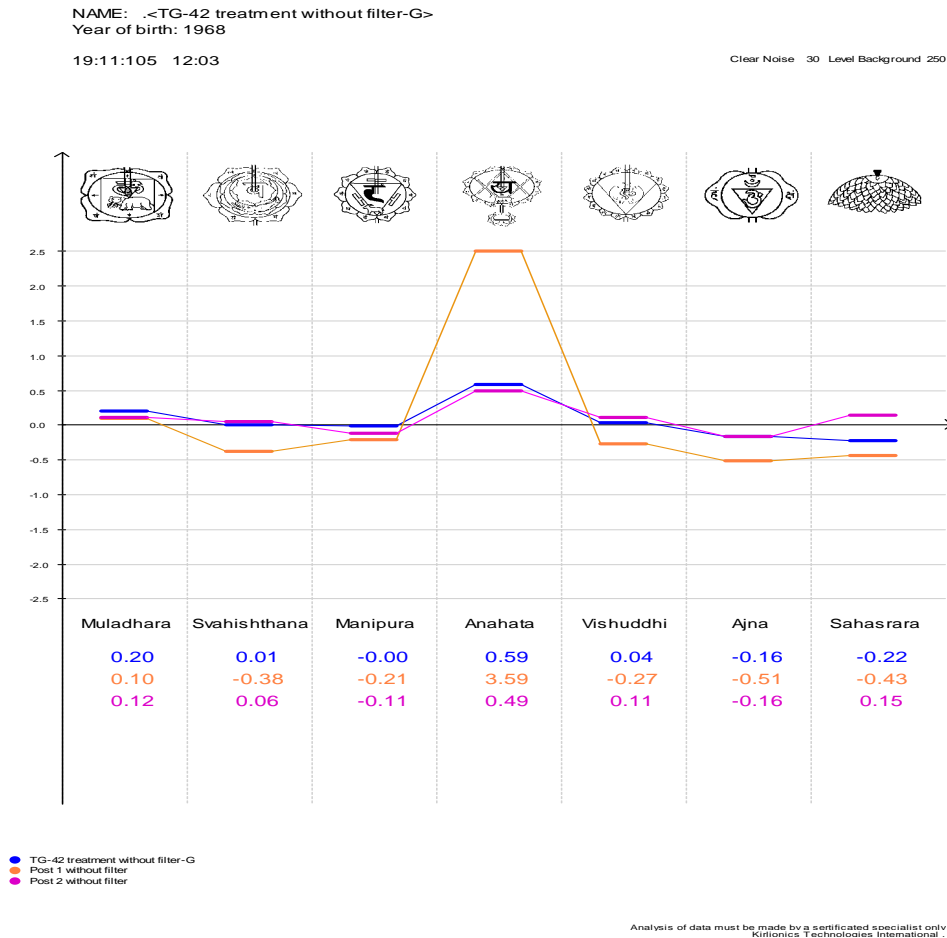


Figure 16. Treatment group without Filter Heart chakra.

This figure indicates a subject responding to the crystal bowl in a hyper value in the heart chakra.

What is important in this study is that a change both positively or negatively on the chakra balance reading of the GDV was evident in the post-readings in a statistically

significant manner. The chakra analysis estimates the energy states of various chakras. If you refer to [Figure 17](#), indicating the chakra equilibrium graph; a subject's chakras appear as up or down deviations from the balance or equilibrium. The chakra values are also referred to as hyper 0-6.- or hypo 0-minus 6.0. Hyper indicates a value above the equilibrium and hypo refers to below the line of balance.

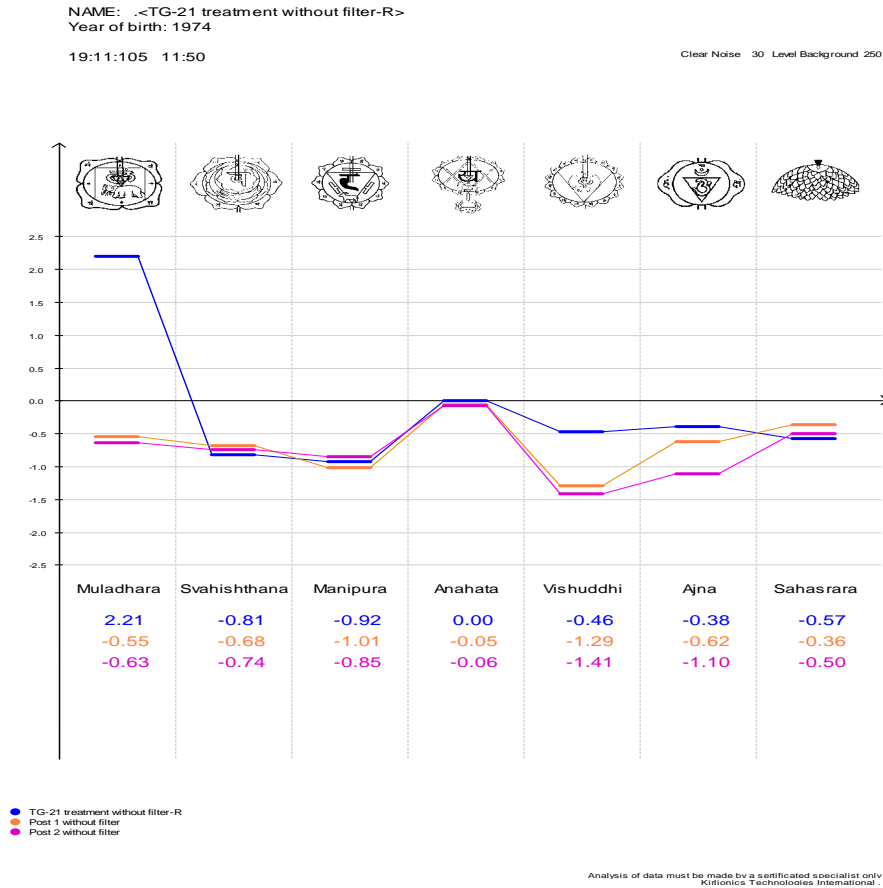


Figure 17. Chakra Reading Hyper and Hypo Readings.

The above figure indicates readings in the hyper or above balance and hypo or below balance.

In this research study, any change from balance or baseline reading is important because it indicates that a chakra or chakras are responding either hypo or hyper to the tone of the crystal bowl. The study was not examining whether the crystal bowl produced a more balanced chakra reading. It did look for a response in a chakra reading following the crystal bowl intervention. It is important to note that this can be interpreted as a balance reading for that subject on that particular day. The post readings show the deviations from the baseline following the crystal bowl.

Discussion

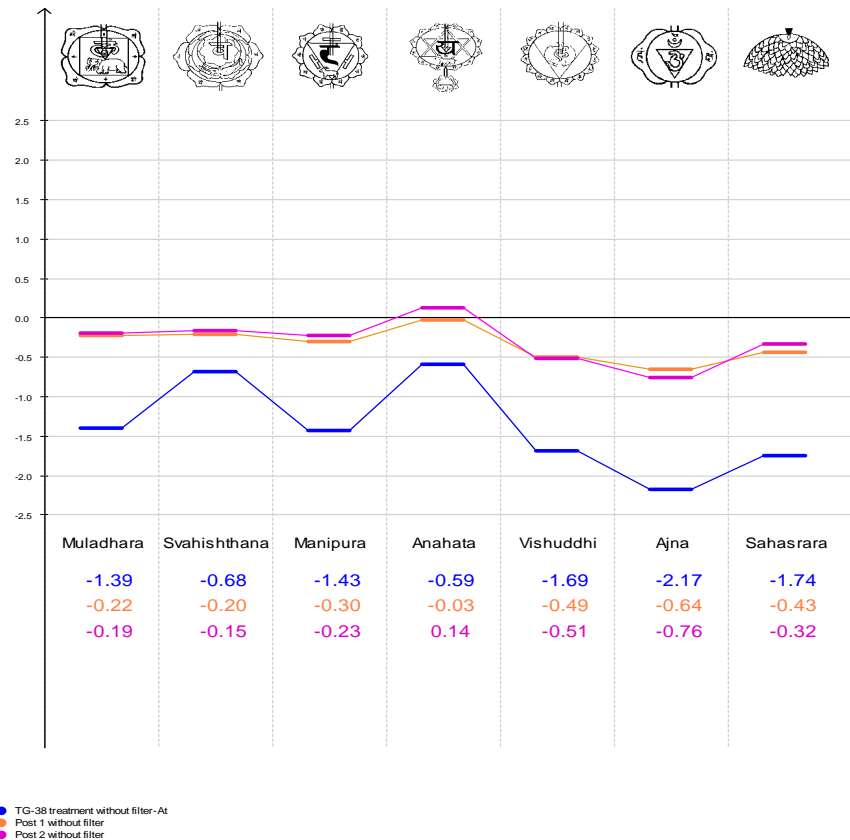
Overview and Implications of Significant Findings in This Study

The findings are discussed from the results of the study and how the GDV data was analyzed to show significance. The method in which the data was statistically measured supports the hypothesis that crystal bowl toning affects chakras. The raw data was exported from the GDV and placed on an excel spread sheet (See [Appendices B.1](#)). It was decided that a series of graphical analyses would be the best method in showing the significance of the data. The effect from the treatment group and lack of effect in the control group is evident in the graphs showing pre and post readings in both groups. (See [Figure 18](#)) This figure demonstrates the change between baseline and post in the treatment group without filter.

NAME: .<TG-38 treatment without filter-At>
 Year of birth: 1978

19:11:105 11:59

Clear Noise 30 Level Background 250



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Figure 18. Treatment subject without filter following crystal bowl.

This figure is an example of a subject’s response to the crystal bowl. The post GDV readings moved into balance following the crystal bowl. This subject was in the treatment group and his reading was without the filter. When assessing the data it was clear that the most significant reaction to the crystal bowl was evident from the readings taken without the filter. This reading is indicative of the sympathetic system or the emotional body.

The question must be asked why subjects reacted to the crystal bowl evident in the readings of the GDV without the filter and not with the filter. According to Barbara Brennan in *Hands of Light*² she describes the subtle energy bodies surrounding the physical body. The subtle energy bodies are the etheric energy body, emotional body, mental body, astral body, celestial body and ketheric template. The emotional body is reported to extend from the physical body one to three inches. I would hypothesize from the data that the sound vibration from the crystal bowl is affecting the subtle energy body of the emotional body before it comes in contact with the physical body. We view these bodies as layers around the physical body. The emotional body is the second layer before the physical. The kinetic wave of the crystal bowl is possibly activating the emotional body causing the readings on the GDV without filter to produce these readings. Again, there is an observable difference between the readings with and without filter and it does not appear that the crystal bowl is affecting the chakras on a physical level.

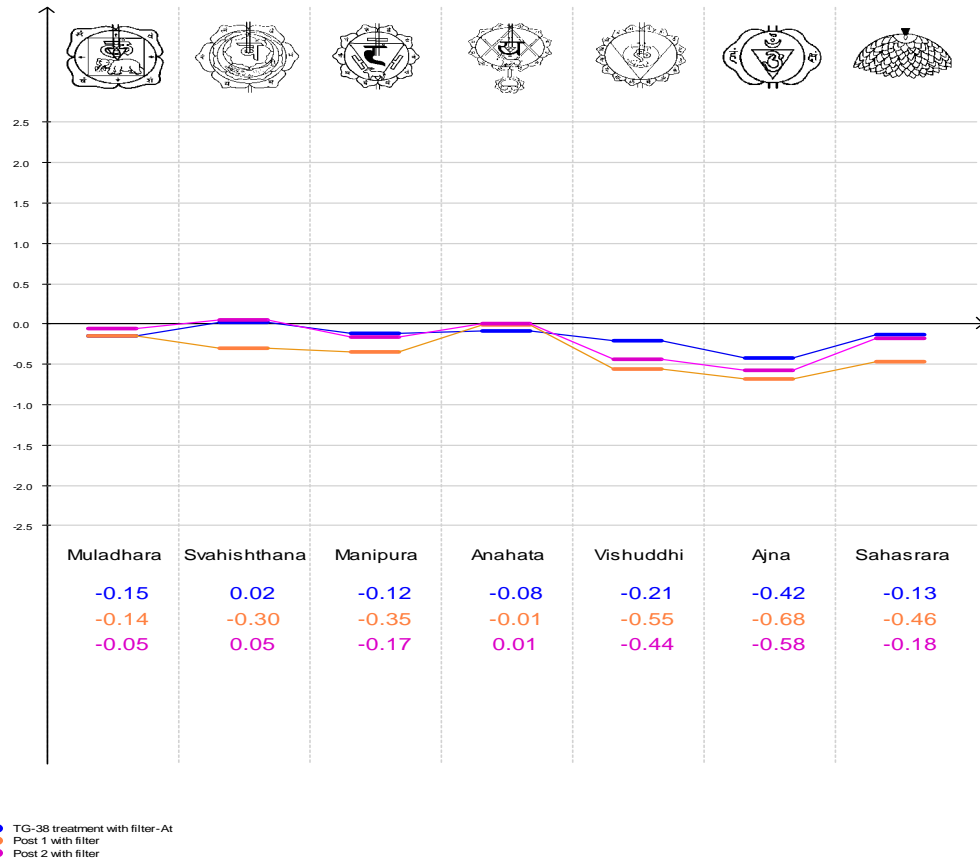
The following figure (See [Figure 19](#)) is the same subject following the crystal bowl with the filter. One can see there is little variation between baseline and post readings.

NAME: .<TG-38 treatment with filter-At>

Year of birth: 1978

19:11:105 10:51

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Analysis of data must be made by a sertificated specialist only
Kirilonic Technologies International .

Figure 19. Treatment Subject with Filter.

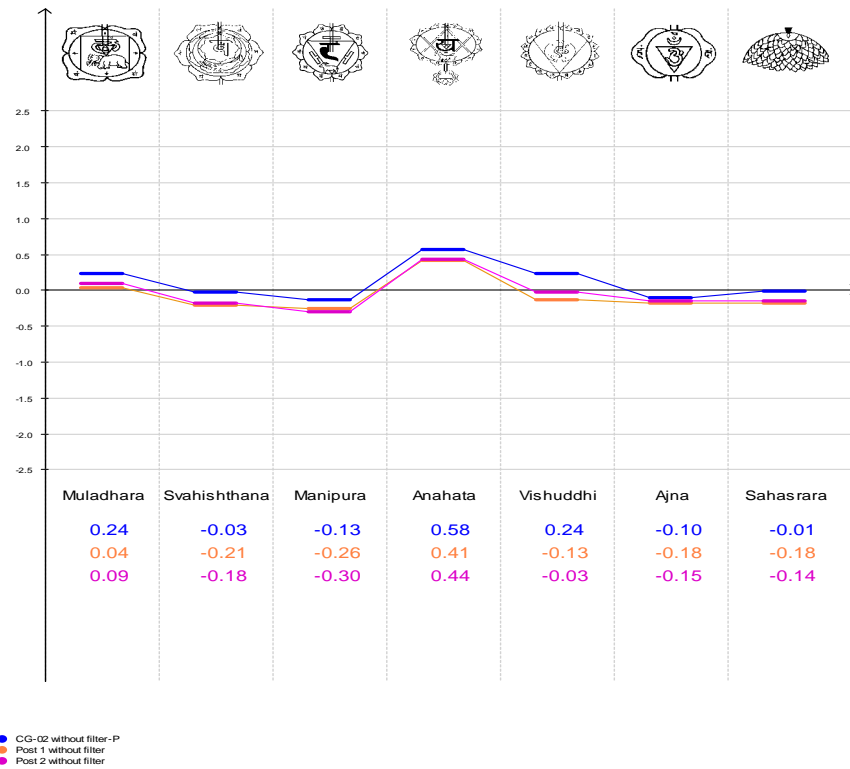
The following figure (See [Figure 20](#)) is a subject in the control group without the filter.

NAME: .<CG-02 without filter-P>

Year of birth: 1954

19:11:105 12:18

Clear Noise 30 Level Background 250



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Kirilovics Technologies International

Figure 20. Control Group Subject without filter.

As we can see there is little change in the GDV measures from baseline reading to post intervention waiting period readings in the control group without the filter.

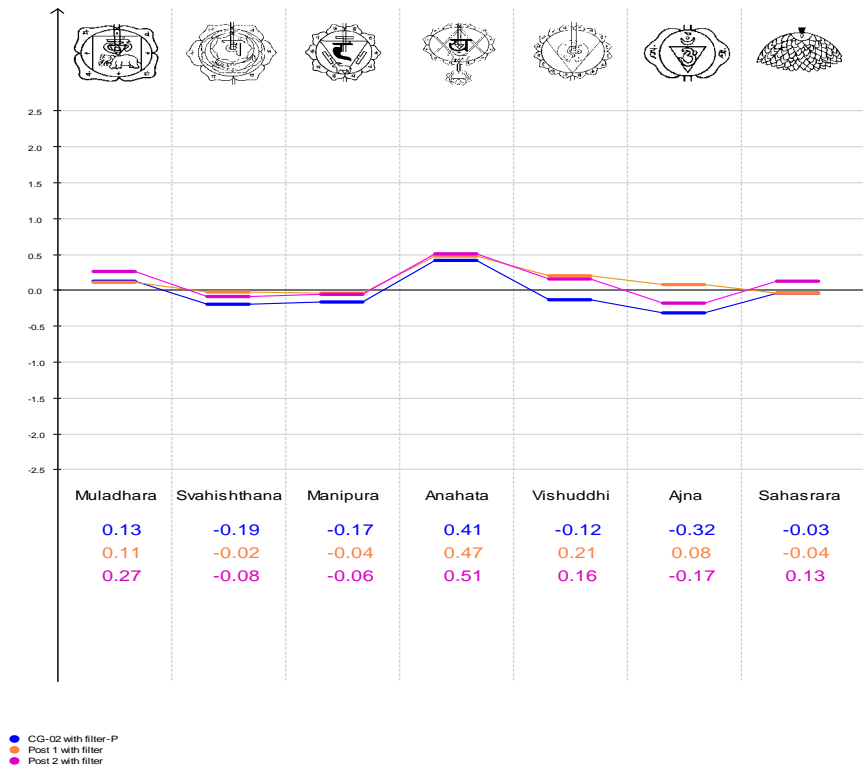
The following ([Figure 21](#)) is the same subject in the control group with the filter.

NAME: .<CG-02 with filter-P>

Year of birth: 1954

19:11:05 13:19

Clear Noise 30 Level Background 250



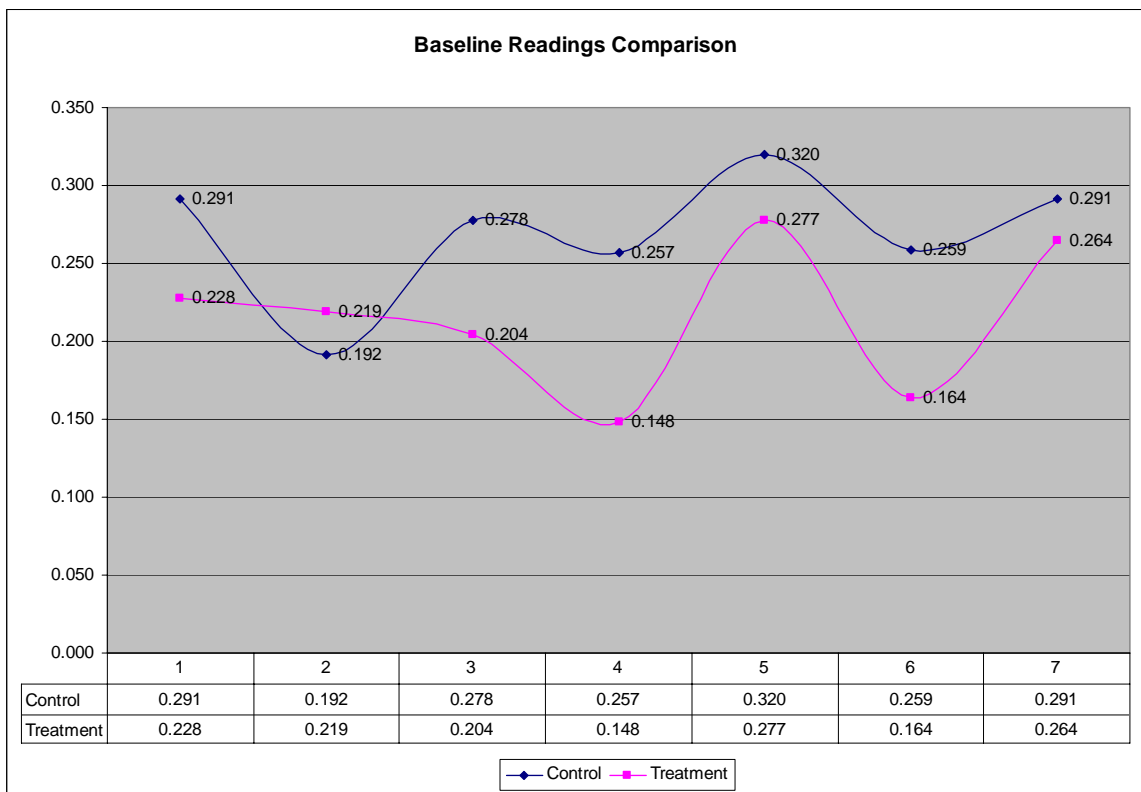
Analysis of data must be made by a certificated specialist only
Kriyonic Technologies International

Figure 21. Control Group Subject with Filter.

As we can see there is little difference in the GDV readings in the same subject in the control group with and without filter. This is a sharp contrast to the treatment group subject readings with and without filter. This clearly indicates little change in the control group. Additionally, it is evident that treatment group readings without the filter have more of a response to the crystal bowl than readings with the filter. With this data, I can surmise that there is more of a response to sound by the chakras on an emotional level or without filter than on the physical level using the GDV.

When deciding how to examine the complex data, it was determined that the first three baseline readings would be averages for all participants in each group and this would serve as the most stable baseline against which to measure any subsequent change in post-test data. (See table 11 of average of baselines) Baseline readings of treatment and control across the seven chakras are illustrated in this graph. To further examine the stability of the baseline a correlation coefficient among the measures, within subjects, was utilized (See Table 5). The results indicate 80% correlations across all baseline measures in both Treatment and Control groups were greater than $r = .612$ $p = 0.02$. The average correlation coefficient at $r = 0.735$ $p < 0.01$ demonstrating that the baseline was extremely stable.

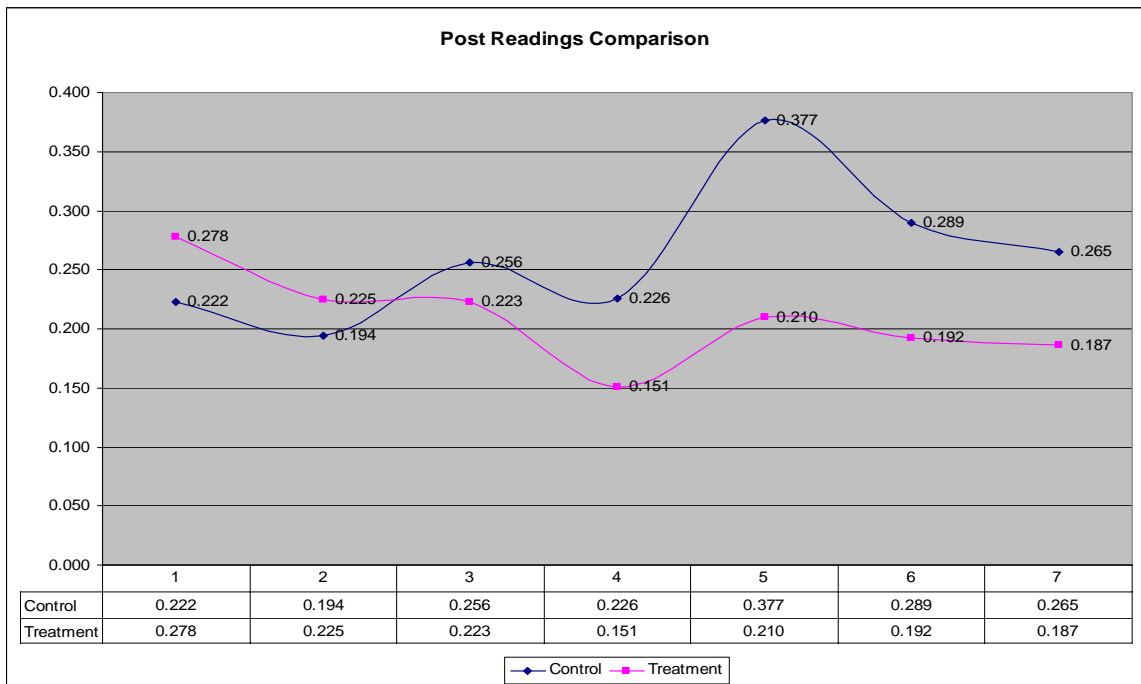
Table 11. Average of Baselines Across Seven Chakras.



In addition (See [Appendices B.11](#)) for data analysis for absolute values and means scores between groups.

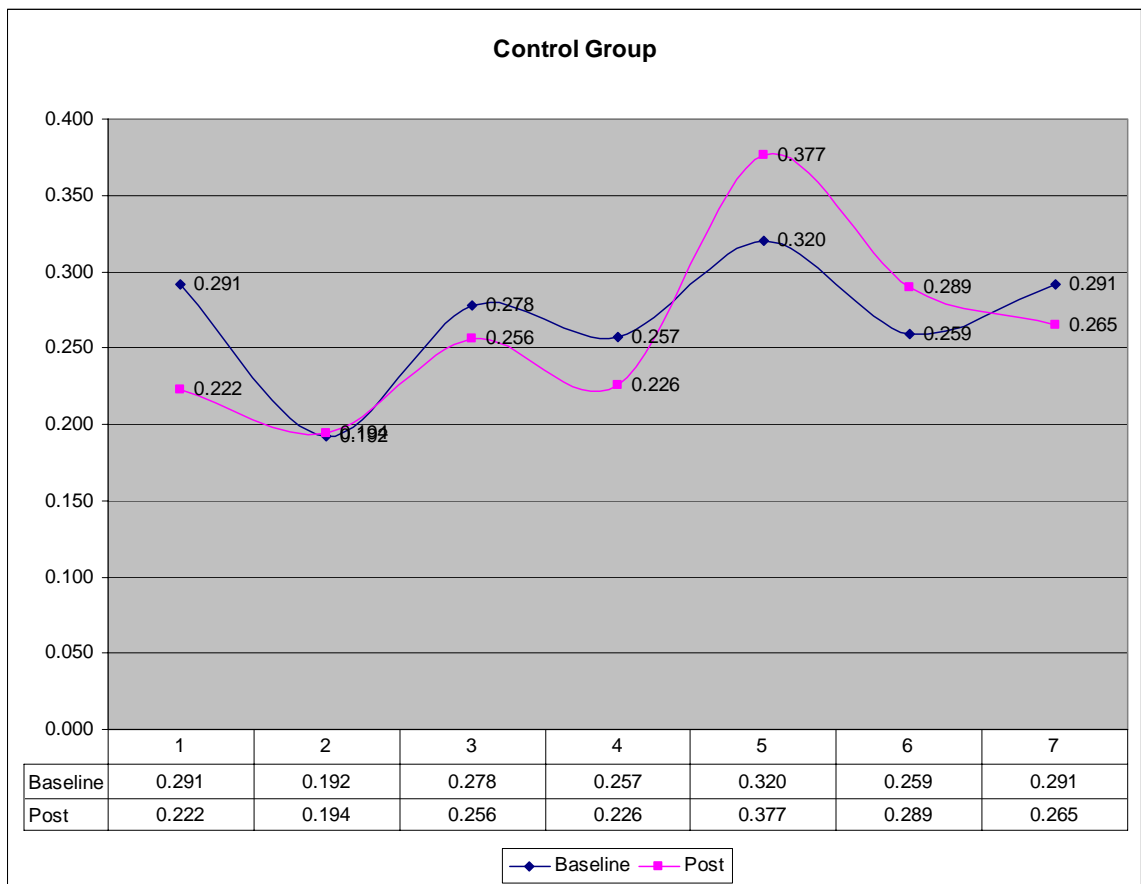
The next step was to calculate change scores between the average baseline and post-test one and between the average baseline and post-test two. The GDV scores were then calculated for each individual subject in the control and treatment group and a mean score was derived. (See [Table 12](#) of graph indicating Post-test Reading Comparison) The mean scores or absolute values formed the basis to analyze change across the chakras.

Table 12. Post-Test Reading Comparison of Treatment and Control Group.



In examining the figure of the graph indicating the control group comparison between baseline and post-test there is no significant change evident in the analysis. ([See table 13](#))

Table 13. Control Group Comparison Between Baseline and Post.

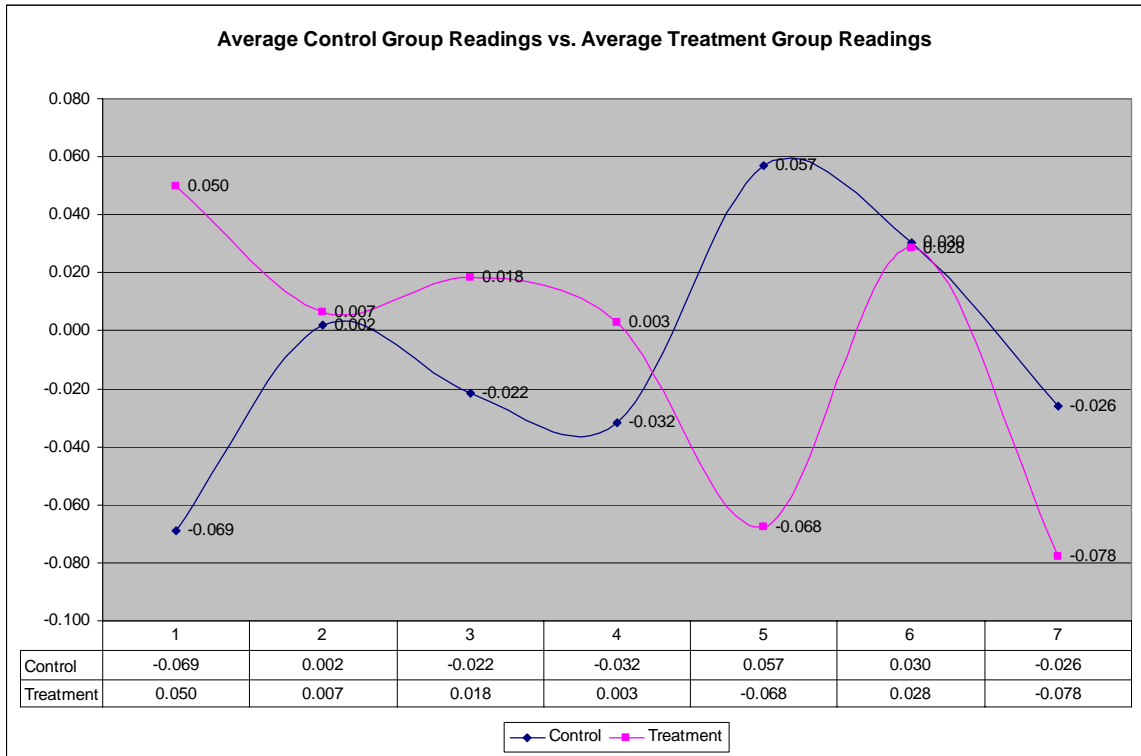


The interesting changes are found when the average control group GDV readings are compared to the average treatment group reading across the seven chakras ([See table 14](#))

This table shows the average control group reading vs. the average treatment group reading. The graph clearly demonstrates a response in the first, fifth and seventh chakra. However, results of comparisons of change scores between the control and treatments conditions show that there were no significant differences between these groups on either chakra one or seven ($p=.115$ and $p=.25$, respectively). However, the control and treatment group changes were significantly different at chakra five ($p=.03$). Refer to appendices B.16 for data on one tailed t- test which found significance in the fifth chakra. Each point on that graph is the average value of the change from the baseline to the post reading of that chakra. In other words values were calculated for change in the control group and in the treatment group in each chakra. We took the average baseline reading of each chakra and compared it to the post readings for each chakra. We then took those averages and compared them to each other between groups. The chakras changed from baseline to post in each group and we then examined each group and compared them numerically to pose the question of how are they different. The baseline averages were calculated and the post averages were calculated for each of the seven chakras in the treatment and control group. In addition, the control group became the baseline or zero value against which change in the treatment group can be seen. As you can see on the graph the first, fifth and seventh show a response to the bowl, however, only the fifth chakra difference is statistically significant. See Appendices B.9 or B.10 for absolute values. In addition, a numerical value or number was arrived at indicating a change score between baseline and post. This number called the absolute change value is the difference between the baseline comparison figures and post comparison figures in treatment and control groups. These values were then shown numerically and compared

graphically to demonstrate the change that occurred, especially the statistically significant difference in the fifth chakra.

Table 14. Significance in Average Between Treatment and Control Group.

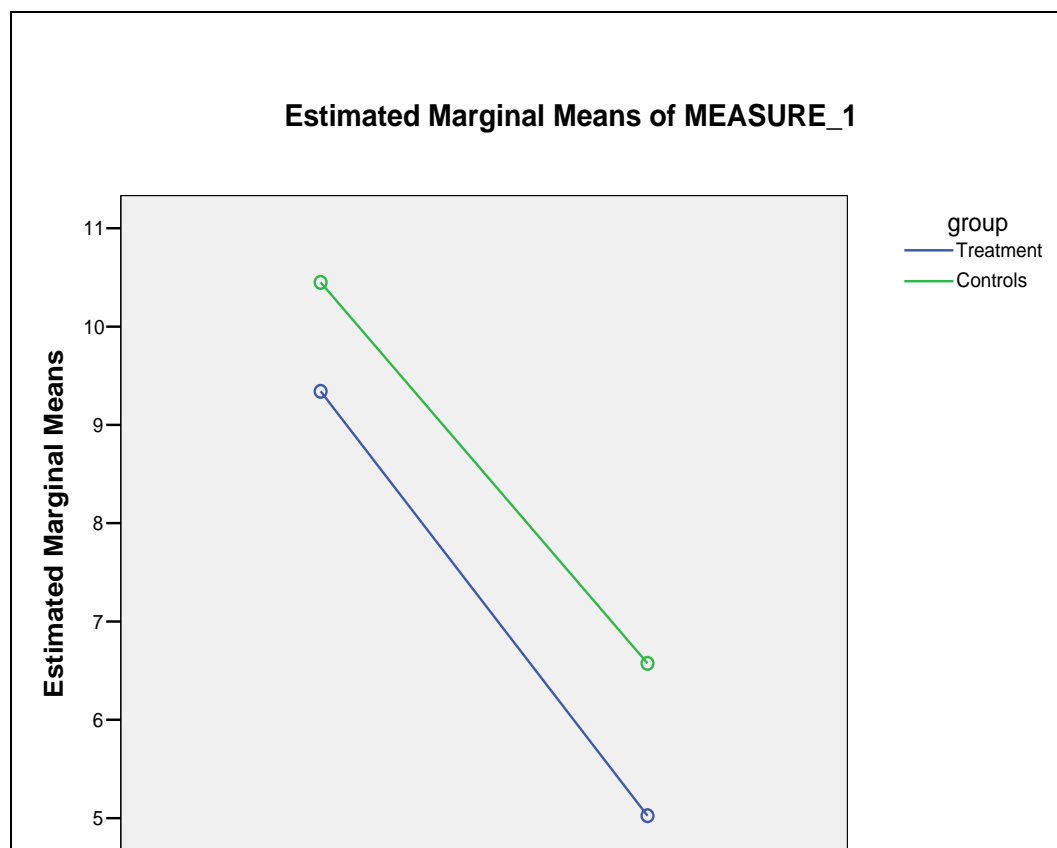


As we can see there is a response in the first, fifth and seventh chakras. However the statistical significance is found in the fifth chakra at $p=.03$.

The Profile of Mood States questionnaire results were analyzed using a series of 2x2 Mixed Analysis of Variance with one two level between group factors (control v. treatment) and one two-level within group factor (repeated measures from pre-post). This analysis allowed for certain relevant questions to be determined for significance pre and post and between groups. An F test was utilized for this interaction (See [Appendices B.2](#)) for POM's Mixed Anova) Findings indicated that no significance was found with

the Mixed Anova. There was no support for the hypothesis that those subject in the treatment group would show significant positive effects when compared to the control group. (See [Table 15](#) POM's Treatment v. Control showing No Difference). One can easily see that the lines are basically parallel indicating that there is no interactive effect between groups.

Table 15. POM Treatment and Control Indicating No Difference Between Groups.



In addition the F test for the interaction in individual questions, again revealed no significance present between groups ($F=0.15$, $p=0.70$). (See Appendices B.3) for excel sheet for POM analysis of individual questions)

The question we must examine is why there was no interaction found in the POM's between treatment and control group. In addition, we also discuss why certain chakras responded to the crystal bowl (C note) and others did not. I also attempt to understand why certain subjects' chakras response was hypo and other subjects were hyper. Is there a way to understand the meaning in this on a theoretical basis, what are the emotional implications as well as physical indication?

[Possible Reasons for Outcomes in Profile of Mood State Results:](#)

The results of the POM have shown no significance between treatment and control group. When further analysis was performed on each question in the POM, all related to feelings of well-being, anxiety, depression, fatigue, energy level (See [Appendices A.6](#)). There was again no significance in any of the questions pre and post between groups.

In attempting to understand why the crystal bowl did not have an effect on the scores of the POM there can be a number of reasons why this occurred. First we must look at the specific sample utilized in the research study. The two groups consisted mainly of individuals who responded to an article about the GDV; recruiting subjects for the study, which was published in a monthly publication entitled *Inner Realm* (See [Appendices A.1](#)). This publication's audience are people who are interested in a holistic lifestyle, may practice meditation or engage in alternative therapies for healing. This is a very specific group of people who may be emotionally more balanced than the general population or at least aware of these issues. The remaining subjects in the treatment and

control groups were again, people interested in having their energy field analyzed, possessed a knowledge of chakras and metaphysics. There were only a few subjects who came into their appointment knowing nothing about energy fields or chakras. These subjects' generally included young men in their early 20's who knew about the study from a family member and volunteered to be a part of the study. However, these were not to change significance pre and post in the study. In addition, for the scores to change we would have to assume that they arrived for the study in a somewhat distressed mood and filled out the POM. In examining these POM's these subjects did not report distress on their pre-POM in either treatment or control groups. Another factor could be the time element involved in completing the pre and post POM. The subject arrived and completed the POM, had three baseline readings five minutes apart, received fifteen-minutes of either crystal bowl toning or fifteen minutes of sitting, were given a post one GDV, waited 20 minutes and then completed the post POM. The time frame was approximately 40 minutes between pre and post POM. We have to wonder whether fifteen minutes of the crystal bowl, while reported to be an enjoyable, relaxing experience, would be enough to change responses on the post POM in the treatment group. A subject may have required a longer time period exposure to the crystal bowl or possibly repeated exposure over a number of days to change mood scores on the POM.

It would seem obvious then, that the control group scores would change very little from pre to post with no intervention besides sitting quietly on a couch. A subject may feel calmer after sitting, but the effects on a post POM is probably doubtful and substantiated by the control group data.

Why the Response of Chakras: First, Fifth and Seventh

The graphs of the average or means of the treatment group vs. average means of the control group illustrates the response $>$ or $<$, 05 of the first, fifth and seventh chakra. The first chakra (Mulaharda) absolute change value is 0.119 between treatment and control means of the baseline and post readings. The fifth chakra (manipura) the absolute change between groups is -0.124. In the seventh chakra (sahasara) the absolute value change is -0.052. These three chakras demonstrated the greatest response to the fifteen minutes of the crystal bowl intervention. However, the fifth chakra yielded statistical significance upon testing.

The values for the treatment groups for the first chakra is $>$ or less than 0.018; fifth chakra $>$ or less than -0.068 and Seventh chakra $>$ or less than -0.078. These values indicate the level of response of the treatment groups of those three chakras.

When looking at the control group in the first chakra the value is -.069 while the treatment value was 0.050. The fifth chakra control value was 0.057 and treatment is -0.068. The seventh chakra control value is -0.026 and treatment was -0.078 (See Appendices B.10).

The remaining chakra values do not depict a response to the crystal bowl in the study. The third chakra value in the treatment group is 0.018 and the absolute change was 0.040. Although this is not significant, it does show somewhat of a trend in the response in that chakra as a result of the crystal bowl.

How do we begin to understand the responses of these three chakras? What is it about these three chakras exhibiting a change and not the other four chakras.

In a perusal of the literature in *Wheels of Light* by Rosalyn Bruyere she discusses the relationship of chakras having a positive and negative polarity.³ “Those chakras that

move energy out the front of the body are called output chakras and have a positive polarity. Those into which energy flows are called intake chakras and have negative polarity.’⁴ In looking at Bruyere’s diagram of the polarity of chakras (See [Appendices A.7](#)), the first, third, fifth and seventh are considered positive output chakras. The second, fourth and sixth are termed input negative chakras. This theory proposes how the energy enters the chakras and interacts with the other chakras based on their polarity, input and output functions.

It is interesting to note that in this study the positive output chakras responded to the crystal bowl. The idea that there is an interrelationship between these chakras suggests why we are seeing this phenomenon in the study. Although the third chakra did not show statistically significant differences, we can see that there was indeed a response greater than the second, fourth and sixth. Is it possible that as the vibrational energy of the crystal bowl resonated or vibrated with the chakras, and the energy is being processed in the chakras in this manner? In the study we are able to see this process in the data. We can infer that as the sound from the crystal bowl enters the first chakra, it produces a response which moves to the fifth chakra, where the largest, significant response is found. As this output kinetic energy moves up the chakra it again produces a response in the seventh chakra. While the statistical significance is found in the fifth chakra, there was a response in the other positive output chakras of the first and seventh. This certainly holds to Bruyere’s diagram of the polarity of chakras and how they may be functioning. This results of this study coincides with this theory of negative/positive, input/output of chakra energy.

We must also consider what this means in the healing capacity. When the chakras are activated in this manner are they producing a healing effect? Are they activated now so that another modality such as meditation, prayer, energy healing, craniosacral, can be more effective because the chakras are activated?

The next consideration for this study is what was the affect of the crystal bowl C note on the first, fifth and seventh chakra? Conversely, why did this note not effect the second, fourth and sixth chakra. We know from the literature review that the note of C vibrates at 34.648 Hz. When the crystal bowl is struck it send out vibrational waves at this frequency rate, in the shape of kinetic waves to the subjects' energy field and physical body. We also see propositions in the literature that the first chakra vibrates to the same frequency as the note of C. One can see that the first chakra is activated by the vibration of this particular bowl and as the energy moves up the chakra system it has, in this study, activated the fifth and seventh chakra. According to Hiroshi Motoyama "even though the primary energy conducted through the chakras might be of a subtle energetic nature, there is a secondary reverberation of energies in a lower octave harmonic, such as electrostatic fields and might be measurable."⁵ From this we can infer that harmonics of the resonating C note are activating the fifth and seventh chakra by nature of their vibrational energy, harmonics and the property of resonance. We still do not have an understanding of why the second, fourth and sixth chakra did not respond, however, we do know that these chakras resonate to their own frequency and particular note in the musical octave. These three chakras are probably not activated by the C note in this study or the harmonic transmission through the chakra system.

Discussions of the response of the subjects concerning the chakra balance or equilibrium hypo or hyper readings are an interesting question. We know from the literature review that hypo or hyper readings indicate a misbalance in the energy in the system of the subject on that particular day. The GDV readings (See [Figure 22](#) and [Figure 23](#)) indicate in each figure a hyper response (heart chakra) and hypo response.

The first [Figure 22](#) indicates a hyper response:

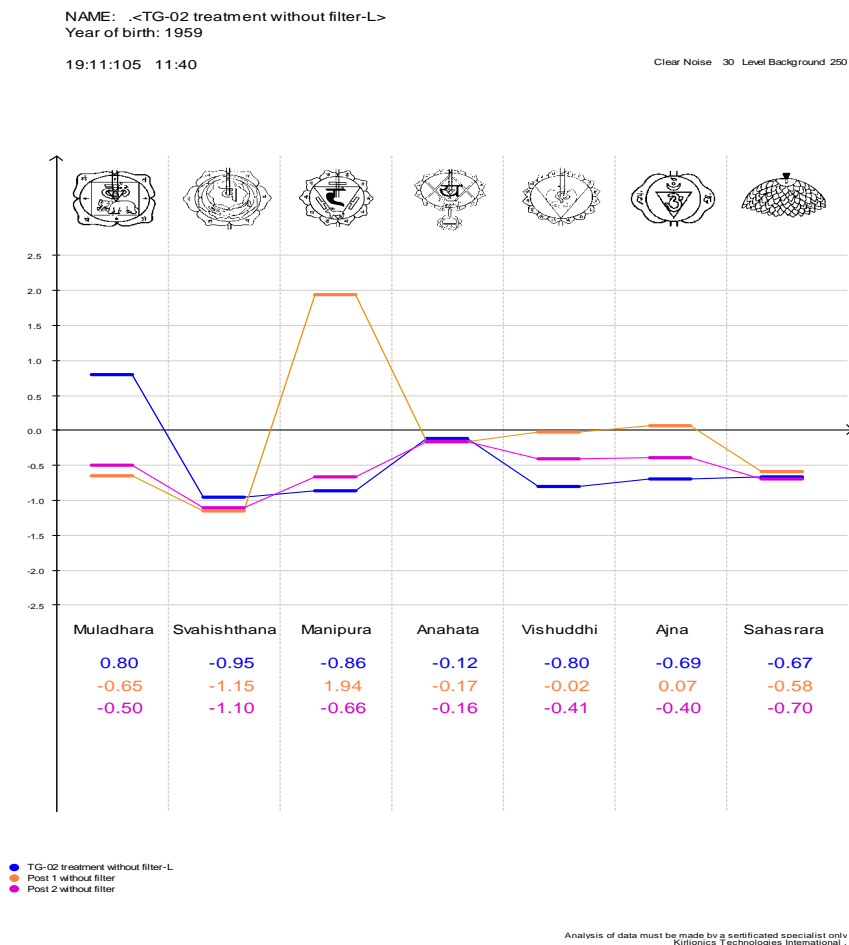


Figure 22. Reading of a Hyper Response in the Treatment Group without Filter.

The following figure 23 is a depiction of a hypo response in a subject:

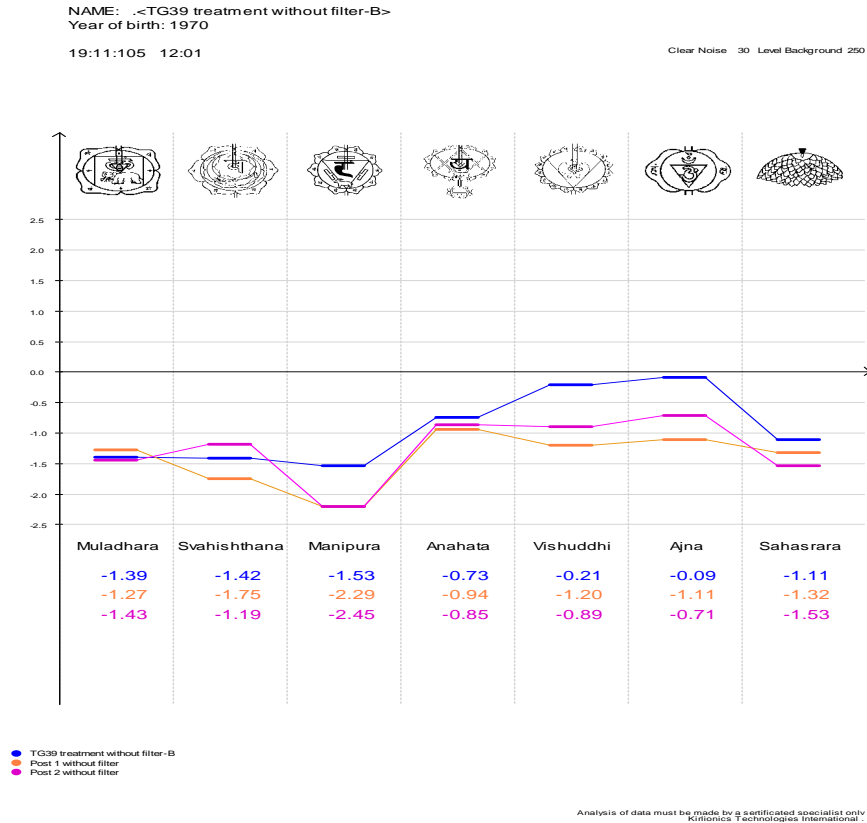


Figure 23. Reading of a Hypo Response in the Treatment Group without Filter

From this research study we can only state that the bowl had an effect on the chakra system in a both hyper and hypo manner. The chakras were activated to produce a misbalance in the chakra system. I would hypothesize that if readings were taken again in one hour they may return to baseline once the chakras were no longer activated by the bowl.

On a personal note, a GDV chakra reading was taken on this researcher prior to seeing a client in my office. The researcher is a psychotherapist by profession. During the one hour session the client was very emotional and tearful. Following this the researcher had another GDV reading. The heart chakra was in the extreme hyper range

after being balanced in the first reading. The researcher was very curious and waited approximately one-half hour and had a third reading taken. As was expected, the chakra system went back into balance. This clearly demonstrates how subtle energies from another person can and does affect the reading of the GDV. However, further research is indicated.

Another interesting phenomenon occurred during the course of the research study. The researcher was the only person conducting the study and administering the fifteen minutes of crystal bowl to forty-one subjects. The researcher began noticing a loss of hearing as the weeks went by until a ringing in my right ear (tenitis) developed. After consulting a physician, it was diagnosed that I had developed fluid in my middle ear causing the loss of hearing. Additionally, the researcher also became aware of daily stomach distress during the same time period. The researcher began to wonder what the effect of leaning was over the crystal bowl almost daily for a number of weeks on the researchers own chakra system. I can suggest that the vibrations of the bowl were indeed affecting the researchers own chakra system causing the physical symptoms. A few months after the study all the complaints disappeared. This may be an indication of the effect of having too much vibratory waves being harmful to the body. It would have been interesting to have had a daily GDV reading done on the researcher to follow the effects of continued exposure to the vibrations of the bowl.

Suggestions for Future Research

There is so much research still to be conducted using the Gas Discharge Visualization Device, the effects of sound on chakras, the crystal bowl, notes, tones and how vibrational waves affect the energy field and chakras. We are really just beginning to gain an understanding of the chakras and how they respond to outside stimuli like the crystal bowl. With a measurement device like the GDV, we can begin to study the effects of types of holistic healing techniques on the chakra system, energy field and diagram system. This study is just the beginning in our understanding of how the chakras respond to sound, vibrations and subtle energies in the environment, as well as alternative healing techniques. We can also begin to measure the effects of conventional medicine and pharmaceuticals on the energy field with the GDV.

An interesting study would be to follow a client who has been prescribed a type of medication and administer weekly GDV readings to assess changes in the energy field and chakras. I would also like to have another group receiving no medication and only psychotherapy to examine their GDV readings and progress without medication. It would be very helpful to understand the effects these powerful medications are having on a client's sensitive energy field and chakras. There are many people who enter treatment only wanting medication for their symptoms and fail to realize the effects they are having on their mind and body. This type of research could assist the general public in making more informed decisions about what types of pharmaceuticals they are putting in their bodies.

I would also like to conduct a study assessing the GDV readings of a healer as they are working on a client. It would be very interesting to examine the pre and post

readings of the healer as well as the client. This, I feel, would yield some very important data on what is occurring to the healer during their sessions. We would also have a method to evaluate whether the healing method is affecting the energy field, chakra or diagram system.

Further research needs to be conducted evaluating the differences between the sympathetic and parasympathetic readings on the GDV. When taking a reading on the GDV we are receiving very different data with the filter vs. without the filter. It would be important to understand how sound could affect the physical body. I would hypothesize that a subject may need a longer period of time than fifteen minutes to show changes in the chakra readings on the physical. They may need longer exposure to the crystal bowl and possible over a number of days. A study to follow the effects of sound on the physical and emotional bodies would be very interesting.

A study evaluating the chakra readings of hyper and hypo values would be very helpful in evaluating what the chakras are responding to and what is causing these types of readings. I would use the Stait Trait and Zung standardized measurements along with the GDV to evaluate those subjects who had either a hypo or hyper reading. We could then see if there is a correlation between emotional state and these readings.

Additionally, another study taking an initial physical assessment and GDV chakra reading to assess hyper and hypo status could yield some interesting findings on the relationship between physical problems and chakra values. I would also be interested in psychiatric diagnosis in relation to the chakra readings and whether this is a function of a diagnosed disorder.

In conclusion, I have enumerated a number of possible studies and could go on with the possibilities for research. The GDV has shown, in this study, to be a very effective tool in measuring the chakras and whether they respond to the sound of a crystal bowl. It is with these significant results that I feel very confident concerning the efficacy of the research projects enumerated above. This research study is just a beginning in the field of energy medicine in understanding the chakra system and how healing occurs. My hope is that this helps in the advancement of the science.

Chapter 5 Endnotes:

¹ Jonathan Goldman, *Healing Sounds* (Rochester: Healing Arts Press, 1992).

² Barbara Brennan, *Hands of Light* (New York: Bantam Books, 1988).

³ Rosalyn Bruyere, *Wheels of Light* (New York: Simon and Schuster, 1989).

⁴ *Ibid.*, 78.

⁵ Richard Gerber, *Vibrational Medicine: Third Edition*, (Rochester: Bear and Company Publishers, 2001), 132.

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APPENDIX A

Participants

A.1 Letter to Magazine Requesting Subjects for Research

The GDV camera and software is the invention of Dr. Konstantin G. Korotkov, a Russian scientist. The GDV is the first device in the world which measures the distribution of energy levels of living organisms. This device has successfully passed clinical trials in Russia, England, Germany and the United States. It is accepted as a measuring device of the human energy field in dissertation research.

This new instrument has been introduced into the scientific field and alternative medicine. Its full name is the Computerized Gas Discharge Visualization Technique; or GDV and is based on the earlier and well-known, Kirilian Photography. The Kirilian was known for its ability to photograph the auric field around the body. The GDV is the first tool that gives us the opportunity to visualize the distribution of the human energy field and makes it easily reproducible and graphically readable on a computer screen.

The GDV is a camera and sophisticated software program that reads the clients energy state on a variety of different levels including: an individuals psychological type, psychological stress levels, energy condition of systems and organs, quantitative monitoring of condition during treatment course, quantitative monitoring of an individual in the process of specific external influence such as meditation training, healing, etc., analysis of the effect of test loads and probes on dynamics of energy levels of an individual, effects of subtle influences such as homeopathy, flower essences, essential oils, types of healing on a human energy field and the investigation of compatibility and influence of people on one another's energy field.

The GDV, using a special electrode system, creates a high intensity field around an object, such that it produces a gas discharge in which the glow can be seen and measured on a computer screen all the while the data is being stored and analyzed on the companion computer. The diagnostic table is based on the concepts of traditional Chinese medicine, micro-acupuncture systems and empirical data. The analysis includes utilizing information on chakras and Ayurvedic medicine to additionally analyze the data received.

The GDV diagram estimates the general organism energetics as compared to the energetic level of a relatively healthy person. The computer read out can target early disease processes producing changes in the energy field. Additionally the GDV is able to produce a read out of each chakra and measures how they are functioning, i.e. size, color, motion and intensity.

A.2 Consent Letter

NAME:
ADDRESS:
PHONE NUMBER

DATE:

I, _____, hereby give consent to Maryanne Cowan, principle researcher, to be a subject in the research study to measure the effects of Crystal Bowl toning on the human energy field and chakras. I agree to complete two questionnaires called the Profile of Mood States. I also agree to submit to having readings taken with the Gas Discharge Visualization Device which would include placing each fingertip on the camera lense for a total of ten readings. I understand that there are two subject groups called A and B and that I will be randomly placed in either treatment or control group for the purposes of the study. I also understand that my GDV readings may be utilized in this research study and my personal information with be held anonymous.

I understand that this is not an invasive procedure and that I have completed my medical history form and divulged accurate personal information for the researcher. I understand that there are no known side effects and I take full responsibility for being in this study and will not hold Maryanne Cowan responsible for any unforeseen reactions.

Signature of Subject

A.3 Medical Form

Please list any medical diagnosis or physical problems:

MEDICAL HISTORY FORM

NAME:

ADDRESS:

PHONE NUMBER:

AGE:

DATE OF BIRTH:

MEDICAL HISTORY:

Do you have any medical history that requires you to take medications? If so, please list them.

Do you have a pace-maker implanted?

Are you being treated for a psychiatric diagnosis? If so, are you on medication? Please list your diagnosis and medications.

Do you require a special diet? If so, what is it? Please list..

I hereby state that the above information provided by me is accurate and correct to the best of my knowledge.

Signature of Subject

A.4 Consent to Perform Human Research

PRINCIPAL INVESTIGATOR: MARYANNE L. COWAN, L.C.S.W. Ph.D.
STUDENT

DATE STUDY TO BEGIN: January 3, 2004

PROTOCOL RESEARCHING THE EFFECTS OF THE CRYSTAL BOWL TONING ON ANXIETY AND DEPRESSION SCALES

Location: Psychotherapy Office 65 N. Maple Avenue
Ridgewood, NJ 07450

1. STUDY CONDUCT

1.1 Background

The Crystal Bowl emits tones and sound equivalent to the notes on a musical scale. There has not been any research to date of the effects of this vibrational sound on human emotions. Anecdotal reports indicate that subjects find the effects of toning of the Crystal Bowl to be relaxing and can aid in a person achieving a meditative state. Clients in my psychotherapy practice report that they find the toning of the bowl to make them feel less anxious and a general feeling of well being. Upon reviewing the literature there does not appear to be research on the effects of the toning of the Crystal Bowl on human subjects. The Crystal Bowl has been utilized by Dr. Mitchel Gaynor at Sloan Kettering in New York City with patients who are being treated for Cancer. He utilizes this as adjunct therapy to assist patients in relaxation and possible healing. However, the effects have never been researched with data.

1.2 Objective

To evaluate and measure the effects of Crystal Bowl toning on subjects for changes in the scales of the Zung for depression and the Stait Trait measure for anxiety. There will be a pre-test; Crystal Bowl toning and a post-test. My objective is to assess any changes in these dependent measures after being administered toning of the Crystal Bowl in an office setting. The objective is to measure changes in anxiety and depression after being exposed to the toning of the Crystal Bowl for five days.

1.3 Study Design

Up to 40 people will complete the Zung for Depression and Stait Trait for Anxiety. This will be a Randomized experimental design: Pre-test Post-test and a Control Group. The group receiving the treatment will experience the Crystal Bowl toning for a period of fifteen minutes for five consecutive days. On day one they will first complete the depression and anxiety scales and then receive 15 minutes of toning. This will go on for

five days. On the fifth day, after the last toning session the subjects will complete the Zung and Stait Trait as a post-test. The researcher will be assessing changes in the pre and posttest. The Control group will complete the Stait Trait on day one; receive no treatment and then complete the same tests on day five and submit them to the researcher.

Subject Population

1.4.1 Inclusion criteria

- a. Subjects will show willingness to participate by signing voluntary informed consent form.
- b. Subject will show ability and stated willingness to follow the directions of the Principal Investigator (PI).

1.4.2 Exclusion Criteria

- a. Those subjects to be excluded from the study are patients diagnosed with significant psychopathology including schizophrenia; substance abuse disorder including alcoholism and drug addiction.

1.4.3 Potential Risks

- a. There are no potential risks known.

1.4.4 Discontinuation Criteria

- a. A subject may be dropped from the study at any time at her request or that of the PI of the project and reported to the IRB.
- b. If the subject terminates her participation in the study prematurely, the drop date and reason will be recorded in the Report Form and reported to the IRB.
- c. If adverse reactions occur during the study, the PI can determine whether the subject should discontinue and report same to the IRB in writing.

1.5 Evaluations

1.5.1 Safety

- a. In the event of any reactions, the PI must notify the IRB chair within 24 hours and the full board within 72 hours. Any adverse reactions will be recorded in the complaint file and reported to the full IRB Board. If there is a major adverse reaction, the FDA and the Chair of the IRB will be notified within 24 hours and then in writing.

- b. In case of adverse effects, proper therapeutic measures and follow-up will be done by the PI in accordance with good clinical practice.

1.5.2 Efficacy

Efficacy will be addressed by comparing the differences in the Pre-test and Post-test of the Zung and Stait Trait measure.

1.5.3 Statistical Analysis

The data will be analyzed by analyses of variance repeated measures on each subject. Differences will be calculated between the pre-test; post-test treatment group and the control group. Additional statistical methods will be used as appropriate.

- 1.6 All subjects will be required to sign the Informed Consent Form. All subjects will sign a Demonstration Sign-off sheet verifying that they have been instructed regarding the above procedures and that they do understand them.

2. Management and Regulation

The subjects will be monitored by Maryanne Cowan, researcher during the study.

2.3 Regulatory Considerations: None

2.3.1 Protocol Agenda

The PI shall not implement a change in or other wise deviate from the protocol if the change may increase the risk to study subjects of adversely affect the validity of the investigation or the rights of the human subject; however the PI must notify the Chair of the IRB prior by letter also.

2.3.2 Subject Report Form Completion and Submission

Reports of progress or lack of progress will be sent to the IRB from the start date, which is January 3, 2004. Study will not last longer than one month unless protocol is resubmitted to the IRB.

Subject Report forms will be completed at the end of one month. They shall be maintained by the PI with a final report to the IRB.

STUDY NAME: The Effects of Crystal Bowl Toning on Anxiety and Depression Scales
Stait Trait and Zung

BEGINNING OF STUDY: January 3, 2003

LENGTH OF STUDY: One Month

SUBJECT INFORMED CONSENT

RESEARCHER IN CHARGE OF STUDY: MARYANNE L. COWAN, L.C.S.W.
DOCTORAL STUDENT, HOLOS UNIVERSITY

NAME OF EQUIPMENT: The researcher will utilize a Crystal Bowl with subjects and expose them to the toning of the bowl for 15 minute sessions for a period of five days. They will agree to take a pre-test with the Zung measure of depression and the Stait Trait for Anxiety and after the five days a post test utilizing the same measures. There will be a control group receiving no Crystal Bowl treatment, however they will take the pre and posttest measures.

Purpose: This is a clinical investigational study utilizing the Crystal Bowl to ascertain whether the vibrational toning effects anxiety and or depression in subjects.

Inclusion Criteria:

1. Subjects will show willingness to participate by signing voluntary informed consent form.
2. Subject will show ability and state willingness to follow the directions of the Principal Investigator (PI) and the research staff.

Exclusion Criteria:

There is no exclusion from the study.

Procedures.

1. The length of the study if one month for each patient.
2. You agree to participate in daily 15-minute sessions with the PI and Crystal Bowl toning during that time. You will also agree to take the pre-test and post-test Zung and Stait Trait for anxiety. Your visits will be conducted by Maryanne Cowan, Ph.D. Student and researcher.
3. Your participation in this Study may be dropped by the PI for failure to follow instructions or you do not continue with the study's protocol.

CONFIDENTIALITY OF RECORDS

Your identity as a part of this Study will be kept confidential. For your safety, your name and address will be filed at the Sponsor's office. Results of this study may be reported in scientific presentations or publications, but you will not be identified.

QUESTIONS

This form has told you what this Study is about

1. If you have any questions about the Study, or injuries as a result of the Study, Maryanne Cowan, Ph.D. Student will assist you. The 24-hour number to call is 201-670-4124.

SUBJECT STATEMENT

I am signing this consent freely and am not being forced. I understand that, by signing this form, I do not lose any rights to which I am entitled.

I hereby state that I have the legal capacity to enter into contract that no guardian has been appointed by me.

The consent form has been read by (to) me and Study information has been fully explained to me. Any questions that have occurred to me have been fully answered by the Study Coordinator. I may request a signed copy of this form.

I agree to cooperate with all research personnel and to follow the procedures as outlined to me.

By signing this Consent Form, I am authorizing release of my medical records to the Food and Drug Administration, the Institutional Review Board and any third party required by law.

Subject's Signature

Date

A.5 Cleansing Prayer

CLEANSING PRAYER

The Rainbow Bridge II
Link with the Soul-Purification
By Two Disciples-Dwal Khul

I am the Soul
I am the Light Devine
I am Love
I am Will
I am Fixed Design

The Sons of Men are one and I am one with them
I seek to love not hate
I seek to serve and not due service
I seek to heal not hurt
Let pain bring due reward of light and love
Let the soul control the outer form and life and all events
And bring to light the love which underlies
The happenings of the time
Let vision come and insight
Let the future stand revealed
Let inner union demonstrate and
Outer cleavages be gone
Let love prevail
Let all men love.

At this time the principle researcher invoked the spiritual vortex to cleanse the room and any and all unwanted energies. This spiritual vortex is similar to a whirlwind which cleanses energetically and is mentally focused on for a period of three minutes. This prayer was utilized before the principle researcher began for the day to cleanse the treatment space.

[A.6 Profile of Mood States Scale Sample Page](#)

POMS™ Standard Form

BY DOUGLAS M. MCNAIR, Ph.D., MAURICE LORR, Ph.D., JW P. HEUCHERT, Ph.D., & LEO F. DROPPLEMAN, Ph.D.

Client ID: _____ Age: _____ Gender: Male Female
(Circle one)

Birth Date: ____/____/____ Today's Date: ____/____/____
Month Day Year Month Day Year

To the Administrator:

Place a checkmark in one box to specify the time period of interest.

To the Respondent:

Below is a list of words that describe feelings that people have. Please read each word carefully. Then circle the number that best describes

how you have been feeling during the PAST WEEK, INCLUDING TODAY.
 how you feel RIGHT NOW.
 other: _____

If no box is marked, please follow the instructions for the first box.

POMS™

	Not at all	A little	Moderately	Quite a bit	Extremely
1. Friendly	0	1	2	3	4
2. Tense	0	1	2	3	4
3. Angry	0	1	2	3	4
4. Worn out	0	1	2	3	4
5. Unhappy	0	1	2	3	4
6. Clear-headed	0	1	2	3	4
7. Lively	0	1	2	3	4
8. Confused	0	1	2	3	4
9. Sorry for things done	0	1	2	3	4
10. Shaky	0	1	2	3	4
11. Listless	0	1	2	3	4
12. Peeved	0	1	2	3	4
13. Considerate	0	1	2	3	4
14. Sad	0	1	2	3	4
15. Active	0	1	2	3	4
16. On edge	0	1	2	3	4
17. Grouchy	0	1	2	3	4
18. Blue	0	1	2	3	4
19. Energetic	0	1	2	3	4
20. Panicky	0	1	2	3	4
21. Hopeless	0	1	2	3	4
22. Relaxed	0	1	2	3	4
23. Unworthy	0	1	2	3	4
24. Spiteful	0	1	2	3	4
25. Sympathetic	0	1	2	3	4
26. Uneasy	0	1	2	3	4
27. Restless	0	1	2	3	4
28. Unable to concentrate	0	1	2	3	4
29. Fatigued	0	1	2	3	4
30. Helpful	0	1	2	3	4

Please flip over.
Items continue on the back page...

A.7 Chakra Polarity-Positive/Negative Input

WHEELS OF LIGHT

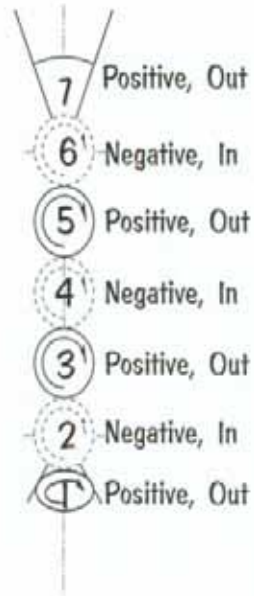


Fig. 3.12. Chakra Polarity.

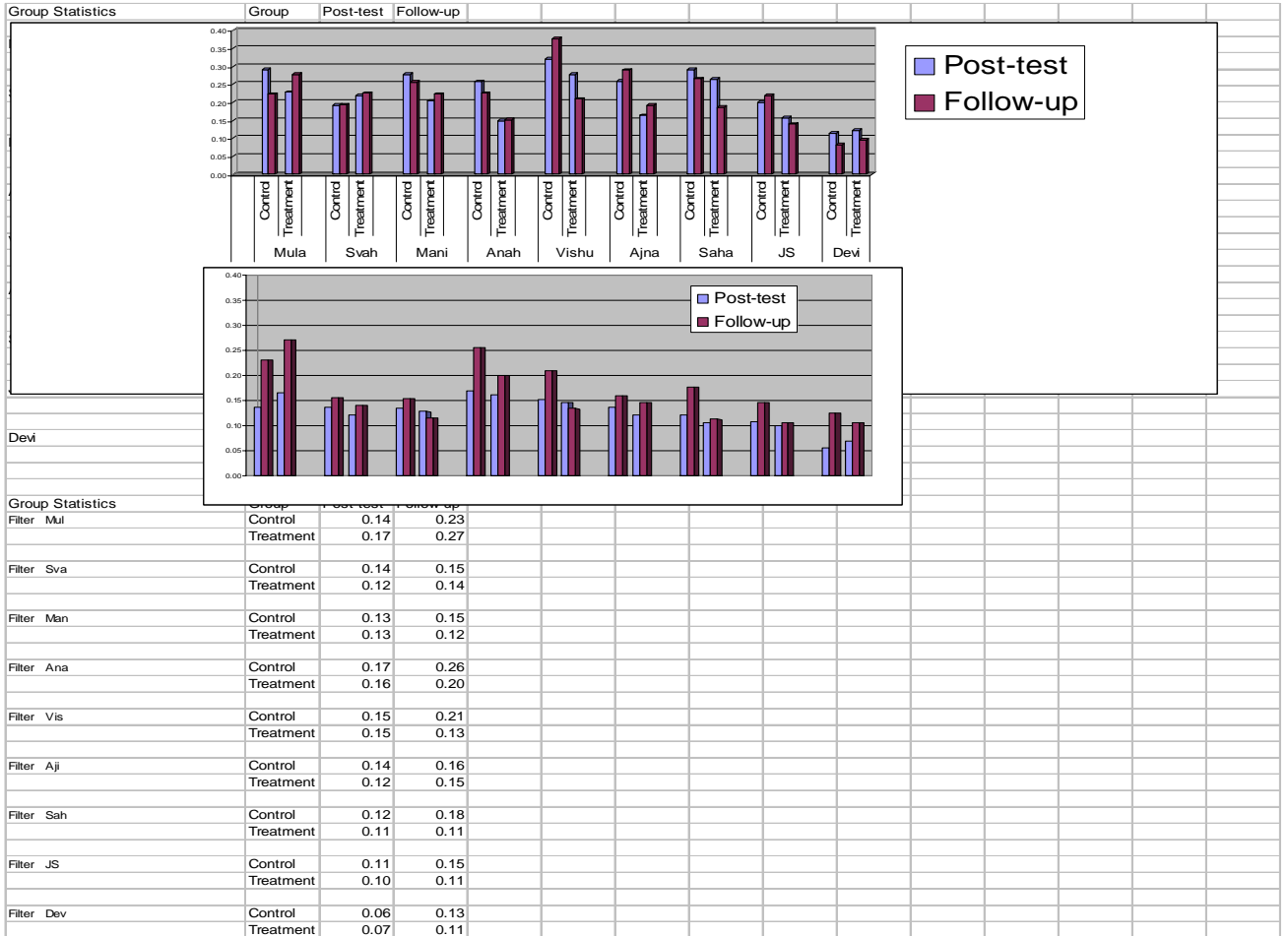
Those into which energy flows are called *intake* chakras and have negative polarity. Each chakra with a given polarity is connected to the remaining chakras of the same polarity. For example, energy flowing up the chakra system into the fourth chakra (intake) will immediately connect to the second and sixth chakras (which are also intake chakras). Thus, the upper chakras of each polarity have access to the lower chakras of the same polarity and vice versa.

In addition to polarity, the respective functions—intake and output—are interrelated. Having an opinion in the third chakra is connected to the fifth chakra (speech, expression) because one speaks an opinion. The second, fourth, and sixth centers (which are intake centers) form one relationship, and chakras one, three,

B.4 GDV Data Analyzed for Significant Response to Crystal Bowl

Group Statistics	Group	Post-test	Follow-up
Muladhara	Control	0.291382	0.222276
	Treatment	0.227967	0.277724
Svahishthana	Control	0.191707	0.19374
	Treatment	0.218537	0.225041
Manipura	Control	0.277886	0.25626
	Treatment	0.204228	0.22252
Anahata	Control	0.257154	0.22561
	Treatment	0.148455	0.15122
Vishuddhi	Control	0.32	0.376829
	Treatment	0.277317	0.209756
Ajna	Control	0.258862	0.289268
	Treatment	0.16374	0.192195
Sahasrara	Control	0.291138	0.265203
	Treatment	0.26439	0.186585
JS	Control	0.20022	0.219374
	Treatment	0.157707	0.139065
Deviation	Control	0.11439	0.081951
	Treatment	0.121707	0.095122
Group Statistics	Group	Post-test	Follow-up
Filter Muladhara	Control	0.137073	0.230081
	Treatment	0.165366	0.272033
Group Statistics	Group	Post-test	Follow-up
Filter Svahishthana	Control	0.136585	0.154878
	Treatment	0.120081	0.140488
Group Statistics	Group	Post-test	Follow-up
Filter Manipura	Control	0.13439	0.153984
	Treatment	0.127805	0.115122
Group Statistics	Group	Post-test	Follow-up
Filter Anahata	Control	0.16878	0.256179
	Treatment	0.162195	0.199756
Group Statistics	Group	Post-test	Follow-up
Filter Vishuddhi	Control	0.152439	0.209675
	Treatment	0.146667	0.133577
Group Statistics	Group	Post-test	Follow-up
Filter Ajna	Control	0.135772	0.159024
	Treatment	0.120081	0.145772
Group Statistics	Group	Post-test	Follow-up
Filter Sahasrara	Control	0.120081	0.176585
	Treatment	0.105285	0.112439
Group Statistics	Group	Post-test	Follow-up
Filter JS	Control	0.106707	0.145472
	Treatment	0.100472	0.106423
Group Statistics	Group	Post-test	Follow-up
Filter Deviation	Control	0.055691	0.125691
	Treatment	0.068374	0.10626

B.5 Post-Test Results

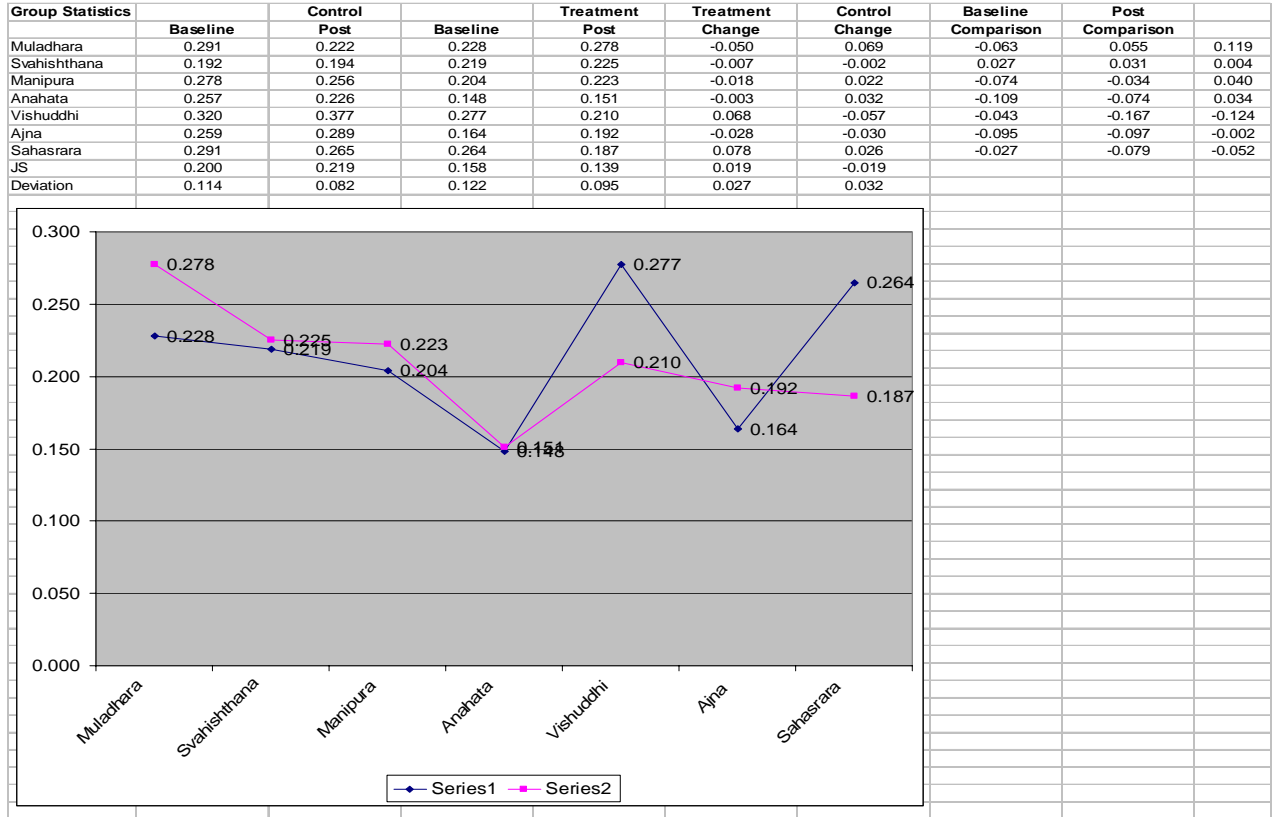


B.6 Data Showing Response to Crystal Bowl

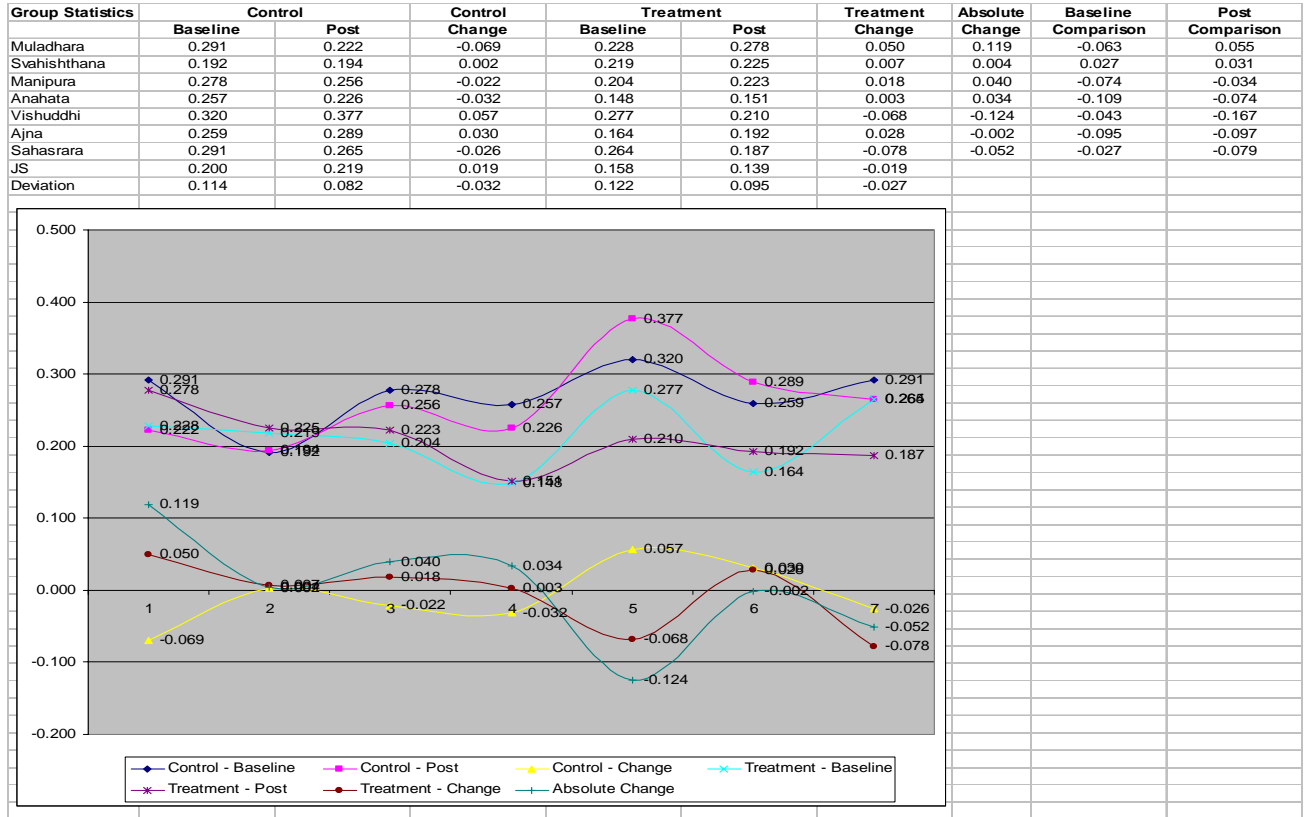
Group Statistics	Group	Post-test	Follow-up
Muladhara	Control	0.29	0.22
	Treatment	0.23	0.28
Svahishthana	Control	0.19	0.19
	Treatment	0.22	0.23
Manipura	Control	0.28	0.26
	Treatment	0.20	0.22
Anahata	Control	0.26	0.23
	Treatment	0.15	0.15
Vishuddhi	Control	0.32	0.38
	Treatment	0.28	0.21
Ajna	Control	0.26	0.29
	Treatment	0.16	0.19
Sahasrara	Control	0.29	0.27
	Treatment	0.26	0.19
JS	Control	0.20	0.22
	Treatment	0.16	0.14
Deviation	Control	0.11	0.08
	Treatment	0.12	0.10
Group Statistics	Group	Post-test	Follow-up
Filter Muladhara	Control	0.14	0.23
	Treatment	0.17	0.27
Group Statistics	Group	Post-test	Follow-up
Filter Svahishthana	Control	0.14	0.15
	Treatment	0.12	0.14
Group Statistics	Group	Post-test	Follow-up
Filter Manipura	Control	0.13	0.15
	Treatment	0.13	0.12
Group Statistics	Group	Post-test	Follow-up
Filter Anahata	Control	0.17	0.26
	Treatment	0.16	0.20
Group Statistics	Group	Post-test	Follow-up
Filter Vishuddhi	Control	0.15	0.21
	Treatment	0.15	0.13
Group Statistics	Group	Post-test	Follow-up
Filter Ajna	Control	0.14	0.16
	Treatment	0.12	0.15
Group Statistics	Group	Post-test	Follow-up
Filter Sahasrara	Control	0.12	0.18
	Treatment	0.11	0.11

Group Statistics	Group	Post-	Follow-
Filter JS	Control	test	up
		0.11	0.15
	Treatment	0.10	0.11
Group Statistics	Group	Post-	Follow-
Filter Deviation	Control	test	up
		0.06	0.13
	Treatment	0.07	0.11

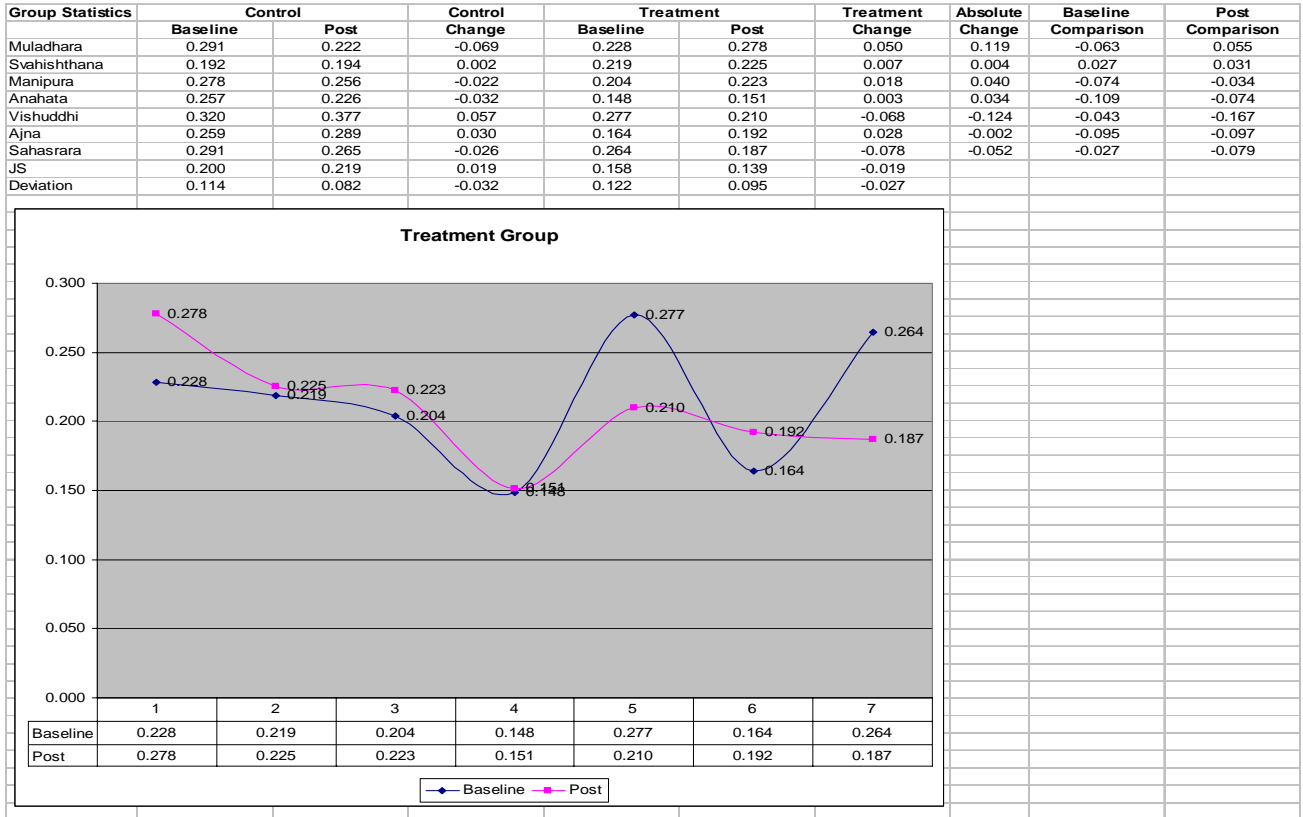
B.7 LaRue: Greywolf Data Results of Means Analysis of Seven Chakras



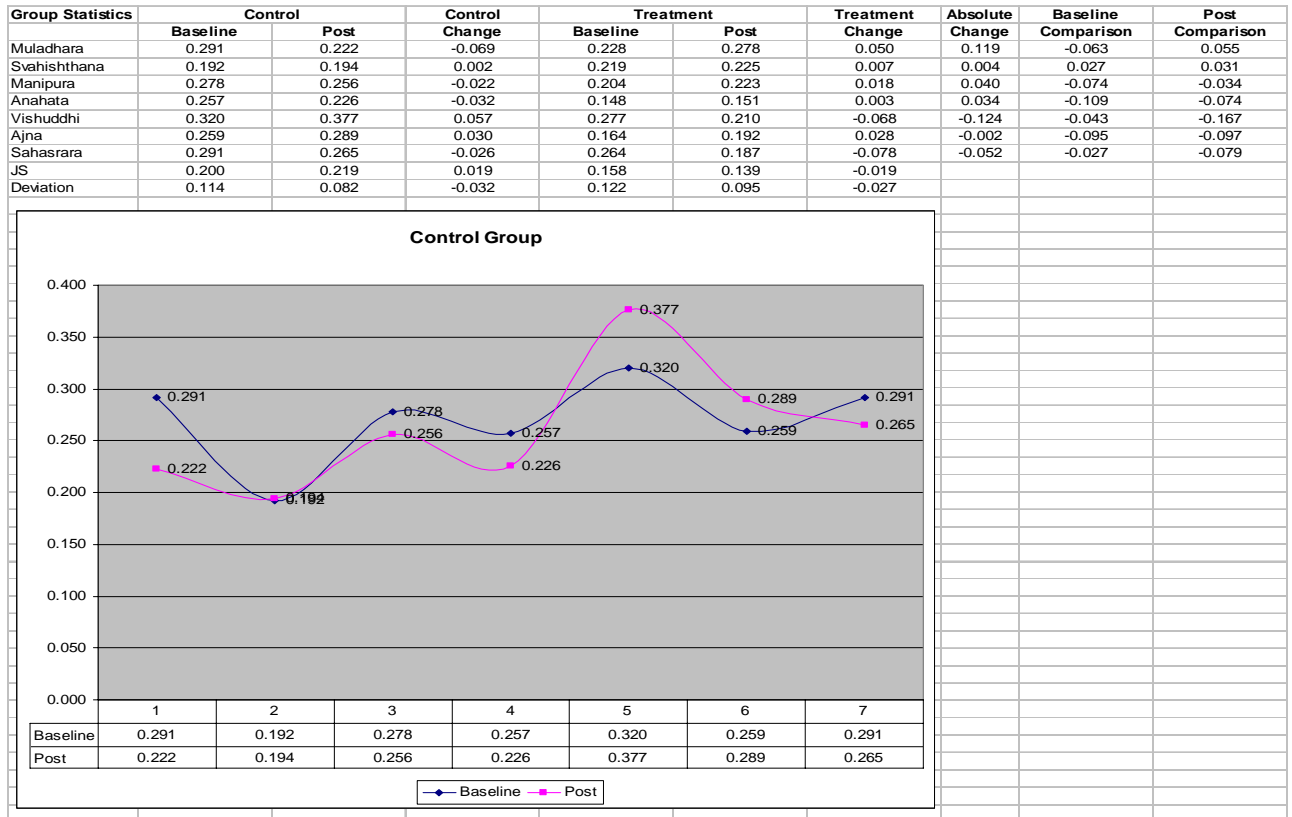
B.8 Data of Results Showing Response to Bowl Means Analysis



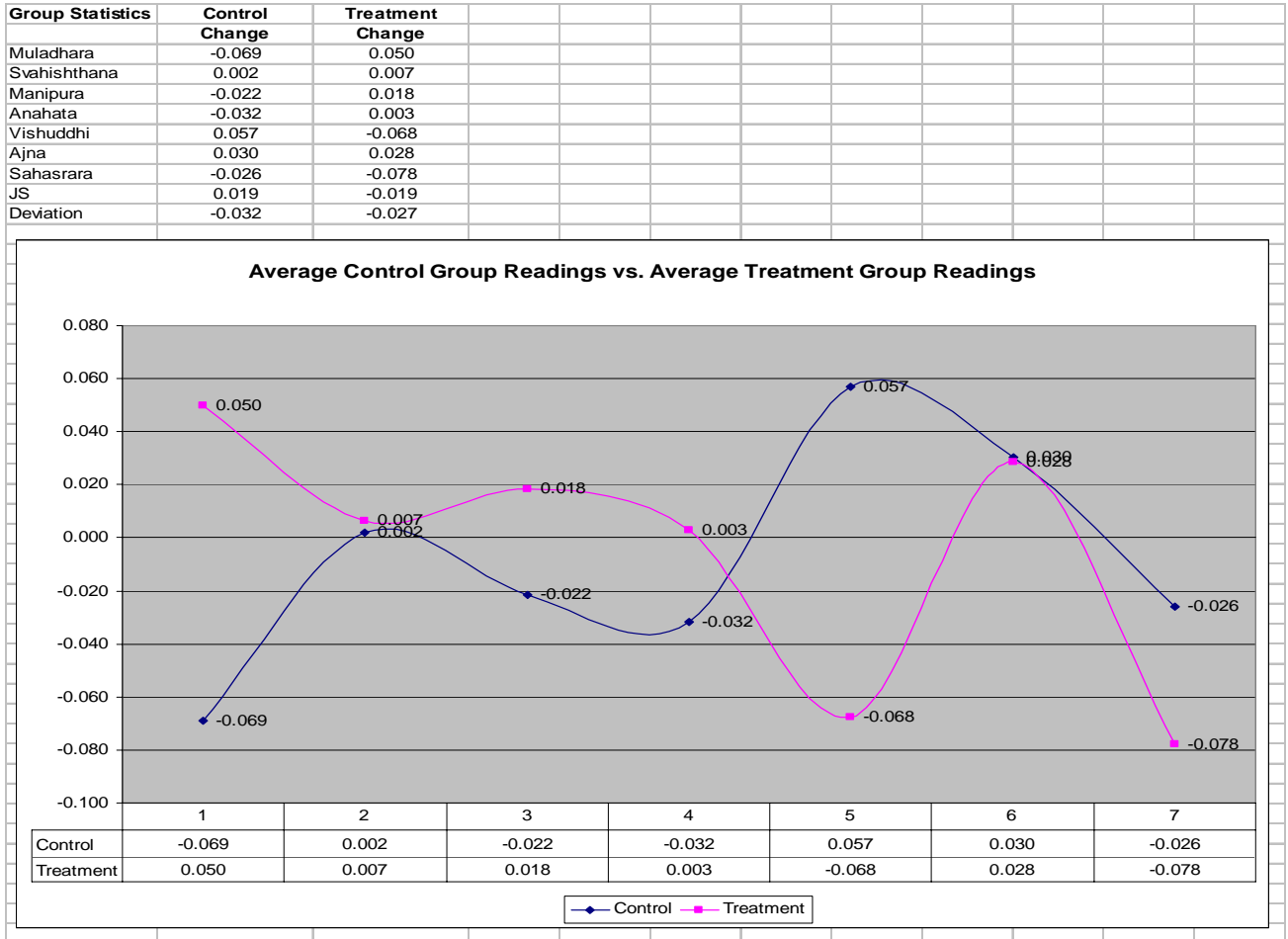
B.9 Treatment Group Means Analysis across Seven Chakras



B.10 Control Group Means Analysis across Seven Chakras

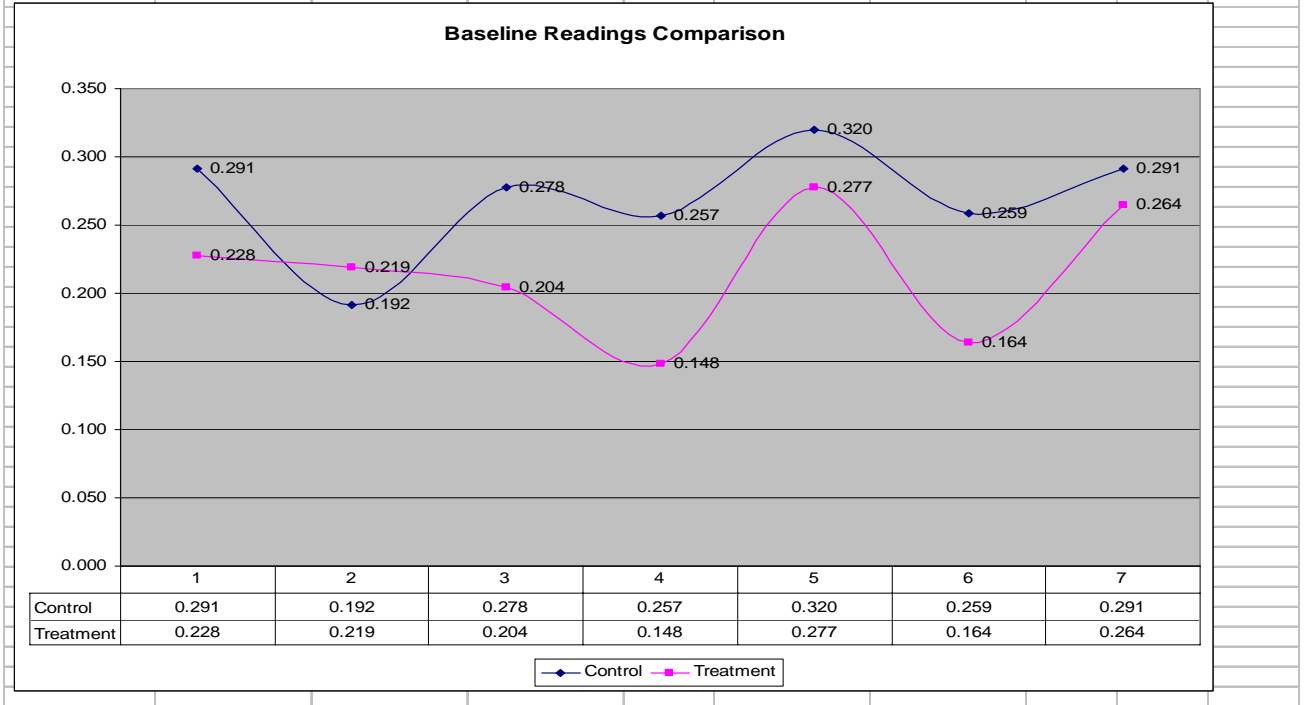


B.11 Graphs and Data Showing Variations between Groups

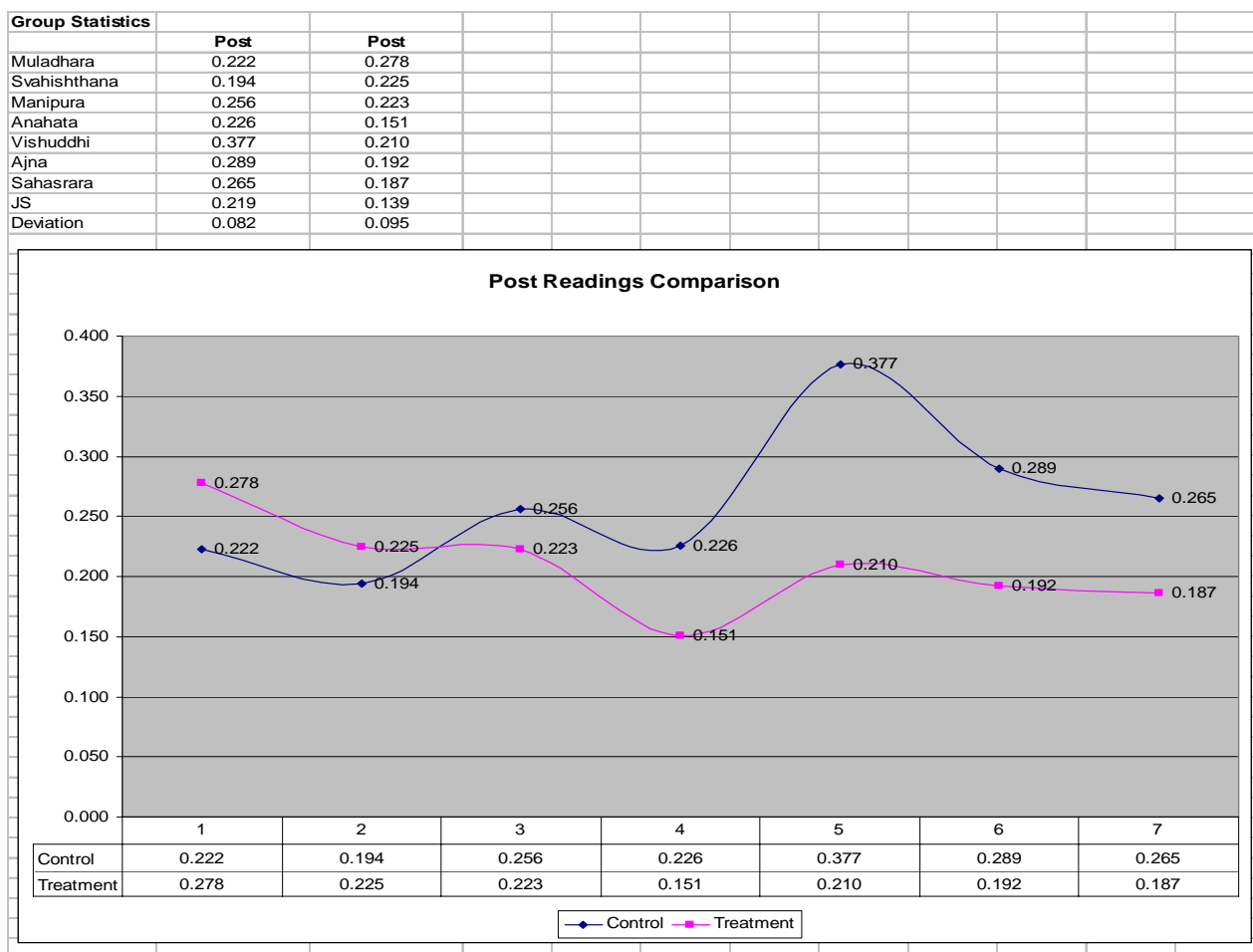


B.12 Baseline Averages Means Analysis across Seven Chakras

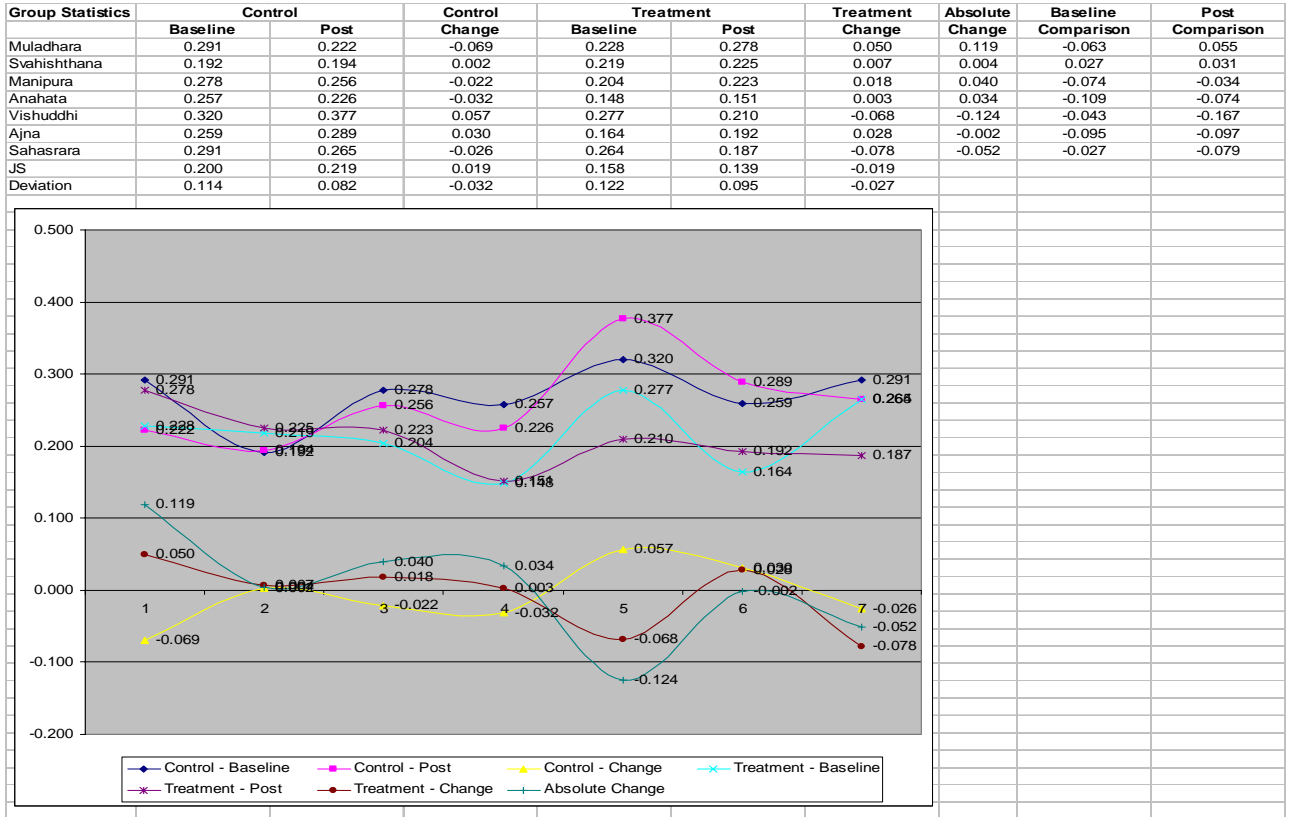
Group Statistics	Control	Treatment
	Baseline	Baseline
Muladhara	0.291	0.228
Svahishthana	0.192	0.219
Manipura	0.278	0.204
Anahata	0.257	0.148
Vishuddhi	0.320	0.277
Ajna	0.259	0.164
Sahasrara	0.291	0.264
JS	0.200	0.158
Deviation	0.114	0.122



B.13 Post Readings Means Analysis across Seven Chakras



B.14 Group Readings Means and Variations across Seven Chakras



B.15 Data of Pearson's R Correlation of Coefficients

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	4 5 2	1 553 0.	0212416091443100010078826541031120 477	0			
C	1 2 4	8 5 259 22	0381781437901902839974089990322187 131	9		47788	
3	0 0 0	0 000 0	000000000000000000000000000000001442a	6		13106	0.885
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C	2 2 4	0 125 0.	1321144450025122103344414471220243 877			87798	
1	4 5 0	1 149 20	5820565808362578154011802944307249 067			06744	
4	0 0 0	0 000 0	00000000000000000000000000000000 274			27495	0.848
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	- 0 -	0 000	00000000000000000000000000000000 000	for		00000	
	0..0.	agg		
C	5 6 8	1 426 0.	4211437973654335211435656433564237 614	reg		61428	
1	7 9 9	4 152 21	6018177062860272447512707566892916 781	ate		78134	
5	0 0 0	0 000 0	000000000000000000000000000000002116c	bas		11663	0.456
C	0. - -	00-- 0.	-----0--0-----0--0---0----- 000	belin		00000	
1	2 0 0.	..0004	000000.00.0000000000.00.000.000000	ces		0.625
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	7 0 0 0 4 6	9428660310635229362200309340161208	175	168	1752	
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C	1 0 0 5 0 3 2 0.	5304201035693150901101043511515020	889	of	88988	
1	9 5 1 5 4 4 3 5 2	4321611578399564311531053584864117	633	free	63395	
7	0 0 0 0 0 0 0 0	00000000000000000000000000000000	488	dom	48826	0.871
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C	6 7 7 1 8 7 8 0.	0214527460204000246230104842101561	857	8. 0	85777	
1	1 6 8 6 9 2 7 1 1	1026014266212147286562992266022320	573*	9 1 0	57343	
8	0 0 0 0 0 0 0 0	00000000000000000000000000000000	2351611		23566	0.73
	- 0 - 0 0 0 0	00000000000000000000000000000000	000		00 00	
	0..0.....	.....	...		.0..	
C	2 1 3 2 8 7 2 0.	0116603231772100356112225515440085	976		97.33	
1	4 6 3 2 3 5 7 2 2	4075586208725009103483214690632610	736		73613	
9	0 0 0 0 0 0 0 0	00000000000000000000000000000000	140		14629	0.946
	- 0 - 0 0 0 0	00000000000000000000000000000000	000		00000	
	0..0.....	.....	...		.....
C	3 3 5 2 8 5 6 0.	1446623232545113443344415642132553	998		99878	
2	5 5 9 8 4 6 0 1 5	0216762695877532041543956075747956	429		42911	
0	0 0 0 0 0 0 0 0	00000000000000000000000000000000	833		83377	0.817
	0 - 0 0 0 0	00000000000000000000000000000000	000		00000	
	0..0.....	.....	...		.....
C	1 1 0 0 0 0 1 0.	4121030132330631801300142315212123	778		77878	
2	7 2 3 8 0 6 7 3 5	8787129403990329340818407400422150	934		93402	
1	0 0 0 0 0 0 0 0	00000000000000000000000000000000	449		44971	0.833
	- 0 - 0 0 0 0	00000000000000000000000000000000	000		0000	
	0..0.....	.....	...		0....	
C	4 4 6 3 8 9 6 0.	2528944563876324268545618864341896	999		.9989	
2	4 5 2 9 6 7 5 3 6	7328480612495596266031493254178334	535		93523	
2	0 0 0 0 0 0 0 0	00000000000000000000000000000000	032		53278	0.814
	- 0 - 0 0 0 0	00000000000000000000000000000000	000		00 00	
	0..0.....	.....	...		.0..	
C	2 2 1 0 1 3 3 0.	3302231120122112012241201131020131	857		85.53	
2	5 5 7 0 9 3 0 2 4	0341739952574419222707101931263764	451*		45789	
3	0 0 0 0 0 0 0 0	00000000000000000000000000000000	4701		47155	0.734

	-	0	0000	0000002000000400000040000004000000	000	0	000			
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C	2	6	0	3424	2.	3103214532445153045447436674220572	869	8	.997	
2	2	7	4	7314	81	7297749805899729682176246002312717	286	266	94	
4	0	0	0	0000	0	00000000000000000000000000000000	608	688	39	0.766
	-	0	0100	0000000002100000000002200000000	000	0000				
	0.	0.	.....	.....	.....	.....	.....	.....	.....
C	8	5	5	1085	0.	0306539693089424066387953193331664	989	089	99	
2	0	5	9	4847	36	8605600808848568363070774535314400	058	.	5885	
5	0	0	0	0000	0	00000000000000000000000000000000	028	928	41	0.961
	-	0	0000	00000000000000000000000000000000	000	0000				
	0.	0.	.....	.....	.....	.....	.....	.....	.....
C	0	0	1	3200	0.	1151011012110010301020220210003200	988	.	8868	
2	4	5	2	8336	06	2294793110016014146639064150438530	620	920	60	
6	0	0	0	0000	0	00000000000000000000000000000000	028	628	49	0.755
	0	0	0000	003000000300030000000100000000000	000	0000				
	0.	0.	.....	.....	.....	.....	.....	.....	.....
C	0	7	1	5117	0.	0482030344210711732112810066207100	264c	.	6426	
2	9	2	4	2493	47	4315322866495318140412617741792935	412=	212	11	
7	0	0	0	0000	0	00000000000000000000000000000000	020612	461	94	0.066
	0	0	0000	00300000000000000000000000000000	000	0000				
	3.	0.	.....	.....	.....	.....	.....	.....	.....
C	4	0	0	3012	1.	7957241306042432401502862534363212	203a	203	00	
2	4	2	2	5546	71	5282007944665780827513250112534260	240b	240	39	
8	0	0	0	0000	0	00000000000000000000000000000000	03627c	627	98	0.06
	-	0	0000	00000000000000000000000000000000	000	0000				
	0.	0.	.....	.....	.....	.....	.....	.....	.....
C	3	4	6	0653	0.	1261504335353211624144725740005131	899	899	.9	
2	4	9	0	8694	01	6118723098464302831438796689228727	812	812	70	
9	0	0	0	0000	0	00000000000000000000000000000000	578	578	49	0.731
	-	0	0000	0000000000000000010100000000000	000	0000				
	0.	0.	.....	.....	.....	.....	.....	.....	.....
C	4	3	3	0562	0.	1113438883555223023208254042021352	527	52	.57	
3	7	9	9	5600	11	5623533022568031433631252568552002	979*	977	52	
0	0	0	0	0000	0	00000000000000000000000000000000	018101	819	37	0.64
	-	0	0000	00000000000000000000000000000000	000	0000				
	0.	0.	.....	.....	.....	.....	.....	.....	.....
C	6	8	0	0853	0.	0101317653997122124387430883221243	779	779	88	
3	1	0	0	7463	14	7207754570344676889316212944952534	603	603	35	
1	0	0	0	0000	0	00000000000000000000000000000000	756	756	27	0.739
	-	0	0000	00000000000000000000000000000000	000	0000				
	0.	0.	.....	.....	.....	.....	.....	.....	.....
C	0	1	0	3452	0.	3241311013340142512020323530005021	988	988	89	
3	7	6	2	5326	13	3045443332226019530713274663343551	561	561	70	
2	0	0	0	0000	0	00000000000000000000000000000000	934	934	48	0.938
C	0.	0.	0	0000	0.	000000100000010000001000001000000	2000a	0000		0.961

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 C 0
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 C 6
 b 5
 2 6
 C 0
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 1: 6
 C 3
 b 2
 3 7
 C 0
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 3 4

T T
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C v 9
4 s 9

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b 0..0..... 0.....
1- 7 8 8 6 7 6 7 . 8867768756577786757
T 7 6 0 4 2 0 7 0. 83450965794574741298
b 0 2 4 3 1 7 1 7 6 6 0 1 3 2 3 0 9 6 9 5 9 0 8 2 3 3 5 9 9
2 5 5 7 9 9 3 6 8 8 6 1 9 2 3 4 6 1 7 9 7 6 5 2 1 5 3 7 5 2
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T 0 0 0 0 000000 0000000 0000
b 0..0...0. ....0.....0....
3- 5 8 8 5 5. 7 7766678. 8677815. 5555
T 1 8 2 8 7 6 5 0. 38235949867119372742
p 8 4 5 6 7 6 1 6 9 1 5 8 6 8 5 3 0 7 9 7 2 4 1 1 0 8 8 4 8
1 4 2 7 2 1 7 3 2 5 4 6 3 4 5 1 9 3 9 7 4 2 6 1 6 9 8 9 5 3
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b 0..0..... .....
3- 5 7 7 3 6 6 6 6 7 7 5 5 5
T 3 6 4 8 1 9 5 0. 809387
p 1 1 2 3 6 5 4 4 4 5 4 5 2 1 0
2 1 9 5 3 9 8 2 2 3 8 8 4 1 7 7
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C 0 0000 0000000000000000 0
b 0..0.....
1- 3 7 7 6 866 87567897858888678707
C 6 8 6 1 192 0. 231304461499225676.2
b 7 6 5 3 58274 61502167600482986080
2 1 4 7 2 13229 13999861531591776174
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C 0 0000 00000 000000000 0000
b 0..0.....0.....0.....
3- 9 5 6 9 886 77878.677888757.7876
C 2 5 9 2 284 0. 38362763695818676079
p 7 2 9 6 07497 23431527274230343976
1 9 4 2 3 575 11 49833185278524193198
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C 0 0000 000 00
b .0.....0..
3- 0.7 8 8 888 788.77
C 6 4 4 5 182 0. 332794
p 1 7 9 8 36251 047553
2 4 8 9 4 51225 711182

B.16 Data of Group Statistics and Independent Samples of One Tailed T-tests

Group Statistics					
	Group	N	Mean	Std. Deviation	Std. Error Mean
Muladhara Differences P2-P1	Control	41	-.0695	.46011	.07186
	Treatment	41	.0510	.44502	.06950
Vishuddhi Differences P2-P1	Control	41	.0573	.28571	.04462
	Treatment	41	-.0685	.31079	.04854
Sahasrara Differences P2-P1	Control	41	-.0256	.27218	.04251
	Treatment	41	-.0783	.41207	.06435

Independent Samples Test										
		Levene's Test for Equality of Variances			t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Muladhara Differences P2-P1	Equal variances assumed	.177	.675	-1.205	80	.232	-.12049	.09997	-.31943	.07846
	Equal variances not assumed			-1.205	79.911	.232	-.12049	.09997	-.31944	.07846
Vishuddhi Differences P2-P1	Equal variances assumed	.005	.944	1.909	80	.060	.12585	.06593	-.00535	.25706
	Equal variances not assumed			1.909	79.440	.060	.12585	.06593	-.00537	.25707
Sahasrara Differences P2-P1	Equal variances assumed	.000	.983	.683	80	.497	.05268	.07713	-.10080	.20617
	Equal variances not assumed			.683	69.321	.497	.05268	.07713	-.10116	.20653

Results of comparisons of change scores between control and treatment conditions show that there were no significant differences between these groups on either chakra 1 or 7 ($p=.115$ and $p=.25$, respectively). However, the control and treatment groups were significantly different at chakra 5 ($p=.03$).

(These are 1-tailed tests).